



2007 Virginia Outdoors Plan

Charting the Course
for Virginia's Outdoors



*"...Heaven and Earth
never agreed to frame
a better place for man's
habitation than Virginia."*

—Captain John Smith



2007 Virginia Outdoors Plan

*A plan for meeting Virginia's outdoor recreation,
land conservation and open space needs*

**Commonwealth of Virginia
Department of Conservation and Recreation**

**Director
Joseph H. Maroon**

The Department of Conservation and Recreation would like to thank the citizens of Virginia, private and public agencies and organizations for participating and partnering to develop the 2007 Virginia Outdoors Plan. The Planning District Commissions are recognized for their key role in partnering to facilitate citizen input, recommendations and review for each of the recreational regions. The direction and insight of the Technical Advisory Committee is recognized and appreciated. The recommendations presented in this plan can only be implemented through these continued partnerships.

John R. Davy, Division Director
Planning and Recreation Resources

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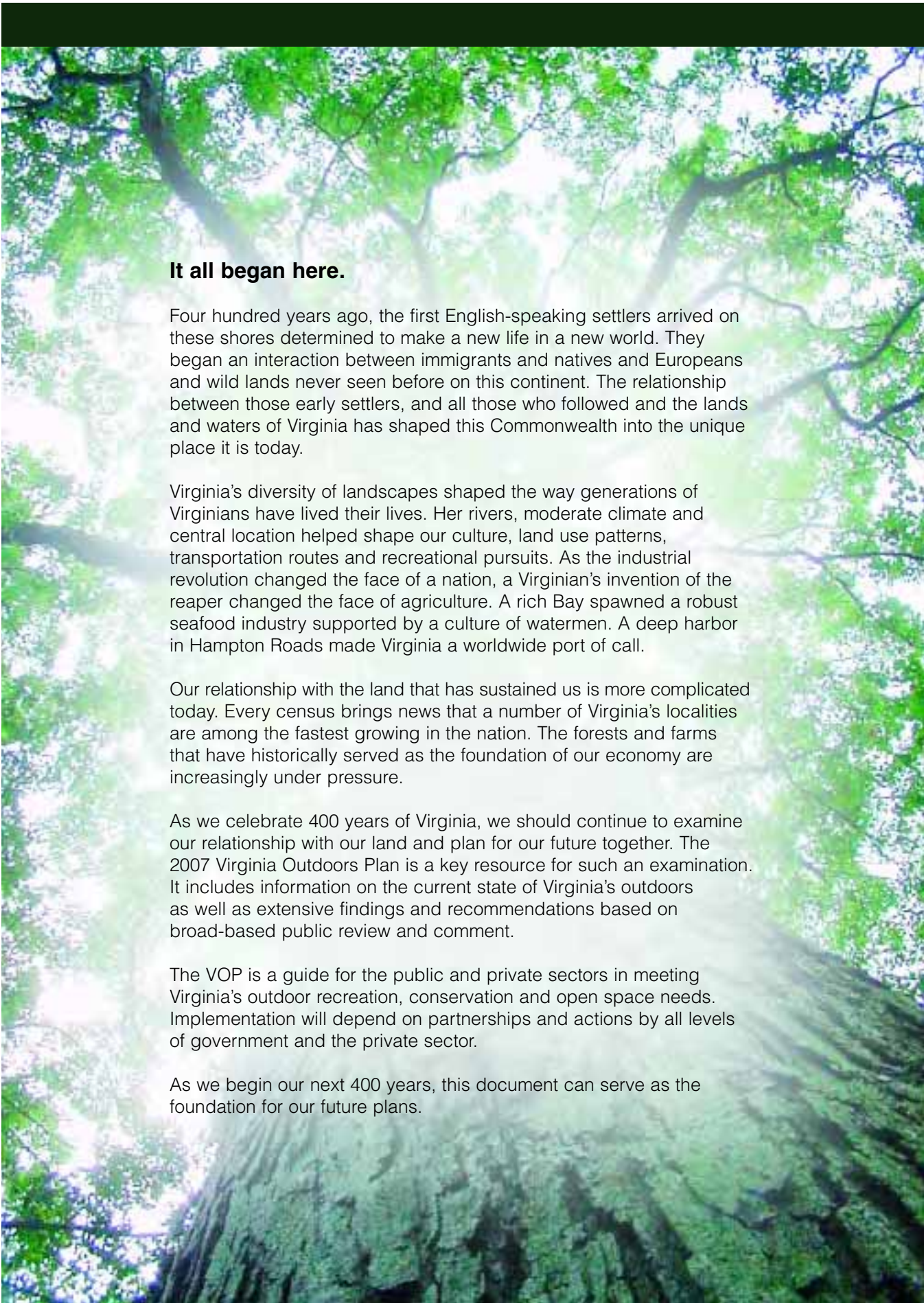
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It all began here.

Four hundred years ago, the first English-speaking settlers arrived on these shores determined to make a new life in a new world. They began an interaction between immigrants and natives and Europeans and wild lands never seen before on this continent. The relationship between those early settlers, and all those who followed and the lands and waters of Virginia has shaped this Commonwealth into the unique place it is today.

Virginia's diversity of landscapes shaped the way generations of Virginians have lived their lives. Her rivers, moderate climate and central location helped shape our culture, land use patterns, transportation routes and recreational pursuits. As the industrial revolution changed the face of a nation, a Virginian's invention of the reaper changed the face of agriculture. A rich Bay spawned a robust seafood industry supported by a culture of watermen. A deep harbor in Hampton Roads made Virginia a worldwide port of call.

Our relationship with the land that has sustained us is more complicated today. Every census brings news that a number of Virginia's localities are among the fastest growing in the nation. The forests and farms that have historically served as the foundation of our economy are increasingly under pressure.

As we celebrate 400 years of Virginia, we should continue to examine our relationship with our land and plan for our future together. The 2007 Virginia Outdoors Plan is a key resource for such an examination. It includes information on the current state of Virginia's outdoors as well as extensive findings and recommendations based on broad-based public review and comment.

The VOP is a guide for the public and private sectors in meeting Virginia's outdoor recreation, conservation and open space needs. Implementation will depend on partnerships and actions by all levels of government and the private sector.

As we begin our next 400 years, this document can serve as the foundation for our future plans.

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Vision for Virginia's Outdoors

In utilizing and conserving natural resources of the nation, the one characteristic more essential than any other is foresight.

—Theodore Roosevelt



Hikers explore the wonders of Virginia's outdoors. Photo by Virginia Tourism Corporation.

Introduction

It is the vision of the 2007 *Virginia Outdoors Plan* (VOP), the ninth VOP produced since 1965, to provide sound guidance and direction in meeting the state's needs for outdoor recreation and for the conservation of natural, cultural and scenic resources important to Virginians' quality of life.

After 400 years, Virginia remains a wonderfully attractive and desirable place to live and settle. Virginia is known as one of the most scenic states abounding with diverse natural resources that span the Coastal, Piedmont and Mountain regions. Immense opportunities are available for citizens and tourists to experience Virginia's history through its landscapes and cultural settings. The quality of life and economic well-being in the Commonwealth are directly linked to all of Virginia's outdoor resources. These same resources make Virginia popular and have resulted in steady patterns of increased settlement and growth since the Jamestown Colony was founded in 1607.

Over the past two decades, the state has seen its highest growth in population. The development resulting from this growth has stimulated a strong economy that has improved Virginia's business climate. At the same time, this period of growth and development has contributed to the unprecedented loss of farm and forestland. Water quality in many streams and rivers has deteriorated due to increased impervious surfaces and loss of natural buffers, resulting in significant impacts on aquatic life and outdoor recreation, as well as increased costs for water treatment. The lack of adequately integrated sound land use and transportation planning has fragmented natural resources, as well as local communities, requiring people to use their automobile for nearly every aspect of their lives.

The desire to change these patterns has increasingly turned into a ground swell of public support for better land use planning, preservation of working farms and forests, protection of our natural, historic and cultural resources, and for the provision of outdoor recreation opportunities. This was clearly shown by the voters' overwhelming passage of the 2002 State Parks and Natural Areas General Obligation Bond, as well as the vast majority of similar local referenda. It has been further evidenced by Gov. Tim Kaine's establishment of an aggressive state land conservation goal, the successful defense of the state's land preservation tax

credit program, the recent state funding for purchase of development rights for agriculture and forest lands, and the insistence of additional local land use controls into the recent state transportation debate. At the more than eighty VOP public meetings held by Department of Conservation and Recreation (DCR) staff across the state during 2005 and 2006, citizens expressed overwhelming concern and support for protecting our natural resources and open space, for enhancing outdoor recreation opportunities, and for making our communities more livable and walkable. The urgency to act now is compelling. The opportunities that exist today to conserve important resources, provide outdoor recreational opportunity and build on the quality of life desired in Virginia must be seized before they are forever lost.

Virginia's identity is its land. From the shores of Chincoteague to the hills and valleys of Cumberland Gap, Virginia's beauty is unmatched. But as quickly as our population is growing, our rate of development is growing even faster. If we continue as we have, Virginia will develop more land in the next 40 years than we have in the last 400 years. Without foresight, without a plan to focus and manage that growth in a balanced way, we will be failing ourselves and future generations.

—Gov. Tim Kaine, Environment Virginia Conference, April 20, 2006

Future generations will live with decisions now being made. The vision of the Virginia Outdoors Plan is that it will contribute to today's decisions so that when our sons and daughters and their children look back, they will be proud of the work this generation has done for the outdoors.

Issues and trends

Numerous issues were identified during the preparation of the 2007 VOP. Many of these are addressed in subsequent chapters. The following is a list of the most critical issues and trends related to the state's overall outdoor recreation and resource conservation needs.

Funding and economics

The greatest obstacle in meeting identified needs for outdoor recreation and land conservation is availability of public funding. Virginia's outdoor recreation and land conservation initiatives continue to struggle from

the lack of consistent, stable state funding. While much has been, and will continue to be, leveraged through strong public-private partnerships, there needs to be a consistent and stable source of funding at both the state and federal level for outdoor recreation and land conservation efforts. In addition, much of Virginia's park and recreational infrastructure at local and state levels is aging and in need of major maintenance and updates. Adequate public funding for proper operation and management of these outdoor recreation resources is also a critical need. Thus stable funding at all governmental levels is essential to the sustained economic health and quality of life in the Commonwealth.

Demonstrating the connection between economic benefit with outdoor recreation and land conservation remains an important issue. Communities that grow according to smart growth principles thrive economically. They tend to attract investment, revitalize urban areas and boost tourism, while safeguarding the environment and preserving parks and open space. They also develop a "sense of place" within the community that is attractive to tourists, businesses and residents. Virginians in rural, urban and suburban growth areas have voiced interest in promoting strong linkages to the economic benefits of outdoor recreation, open space and land conservation, so those factors can compete on equal footing with other economic drivers in the decision-making process. Several case studies supporting this concept are included in this report (see Chapter V. Economic Benefits of Recreation, Tourism and Open Space).

Citizens support the use of public funds for outdoor recreation and land conservation. The 2006 VOS shows over 94 percent of citizens believe it is either "important" or "very important" to protect Virginia's natural and open space resources. It is noted that 91 percent support state funds being used for the protection of our natural resources. Most prefer state funds for land protection to be expended for the outright purchase of lands from willing sellers with future provisions for public use and access.

Outdoor recreation

The integration of parks and open space into a locality's comprehensive plan is critical to improving quality of life. Emphasis should be placed on components such as hiking and biking trails, water access and blueways, community parks and local recreation centers. The integration of these activities into community



Rock Climbing. Photo by Passages Adventure Camp.

planning makes walkable, livable communities a reality, especially where local parks and recreation departments work in concert with economic development, tourism and planning departments to create a community vision that connects open space, land conservation and outdoor recreation opportunities. Citizens across the state are emphatic that these important outdoor recreation resources must continue to be acquired and protected.

The strong turnout at VOP public meetings corroborates data from the 2006 VOS conducted by researchers at Virginia Commonwealth University that showed 92 percent of Virginians rated access to outdoor recreation opportunities as either "very important" or "important". In a technology-driven society, it is through the individual and collective outdoor experiences that one develops an appreciation and respect for our natural resources. As author Richard Louv puts it in his book, *Last Child in the Woods*: "The future of children in nature has profound implications not only for the conservation of land but also for the direction of the environmental movement."

Public lands that offer a myriad of active and passive recreation opportunities are needed throughout the Commonwealth to meet the needs of a growing population. Citizens want additional public lands that are accessible for a variety of outdoor recreational activities and as places to experience and interact with nature. Funding for public recreational land acquisition is a necessary component of a comprehensive strategy, because private lands protected by conservation easements rarely include public access.

Water access, trails, greenways and blueways

The two highest outdoor recreation needs indicated in the 2006 VOS were additional public access to Virginia's waters and trails for walking and bicycling. Over the past 15 years, the popularity of walking for

Vision for Virginia's Outdoors

pleasure, bicycling and water-related activities has grown substantially, and thus the high demand for additional resources to meet the need. To help meet this demand, linear linkages, known as greenways on land and as blueways or water trails on water, are being planned and implemented in several parts of Virginia. In some ways, Virginia has experienced an explosion in interest in trails of all types in recent years, with more on the horizon. In the past few years, several trails have been added as significant resources, including: the Captain John Smith Adventures on the James, and Mattaponi, Pamunkey and York rivers, the Virginia Capital Trail from Williamsburg to Richmond, the Hawksbill Greenway in Luray, the Shenandoah River Blueway in Rockingham County, the Radford Greenway system, the James River Park Mountain Bike Trail System in Richmond, the Tobacco Heritage Trail through the counties of Southern Virginia, and the Smith River Trail in Henry County.

To meet future demand, more greenways, blueways and trails are needed. Greenways are often established in riparian corridors beside a river or stream and may be suitable for trail development. Selected sites along the trail within the greenway may also serve as water trail or blueway access points.

Localities should also consider local planning for specific water access sites for swimming, boating, fishing and beach use. When planning linear corridors to meet the growing needs for trails and water access,

both water and land-based resources must be considered. If strategically planned, greenways and blueways may enhance human and wildlife connections by creating outdoor recreation opportunities while conserving important lands for habitat and ecological health.

Nature-deficit disorder

According to references included in the book *Last Child in the Woods*, an alarming trend in attention deficit disorder and hyperactivity in many youths across the country today has been attributed, in part, to a lack of time spent in the outdoor environment. A related theme was expressed by many Virginians attending VOP meetings across the state. By and large, citizens expressed concern that today's children are not interacting in nature as they had in the past. This lack of interaction with our natural world in a meaningful way has been termed by author Richard Louv as "nature-deficit disorder".

Television, internet and computer games compete for and often dominate a child's recreation and leisure time. Today's society has also promoted a culture of fear of the outdoors and put up barriers to traditional recreation. Consequently, children are spending less time outside and not developing important links with our natural world. This contact has been found to be important to childhood development. The ability to recreate outdoors in safe places is now being recognized as essential to social development and to a healthy lifestyle.



Canoeing in the Appomattox-Buckingham State Forest. Photo by DOF.



Virginia's vision for the outdoors depends on youth experiencing nature. Photo by C. Vernon Spratley Middle School.

A concerted effort must be made to link environmental education and healthy lifestyle initiatives to encourage citizens to maintain a connection with nature. Time spent recreating in nature builds self-esteem, fosters creativity and enhances personal and spiritual growth. For all ages, easily accessible parks and natural places are necessary for providing recreation, inspiration and essential respite from the stressors associated with an increasingly fast-paced and technological environment. So, too, is the need for more meaningful outdoor experiences for children. If existing and future generations do not experience nature, support for Virginia's natural resources could wane, breaking Virginia's tradition for the love and stewardship of the outdoors.

Land conservation and green infrastructure planning

If Virginia is to sustain the quality of life for which the state has been known these past 400 years, sound resource conservation and green infrastructure planning are of paramount concern. Current development trends and patterns are causing an escalation in the loss and degradation of the state's precious cultural landscapes and natural resources. The conversion of open space, agricultural and forestland is increasing faster than the population is as a whole. Of all the development that has occurred in the past 400 years, more than a quarter of it has taken place in the past 15 years. If Virginia continues to grow with these same development patterns, more land will be developed in the next 40 years than has been since the Jamestown settlement was established in 1607.

In 2000, the Virginia population was 7,078,501 and was ranked 17th in population growth and was the 12th most populous state. In 2006, the U.S. Census

projections show Virginia at 7,642,884. It is projected by 2020 that Virginia's population will grow to 8.6 million (Virginia Employment Commission, 2007). According to the Center for Watershed Protection, from 1990 to 2000, Virginia experienced a 45 percent increase in impervious (non-porous) surfaces such as roads. Sound land use planning and green infrastructure must be applied as never before if Virginia is to achieve a sustainable future.

To assist in assessing land consumption patterns, the Virginia Vulnerability Model was developed by DCR in an effort to map predicted areas of high growth across the Commonwealth (see Map I-1). This Geographic Information System (GIS) based model provides a large-scale picture of statewide growth patterns. The growth prediction model may be used as an indication of potential land use change over time. The model can help in the development of a green infrastructure plan, which would help determine where Virginia's land conservation priorities should be focused and facilitate a more integrated approach to land conservation, planning and development. Information on this modeling effort is found on the DCR website at www.dcr.virginia.gov/dnh/vclna.htm.

Water quality

At the public meetings across the state, citizens consistently raised concern about the condition of Virginia's waters. This is not surprising since clean water is critical to drinking water and to the enjoyment of popular outdoor recreation activities, such as fishing, swimming and boating. Four of the public's 10 most popular outdoor recreation activities (swimming, beach use, fishing and boating) are water dependent. Water quality must be maintained, not only to ensure that streams and rivers in the Commonwealth are suitable for recreational activities, but also to ensure adequate drinking water for existing and future populations. Watershed management strategies are essential to ensuring that the Commonwealth's lakes, rivers and streams and the Chesapeake Bay are maintained or restored to a level of quality that will meet the needs of both current and future generations.

Livable and walkable communities

During the VOP public meetings, citizens across the Commonwealth expressed a desire for livable and walkable communities. Current development patterns often require people to drive in order to run the most routine errands or even to reach local schools, often located only short distances away. Issues over health and obesity along with rising fuel costs and transportation concerns have grown significantly over the past five years. Virginians are increasingly asking for

Map I-1. Growth Prediction

Virginia Conservation Lands Needs Assessment Virginia Urban Growth Prediction Model

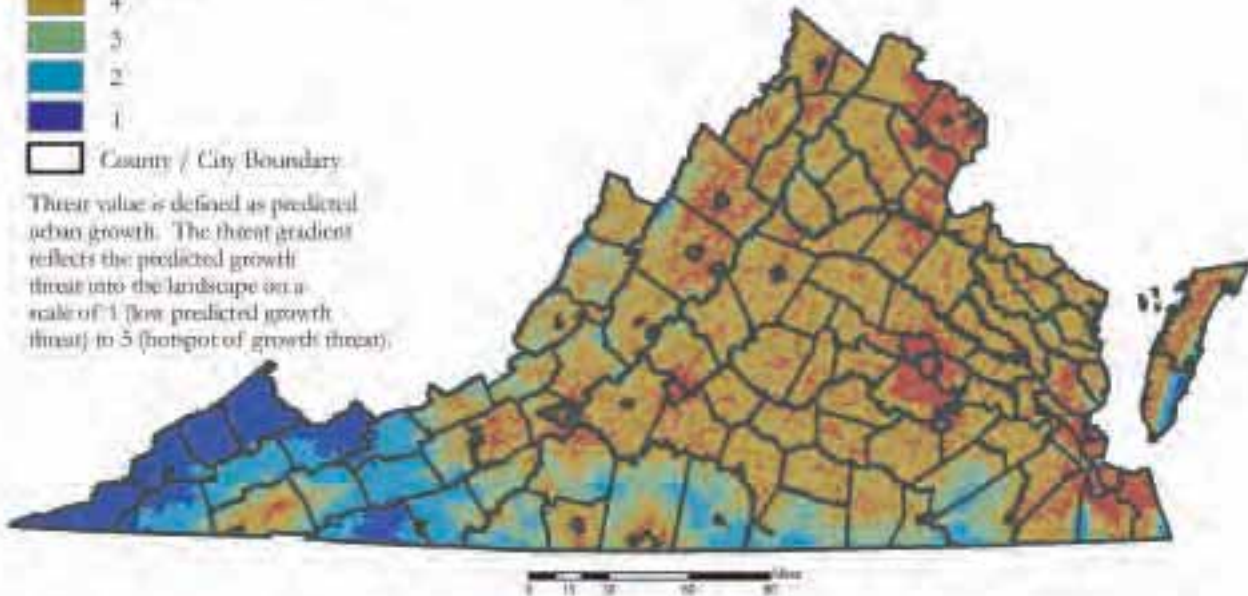
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Threat Value



County / City Boundary

Threat value is defined as predicted urban growth. The threat gradient reflects the predicted growth threat into the landscape on a scale of 1 (low predicted growth threat) to 5 (hotspot of growth threat).



Virginia Conservation Lands Needs Assessment Virginia Rural Growth Prediction Model

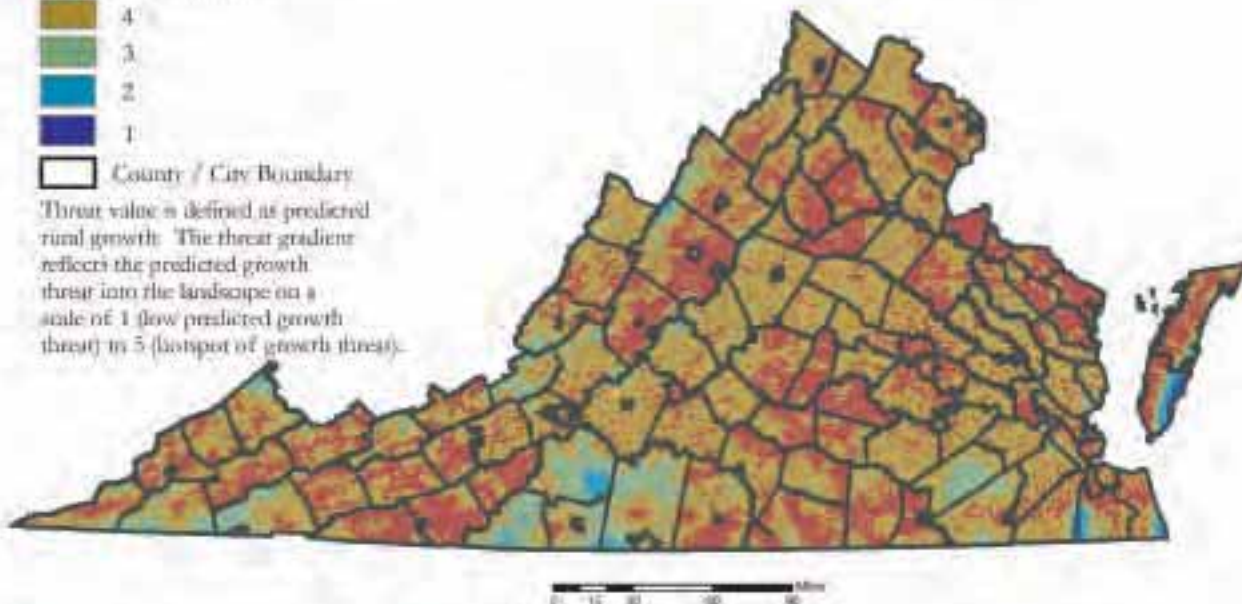
July 2008

Threat Value



County / City Boundary

Threat value is defined as predicted rural growth. The threat gradient reflects the predicted growth threat into the landscape on a scale of 1 (low predicted growth threat) to 5 (hotspot of growth threat).



For more information about the VCLNA and the Vulnerability Model, visit DCR's website: http://www.dcr.virginia.gov/natural_heritage/vclna.shtml



*Walking at the Dutch Gap Conservation Area in Chesterfield County.
Photo by Jennifer Wampler.*

alternate options for commuting and safely traversing their communities without having to use their automobile. An indication of this trend is the increase and public support for new federal transportation-related programs, such as the "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" and "Safe Routes to School." Both of these offer funding assistance for the development of multi-use trails, which can provide alternative connections to community services.

In 1965, there were 1,799,557 vehicles registered in Virginia, and driving for pleasure was rated as the number one outdoor activity. By 2005, according to the Federal Highway Administration, Virginia had 6,503,843 vehicles registered, but driving for pleasure is no longer the most popular outdoor recreational activity with only about 50 percent of the population participating. Walking for pleasure is now the number one outdoor recreation activity with over 70 percent of the population participating. Livable and walkable communities offer alternate means of transportation while also connecting communities with trails and sidewalks. Such communities maximize parklands, open space and recreational services so that each is integrated into the fabric of everyday life.

Diversity

Hispanic and Asian minorities are among the fastest growing population groups in Virginia and account for a large portion of its population growth. Between 1990 and 2000, for example, the number of Hispanics in Virginia increased 112 percent. These demographic changes require increased awareness of the needs and expectations that differing cultures place on recreational facilities. Statewide educational efforts to promote outdoor recreation among minorities and embrace cultural diversity are important in providing all Virginians with outdoor recreation opportunities. More than ever, park managers must determine what practices work best in serving racial and ethnic minorities in recreational, natural and cultural resource settings. Additionally, the ability of public recreation and natural resource agencies to attract multicultural and diverse employees has continued to gain importance.

What's new in the 2007 VOP?

This edition of the *VOP* marks a significant milestone in the report, as it not only functions as the Commonwealth's most comprehensive outdoor recreation planning document, it also serves as the official guidance document for the Virginia Land Conservation Foundation (VLCF) (see Chapter III. Land Conservation). As a result, each planning region includes a new land conservation map produced by DCR showing existing protected lands. The inclusion of these maps for the first time show all known protected lands in a given region. The 2007 *VOP* also contains a new thematic organization centered on outdoor recreation, land conservation and green infrastructure.

Other new parts of the 2007 *VOP* are specific sections that address emerging issues, such as:

- Blueway planning and development.
- Virginia watersheds and their management.
- Environmental education aimed at conservation ethics and nature-deficit disorder.
- Health based lifestyles related to outdoor recreation opportunities.
- The impact of climate change on outdoor recreation.
- Transportation programs supporting outdoor recreation and livable/walkable communities.
- Crime Prevention Through Environmental Design (CPTED) techniques and principles.

2007 VOP Planning Process

- DCR serves as the Commonwealth's lead outdoor recreation planning agency. As such, DCR is responsible for the development of the *VOP*. The department staff members began the planning process for the 2007 *VOP* with an assessment of implementation of the previous 2002 *VOP*.
- DCR staff conducted an inventory of local outdoor recreation facilities in 2005.
- In 2005, at the start of the planning process, a series of more than 40 public meetings were held by DCR to receive input from stakeholders, including citizens, organizations, localities and planning districts.
- The 2006 *VOS*, conducted by Virginia Commonwealth University for DCR, polled over 3,000 families and reported citizen input for numerous natural resource and outdoor recreation topics.
- DCR's outdoor recreation and conservation planners conducted research on trends and alternatives to address the issues identified in the public meetings.
- A Statewide Technical Advisory Committee (TAC), appointed by the director of DCR, convened five times throughout 2006 to provide input into the *VOP*.
- Drafts were produced and revised based on comments from the TAC, citizens and other local, regional, state and federal agencies.
- Individual meetings and interviews were held by DCR staff with planning district commission staff across the state to receive direct input about draft findings and recommendations for the planning regions.
- The draft 2007 *VOP* was posted on the department's website for citizen review and comment.
- A second series of more than 40 public meetings was held in 2006 across the state in the regional planning districts to present the draft findings, recommendations and receive additional public input.
- Input from the public meetings and written comments were considered, and a substantial amount incorporated in the development of the final document.

How the 2007 VOP addresses issues

The 2007 *VOP* offers specific statewide recommendations for program areas, land management agencies responsible for outdoor recreation, and land conservation. It also includes numerous recommendations for each planning region throughout the Commonwealth. The recommendations made in the main thematic chapters of the plan address the way land conservation and outdoor recreation needs are generally connected and related to meeting the future needs of Virginians. Program- and region-specific recommendations found throughout the 2007 *VOP* further connect these overarching thematic recommendations to specific situations and communities. The text below summarizes recommendations for each of the major thematic chapters.

Outdoor recreation

- A steady source of local, state and federal funding is needed to meet and sustain Virginia's outdoor recreation needs for a growing population.
- DCR should continue to provide technical assistance to local recreation departments and provide grant funding, as available, for local parks to help meet outdoor recreation needs.
- More communities should take advantage of the benefits derived from establishing regional park authorities.
- State and federal agencies should provide technical support and funding for regional park authorities and water access authorities to acquire, develop and manage resources to meet regional outdoor recreation needs.
- Local government should provide close-to-home outdoor recreation opportunities to meet changing trends in recreation.
- Public recreational agencies must better address Virginia's increased demographic and cultural diversity in addressing local and regional outdoor recreation needs.
- In times of increasing demand but limited funding, public and private partnerships take on increased importance. Consequently, local, federal and state government agencies should expand development of private sector partnerships and volunteer support to meet growing outdoor recreation needs.
- A greater appreciation and understanding on the part of public and elected leaders is needed to secure and sustain resources. Recreation, natural resource and conservation professionals should place an increased emphasis on educating local and state leaders about the economic and health benefits of land conservation and outdoor recreation.

Land conservation

- Even with recent changes, Virginia currently has the most attractive state income tax incentives for land preservation in the nation. Such incentives must remain in place in the future if the Commonwealth's land conservation goals and protection of working landscapes are to be met. In addition, Virginia should join the vast majority of states in establishing a dedicated source of funding for future land acquisitions and opportunities.
- Increasingly, green infrastructure modeling and sound land use decision making should be implemented at the local, regional and state levels to conserve lands for future generations.
- Localities, state agencies and private organizations should develop additional methods of targeting preservation efforts using green infrastructure land planning techniques, geographic information systems, local comprehensive plans and decision support systems such as DCR's Virginia Conservation Lands Needs Assessment.
- Partnerships among governmental agencies, non-profit organizations, volunteer groups and the private sector should be encouraged and expanded to meet conservation goals.
- Organizations undertaking land preservation projects should endeavor to protect a range of conservation benefits that exist on lands. Such benefits may include scenic open space, water quality protection, historic features, habitat preservation and public access.
- Conservation professionals and local, regional and state governments should provide increased education to the public and to decision makers regarding the economic, health, cultural and natural benefits of land conservation.

Green infrastructure

"Green Infrastructure is our nation's natural life support system – an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas; greenways, parks and other conservation lands; working farms, ranches and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources and contribute to the health and quality of life for America's communities and people"

—Benedict and McMahon, 2006

Green infrastructure planning integrates outdoor recreation, open space, cultural resources and conservation lands into ongoing planning and land use management decisions. The 2007 VOP encourages the state, regions and localities to employ green infrastructure land planning because it supports cost effective, sound economic development in harmony with land conservation, cultural resource protection and outdoor recreation.

- Local, regional and state agencies should identify and obtain sources of funding for green infrastructure initiatives.
- Regional and local governments should more readily incorporate green infrastructure planning into their land use practices in order to ensure sustainable development of their community and a high quality of life for future generations.
- A number of the Commonwealth's state agencies are engaged in green infrastructure planning. Green infrastructure planning needs to be coordinated between state agencies.
- Regional and state agencies and other proponents of green infrastructure planning should demonstrate to elected officials and other leaders the benefits of green infrastructure planning.
- Local, regional and state agencies should continue data development for green infrastructure planning. GIS technology offers greater opportunity to enhance green infrastructure planning at the local, regional and state levels. Coordinated GIS data development and enhanced utilization of data will further benefit green infrastructure in the Commonwealth.

Forty years of progress for Virginia's outdoors

The first Virginia Outdoors Plan, *Virginia's Common Wealth*, printed in 1965, set the stage for outdoor recreation and conservation planning in Virginia. Using that plan as a benchmark for outdoor recreation and conservation, the 2007 VOP recommendations continue to reflect on the philosophy and objectives formulated in the first outdoors plan. Some issues addressed in the 2007 VOP were originally raised in 1965, but their attainment has not been fully realized. While significant challenges exist, the Commonwealth can take pride in accomplishments made in the past 40 years. Many of the objectives outlined in this first 1965 plan have been achieved and are summarized below.

Vision for Virginia's Outdoors

Table I-1. Summary of 1965 Recommendations and Accomplishments to Date

1965 Recommendation	Explanation of Progress
1. Adopt a state outdoor recreation and open space policy.	The Open-Space Land Act (§ 10.1-1700 et seq.) from the <i>Code of Virginia</i> comprehensively addresses outdoor recreation and open space policy.
2. Create a Commission of Outdoor Recreation.	The Commission of Outdoor Recreation was created in 1966. The commission functioned as its own entity to update the Virginia Outdoors Plan and implement recommendations in the plan. In 1983, the commission was folded into the Department of Conservation, Recreation and Historic Resources. Today, the function of the Commission continues in DCR and its attendant boards.
3. Enlarge and improve the State Park system.	The 1965 goal was set at 36 parks to be developed by 1976. The state park system has grown to include 34 developed state parks and the land for five more, bringing the current state park total to 39. Twenty-eight of the state parks are protected in perpetuity by the federal Land and Water Conservation Act.
4. The state should aid localities in resource conservation and development: a) research guidance and technical assistance, b) matching funds, and c) provision of legal powers.	<p>a) DCR continues to provide research guidance and technical assistance to localities for outdoor recreation and conservation initiatives.</p> <p>b) Grants appropriate to local governments pursuing outdoor recreation and conservation are outlined in Chapter VI of the 2007 <i>VOP</i>.</p> <p>c) The <i>Code of Virginia</i> makes provisions for including outdoor recreation, conservation and community planning in the local comprehensive planning process.</p>
5. Encourage greater use of regional planning commissions and regional park authorities.	Over the years, regional planning commissions have expanded to 22 across the Commonwealth. Each are supported by member localities and embrace outdoor recreation, cultural resources and land conservation in regional planning projects. Three regional park authorities currently operate in Virginia. These include the Northern Virginia Regional Park Authority, Fairfax County Park Authority and the Upper Valley Park Authority. In addition, under separate Virginia Code authorization, two public access authorities have been established in the Northern Neck and Middle Peninsula. Both received federal seed funding for establishment from Virginia's Coastal Zone Management Program.

1965 Recommendation	Explanation of Progress
<p>6. Establish a system of scenic byways and provide for recreation access roads.</p>	<p>The Virginia Byways recognition program began in 1966 when the Virginia General Assembly passed the Scenic Highways and Virginia Byways Act (<i>Code of Virginia</i> §33.1-62). As of spring 2006, over 2,780 miles of roads have been designated Virginia Byways. In addition, four National Scenic Byways totaling about 359 miles, and the three USFS byways totaling about 96 miles, have also been recognized in Virginia.</p> <p>The Virginia Department of Transportation (VDOT) and DCR also administer the Recreational Access Roads Program providing state funds for the construction of vehicular access roads to public recreational areas.</p>
<p>7. Make our highways more pleasant.</p>	<p>VDOT administers programs to achieve this goal. Over the years, with more automobiles and growing populations, this focus has had to balance with growing traffic flow and accessibility needs.</p>
<p>8. Accelerate the program of Commission of Game and Inland Fisheries.</p>	<p>The Commission of Game and Inland Fisheries is now known as the Department of Game and Inland Fisheries (DGIF). DGIF manages wildlife management areas and many public access sites to the state waters. Currently, there are 220 public access sites and 37 wildlife management areas. In recent years the non-game division of DGIF has expanded and realized success in developing and managing the Virginia Birding and Wildlife Trail (see the DGIF subsection of Chapter IX).</p>
<p>9. Encourage multiple uses of public lands to allow maximum recreation opportunity consistent with the land's primary purpose.</p>	<p>Cooperative agreements with the U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, DGIF and the Department of Forestry encourage multiple uses of lands on state and federal properties. Also, at the local level, schools have and are encouraged to open recreation land and facilities to the community.</p>
<p>10. Encourage advance planning and land acquisition in areas of major water impoundments.</p>	<p>As population grows and localities expand, the demand for additional water impoundments has increased. State agencies have been actively involved in the new planning of existing reservoirs particularly when they are due for Federal Energy Regulatory Commission re-licensing. This process often results in enhanced recreational opportunities. Planning and cooperation with regional water authorities and local government is now a part of any new reservoir planning.</p>

Vision for Virginia's Outdoors

1965 Recommendation	Explanation of Progress
11. Develop the recreation opportunities created by soil and water conservation districts.	Where appropriate, soil and water conservation district impoundments have been used for recreational activity.
12. Recognize the vital role of the individuals and the travel industry.	The travel industry continues to be a mainstay of Virginia's economy. The travel industry continues to recognize and embrace the fundamental importance of marketing outdoor recreation opportunities, such as state parks, wildlife areas and historic sites. The relationship and partnership of sharing user data, including visitation, demand, supply and needs information, with Virginia Tourism and the Virginia Department of Historic Resources is continuing to grow.
13. Undertake a study of the relation of land taxation to the preservation of open space.	In 2006, Virginia is known to have one of the most attractive land preservation tax credit incentives in the nation.
14. Provide for acquisition of scenic and conservation easements.	With the establishment of the Virginia Outdoors Foundation, Virginia has become one of the nation's leaders in holding conservation easements. In addition, many agencies and nonprofit land trusts have developed over the past decade to play an ever important role in the use of easements to protect land.
15. Initiate water resource and river basin studies.	In 2003, DEQ reorganized to establish a new division, the Water Resources Division, responsible for water resources management.
16. Accelerate marine resources and beach erosion study.	The Shoreline Erosion Advisory Service (SEAS) was founded in 1980. SEAS is now a special function of the DCR erosion and sediment control staff. The Virginia Institute of Marine Science and other universities and agencies continue to conduct research on marine related issues.
17. Provide guidelines for planned communities and cluster development.	Legislation has been developed and expanded in recent years that enable local governments to consider planned communities and cluster development.
18. Create a Historic Landmarks Commission.	The Historic Landmarks Commission was created in 1966 and is now known as the Virginia Department of Historic Resources.
19. Establish the Virginia Outdoors Foundation.	The <i>Code of Virginia</i> established the Virginia Outdoors Foundation (VOF) in 1966. The VOF currently holds the 2nd most easements in the nation. In 2006 alone, more than 70,000 acres of land were conserved by VOF.

1965 Recommendation	Explanation of Progress
<p>20. The 1965 recommendation was to establish the Virginia Outdoors Fund as a stable funding source to implement the <i>Virginia Outdoors Plan</i>. The Virginia Outdoors Fund is currently funded by the federally supported Land and Water Conservation Fund. In 1999, the Virginia Land Conservation Foundation became the funding recipient for state dollars to be used in a grant match program for land protection.</p>	<p>The Virginia Outdoors Fund was established in 1966 and has been administered in Virginia, first by the Commission of Outdoor Recreation and now by DCR. Today, the Virginia Outdoors Fund is made possible through the federally funded Land and Water Conservation Fund (LWCF). Since 1999, the main source of state funds for land conservation has been the Virginia Land Conservation Foundation (VLCF), which is a matching grant program staffed by DCR. With no stable funding source for outdoor recreation and land protection, state funding has fluctuated dramatically over the past decade. Over the lifetime of these two funds, they have collectively provided \$101,267,317 in matching grants for the acquisition and development of outdoor recreation resources and land protection. The Virginia Outdoors Fund has contributed \$80 million in matching grants and the Virginia Land Conservation Foundation \$21,267,317.</p>
<p>21. Create greater awareness of the value of natural resources and environmental geography.</p>	<p>The establishment of Virginia Naturally, a multi-agency and organization effort headed by DEQ that serves as a conduit for environmental education, has been important with school age students and both formal and nonformal educators. In addition, curricula, such as the "Virginia State Parks: Your Backyard Classroom" developed for educators to use with Virginia's state parks, as well as Project Underground, have proven to be effective environmental educational tools. Also, the development of the SOL's, the expansion of the Virginia Natural History Museum, and the Science Museum of Virginia have greatly added to the public's understanding of natural resources and environmental geography.</p>

The 400th anniversary of the settling of Jamestown has given Virginians an opportunity to look back at the struggles of those days and to marvel at how this country has grown. It also provides an opportunity to educate a new generation on what has changed, how it has changed and what needs to be done to ensure its legacy. This 400th anniversary inspires Virginians to exercise foresight so that 400 years from now, future generations will see Virginia as John Smith saw it, as a perfect place for man's habitation. The 2007 *Virginia Outdoors Plan* offers guidance and direction for what should be done today if Virginia is to preserve her outdoor legacy for future generations to enjoy. The information and recommendations that follow will assist all in charting a course to preserve Virginia's "Common Wealth."

Let us leave a splendid legacy for our children... let us turn to them and say, this you inherit: guard it well, for it is far more precious than money... and once destroyed, nature's beauty cannot be repurchased at any price.

—Ansel Adams, U.S. photographer, 1902-84

Resources:

Virginia Employment Commission, Economic Information Services Division. <http://velma.virtuallmi.com>.

Federal Highway Administration. www.fhwa.dot.gov.

Louv, Richard. 2007. Leave No Child Inside: The growing movement to reconnect children and nature. *Orion*, March-April.

Outdoor Recreation Issues, Trends and Survey Findings

The fact that we live in a world that moves crisis by crisis does not make a growing interest in outdoor activities frivolous, or ample provision for them unworthy of the nation's concern.

—John F. Kennedy



Exploring the outdoors from a kayak. Photo by Irvine Wilson.

The information presented throughout the 2007 *Virginia Outdoor Plan (VOP)* strongly supports the continued and renewed emphasis on outdoor recreation facilities and open space. The identification of outdoor recreation issues for the 2007 VOP was comprehensive and involved citizen comment through more than 80 public meetings, a statewide survey, an inventory of parks and recreation facilities for each jurisdiction, and substantial research by outdoor recreation and conservation professionals. The technical process and standards for determining the demand, supply and needs for outdoor recreation facilities is outlined in Appendix C. An overview to the demands, supply and needs inventory and the 2006 *Virginia Outdoors Survey (VOS)* is outlined in this chapter.

Changes in demographics have and will continue to influence outdoor recreation issues, trends and survey findings. The 2007 *VOP* takes the information gathered on a statewide basis and analyzes it by region. The issues, trends and 2006 *VOS* findings are reflected in the recommendations for each recreation region.

Public input related to outdoor recreation

Public meetings held in the fall of 2005 and an extensive comment period provided citizens and local governments the opportunity to comment on outdoor recreation, open space and conservation issues. The comments related to outdoor recreation have set the tone for the research and outdoor recreation and conservation recommendations presented in the 2007 *VOP*. In general, the comments reflect a changing Virginia with citizens having greater concern for the outdoor environment and awareness of diminishing opportunities as open space lands are lost to development.

Major statewide issues highlighted in these public meetings cover a range of topics categorized and summarized below.



Baseball Allstars. Photo by Richmond Parks, Recreation and Community Facilities.

Outdoor Recreation Issues, Trends and Survey Findings

Table II-1. Issues Identified in Fall 2005 Public Meetings for the Virginia Outdoors Plan

Topic	Issues
<p>The need for adequate funding</p> <p>This issue is addressed in the following chapters:</p> <ul style="list-style-type: none"> • Chapter I: Vision for Virginia. • Chapter III: Land Conservation. • Chapter VI: Grant Opportunities for Outdoor Recreation, Open Space and Conservation. 	<ul style="list-style-type: none"> • Grant programs that provide funding assistance for trails, parks and recreational facilities receive far more requests than available funds can serve. • Insufficient funding for maintenance results in deteriorating park and recreation infrastructure. • Park and recreation budgets are declining relative to costs. • There is increasing competition for federal, state and local tax resources. • The Land and Water Conservation Fund has seen decreasing funding levels for many years. • The Virginia Outdoors Fund has not received state funding for many years. • Land values are appreciating at rates that exceed the available funding for land conservation efforts, especially in urban areas. • Escalating costs for construction of park facilities lowers purchasing power of parks agencies.
<p>General trends related to demographics</p> <p>This issue is addressed in the following chapters:</p> <ul style="list-style-type: none"> • The Chapter VIII section entitled “Changing demographics and their impact on recreation resources.” 	<ul style="list-style-type: none"> • An increase in sedentary work styles and longer work hours affects public health. • Commuting constraints including traffic congestion, air quality advisories and longer commutes limit leisure time. • Busy lives and over-scheduled family activities limit impromptu outdoor recreation. • Increasing cultural diversity brings varied outdoor ethics and attitudes and a need for multilingual outdoor education. • There is difficulty in providing equal opportunity for leisure to all people. • There is declining quality of life and livability of urban areas due to insufficient open space. • There is greater division between the socio-economic status of citizens. • Increasing crime (violence, drug use, vandalism, gangs) exists in communities and parks.
<p>Nature-deficit disorder</p> <p>This issue is addressed in the following chapter:</p> <ul style="list-style-type: none"> • Chapter VII-H: Environmental and Land Stewardship Education. 	<ul style="list-style-type: none"> • Many people, particularly children, are not experiencing the out-of-doors. Richard Louv, in his book <i>Last Child in the Woods</i>, defines this problem as nature-deficit disorder, or stated more simply, a disconnect with nature. A lack of outdoor experiences leads to a decline in understanding the natural world and its role in supporting life on the planet. This disconnect is also leading to major health problems, as well as contributing to inactive lifestyles, especially among our youngest citizens.

Outdoor Recreation Issues, Trends and Survey Findings

Topic	Issues
<p>Benefits of parks, recreation and open space This issue is addressed in the following chapters:</p> <ul style="list-style-type: none"> • Chapter V: Economic Benefits of Recreation, Tourism and Open Space. • The section of Chapter VIII entitled “Health and wellness benefits of outdoor recreation.” • Chapter IX-D: Local and Regional Parks and Recreation. 	<ul style="list-style-type: none"> • There is a need to articulate the economic benefits of outdoor recreation, including eco-tourism and the link to healthy lifestyles. • Cost benefit analyses for parks, recreation and open space need to include the benefits of outdoor facilities and the contribution of open space to the health of the environment. • Lack of comprehensive plans and zoning laws for green infrastructure and open space in new developments needs to be addressed to mitigate the long-term impact on the environment and resulting costs. • Citizens need closer-to-home recreational opportunities that result in frequent and continued use and improved health benefits for their families. • The concern over privatization of outdoor recreation programming at the local level, which would reduce the traditional offerings and role of local parks and recreation departments.
<p>Environmental impacts due to the loss of open space lands to development This issue is addressed in the following chapters:</p> <ul style="list-style-type: none"> • Chapter III: Land Conservation. • Chapter IV: Green Infrastructure. • Chapter VII-C: Historic and Landscape Resources. 	<ul style="list-style-type: none"> • Development tends to increase runoff and degrade water quality. • Loss of tree canopy affects ecosystems, temperatures and soil stability. • Lack of open space affects the functional capacity of the area’s green infrastructure. • There is a loss of land for outdoor activities, especially those that require large parcels of land. • Declining air quality impacts vegetation, water quality and scenic viewing. • Land conversion to developed areas decreases traditional viewsheds and cultural landscapes.
<p>Bicycle and pedestrian facilities This issue is addressed in the following chapter:</p> <ul style="list-style-type: none"> • Chapter IX-B-6: Transportation Programs. 	<ul style="list-style-type: none"> • There is a need to encourage Rails to Trails and Trails with Trails to meet the growing needs for multipurpose trails. • There is a need to encourage walkable, livable communities with safe routes to schools. • There is a lack of self-powered commuter support systems such as bike lockers and showers for commuters. • There is a need to educate motorists and bicyclists.
<p>Trails and greenways This issue is addressed in the following chapter:</p> <ul style="list-style-type: none"> • Chapter VII-A: Trails and Greenways. 	<ul style="list-style-type: none"> • There is a need to include linear outdoor recreation facilities as part of green infrastructure planning. • Advocates should stress the multiple benefits of greenways to include integration of wildlife corridors and the positive effects of linear corridors on water quality. • There is a need to manage trails for multiple uses where appropriate. • Access to recreational waters is needed.

Outdoor Recreation Issues, Trends and Survey Findings

Topic	Issues
Land conservation This issue is addressed in the following chapters: <ul style="list-style-type: none"> • Chapter III: Land Conservation. • Chapter IV: Green Infrastructure. 	<ul style="list-style-type: none"> • There is a need to conserve lands immediately due to escalating real estate values. • There is a need to address development pressures on all Virginia lands. • Land use alternatives need to address sprawl and open space preservation. • There is a need for resources to promote natural resource protection. • The Chesapeake Bay 2000 agreement goals should be met. • There is a growing need to protect working farm and forest lands. • The loss of viewsheds and cultural landscapes affects the quality of open space.
Impacts of grey infrastructure on parks, scenic and cultural landscapes. This issue is addressed in the following chapters: <ul style="list-style-type: none"> • Chapters I through IV include discussion and recommendations concerning the impact of modern infrastructure on traditional landscapes. 	<ul style="list-style-type: none"> • In park settings, there is a need to install utilities underground. • Locate cell phone towers, wind mills and other towers outside of park boundaries and with minimal impact to scenic viewsheds. • There is a need to better utilize Geographic Information System (GIS) technologies in planning and implementing outdoor recreation programs. • There is a need to expand information technology to enhance educational programs about the values of outdoor recreation and land conservation.
Foundations and friends groups This issue is addressed in the following chapter: <ul style="list-style-type: none"> • Chapter IX-E: Private Sector. 	<ul style="list-style-type: none"> • There is a need to leverage the influence of non-profit organizations for citizen participation, volunteer contributions, training, building community capacity and fundraising in support of parks, recreation and land conservation.

Funding

Since the Land and Water Conservation Fund (LWCF) was first established in 1966, the demand for grant funds has been greater than the annual allocation from Congress. Many communities have ongoing efforts to improve the quality of life of their citizens through the provision of parks, trails, recreation facilities and programs. There are many demands placed on local tax revenues, and often the availability of grant funds to help offset the cost of community projects is the catalyst that decides which projects local governments can support.

The General Assembly established the Virginia Outdoors Fund (consisting of LWCF and state appropriated funds) in an effort to provide grant and loan funds to help meet local government needs for park and recreational funding. This program has seldom

received enough funding to meet the volume of requests for assistance received from local governments.

The Land Conservation Fund, governed by the Virginia Land Conservation Foundation and administered by the Department of Conservation and Recreation (DCR), was established to help acquire fee sample or easements on land for the protection of historic, conservation, forestal, agricultural and recreation values. This program is an important part of the state's efforts to meet the pledges of the Chesapeake Bay 2000 Agreement. Funding for this program has been inadequate to meet targeted objectives.

Another grant program administered by the DCR is the Recreational Trails Program. Requests for funding assistance received for this program consistently exceed the allocated amount by two to three times.

Demographics

Virginians have noticed the trends in population growth and changing demographics (see Chapter VIII). The population is anticipated to increase from 7,567,000 to 8,601,900 by 2020 (www.coopercenter.org, 2006). This anticipated increase in population is expected to translate into increased demand for outdoor recreation. The growth of the Hispanic population, as well as immigration from many other countries, can change the way recreation programs need to be delivered.

The changes in the demographics of Virginia will also demand resources to meet the needs of an aging population, including accessibility for all citizens. The aging population may be the leading reason that the demand for active sports is shifting to individual and passive recreation, such as walking facilities.

As more adults and children engage in electronic leisure, technology becomes incorporated into new outdoor recreation activities such as geocaching, use of digital cameras and cell phones. Virginians concerned about the increase in health risks and chronic disease problems related to obesity were especially interested in having access to outdoor recreation opportunities in their communities. With populations increasing and demographics changing in Virginia, recreational programs and opportunities provided must be flexible enough to keep pace.

Demand, supply and needs for outdoor recreation

The 1965 *Virginia's Common Wealth* addressed for the first time in Virginia the correlation of population and recreation resource demand to a statewide program addressing the adequacy of parks and recreation facilities. The 1965 plan used National Recreation and Parks Association (NRPA) guidelines to estimate the needs for recreation lands and facilities. The plan considered outdoor recreation needs based on 90 acres per one thousand persons. In developing recommendations, consideration was given to the availability and cost of land; the rural, urban and industrial nature of a locality; the population demographics and incomes; and accessibility to the open countryside, woodlands, streams, seashore and natural areas.

A Virginia standard of 10 acres per 1000 persons is used to project acreage needed for state parks. Given this standard, 78,929 acres of state park lands are needed to adequately meet the demand based on the 2010 population projection of 7,892,900. The existing Virginia State Parks system consists of approximately

66,234 acres, which includes the 34 operating state parks, Breaks Interstate Park, five newly acquired and undeveloped parks, and several small satellites and monuments. This leaves a projected deficit of 12,695 acres of state parkland in 2010. With Virginia being one of the top 10 fastest growing states, it is anticipated that the acres of state parkland needed based on population will increase to 86,019 acres by 2020.

Factors that affect the demand for outdoor recreation include Virginia's population as well as out of state visitors. Tourism and the number of out of state visitors have continuously risen over the years. The estimated number of out of state visitors in 1965 was approximately 26 million, while the number of visitors in 2005 was estimated at 54.8 million (www.vatc.org, 2006). While every Virginian may not use recreation areas, it is almost certain that visitors to Virginia not only use the recreation facilities, but in many cases recreation areas are key destinations. This combination of tourism and recreation are significant to Virginia's economy. Local and regional partnerships are developing for nature tourism and recreation destinations, increasing the demand for Virginia's outdoor recreation beyond projections based solely on resident population estimates.

Mobility based on roads, public transportation and multimodal transportation options also affect the demand and trends for outdoor recreation areas and facilities. A subsection of Chapter IX, Transportation Programs, is a new inclusion in this VOP to address transportation initiatives and their interface with outdoor recreation. With many populated areas dealing with more traffic congestion and workers commuting longer distances throughout Virginia, user groups desire less travel time to recreation destinations. For many frequently repeated activities, persons indicate a travel time of 15 minutes to 30 minutes is acceptable.

The 2007 VOP recommendations are formed from findings of a demand, supply and needs analysis for outdoor recreation facilities, along with input from the public. Data relating to the percentage of population that are participating in each activity and the mean numbers of participation days per year are used to estimate the demand for recreational areas and facilities. The supply of outdoor recreation facilities is derived from a statewide inventory of recreational areas and facilities. This inventory is updated every five years as part of the outdoor recreation planning process and is maintained by DCR. The demand, supply and needs data was analyzed by four sampling regions, Mountain, Piedmont, Chesapeake and Urban Crescent. Analysis by region reflects the demographic

Outdoor Recreation Issues, Trends and Survey Findings

diversity of the regions. Regional survey findings and inventory data were used to calculate the need for recreational lands and facilities. Identified needs are important in directing the expenditure of local, state and federal funds, as well as guiding the private sector in outdoor recreation investments. An estimate of outdoor recreation areas and facility needs are presented on a statewide and planning district basis.

Statewide needs

Based on the 2006 VOS, the two highest needs for outdoor recreation in the next five years are access to recreational waters of the state and trails close to home. The trends indicated in the fall 2005 public meetings and the findings of the 2006 VOS support these statewide needs. Key recommendations in the 2007 VOP propose initiating a statewide trails and greenways planning process that incorporates various stakeholders and the public input process to better meet the growing demand. Recommendations for continuing a water access program to address recreational needs calls for strong partnerships between localities, planning districts and various state agencies including, the DCR, the Department of Game and Inland Fisheries, the Virginia Coastal Zone Management Program, Virginia Marine Resources Commission and the Department of Transportation. Public interest in existing and potential water trails along rivers and streams is growing, and these resources are being recognized for their contributions to local economies. The 2007 VOP recommends that DCR continue to offer technical support and coordination with localities for the development and management of water trails.

Regional outdoor recreation facility needs generally reflect the statewide trends, but the implementation and specific priorities may vary. Facility needs are summarized in each of the planning district chapters of this plan. Regions that show surpluses of recreational facilities may be tourist destinations and actually experience shortages during prime recreation seasons.

Virginia Outdoors Survey findings

The 2006 VOS was a cooperative project between DCR and Virginia Commonwealth University. The survey combines information about individual outdoor recreation activities, state park usage preferences, and opinions on natural resources and conservation. Information about the various activities is included in the program areas of this 2007 VOP.



Water Access is a top recreational priority. Photo by Virginia Tourism Corporation.

An overwhelming 91.9 percent of Virginians indicated that having access to outdoor recreational opportunities was either important or very important. Participation is most likely on weekends; however, with flexibility in work schedules and the numbers of retired or semi-retired persons increasing, almost one-third or 28 percent of Virginians participate in outdoor recreation equally on weekends and during the week. With demographics in Virginia shifting to an aging population, the number of persons who enjoy outdoor recreation both during the week and on weekends is likely to increase into the foreseeable future.

Land conservation and green infrastructure: natural and open space protection

The 2006 VOS gathered information on natural resource and open space protection that relates directly to the land conservation and green infrastructure themes of the 2007 VOP. When asked how important it was to protect Virginia's natural and open space resources, 94 percent indicated it was either important or very important. Only 2 percent did not think it important to protect these resources, and another 4 percent responded they did not know if it was important.

As a follow-up question, the survey inquired if the state should spend public funds to acquire lands to prevent the loss of exceptional natural areas to development. Approximately 78 percent felt public funds should be used to protect lands, while 8 percent did

not want to use public funds and 14 percent did not know. When then asked how public monies should be used to protect Virginia's natural and open space resources the following options were ranked:

- 71 percent favored outright purchase from willing sellers of the property, and then management as a natural area or park for public use.
- 24 percent preferred the purchase of easements that reduce development rights, but leave the land in private ownership with some public use allowed.
- 5 percent preferred the purchase of easements that reduce development rights, but leave the land in private ownership without public use opportunities.

Clearly from the responses above, the citizens of the Commonwealth prefer public access to lands acquired or protected by the state with public funds. The demands for natural areas and parks support this position as popularity increases for these outdoor recreation areas.

Types of outdoor recreation lands

When Virginians were polled about their preferences for outdoor recreation facilities, the balance of developed parks and natural area parks were important. Approximately one-third of those responding had no preference as to the type of park.

Table II-2. Types of Parks Desired in Virginia

Type of Park	Survey Preference
Developed Parks	39%
Natural Area Parks	31%
No Preference	30%

Virginia State Parks

The summary of trends, issues and needs for Virginia's State Parks are found in Chapter IX. The 2006 VOS reinforces the popularity and importance of State Parks to Virginians.

When asked for the top three reasons for having a system of state parks, the survey indicated the following:

- Conserving and protecting natural resources 61%
- Providing places to explore and enjoy natural and cultural heritage 59%
- Providing places for a variety of outdoor recreational activities contributing to a healthy lifestyle 54%

Outdoor recreation activities rankings

DCR has been sampling participation rates in outdoor recreation since 1965. It is instructive to note the incremental changes in participation rates over time. Activities that have been in the top 10 have changed little over the years. Activities that are new to the top 10 that were not in the early years, such as "visiting historic sites," were simply not measured at that time. Table II-3 displays the results for popular outdoor activities ranked in 1965, 1996 and 2002, and contrasts them with the results of the 2006 VOS.

*What do you suppose will satisfy the soul,
except to walk?*

—Walt Whitman

Water access

Based on the 2006 VOS, over 50 percent of Virginians felt the most needed outdoor recreation opportunities include public access to state waters for boating, fishing, swimming and beach use. The 1965 *Virginia Common Wealth* projected that swimming would be the most popular activity in 2000. While swimming is still very popular as fourth among outdoor recreation opportunities, swimming has declined from 52 percent household participation in 2000 to 44 percent participation in 2006. Most swimmers choose an outdoor or indoor pool setting rather than a natural body of water. The concern for water quality in primary contact sports may be a factor in this trend. Also, natural water bodies accessible within 30 minutes of the population are limited, making the use of local outdoor and indoor pools more convenient.

Fishing is also a popular outdoor recreation activity dependent on water access. It is ranked as the seventh most popular outdoor recreational activity with 26 percent of households participating. Slightly more



Biking along the James River in Richmond. Photo by Nathan Lott.

Outdoor Recreation Issues, Trends and Survey Findings

Table II-3. Percentage of Households Participating in Activities

1965 Rank	2006 Rank	Activity	% of pop. 2006	% of pop. 2002	% of pop. 1996
3	1	Walking for pleasure	72	67.1	65
5*	2	Visiting historic sites	56	40.4	35
1	3	Driving for pleasure	55	62.4	60
2	4	Swimming	44	52.2	53
11	5	Visiting nat. areas, parks	44	26.9	24
N/A	6	Sunbathing on beach	36	39.1	42
7	7	Fishing	26	42.0	29
6	8	Picnicking	26	28.7	31
N/A	9	Using a playground	25	24.4	24
10	10	Boating	24	34.1	31
N/A	11	Jogging	24	21.5	20
N/A	12	Visiting gardens, arboretums	21	21.6	20
8	13	Bicycling	21	39.7	31
13	14	Camping	18	28.2	26
16	15	Hiking, backpacking	16	18.3	15
4#		Playing outdoor sports			
	16	Golf	14	25.1	20
	17	Basketball	12	15.4	12
	18	Fitness trail	10	7.3	6
	19	Soccer	9	8.7	6
	20	Snow skiing, boarding	9	11.9	13
	21	Tennis	8	16.2	20
12	22	Hunting	7	13.8	17

5* Sightseeing was ranked in 1965 and not historic sites.
4# Playing outdoor sports was ranked as the 4th most popular outdoor activity in 1965; however, the individual sports were not ranked.
Attending outdoor sports events was ranked 9th in 1965 and not in subsequent years.
Horseback riding was ranked 14th in 1965 and 25th in 2005 with 5.8 percent of the population participating.
Water skiing was ranked 15th in 1965 and 34th in 2005 with 4 percent of the population participating.
Attending outdoor concerts/drama was ranked in 1965 and not in subsequent years.
(Data from Virginia Outdoors Surveys 1996, 2002 & 2006.
1965 Data from Virginia's Common Wealth, November 1965.)

Virginians indicate that they fish in freshwater rather than saltwater, which may be a result of travel time to water bodies from population centers. Eighty to 85 percent of all fishing takes place on public water bodies. This further increases the demand for adequate public access at both freshwater and saltwater locations. Boating ranks as the 10th most popular outdoor recreation activity.

Trails and greenways

Trails and greenways rank alongside water access as equally important to citizens responding to the 2006 VOS. Some 49 percent of those surveyed indicated a high need for walking and hiking facilities. Walking for pleasure is Virginia's most popular outdoor activity with 71.7 percent of those surveyed indicating that it

was their favorite outdoor recreation activity. In addition to those walking, another 16 percent hike and backpack. Walking for pleasure and providing safe places for the public to enjoy being outdoors while walking is anticipated to continue to increase with population growth in Virginia. Trails and greenways programs at the local, regional and state levels will help meet the increasing demand for safe, aesthetically pleasing walking opportunities (See Chapter VII).

Thirty-nine percent of Virginians felt trails for bicycling were needed. This high ranking of perceived need may be the public's expression of a desire to have safe places to bicycle. Approximately 5 percent of all Virginians mountain bike and 20 percent ride bicycles on roads. However, 40 percent of Virginians felt there was a need for trails for bicycling. Given this response

rate, the provision of safe places to bicycle could increase the popularity of this activity, as fear of riding on roads deters many potential bicyclists.

Natural areas

The growing trend for visiting natural areas and parks could be related to the interest in walking for pleasure as well as the growth in Virginia's senior population. In fact, over the past 10 years the participation rate for visiting natural areas has increased from 24 percent to 44 percent of households surveyed making this activity the fifth most popular outdoor recreation activity ranked in the 2006 VOS. The need for access to natural areas and parks was recognized as the third most important opportunity need in Virginia.

Hunting

Another significant trend in outdoor recreation activities indicated in the 2006 VOS is the decline in the numbers of hunters in Virginia. In the past 10 years, hunting has decreased from an activity engaged in by 17 percent of households in 1994 to 7 percent of households in 2006. The continued change in land use patterns from rural to urban and suburban may have driven this change. Sixty-five percent of hunters in Virginia hunt on private lands. The lack of access to previously hunted private lands due to landowner changes has also driven a change in supply of lands for hunting. In fact, where lands remain rural, hunting participation rates are much higher than in the urban crescent. Participation in the mountain region was 21.4 percent, Piedmont region was 16.4 percent and Chesapeake region was 16.5 percent, as contrasted with the participation rates of 6.1 percent in the urban crescent.

Camping

A similar, but not so dramatic, change in the numbers of persons camping is noted as a result of the 2006 VOS. In 1965, camping was the 13th most popular outdoor activity, and in 2006 it ranks 14th in popularity. The percent of households who camp have dropped from 26 percent in 1996 to 18 percent in 2006. Of those camping, 63 percent camp at public sites, with 55 percent of these using a state park or other state land. Approximately 70 percent of campers use tents and prefer drive in campsites. Amenities most important to campers include flush toilets and showers.

Table II-4. Types of State Park Campsites Preferred by Virginians

Campsite with water/electric	61%
Tent camping without water/electric	25%
Pack in campsite	4%
Canoe/boat in campsite	10%

Public vs. private lands for outdoor recreation

The only sports in which over 60 percent of participants used private recreation areas more than public areas were for snow skiing and snow boarding and for hunting. Approximately 65 percent of hunters hunt on private lands. All other outdoor recreation opportunities are mostly conducted on public lands. Even participants in golf, tennis and swimming indicated that over 63 percent of their activities in these sports were held on public property.

Table II-5. Active Sports Participation

Active sports remain popular outdoor recreation activities for Virginians, with over 80 percent of activities such as of soccer, softball, basketball and baseball being played at public facilities. Participation rates for active sports surveyed in the 2006 Virginia Outdoors Survey are shown below.

Sport	Va. household participation rate
Golf	14.6%
Basketball	12.5%
Soccer	9.2%
Tennis	8.6%
Softball	7.5%
Football	5.8%
Baseball	5.5%
Volleyball	3.4%



Youth soccer. Photo by Herndon Parks and Recreation.

Land Conservation

The earth belongs to the living. No man can, by natural right, oblige the lands he occupied or the persons who succeed him in that occupation, to the payment of debts contracted by him. For if he could, he might, during his own life, eat up the use of the lands for several generations to come, and then the lands would belong to the dead, and not to the living. No generation can contract debts greater than may be paid during the course of its own existence.

—Thomas Jefferson



Aerial view of undisturbed lands. Photo by Virginia Tourism Corporation.

When he announced his goal to preserve an additional 400,000 acres of Virginia land during his term, Gov. Tim Kaine noted that: “With every passing day, land is becoming more expensive and scarcer. I will set and meet this preservation goal during my term – not just because it’s the right thing to do – I will do it because if I don’t, the opportunity to do it will not be there for future governors and future Virginians.”

The conservation of Virginia’s land and related water resources is not only a mandate of Article XI of the Constitution of Virginia, but is also vital to the quality of life enjoyed by Virginians. With population and associated development increasing at unprecedented rates, the conservation of these resources is essential to both the public well-being and the economic viability of the state. Land conservation is more than just about aesthetics; it is a strategy for improved water quality, protection of drinking water supplies, smarter growth, historic preservation, preservation of our plant and animal communities and many others. If there was ever a time for the state to focus on the conservation of its natural and cultural resource base, it is now.

While the state has established a number of very significant land conservation goals (see *Land Conservation Findings* below), accomplishing those goals is only an interim step in meeting Virginia’s need for land conservation. The scientific question of how much land needs to be conserved is being addressed and will take time to answer, as many factors concerning the functions of the land and the ultimate quality of life in Virginia must be considered.

Because the science of protecting our land and cultural resources is evolving, it is premature to set an ultimate acreage figure. However, interim goals such as Gov. Kaine’s goal of protecting 400,000 additional acres by 2010 and the regional Chesapeake Bay goal of conserving 20 percent of the watershed have helped to galvanize efforts in the Commonwealth. It is recognized that these goals, even when met, will need to be refined in order to reflect the future demands of a growing state.

Acquiring lands and easements also require public and private bodies to maintain stewardship of those properties. In some cases, this will require additional public funding to develop and operate the properties for the public’s use and enjoyment, while in other

cases, it will mean adequate monitoring by public or private easement holders to ensure easements and management principles are upheld.

Three of the largest landowners in the Commonwealth – the National Park Service, the USDA Forest Service, and the U.S. Fish and Wildlife Service – develop and follow management plans for more than two million acres in Virginia. With some areas dedicated to open space use, some to preservation, and other areas available for recreation, it is apparent that the way this space is managed significantly influences the resources available to the public. Similarly, state agencies such as the Department of Conservation and Recreation, the Department of Game and Inland Fisheries, and the Department of Forestry develop and implement plans appropriate to the resources for which they are responsible. Regional and municipal park and recreation agencies also prepare management plans for their larger parks.

Results of the 2006 Virginia Outdoors Survey:

- When asked how important is it to protect Virginia’s natural and open space resources, 95 percent of respondents said it was either “important” or “very important” (67 percent said it was “very important” and 28 percent said it was “important”). Less than two percent responded that protection of natural and open space was not important.
- Nearly 78 percent answered “yes” to the question “Should the state spend public funds to prevent the loss of exceptional natural areas to development?”
- More than 70 percent of those surveyed said they favored outright purchase from willing sellers as an appropriate tool for conserving open space.

Findings

- Gov. Kaine’s goal of the preservation of an additional 400,000 acres of land by 2010 is an extraordinary commitment that will require the Commonwealth and its partners to nearly double the past annual rate of land conservation.

Land Conservation

- In 2000, the governors of Virginia, Maryland, and Pennsylvania, and the mayor of Washington D.C. signed the Chesapeake 2000 Agreement, which committed those states to permanently preserve from development 20 percent of the land area in the Chesapeake Bay Watershed by 2010. As of July 2006, Virginia had protected almost 17.8 percent of the Bay watershed, which makes up about 60 percent of the state's total land area. For comparative purposes, 13.6 percent of total state lands have been protected.
- Growing human population and development patterns that consume disproportionate amounts of our rural heritage have been a driving force in Virginia in recent decades. As Virginia commemorates the 400th anniversary of the founding of the Jamestown Settlement, it is remarkable to note that of all the development that has occurred since 1607, more than a quarter of it has taken place in the last 15 years.
- The population of Virginia is predicted to increase by 5 percent by the year 2010, by almost 15 percent by the year 2020, and by nearly 24 percent by the year 2030. If Virginia continues to grow with the same development patterns as it has in the past, more land will be developed in the next 40 years than has been since the Jamestown settlement was established in 1607.
- As a result of a combination of factors including population growth, inefficient development patterns, and an aging farming population, Virginia lost 3.3 million acres, or over 20 percent, of its farmland between 1982 and 1997. Nearly 120 Virginia farms disappear every year.
- With 15.77 million acres of forested land, Virginia is 61.5 percent forested. According to the Virginia Department of Forestry, urban growth and development resulted in an average net loss of 26,100 acres per year from 2001 to 2004. This is an accelerated rate of loss when compared to the 20,000 acres per year estimate for the 1992–2001 time period. More acres of forest are developed each year, but reversion of some agricultural land to forest partially offsets the loss. If current development trends continue, it has been projected that Virginia will lose a million acres of forest in the next 25 years.
- A Mason-Dixon poll of Virginia voters in January 2003 found that “the highest percentage of voter support – 85 to 90 percent – related to preserving Virginia’s rural character and investing in our agricultural, forestry and natural resource-based industries to keep working farms, forests and open space.”



Scenic viewsheds, landscapes and open space are important for conservation. DCR photo by Irvine Wilson.

- Preserved open-space lands provide benefits in terms of working (agricultural and forestal) landscapes, scenic landscapes, recreation, natural areas and parks, cultural and historic resource protection, natural resource protection, water quality improvement and maintenance, and carbon sequestration, along with the economic benefits associated with these functions.
- Conservation and open space easements alone (which generally do not allow for public access) will not meet the state's increasing need for accessible public lands.

Recommendations

- To meet Gov. Kaine's goal of preserving 400,000 acres of Virginia land by 2010 and the Chesapeake Bay Agreement goals for watershed protection, a consistent and stable source of state funding for the Virginia Land Conservation Foundation and local Purchase of Development Rights programs should be established.
- Maintain strong state tax incentives for land conservation.
- Maintain federal funding assistance and tax incentives.
- As population growth accelerates development pressure, land conservation and sound land use decision making should become prominent strategic considerations in land-planning efforts at the local, regional and state levels if Virginia is to effectively conserve lands for future generations.
- Localities, state agencies and private organizations should make deliberate decisions about how to focus and prioritize their land conservation efforts. To do so, they should further develop a method of targeting preservation efforts through the use of green infrastructure land planning techniques, geographic information systems, local comprehensive plans, and decision support systems such as the Virginia Conservation Lands Needs Assessment.
- Meeting conservation goals will require enhanced partnerships among all agencies and the private sector.
- All organizations undertaking land conservation projects should strive to ensure that protected lands are offering a wide range of public benefits, including water quality protection, habitat preservation and public access.

Protected lands should benefit the public and possess unique and significant natural, historic, recreational, scenic and cultural resources, including:

- Recreational and park lands.
- Lands with rare, threatened or endangered species.
- Fish and wildlife habitat.
- Agricultural and forestal lands.
- Historic and cultural resources.
- Open space land with scenic qualities.
- Lands and other resources designated as part of a locally driven planning process.

Characteristics that make particular properties special and worthy of protection include the following.

- River corridors
- Viewsheds
- Public access points
- Blueways and greenways
- Land that meets the needs identified in the *Virginia Outdoors Plan*
- Support of a local or regional plan
- Land adjacent to a Virginia Scenic River, Road or Byway
- Land adjacent to parks or natural area preserves
- Land adjacent to wildlife management areas
- Land adjacent to state forests
- Land that meets the needs identified in the Virginia Natural Heritage Plan
- Rare or unique species
- Biodiversity
- Land individually listed on the Virginia Landmarks Register
- Land that is a contributing resource within a historic district that is listed in the Virginia Landmarks Register
- Prime and important soils and farmland
- Wetlands
- Contiguous forest parcels
- Timber value
- Unique geological features
- Cultural geography
- Relationship to development patterns and land use planning

- Land management and easement-holding agencies and organizations have significant responsibilities for ongoing stewardship of lands and should improve monitoring and oversight of these conservation and historic easements. Stewardship of state owned lands and conservation easements will require dedicated resources of staff time and funding to ensure that those properties are properly managed to meet the public need.
- State agencies should work with private land trusts to maximize conservation value of easements by considering inclusion of language in the deed that would maintain or establish riparian buffers along streams and implement forestry and agricultural best management practices on properties to improve water quality benefits.
- Conservation organizations and agencies within the Commonwealth should work in partnership with federal entities to protect land and resources that exist on, or that would buffer, military bases.
- Virginia should work with corporate partners to identify areas on their properties that could be placed under easement.
- In an effort to sustain and improve water quality, Virginia should protect large tracts of land within watersheds as open space through watershed planning and land conservation.
- Virginia should work with educational institutions and conservation organizations to instill long-term support for land conservation and open space protection through meaningful outdoor experiences to children and adults.
- Proactive measures should be taken now to preserve Virginia's historic resources. Such actions should be comprehensive in scope, considering the resource as well as its surroundings and context.
- Scenic areas should not be overlooked when targeting lands for protection.

When we see land as a community to which we belong, we may begin to use it with love and respect.

—Aldo Leopold, *A Sand County Almanac*

Importance of land conservation

Much of Virginia's landscape remains as it was in the 17th and 18th centuries when it was inhabited by Native Americans and when European and African settlement began. As Virginia has continued to develop, much of its landscape character is lost to sprawling development or is fragmented by grey infrastructure to serve a growing population.

With the growing interest in land conservation, the preservation of Virginia's landscapes is becoming more commonplace throughout the state. A comprehensive land conservation strategy is needed to preserve these critical landscape components. Land conservation is vital for protecting many of Virginia's shared community assets, such as biodiversity, outdoor recreation, water quality, historic and cultural resources, scenic resources, and working landscapes. Valuable tools for the protection of these assets are described later in the chapter.

Biodiversity

Virginia is home to more than 32,000 native species of plants and animals. Each is part of Virginia's natural tapestry, has intrinsic value, and plays a role in the complex web of life. The loss of one may lead to the loss of dozens more and it is difficult to know which may be keystones to entire ecosystems. Some 40 percent of all modern pharmaceuticals are derived from plants and animals. Wild organisms are important genetic reservoirs for improving domestic crops and livestock.

Much biodiversity protection can be accomplished by protecting habitat. For some highly specialized terrestrial species, a significant proportion of their habitat may be secured by protecting relatively small areas of land. One such example is the Virginia endemic vine, Addison's leatherflower, which has a strong affinity for an unusual soil type on south to west-facing slopes. Other species, such as many forest-interior nesting birds, require large blocks of unbroken habitat in order to prosper. Most species benefit from corridors between population nodes in order to interbreed and to reoccupy vacated territory. Other key pieces of Virginia's landscape are critical habitat for brief periods of time. The southern tip of the Delmarva Peninsula, for example, supports millions of migrating birds each fall as they rest and feed in preparation for their flight south across the mouth of the Chesapeake Bay. Other species live out their lives in the dark in one of Virginia's more than 4,000 caves.



Exploring caves for rare species biodiversity. DCR photo by Irvine Wilson.

Protecting habitat for aquatic species is a significant challenge because much relies on protecting watersheds, encompassing large land areas. Carefully focused watershed protection efforts will help secure the future for many rare aquatic species concentrated in specific river systems, such as the Clinch River in southwest Virginia. Also, efforts to protect riparian zones on farms and working forests, and to implement other best management practices, will significantly improve conditions for aquatic species throughout the state.

Outdoor recreation

The 2007 *VOP* demonstrates the strong connection between resources needed for outdoor recreation and sound land conservation based on green infrastructure planning (See Chapter IV). Most of the popular forms of outdoor recreation are either dependent on resource lands and waters or enhanced by their proximity to them. Land protection is essential for ensuring outdoor recreation opportunities for Virginia's growing population. If the citizens of the Commonwealth are not afforded opportunities to enjoy the outdoors and experience Virginia's diversity, the future of Virginia's outdoors will be jeopardized. Long-term support for land conservation and open space protection are strongly tied to outdoor recreation experiences for children and adults.

Both public and private lands are important for meeting the needs of outdoor recreation. Public recreation areas are increasingly in demand as large tracks of private land are subdivided and traditional local recreational uses are lost. Conserved private land is important, not only in providing much of the hunting opportunity east of the Blue Ridge, but also in maintaining scenic vistas and serving as buffer lands around major park and recreation areas. Private lands can also play an important role in the provision of various types of long distance and connector trails in the state.

Water quality

The condition of the land has direct and highly significant impact on water quality. A naturally vegetated landscape provides the greatest benefits to water quality. Undeveloped lands, especially forests, filter both surface water and groundwater. Developed lands are predominantly impervious surfaces, or gray infrastructure, like sidewalks, buildings, parking and roads that don't allow water to filter directly into the ground. Water that cannot soak into the ground flows over the land surface, eventually ending up in a waterway. The amount of impervious surface in a watershed directly affects the amount of runoff, influencing surface water quality in streams. Not only does impervious surface accelerate stream erosion and degrade water quality of surface waters or streams, it blocks or diverts water from recharging ground water.

The Center for Watershed Protection reports that runoff from a watershed that is composed of less than 10 percent impervious cover is considered to be "sensitive." At 10 percent impervious cover, stream quality begins to decline. When impervious surface areas within the watershed range from 10 to 25 percent, streams are categorized as "impacted." Between 25 percent and 60 percent impervious surface areas leave streams "damaged," and above 60 percent impervious cover streams are considered "severely damaged" (www.cwp.org/whywatersheds_files/frame.htm).



Protecting shorelines from impacts of development maintains water quality for the state's rivers and the Chesapeake Bay. Photo by DCR.

Land Conservation

Protecting large tracts of land as open space through watershed planning and land conservation sustains and improves water quality. By and large, Virginians take for granted the water quality benefits provided by privately held forestland – land that is rapidly being converted to other uses. Several other states, such as Florida and New York, recognized the importance of protecting significant portions of watersheds and took action, primarily as a means of ensuring adequate drinking water supplies. Virginia's conservation lands strategy should also include the protection of significant watershed areas.

Historic and cultural resources

Preservation of historic resources is linked with land conservation and open space protection. As development spreads throughout the Commonwealth, it is even more important to protect cultural and archaeological resources. These historic resources provide insight into the social, cultural and economic development of Virginia, and give citizens a tangible link to the past. These resources include historic houses, commercial buildings, factories, mills, churches, battlefields, archaeological sites and cultural landscapes. It is sound environmental policy to protect these resources, which preserve important pieces of the past needed to inspire and inform future generations.

Not only do these resources provide historical background and information, they are also important to Virginia's economy. Attractive financial incentives spur private investment in historic structures, resulting in the rehabilitation and revitalization of neighborhoods and cities. At the same time, heritage tourism draws thousands of people to Virginia's towns and cities each year. The 2006 *Virginia Outdoors Survey* discovered that visiting historic sites is the second most popular recreational activity of Virginians. Thus, protecting Virginia's historic and cultural resources in their landscape settings is essential to maintaining the quality of life in our state.

Historic land protection can take a number of forms. One commonly recognized form is the protection of actual historic sites, such as battlefields, settlements, plantations and historic homes. These have, by private efforts or by chance, retained many of their original characteristics. Other sites of historic value may be obscured, but not obliterated, by changes in the landscape. Archeological sites often fall into this category and need to be protected, at least until artifacts and valuable information can be extracted from them. Many natural landscapes across Virginia are of invaluable cultural significance to the Native Americans who called Virginia home long before Europeans arrived.

There is also historic value in preserving representative pieces of Virginia's landscape, regardless of whether or not actual historic events occurred there. Cotton fields, pine savannahs, expansive mountain forests and long stretches of wild rivers are all part of Virginia's history. Preserving them is important for helping people reconstruct and visualize the past. For example, a small patch of an ancient swamp forest, protected by The Nature Conservancy, yielded important data from cypress tree growth rings. This data helped historians understand drought conditions during the settlement of Jamestown. Virginia's history will continue to be discovered as additional landscapes are protected.

Proactive measures must be taken now to preserve Virginia's historic resources. Such actions should be comprehensive in scope, considering the resource as well as its surroundings and context. When a historic building is preserved, it is also important to protect its historic setting and landscape, including any existing archaeological or other resources, if possible. Collectively, these elements provide a more accurate and rich understanding of the past.



Virginia City Church in Wise County. Photo by DHR.

Scenic resources

The tapestry of Virginia's landscape ranges from mountain overlooks, to hardwood forests, to the Coastal Plain. Virginia's scenery, particularly in rural and agrarian settings, is an important part of what draws people to the Commonwealth. Protecting these scenic landscapes and resources is another reason for land conservation. Scenic areas need to be targeted as special priorities for protection.



Preservation of diverse landscapes protects wildlife habitat and scenic open space. DCR photo by Irvine Wilson.

Land conservation can maintain a region's sense of place and the local character of communities. Preserving a clear boundary between cities or towns and countryside safeguards the rural character of Virginia. Land conservation can serve to protect open space on the edge of urban areas while encouraging more compact, walkable communities. In an urban context, land conservation can serve to maintain community identity and character by encouraging infill development on vacant, underused, or overlooked land, including brownfields. For more information on scenic resources, see chapter VII-D.

Working landscapes

Together, agriculture and forestry are Virginia's number one industry, contributing more than \$47 billion to the state's economy in 2004, and representing more than 15 percent of total employment. Numerous economic factors are causing many farms and forestlands to be developed. Depressed commodity prices due to competition from other countries, rising land costs (and by extension rising property taxes), dwindling interest in the upcoming generation to pursue demanding careers on the land, and the farm-as-pension-fund approach to retirement all lead to many farms and forests being sold for development. Eventually, as forests become smaller and farms more widely separated, the land-based economy slows. As supporting

businesses disappear, more working lands grow idle or are converted to other uses. Therefore, an important part of supporting land-based economy is to preserve the land. Such efforts should focus on the most productive lands and areas with intact supporting infrastructure.

Economic value of land conservation

Protected land typically enhances the value of nearby residential property. In most cases, a home with a view of a forest or a meadow is more desirable than a similar home with a view of an interstate highway. Recognizing this concept, many local governments strongly support land conservation, understanding that protected, undeveloped land generates more direct tax revenue than the services it requires, and that residential development typically brings in less taxes than it costs to service. In addition, the increased value of properties near preserved lands means that localities benefit by permanently protecting green space.

The Virginia Conservation Lands Needs Assessment (VCLNA) may be used to target conservation lands that would be most economically beneficial to communities. For more information on the VCLNA, see Chapter IV: Green Infrastructure.

Methods and strategies for protecting open space and natural resources

The following text will discuss a full range of tools available for the conservation of land and related resources. Conservation cannot happen without a strong partnership between individual property owners, public agencies, corporate neighbors and private land conservation organizations. While the efforts of public agencies are generally well known, the significant contributions of the private sector are often less apparent.

For more information about partnerships for protection, see the subsection of this chapter entitled, "Land conservation organizations in Virginia."

Conservation tools

There are a number of land conservation tools in Virginia, including ways for private landowners to carry out voluntary conservation, as well as ways that localities can regulate land use to encourage conservation. Open space and significant natural, historic, agricultural, forestal, scenic and recreational resources are protected by a combination of land use regulations and voluntary mechanisms. These are available to private landowners, private nonprofit organizations and government agencies. Federal and state tax incentives also play an enormously significant role in open space protection.

Land protection mechanisms are becoming more dynamic and diversified, as evidenced by the growing number of strategies. These include public policy and planning tools, fiscal incentives, regulatory mechanisms and voluntary conservation options. However, no single tool can meet all land conservation needs. The size of the Commonwealth, the diversity of interests contained in it, and competing economic and social factors combine to make a single approach ineffective. Many strategies will also not meet the public's recreational needs. Thus, it is important to balance easements on private property with easements on and acquisitions of public lands to meet the public's recreational and outdoor needs. The following is an overview of the options available to agencies, localities and individual landowners that help address the challenges of preserving and protecting open space and natural resources.

Land conservation and open-space planning

The value of planning lies in its comprehensive approach in providing direction for resource protection to all players in land use issues. To be effective, the

planning process must actively engage key players, groups and stakeholders in working together to reach a common goal. Achieving that goal will require a cooperative effort among federal, state and local public agencies, private conservation organizations and land trusts, landowners and developers.

Protection tools and strategies

Land use planning in Virginia incorporates a number of voluntary and regulatory resource protection tools and strategies. These are available to local governments and private land conservation organizations, developers and individual landowners. Regulatory land use tools may be delegated to localities by the state. Some mechanisms may be voluntarily negotiated with developers as a condition of development. Both governmental agencies and private nonprofit organizations can utilize the growing number of voluntary mechanisms in negotiations with private landowners. Tools and strategies are illustrated in the chart below and described in the following section.

Voluntary land protection

Purchase	Donations
Fee simple acquisition	Fee simple donation
Purchase and leaseback	Conservation easements
Purchase of development rights	Remainder interest and reserved life estates
	Natural Area Registry
Combination of purchase and donation:	Bargain sale

Purchase of land

Full legal title to land, and all rights associated with it, may be purchased from landowners who voluntarily sell their land for a conservation purpose at a price equivalent to its value at its "highest and best" use, or fair market value. The appraised fair market value of the property is the standard for all sales. Purchasing land at its fair market value has two advantages: the acquisition process is relatively simple, and the rights and privileges of fee simple ownership are rarely challenged. Land can be purchased for open space through the following options.

Fee simple acquisition

Landowners may voluntarily preserve their lands by donating or selling their legal interest in the land (the "fee simple" interest in the land) to a land trust or government agency. This is the most comprehensive means of affecting control and preservation of land, since the original landowner releases all rights.

Purchase and leaseback

This is an outright purchase of land by a conservation organization or agency, with a subsequent lease back to the original owner who will continue to gain some economic return from the land as agricultural, forestal or open space use. This preserves open space, while ideally generating revenue for the conservation purchaser as well as for the lessee.

Purchase of development rights

Virginia law allows localities to create programs that pay landowners who give up the rights to divide their land for development. The development rights are transferred to the locality in a conservation easement. For more information, see Chapter IV: Green Infrastructure.

Bargain sale

A landowner may also combine a sale and donation by making a “bargain sale,” which allows a conservation agency or organization to obtain the land at a lower price than appraised value. This enables the land to be protected while providing some immediate funds to the seller. This type of sale can result in a tax deduction for the difference in the price received for the property and its fair market value, and may benefit the landowner by offsetting any capital gains tax associated with the sale component of the transaction.

Donations

Donations of conservation easements and outright donation of property to a land trust or to a government agency are highly effective and efficient ways of preserving land. In general, these programs generate few legal disputes over property rights and takings issues, and often qualify property owners for tax deductions. Voluntary protection programs are best combined with other open space protection strategies to maximize their benefit. Examples of donated land protection programs that preserve open space follow.

Conservation easements

Conservation easements are legally binding agreements between the landowner and the organization or agency that becomes the holder of the easement. The landowner retains ownership of the property while transferring certain development rights to a qualified organization. Each easement is written to protect the resources that are unique to that property. The easement places encumbrance on the title, limiting the use of the property in perpetuity. In Virginia, easements may be donated to a public body under the Open Space Lands Act, or to a private, nonprofit conservation organization under the Conservation Easement Act.

The Virginia Outdoors Foundation and other state agencies, such as the Department of Conservation and Recreation, Department of Historic Resources, and the Department of Forestry, as well as national, regional, and local land trusts educate landowners about the benefits of conservation easements. They also negotiate the terms of easements, and hold them once they are established. When funds are available, land trusts may negotiate the purchase of easements. Increasingly, land trusts are dedicating greater resources to stewardship and monitoring of easement properties, especially as lands under easement change hands. With more than 35 conservation organizations in Virginia, land trusts are a fast-growing mechanism for land preservation and have helped Virginia achieve a prominent place in this nationally important land conservation movement.

By donating conservation easements to a qualified organization or government agency, the landowner can continue to possess and enjoy the land while preserving the land’s conservation values. Because particular rights that are relinquished and the conservation values being protected can vary from one conservation easement to another, the process is flexible and involves negotiation between the landowner and the conservation easement holder. This means that the desire of the landowner to protect the property from development need not require the loss of all economic use of the property.

If the land has significant habitat for rare wildlife species, for example, the conservation easement may remove all rights to subdivide the land for development or to harvest any timber. Alternatively, an easement on agricultural or forested land may allow the construction of additional farm structures or selective timber harvesting. The particular restrictions spelled out in a deed of conservation easement are a list of the rights that are surrendered “in perpetuity,” so that all future owners of the land are subject to the same restrictions. The organization holding the easement provides long-term monitoring to ensure that easement values remain protected over time.

A term easement is a type of conservation easement that does not last “in perpetuity,” but is only for a specified number of years. Although Virginia law allows for such easements, they are not often used by state or private conservation groups since they do not result in meaningful long-term preservation of resources. Landowners generally do not favor term easements since they do not qualify for either federal or state tax benefits. Furthermore, neither state nor federal grant funds would be available for purchase of

such easements. These easements may have some limited use by localities in timing of development.

Remainder interests and reserved life estates

These arrangements allow the owner to live on and use the land during the owner's lifetime, and possibly the lifetime of other family members. At the death of person with the life estate, the "remainder interest," or ownership, falls to a designated public or nonprofit land preservation entity. The value of such a donation is different from an outright gift, but can still be considered a charitable contribution for federal income tax deduction purposes. This approach provides limited income tax benefits, but full estate tax benefits.

Stewardship agreements

These provide less binding mechanisms for conservation organizations and landowners to manage property for specific conservation benefits. Under these agreements, the landowner manages the property in accordance with the provisions of a stewardship plan developed in cooperation with the conservation organization. Stewardship agreements often are intended to provide responsible and knowledgeable landowners with an opportunity to plan and implement resource management strategies with reduced government oversight and regulation. They also provide an incentive for landowners to enhance and restore habitat, water quality, or other natural resources. In Virginia, the Natural Heritage Program at DCR offers natural area management agreements. The Nature Conservancy uses stewardship agreements, as well.

The Virginia Registry of Natural Areas

Managed by DCR's Natural Heritage Program, this registry encourages voluntary conservation of lands that support rare species and significant natural communities. Both private and public lands are eligible. Landowners who participate in the registry commit to voluntarily preserve natural heritage resources on their land to the best of their ability, to notify DCR of any potential threats to these resources, such as pollution or clearing of land, and to notify DCR of any intent to sell or transfer ownership of the property. By informing and recognizing the landowners of these significant natural areas, the Virginia Registry of Natural Areas program reduces the chance that these resources may be unknowingly destroyed. Registration is a voluntary and nonbinding agreement that may be terminated by either party at any time, and provides no rights of public access unless requested by the landowner. Locations of registered natural areas are not publicized unless the owner so desires.

[W]e seem ultimately always thrown back on individual ethics as the basis of conservation policy. It is hard to make a man, by pressure of law or money, do a thing which does not spring naturally from his own personal sense of right and wrong.

—Aldo Leopold, *Conservationist in Mexico*

Tax incentives for land conservation

Tax incentives for land conservation are an essential mechanism for encouraging land conservation. These tax benefits are offered at both the state and federal level, and there are also local tax benefits related to conservation easements.

Federal tax benefits of conservation easements

The *Internal Revenue Code (IRC)* allows two types of tax benefits for land conservation – a federal income tax deduction and an estate tax reduction and exclusion. The amount of the federal income tax deduction is based on the reduction in value resulting from the conservation easement as determined by an appraisal that meets the standards set forth in the IRC. Only easements granted in perpetuity and that "qualify" under the IRC are eligible for the tax benefit. The federal estate tax benefit includes a lowering of the total size of the taxable estate so that the deceased's heirs will not be required to pay taxes on the extinguished development rights. In addition to this tax savings, the estate of an easement donor may exclude up to 40 percent of the value of the protected land or \$500,000 (whichever is less) from the taxable estate. Finally, additional provisions of the IRC allow the heirs to elect to donate a "post mortem" conservation easement and have the land taxed as if the easement had been in place at the time of death. This is often a tool that is used when the heirs otherwise may need to sell all or a portion of the land in order to pay estate taxes.

Income tax deductions – easements as a charitable gift

Section 170 (h) of the *IRC* allows deductions for charitable gifts of qualified conservation contributions, which include the donation of land in fee simple or the donation of a perpetual conservation easement. The donation must be made to a "qualified" organization exclusively for "conservation purposes."

The *IRC* specifically defines "conservation purposes." The regulations outline four such conservation purposes:

- Preservation of land areas for outdoor recreation by, or the education of, the general public.

- Protection of a relatively natural habitat of fish, wildlife, plants, or similar ecosystem.
- Preservation of open space (including farmland and forest land) where such preservation is for the scenic enjoyment of the public or pursuant to public conservation policy.
- Preservation of historically important land or certified historic structures.

The landowner donating an easement in 2006 and 2007 (and perhaps in subsequent years, if Congress and the president extend or make permanent the law) is permitted to take an income deduction for the full value of the donation at a rate of up to 50 percent of their adjusted gross income (AGI) in the year of the gift, or 100 percent of AGI for farmers and forestland owners. A private certified appraiser evaluating the easement must determine the value of the gift. If not exhausted the first year, the amount of the gift can be carried forward for 15 subsequent years.

Estate tax benefits of easements

The Farm and Ranch Protection Act of 1997 (§2031(c) of the *IRC*) allows for an exclusion of up to 40 percent of the value of land or \$500,000 (whichever is less) under conservation easement from federal estate taxes. To qualify, the easement must be perpetual and must meet the conservation purposes of section 170(h) above, except that preservation of a historic area or structure is excluded. The easement may be given by a landowner who has owned his land for at least three years or by the executor of the estate of such a landowner. The intent of this provision is to provide relief from estate taxes for farmers and ranchers passing land to their children who might otherwise be forced to sell the land to pay estate taxes.

Virginia state tax benefits of conservation easements

The charitable gift deduction taken for a conservation easement on the federal tax return results in the same diminution in taxable income for state income tax purposes as it does for federal income purposes. Virginia state income tax is defined in the *Code of Virginia* §58.1-322.A as a resident's "federal adjusted gross income for the taxable year" subject to some modifications, none of which affect the charitable deduction of a qualified conservation contribution under section 170(h) of the *IRC*.

The most important Virginia state tax benefit related to the donation of easements is a credit enabled by the Virginia Land Conservation Incentives Act of 1999.

This statute (*Code of Virginia* §58.1-510 *et seq.*) allows a tax credit of an amount equal to 40 percent of the value of a gift of a conservation or open space easement up to \$100,000 per year. The unused portion of the credit may be carried forward for a maximum of 10 additional consecutive tax years.

In addition, for purchased easements, a Virginia state tax exclusion (*Code of Virginia* §§58.1-322 and 58.1-40) permits a landowner to exclude capital gains from the sale of land on which an open space easement has been placed and on which Virginia capital gains tax would otherwise have been levied.

Local tax benefits of conservation easements

In localities where the land use assessment tax program has been implemented, counties must include property subject to a conservation easement in the land use taxation program. In most cases the land is already enrolled in that program, and no additional reductions in the local property taxes result from the easement. In localities that have not implemented the land use assessment tax program, the decrease in the land's market value as a result of the easement should lower the amount of tax paid on that value. Localities should give a landowner the same diminution in value allowed by the IRS. They are required by state law to recognize the restricted value of the land with the easement in place (*Code of Virginia* §10.1-1011).

A 1993 amendment to the Conservation Easement Act relieved the landowner of the responsibility of filing annual applications or other requirements for qualifying for local land use assessment. The landowner with a permanent qualifying easement (whether to a public body or 501(c)(3) organization) automatically receives the benefit of the land use tax rate as long as the locality has implemented one of the four categories of land use tax. In the few counties with only one or two categories of land use tax, such as agriculture and horticulture but not forestry, the easement will result in a tax savings on the portion of the land not otherwise eligible for the use value assessment rate.

Land use taxation

In Virginia, localities can elect to reduce the real estate tax burden on unimproved land. The Commissioner of Revenue determines if the land is suitable for land use valuation. When the locality accepts the application for the land use valuation, the property tax is a reflection of productivity rather than on fair market value. This results in substantially lower real property taxes on the land. The Commissioner of Revenue uses the recommendations of the State Land

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Evaluation Advisory Council (SLEAC) to establish rates for the productive value of the land when calculating the real property tax obligation of the landowner. Land use values are determined for agriculture, horticulture, forestry and open space. For more information about land use taxation, or Virginia's Land Use Assessment Program and SLEAC, see <http://usevaluation.agecon.vt.edu>. Virginia statutes for land use taxation can be found in the *Code of Virginia* §§58.1-3230 through -3244.

The locality may take an individual property out of land use assessment when a landowner changes the use of the property. Examples are if the owner harvests timber with no provision to reforest, or if a landowner is causing pollution by not following accepted best management practices, or if the property is being developed. Likewise, landowners may elect at any time to remove the property from land use to take advantage of demand for development property. Although this taxation program does not offer long-term conservation, it removes some of the financial pressure for sale and development of land. The open space class of lands, such as scenic rivers and Virginia Byways, makes properties automatically eligible for the special land use tax program.

Agricultural and forestal districts

Localities can create special districts with voluntary landowner initiative to temporarily reserve farm and

forestland. These special districts are either Agricultural or Forestal, or both Agricultural and Forestal Districts (AFDs). The districts are a way for counties to encourage the use of land for agriculture and forestry activities. Only landowners who agree to limit development of the property while the district is in effect (from four to 10 years) can initiate the district. At least 200 acres are required to form a district. Landowners have the right to remove their land from the district with no penalty when the term expires. Lands in such districts have reduced taxes corresponding to land use rather than fair market value and are allowed exceptions to laws that would restrict farming or forestry in the district. Details of Agricultural and Forestal Districts can be found in *Code of Virginia* §§15.2-4300 *et seq.*

Funding

Funds to be used for the protection and preservation of natural resources for the outright purchase of land, conservation easements and management agreements are available from local, state and federal sources, as well as private, nonprofit organizations. State programs include the Virginia Land Conservation Fund, the Open-Space Lands Preservation Trust Fund, the Land and Water Conservation Fund and Water Quality Improvement Act funds. Additionally, the Department of Agriculture and Consumer Services' Farmland Preservation program will receive money for



Working farm and forest lands are important to Virginia's economy. DCR photo by Irvine Wilson.



Land conservation partnership at Brumley Mountain in Washington County involved DCR, The Nature Conservancy and the Department of Forestry. DCR photo by Claiborne Woodall.

a local grants program in 2007. Federal monies dedicated to the preservation and protection of open space include the Forest Legacy Fund, Farm and Ranch Protection Program and the Conservation Reserve Enhancement Program, all of which are administered by state agencies for the U.S. Department of Agriculture. The Virginia Resources Authority also can make low-interest loans to localities to help them lock up land while waiting for funding from grants or other sources. More information about funding can be found in Chapter VI: Grant Opportunities for Outdoor Recreation and Open Space.

Land conservation organizations in Virginia – partnerships for protection

The Commonwealth's ability to conserve, protect and enhance its significant natural, cultural, recreational and scenic resources is predicated on a strong partnership between public agencies and private land conservation organizations. Virginia is nationally recognized as a leader in private land conservation. According to a national survey done in 2006 by the Land Trust Alliance, ranking first in the nation in the number of properties protected and sixth in terms of total acres protected. Not surprisingly, the success of the state's land conservation movement lies in the deeply rooted Virginia traditions of private land stewardship and a reverence for private property rights.

Critical to the protection of open space and the preservation of unique natural areas, private land conservation efforts have resulted in the conservation of hundreds of thousands of acres in Virginia. In 1966, the Virginia Outdoors Foundation (VOF) was created to assist private landowners in protecting their properties. As of the end of 2006, VOF held more than 2,000

conservation easements, which protect more than 400,000 acres of open space. In addition to VOF, there are several state, federal and local agencies, a number of national conservation organizations, and more than 30 regional and local private land trusts now working to protect Virginia's landscapes. Not surprisingly, the success of the private land conservation movement lies in the deeply rooted Virginia tradition of private land stewardship.

The private land trusts in Virginia have come together under an umbrella organization called Virginia's United Land Trusts (VaULT). This organization, with support from DCR's Office of Land Conservation and the Department of Forestry, developed VaULT's *Heritage Virginia Strategic Plan for the Conservation of the Commonwealth's Natural and Cultural Resources*, published in December 2003 (see Appendix H).

Virginia's Land Conservation Partners

Private land conservation organizations

Virginia's United Land Trusts

National and regional land conservation organizations

Land Trust Alliance
The Trust for Public Land
The Conservation Fund
American Farmland Trust
The Nature Conservancy
Chesapeake Bay Foundation
Piedmont Environmental Council

Government agencies

Virginia Outdoors Foundation
Department of Conservation and Recreation
 Office of Land Conservation
 Natural Heritage Program
 State Parks System
 Virginia Byways and Scenic
 Highways Program
 Virginia Scenic Rivers Program
 Virginia Cave Protection Program
 Virginia Land Conservation Foundation
Department of Forestry
 Forest Legacy
Department of Historic Resources
 Historic Preservation Easement Program
Department of Agriculture and Consumer Services
 Office of Farmland Preservation
Department of Game and Inland Fisheries
 Virginia Wildlife Action Plan

Land trusts

There are many private, nonprofit conservation organizations that protect land. Each typically serves a particular region of the state or exists for a particular purpose, such as habitat protection or historic preservation. Organizations focusing mainly on land protection are typically called “land trusts” or “conservancies.” A directory of land trusts in Virginia is available at www.dcr.virginia.gov/land_conservation/whereto4.shtml. Nonprofit organizations in Virginia qualified to accept land for protection are defined by the Virginia Conservation Easement Act (*Code of Virginia* §§ 10.1-1009 through 10.1-1016) as being a charitable corporation, charitable association or charitable trust that has been declared exempt from taxation pursuant to § 501(c)(3) of the federal tax code. The primary purposes or powers of which include:

- Retaining or protecting the natural or open-space values of real property.
- Assuring the availability of real property for agricultural, forestal, recreational or open-space use.
- Protecting natural resources.
- Maintaining or enhancing air or water quality.
- Preserving the historic, architectural or archaeological aspects of real property.

These qualified land conservation organizations are defined as “holders” in the act, essentially meaning they are eligible to acquire and hold a conservation easement by gift, purchase, devise or bequest. These groups must have had a principal office in the Commonwealth for at least five years. Until such a group meets these requirements, it may co-hold a conservation easement with another holder that meets the requirements.

In addition to holding easements, many land trusts and conservancies buy or are given land. There are also many conservation organizations that do not actually hold easements or acquire land, but instead work to educate and promote use of the various land conservation tools.

Land conservation organizations work with local planning authorities, and often conduct their own initiatives, to identify and target priority lands to be preserved in their own regions. One example of this is The Nature Conservancy’s Conservation by Design initiative. This initiative lays out a conservation approach comprised of four fundamental components: setting priorities through ecoregional planning, developing

conservation strategies, taking direct conservation action, and measuring conservation success.

Virginia’s United Land Trusts (VaULT)

VaULT was organized in 2000 to address the growing interest and number of organizations involved in land conservation. It serves as an umbrella organization coordinating communications among more than 30 private land conservation organizations in Virginia.

The group’s goals are:

- To promote land conservation efforts statewide.
- To create or build land trust capacity.
- To foster greater coordination and communication between land trusts in Virginia.
- To coordinate private land conservation efforts with those of public sector agencies thus better enabling effective statewide conservation planning and green infrastructure promotion.
- To promote high professional standards for land trusts in Virginia.

An executive summary of the January 2004 VaULT strategic plan is found in Appendix H.

National and regional land conservation organizations

There are several national and regional land conservation organizations as well. Some focus on particular resources, and some provide generic information useful to all land conservation organizations. Just a few examples include the following.

- The Land Trust Alliance, which acts as the convener, strategist and representative of land trusts across America.
- The Trust for Public Land works to conserve land for people to enjoy as parks, community gardens, historic sites, rural lands and other natural places, ensuring livable communities for generations to come.
- The Conservation Fund works across all 50 states to preserve each region’s unique natural resources, cultural heritage and historic places.
- The American Farmland Trust is dedicated to protecting our nation’s strategic agricultural resources.
- The Nature Conservancy works to protect the land and water that plants, animals and natural communities need to survive.



Long-term conservation strategies include state lands like the Highland Wildlife Management Area. Photo by DGIF.

- The Chesapeake Bay Foundation works cooperatively with government, business, and citizens in partnerships to protect and restore the Chesapeake Bay.
- The Piedmont Environmental Council works to promote and protect the Virginia Piedmont's rural economy, natural resources, history and beauty.

Links to these and other organizations can be found at: www.dcr.virginia.gov/land_conservation/wheretof4.shtml.

State agency programs

There are numerous agencies in the Commonwealth with land conservation roles. Many are qualified to accept land or easements from landowners, and they carry out a wide variety of land conservation programs. In fact, the Virginia Outdoors Foundation holds more conservation easements than any other easement holder in the nation, as well as in Virginia. The VOF holds approximately 80 to 90 percent of all conservation easements in the Commonwealth.

State agencies qualified to accept land for conservation purposes include: those having authority to acquire land for a public use, counties or municipalities, park authorities, public recreational facility authorities, soil and water conservation districts, community development authorities, or the Virginia Recreational Facilities Authority. This authority is provided under the Virginia Open-Space Land Act (*Code of Virginia* §§10.1-1700 through 10.1-1705). This act provides public bodies with the authority to acquire properties or interests in property, or designate property for use as open-space land.

“Open-space land” means any land provided or preserved for 1) park or recreational purposes, 2) conser-

vation of land or other natural resources, 3) historic or scenic purposes, 4) assisting in the shaping of the character, direction and timing of community development, or 5) wetlands. Public bodies may also acquire fee simple title or other interests in real property, including easements for the conservation of farm and forestlands.

Virginia Outdoors Foundation

Website: www.virginiaoutdoorsfoundation.org

Contact: 101 N. 14th St., Richmond, VA 23219, (804) 225-2147

The Virginia Outdoors Foundation (VOF) was created in 1966 to promote the preservation of open-space lands and encourage private gifts of money, securities, land or other property to preserve Virginia's natural, scenic, historic, open-space and recreational areas. Open space easements are the primary mechanism VOF uses to accomplish its mission. VOF's easements protect a wide variety of natural resources, including watershed areas, settings for historic homes, scenic views, lands adjacent to public parks and game preserves, and more. Thanks in part to new state and federal financial incentives available to landowners with perpetual easements, the VOF conservation easement program has grown by leaps and bounds. In 1999, VOF put a little more than 11,400 acres under conservation easements, but in 2005, the program had grown such that VOF put conservation easements on more than 41,000 acres. At the end of 2006, VOF held easements on 2,066 properties with more than 400,000 acres in 98 local jurisdictions.

As the conservation easement program matures and land under easement changes hands, VOF must be in contact with heirs or new owners to make them aware of and understand the terms of the particular easement. Subsequent divisions of eased property result in many more individual properties in need of monitoring and stewardship. For these and other reasons, the VOF staff constantly responds to questions from landowners, prospective buyers, real estate agents and attorneys. Staff also reviews forestry plans, building plans and VDOT road projects to make sure easement values remain protected. This stewardship function of the conservation easement program is crucial to the overall success of the program.

Most of the foundation's operating expenses come from annual appropriations by the General Assembly. Other sources include donations, rental and interest income. Over the years, VOF has received private contributions for land purchases or other special projects. The General Assembly created the Open-Space

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Lands Preservation Trust Fund in 1997 to help landowners with costs of conveying conservation easements and to purchase all or part of the value of easements. Funding priority is given to applicants owning family farms, demonstrating financial need and for cost-only reimbursement projects. Visit www.virginiaoutdoorsfoundation.org/ptf.html for more information about the Open-Space Lands Preservation Trust Fund.

Virginia Department of Conservation and Recreation

Website: www.dcr.virginia.gov

Contact: 203 Governor St., Richmond, VA 23219, (804) 786-1712

DCR's mission is to work with Virginians to conserve, protect and enhance their lands, to improve the quality of the Chesapeake Bay and our rivers and streams, to promote the stewardship and enjoyment of natural, cultural and outdoor recreational resources, and to ensure the safety of Virginia's dams. As such, DCR is among the agencies authorized to acquire, by gift or purchase, areas, properties or lands of scenic beauty, recreational utility, historical interest or biological significance for the use, observation, education, health and pleasure of the people of Virginia.

Office of Land Conservation

Website: www.dcr.virginia.gov/land_conservation

Contact: (804) 225-2048

DCR's Office of Land Conservation was established to serve as a central contact point, repository and clearinghouse for land conservation across Virginia. Staff members also administer Virginia Land Conservation Foundation grants and serve as an important source of information for potential grant applicants. In addition, staff members oversee the conservation-value review of land preservation tax credits applications of \$1 million or more. The office's website includes a wide variety of materials and contact information to provide land conservationists and managers with land conservation planning tools.

Natural Heritage Program

Website: www.dcr.virginia.gov/natural_heritage

Contact: (804) 786-7951

For more information on the Natural Heritage Program, see chapter IX.

Virginia State Park System

Website: www.dcr.virginia.gov/state_parks

Contact: (804) 786-5046

For more information about Virginia's state parks, see chapter IX.

Virginia Byways and Scenic Highways Program

Website: www.virginiadot.org/programs/prog-byways.asp

Contact: (804) 786-1119

This program is a cooperative effort between the Department of Transportation and DCR. Since these scenic roads pass through some of Virginia's most attractive countryside, there is an effort to support donation of conservation easements along designated byway corridors. For more information on scenic roads, see chapter VII-E.

Virginia Scenic Rivers Program

Website: www.dcr.virginia.gov/recreational_planning/srmain.shtml

Contact: (804) 786-1119

For more information on scenic rivers, see chapter VII-F.

Virginia Cave Protection Program

Website: www.dcr.virginia.gov/natural_heritage

Contact: (804) 371-6205

The Virginia Cave Protection Act (*Code of Virginia* §10.1-1000-1008) was passed to conserve and protect caves, karstlands and cave geological resources, as well as to advocate the wise use of these resources. Program staff identifies significant caves, and provides cave management expertise, educational materials and conservation measures.

Virginia Land Conservation Foundation

Website: www.dcr.virginia.gov/vlcf

Contact: (804) 225-2048

The Virginia Land Conservation Foundation (VLCF) (*Code of Virginia* §§10.1-1017 through 10.1-1026) provides grants to state agencies and matching grants to other public bodies and holders to acquire fee simple title or interests in property for:

- ecological, cultural or historical resources;
- lands for recreational purposes;
- lands for threatened or endangered species, fish and wildlife habitat, natural areas;
- significant agricultural and forestal lands; and
- open space.

DCR helps administer, manage and protect VLCF's lands. The fund received \$1.75 million in FY 1999, \$6.2 million in FY 2000, \$3 million in FY 2005, and \$10 million in FY 2006. Another \$3.4 million was provided in FY 2000 solely for battlefield protection. Since the beginning of the program, grants have been awarded to 69 projects, conserving an estimated more than 20,000 acres of open-space land.

Virginia Department of Forestry

Website: www.dof.virginia.gov

Contact: Virginia Department of Forestry, 900 Natural Resources Dr., Charlottesville, VA 22903, (434) 977-6555

One of the Virginia Department of Forestry's (DOF) primary goals is to conserve Virginia's forestland base. Thousands of acres of forestland are lost each year to urban and other development. DOF manages more than 50,000 acres of state forestland and helps other state agencies manage state-owned forestland. The agency's mission is to "protect and develop healthy, sustainable forest resources for all Virginians." This statement indicates the agency's dedication to conserving "working forests" that provide forest products, wildlife habitat, water quality protection, recreation opportunities and aesthetic benefits. DOF professionals work with private, nonindustrial landowners, localities and other stakeholders to conserve, manage and protect Virginia's forests.

DOF programs include:

- Forest stewardship - forest management planning.
- Forest Legacy - forest conservation easements.
- Riparian restoration technical assistance.
- Urban and community forestry.
- Forest insect and disease assistance.

Forest Legacy Program

The Forest Legacy Program aims to protect and conserve important forests threatened by conversion to non-forest uses, such as development. Led by DOF, Forest Legacy is an important tool for preserving Virginia's forests through the coming years of anticipated, continued growth. Funded through the federal 1990 Forest Stewardship Act, Virginia may use Forest Legacy funds to purchase conservation easements or land. DOF plans to focus most of its efforts on purchasing conservation easements to enable conservation of the greatest amount of forestland. Priority will be given to threatened forestlands with important values such as the protection of water quality, fish and wildlife habitat, recreation, timber production, rare communities, or scenic and aesthetic characteristics. Visit www.dof.virginia.gov/mgt/index-flp.shtml for more information about the program.

Virginia Department of Historic Resources

Website: www.dhr.virginia.gov

Contact: Easement Program Coordinator, Virginia Department of Historic Resources, 2801 Kensington Ave., Richmond, VA 23221, (804) 367-2323.

The Virginia Department of Historic Resources (DHR) is the state's historic preservation office, whose mission is to foster, encourage and support the stewardship of Virginia's significant historical, architectural, archaeological and cultural resources. This commitment is achieved through a variety of programs, including the historic preservation easement program, state rehabilitation tax credit program, Virginia Landmarks Register, and a cost-share program for identification of historic resources, among others.

Historic Preservation Easement Program

Established in 1966, Virginia's Historic Preservation Easement Program allows historic landmarks to remain in private ownership, and consequently on local tax rolls, while simultaneously ensuring that the historically significant aspects of these landmarks will be preserved forever. The easements held by DHR, which represent the range of cultural history in Virginia, have been voluntarily donated by private owners, or given as a requirement of state grant funding in order to protect the public investment. All properties held under easement by DHR must be individually listed in the Virginia Landmarks Register, or determined by DHR to be a contributing resource within a historic district that is listed in the Virginia Landmarks Register. This program has grown exponentially; since 1995, the number of easement properties held by DHR has increased from 211 to over 400, and it continues to grow. For more information, see chapter VII-C.

Virginia Department of Agriculture and Consumer Services

Website: www.vdacs.virginia.gov

Contact: Farmland Preservation Coordinator, Virginia Department of Agriculture and Consumer Services, 1100 Bank St., Richmond, VA 23219, (804) 786-3501

The Virginia Department of Agriculture and Consumer Services (VDACS) promotes economic growth and development of the state's agriculture, encourages environmental stewardship and provides consumer protection.

Farmland Preservation

In 2001, the VDACS established an Office of Farmland Preservation. That office has a range of programs, including: the development of a model purchase of development rights (PDR) program that localities can use in developing their own PDR programs, creation of criteria for certification of local PDR programs as being eligible to receive grants from public sources, and identifying sources of revenue for localities to use in purchasing agricultural conservation easements. To develop the model PDR program, a Farmland

Land Conservation

Preservation Task Force was formed, comprised of representatives of public agencies, including Virginia Cooperative Extension, Virginia Tech, DOF, DCR, VOF, Department of Business Assistance, and others. The task force also included farmers, farm interest groups, representatives of the environmental community and the Virginia Association of Counties. The results of the Task Force's work can be found at www.vdacs.virginia.gov/pdf/files/pdf05.pdf.

Virginia Department of Game and Inland Fisheries

Website: www.dgif.state.va.us

Contact: Virginia Department of Game and Inland Fisheries, 1010 W. Broad Street, Richmond, VA 23230, (804) 367-1000

While a fundamental goal of the Virginia Department of Game and Inland Fisheries (DGIF) is wildlife habitat management, this work is consistent with land conservation efforts. DGIF's 30 wildlife management areas,

comprising about 190,000 acres, provide a rich variety of wildlife habitat suitable for hunting and fishing as well as viewing wildlife, unique plant communities and spectacular scenery. In addition to habitat management on its property, DGIF professionals share the technical know-how in restoring and preserving habitat with other state agencies, schools, private citizens, farmers and corporations. The agency offers various programs, information, workshops, publications and technical assistance on land management and conservation.

Virginia Wildlife Action Plan

The Virginia Wildlife Action Plan provides a common vision for wildlife conservation across the Commonwealth, identifying the important steps that we must all take to keep common species common and to prevent further decline, or possible extinction, of imperiled species. The plan can be found at <http://bewildvirginia.org/wildlifeplan>.

Green Infrastructure

As we partner to protect Virginia's outdoors, we must put balance at the center of land use decisions. We must create an effective model that encourages redevelopment in cities and suburbs and discourages the wasteful and unnecessary consumption of land farther out from our population centers. And we must reward communities that adopt and use balanced growth policies with economic development assistance and other incentives.

—Gov. Tim Kaine



Photo by Virginia Tourism Corporation.

"Green Infrastructure is our nation's natural life support system – an interconnected network of waterways, wetlands, woodlands, wildlife habitats and other natural areas; greenways, parks and other conservation lands; working farms, ranches and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources, and contribute to the health and quality of life for America's communities and people (Benedict and McMahon, 2006)."

Green infrastructure planning integrates outdoor recreation, open space, cultural resources and conservation lands into ongoing planning and land use management decisions. The 2007 *Virginia Outdoors Plan* encourages the state, regions and localities to employ green infrastructure land planning because it supports cost effective, sound economic development in harmony with land conservation, cultural resource protection and outdoor recreation. Using green infrastructure land planning guides development to less sensitive lands, which reduces time needed for permits, lowers costs of development, protects water quality and creates sustainable communities. Opportunities for strategically linking linear corridors of land together in this planning process maximizes environmental, habitat and human benefits of development created to meet the needs of growing populations.

Findings

- The long-term economic benefits more than offset the cost of acquiring and conserving green infrastructure lands.
- Green infrastructure planning supports implementation of multimodal transportation options and speeds up the process of approval for transportation needs.
- More than 77 percent of homebuyers consider natural open space as a community necessity and rank walking and bicycling trails high among desired community features. Increased property values demonstrate the premium landowners give to these amenities.
- Farms, forests and fisheries contribute significantly to Virginia's economy, both directly through their associated industries, and indirectly by supporting tourism and contributing to quality of life.

- Approximately 45,000 acres of Virginia's rural lands are converted annually to development.
- The VOP public input meetings indicated a strong desire by the public for walkable, livable communities.
- Land use tools for conservation authorized by state legislation are applied with varying degrees of regularity at the local level.

Recommendations

General

- The *Code of Virginia* should be revised to include green infrastructure planning objectives and the use of a green infrastructure land planning model in local comprehensive planning.

Leadership

- Green infrastructure planning needs to be coordinated between state agencies. This integration should include efforts that work in concert with green infrastructure planning, such as watershed management planning, strategic natural resource conservation, and cultural and historic resource planning. The interagency workgroup should develop a communications plan outlining ways to highlight economic and environmental benefits of green infrastructure, and identify proactive steps that ensure stakeholder input, boost public awareness, and expand citizen engagement in green infrastructure, watershed management and strategic conservation.
- Regional and state agencies should continue to educate and train leaders, elected officials and staff of local, regional and state government and conservation organizations about green infrastructure planning. Such training should include guidance on local zoning initiatives that can lead to changes in community design and transportation systems. Emphasis must be placed on the values of open space and the need to preserve it, as well as options for funding green infrastructure initiatives.
- Local governments should take the lead in securing green infrastructure through adoption and implementation of appropriate planning tools and policies.

Data development

- The Virginia Departments of Conservation and Recreation, Environmental Quality, Game and Inland Fisheries, Forestry, Transportation, Agriculture and

Consumer Services, Historic Resources and others should continue to invest in the maintenance and enhancement of critical spatial data for outdoor recreation and conservation. Input from and partnerships with the Virginia Association of Counties (VACo) and Virginia Municipal League (VML) should be incorporated into data development to build upon the work of the Virginia Conservation Lands Needs Assessment Workgroup.

- The Commonwealth should support the development of a Virginia Geographic Data Library (VGDL). The Florida Geographic Data Library (FGDL) could serve as a model for the development of a central data repository in Virginia. A VGDL should facilitate integration of the numerous spatial databases available to support strategic conservation activities and other natural resource and planning applications.

Funding

- State agencies and local governments should explore the use of available federal and state funding resources, including grants, foundations and transportation related funds, to support green infrastructure planning initiatives and conservation priorities at the local, regional and state levels.
- The benefits and importance of green infrastructure should be used to help state agencies and their conservation partners secure continuous and reli-

able conservation funding from both new and existing sources.

Local government initiatives

- Regional and local governments should adopt and implement the green infrastructure planning to ensure sustainable development of their community and a high quality of life for future generations.

(Reference: *The Conservation Fund: Virginia Green Infrastructure Scoping Study* www.greeninfrastructure.net/?article=2079&back=true)

Overview of green infrastructure

For the purposes of the 2007 *VOP*, green infrastructure refers to land planning that balances the benefits of open space with development. Green infrastructure planning emphasizes the importance of connections between blocks of open space, between developed and undeveloped areas and between society and the landscape. The use of a green infrastructure planning model results in the protection of undeveloped land and waterways that provide essential benefits to society – clean air, clean water, food, fiber, open space for recreation and a sense of place. Green infrastructure is integral to long-term effective management of natural and cultural resources that support ecological health and quality of life for citizens of the Commonwealth.



Green infrastructure considers natural resources alongside community needs. Photo by Nancy Sorrells.

Green Infrastructure

Typically, communities carefully plan and fund “gray” infrastructure, the roads, sewers, utilities and buildings before development occurs. The same level of investment and approval is needed for green infrastructure. Green infrastructure land planning encourages conservation of natural resources and directs development to suitable areas. Green infrastructure planning identifies and ranks vital natural resources in concert with other community needs and alongside gray infrastructure prior to development. This planning methodology guides land development and growth in ways that accommodate increased populations, but also protects natural resources providing long-term economic viability and community sustainability.

Need for green infrastructure in Virginia

Green infrastructure planning should be adopted in Virginia to facilitate development and reduce the loss of open space, agricultural and forest lands. Virginia's demographic trends that influence the need for green infrastructure are discussed in Chapter VIII. Green infrastructure networks are necessary to improve water quality and protect ground water recharge areas and drinking water supplies. These networks also provide opportunities for outdoor recreation and protection of cultural resources.

Further justification for adoption of green infrastructure planning is supported by research from The Conservation Fund, www.greeninfrastructure.net.

Transportation

Transportation decisions often drive land development. To facilitate change, green infrastructure and watershed management methodologies should be incorporated into local transportation planning. In Virginia, land use and zoning authority lies with the localities, while the state, with a few exceptions, has the responsibility for transportation decisions. There are few incentives for municipalities to cooperate with one another and the state on transportation and land use issues. Transportation problems can therefore result from the reluctance of localities to plan based on existing transportation infrastructure or to plan in the absence of a connection to transportation planning. Conversely, roads constructed before changes are made in local comprehensive planning may actually create a market for development and force changes in land use. The current tax structure and lack of adequate funding for roads make it very difficult for local governments to resist developers' prof-

fers that ultimately lead to a transportation system that lags behind development.

Efforts are currently underway to improve the land use and transportation connection. In its 2006 and 2007 sessions, the General Assembly took steps that allow local governments, with the assistance of the state, to better understand the transportation impacts of development decisions. The connections between land use planning and transportation are important and are being treated with high priority.



Route 11 corridor. DCR photo by Lynn Crump.

What does green infrastructure look like?

Green infrastructure is a network of ecologically significant blocks of landscape, called cores or hubs, which are connected by linear bands of green space, called corridors. These landscape components vary in size, function and ownership. Cores may be comprised of public parks, natural areas, working forests, farms and rural historic districts, while corridors may be scenic rivers, stream buffers, hiking trails and even scenic byways. Each component contributes to the economy, the physical and mental health of citizens, and the long-term viability of natural resources and communities.

The large landscape cores are important for several reasons. First, ecosystems function best on a large scale. The various natural communities and the many species that comprise them are highly interdependent. Take away a few species and many more may be lost. Second, many species require large blocks of interior habitat in order to prosper. These interior species do not compete well with those that concentrate on the edges. Human development such as roads, housing, power lines and other utility connections create abundant edge habitat. Third, fragmentation of habitats creates opportunities for the introduction and spread

of invasive species. Fourth, many ecological functions, such as cleaning the air and water of pollution, requires large expanses of forest and wetland. Lastly, businesses that rely directly on the land – primarily agriculture, forestry and tourism – are affected by economies of scale. Small, scattered farms and woodlots usually cannot support viable agricultural and forestal economies, nor are they attractive to tourists.

Corridors connecting the cores are also vitally important as avenues of travel for animals, plants and in some cases humans. Corridors allow for natural repopulation of areas that may have experienced a decline in certain species, and minimizes inbreeding by permitting the flow of genes between populations. Some environmentally sensitive features, such as stream courses, can only be protected with corridors. Linear corridors often offer scenic and recreational benefits, particularly when they follow rivers or trails.

Figure IV-1. Conceptual Model of VCLNA Natural Landscape Assessment



Both public and private lands make up green infrastructure networks. Some of the land may be publicly accessible, while other land is not. It is important for the public to understand that even though land may not offer public access, it may still provide community benefits such as scenic vistas, clean air, clean water, food, fiber and wildlife habitat.

Principles of green infrastructure

Green infrastructure principles provide a strategic approach to land conservation that benefits people, wildlife and the environment. Green infrastructure planning is based on sound science and land use planning theory and practice to integrate land conservation, outdoor recreation and existing cultural resources with land development. Green infrastructure planning involves input from landowners and other

stakeholders. Planning most often includes opportunities for making human connections and linkages alongside and within corridors. This type of planning serves as a fundamental building block for sustainable use of land that is good for the environment, the economy and communities.

Green infrastructure is cost effective

Over the long term, using a green infrastructure planning model and investing in green infrastructure lands can be much more economically effective than following current growth patterns.

Protecting watersheds

Investing in green infrastructure lands can often be more cost effective than conventional public works projects and can protect previously-made infrastructure investments. In the Roanoke area, American Forests conducted an urban ecosystem analysis to include Roanoke County, Roanoke City, and portions of Bedford, Botetourt, Craig, Franklin and Montgomery counties to determine how the landscape has changed over time.

The study found that since 1973, the ecology of the Roanoke area had changed dramatically. Forests have declined and urban development has expanded. The average tree cover declined from 40 percent to 35 percent. This tree loss resulted in a 17 percent increase in runoff, an estimated 515 million cubic feet of water. Assuming a \$2 per cubic foot construction cost to build stormwater retention ponds and other engineered systems to manage this runoff would total \$419 million. The stormwater capacity of this urban forest cover in 1997 was worth about \$2.04 billion, down from the 1973 value of \$2.46 billion, based on avoided stormwater retention facility construction. The tree canopy that was lost would have removed 2.93 million pounds of pollutants and 10 microns of particulate matter from the atmosphere annually at a value of approximately \$8.2 million per year.

Based on this analysis, the Roanoke area is studying policy for land use planning and growth management that considers the dollar values associated with green infrastructure when making land use decisions. In addition, consideration is being given to increasing and conserving trees and green space in urban areas. Geographic information systems and computer modeling are being implemented to track trends and changes over time (American Forests, June 2002).

Green Infrastructure

Outside the Commonwealth, localities in other states are using cost analysis to make land protection decisions. For example, in the 1990s, New York City avoided the need to spend between \$6 billion and \$8 billion on new water filtration and treatment plants by purchasing and protecting watershed land in the Catskill Mountains for about \$1.5 billion. Likewise, Arnold, Missouri has dramatically reduced the cost to taxpayers of disaster relief and flood damage repair by purchasing threatened properties and creating a greenway in the floodplain.

Planning for growth

Florida is studying a seven-county Orlando region to consider the possibility of an alternative green infrastructure based model for growth and development. Currently 850,000 acres are developed within Central Florida. If current trends continue, 1,163,000 acres of new land will be developed by 2050 at a cost of \$94.7 billion. The green infrastructure growth model projects that 420,000 new acres and 329,000 redevelopment acres will cost \$37.8 billion, which is \$56.9 billion less than the current trend figure. The savings in development cost by using the green infrastructure model would finance the high-speed rail, transit systems and land acquisition necessary to make the alternative green infrastructure model feasible.

The green infrastructure scenario is based on a balanced planning approach that conserves environmentally sensitive lands and develops higher density residential areas around light and high-speed rail. To build support for this new development trend model, outdoor recreational opportunities, especially trails, will be promoted for public access to citizens. (www.metrocenter.ucf.edu/projects_penndesign.php)

Economic development

A vibrant economy ensures the financial resources to maintain healthy ecological systems and environmental quality. Preserving land and natural resources is critical to a community's economic vitality. Natural open space and trails are prime attractions for potential homebuyers, increasing property values and thereby local tax revenues. Over 77 percent of potential homebuyers rated natural open space as "essential" or "very important," and walking and bicycling trails are among the list of attributes most desired by homebuyers. Open space, outdoor recreation, and a clean, visually attractive environment draw and retain businesses and improve quality of life. The direct effect of conservation land and green infrastructure on major industries in Virginia is important to long-term economic stability of the Commonwealth.



Salt marsh on College Creek. DCR photo by Irvine Wilson.

Green infrastructure in Virginia

Plans to develop a statewide green infrastructure system

www.dcr.virginia.gov/natural_heritage/vclna.shtml

DCR is currently developing the Virginia Conservation Lands Needs Assessment (VCLNA) to identify and prioritize natural resource conservation targets across the state to support green infrastructure planning in Virginia. Initiated as a tool for the Virginia Land Conservation Foundation, the VCLNA will have broad applications for land conservation planning and will be available to local and regional agencies and conservation organizations. The VCLNA uses geographic information systems (GIS) to map significant natural features. By choosing specific models and data sets, analysts will be able to use the VCLNA to highlight areas that are important for conservation.

This system will allow for analysis of location and data on:

- Large, unfragmented natural habitats.
- Concentrations of natural heritage resources.
- Key outdoor recreation areas.
- Prime agricultural lands.
- Significant cultural and historic resources.
- Important areas for sustainable forestry.
- Critical areas for drinking water protection and water quality improvement.
- Scenic resources.

In an effort to make the VCLNA a comprehensive green infrastructure land planning tool, additional datasets are being created for the various needs of public and private conservation partners. A workgroup that consists of representatives from the private sector and all levels of government are helping to inform and guide the process.

Data sets for use in the VCLNA include:

- Spatially explicit sites identified as priorities through existing plans, such as Partners in Flight priority sites.
- Local parks, and local, natural features, which are useful for green infrastructure identification.
- Wildlife diversity for State Comprehensive Wildlife Conservation Strategy planning.
- Recreational lands and identified recreation needs for the *Virginia Outdoors Plan*.

- Forest use and forest economic data for sustainable forestry decision making.
- Surface and ground water sources for drinking water protection.
- Biotic and abiotic factors that influence stream water quality.
- Historic and cultural resource locations for historic resource protection.
- Prime agricultural lands for agricultural reserves.
- Growth measures for vulnerability analyses.

Virginia Wildlife Action Plan

www.dgif.virginia.gov

To continue receiving funding through the State Wildlife Grants program, Congress asked each state to develop a Wildlife Action Plan, known technically as a Comprehensive Wildlife Conservation Strategy (see Appendix G). This annual appropriation began in 2001 as the Wildlife Conservation and Restoration Program and has continued since as the State Wildlife Grants program. As part of its charge to the states, Congress identified eight essential elements to be addressed in the development of the action plan:

1. Species of greatest conservation need.
2. Habitats that support species of greatest conservation need.
3. Problems that these resources face.
4. Actions needed to address these problems.
5. Strategies for monitoring the effectiveness of the action plan.
6. Coordination with key partners.
7. Public participation.
8. Processes for formal action plan review.

These plans examine the health of wildlife and prescribe actions necessary to conserve wildlife and vital habitat.

The goals of the Virginia Wildlife Action Plan are two-fold: First, to prevent wildlife from becoming endangered, and second, to keep common species common. The process for developing the plan was science-based and incorporated existing information and geographic information system analyses, as well as expert input and review.

Green Infrastructure

The action plan identifies actions needed to conserve wildlife and habitats in Virginia in each of the state's ecoregions. Actions contained in the plan also identify needs for improved coordination, enhanced education and outreach, land protection, enforcement, planning, and necessary laws, regulations and policies.

The plan focuses on the following wildlife conservation issues:

- Loss of wildlife habitat to development.
- Poor air and water quality due to pollution and sedimentation.
- Lack of funding for conservation programs.
- Lack of public conservation ethic.
- Conflicts between humans and wildlife.
- Invasive and non-native plants and animals.
- Need for better coordination between conservation partners.

Virginia's Wildlife Action Plan highlights wildlife conservation opportunities and makes information available that supports green infrastructure modeling and planning.

Virginia Department of Forestry (DOF)

The Department of Forestry funded the 2004 *Advancing Strategic Conservation in the Commonwealth of Virginia: Using Green Infrastructure Approach to*

Conserving and Managing the Commonwealth's Natural Areas, Working Landscapes, Open Space and Other Critical Resources. As an outgrowth of this study, DOF has taken the lead in training professionals, planners, outdoor recreational enthusiasts and conservation practitioners in how to begin to implement green infrastructure planning at the local and regional levels. The DOF, through the *State of the Forests report*, has also developed data related to open space lost to development in Virginia that is important to green infrastructure modeling.

DOF supports green infrastructure through the following:

- Forums or training sessions on green infrastructure.
- GIS information and critical lands data for green infrastructure modeling.
- Modest funding from the Urban Community Forestry Program for green infrastructure pilot projects.
- Appropriate marketing and media relations for green infrastructure.
- Support of land trusts, watershed organizations and other non-governmental agencies in the use of the green infrastructure land planning model to target important lands for protection.

Virginia's United Land Trusts

www.dcr.virginia.gov/land_conservation/tools02f.shtml

Virginia's United Land Trusts (VaULT) has written a plan identifying regional priorities for land conserva-



Farm in Augusta County. Photo by Nancy Sorrells.

tion in Virginia. The plan was developed in cooperation with DCR and DOF. Six public meetings were held across Virginia in 2002 to gather input from land conservation interests. Based on this input and information from other existing sources, VaULT wrote this plan to help organizations target their resources and efforts.

For more information about this project, see Appendix H.

Advancing strategic conservation in the Commonwealth of Virginia

www.greeninfrastructure.net/virginia

In the summer of 2002, The Conservation Fund (TCF) received funding from DOF's Urban and Community Forestry Assistance Program to investigate the institutional capacity, support and structure for a statewide green infrastructure network. The study looked at the current institutional situation within the state government, as well as the programs and resources available from other public and private entities working statewide and regionally in Virginia. The result of the project proposes that green infrastructure "can provide Virginia with a strategic framework for land protection and growth while promoting smart growth and smart development." Guidance received from public and private conservation professionals in Virginia indicated a need to create a broader framework to ensure buy-in at the state, regional and local levels.

Recommendations from the report, *Advancing Strategic Conservation in the Commonwealth of Virginia: Using a Green Infrastructure Approach to Conserving and Managing the Commonwealth's Natural Areas, Working Landscapes, Open Space, and Other Critical Resources*, have been incorporated into the 2007 VOP to address the Commonwealth's need for sound outdoor recreation and conservation planning based on local actions, and state and regional support for these local actions (Benedict and McMahon, 2004).

DCR promotes and supports watershed planning through the field offices of the Division of Soil and Water (www.dcr.virginia.gov/soil_&_water/wmp.shtml) and the Division of Chesapeake Bay Local Assistance (www.dcr.virginia.gov/chesapeake_bay_local_assistance).

Blue and green infrastructure efforts

www.deq.state.va.us/coastal/coastalgems.html

Virginia Coastal Zone Management Program's Coastal Geospatial and Educational Mapping System (Coastal GEMS) is designed to present spatial (i.e. maps) and nonspatial (i.e. textual information, fact sheets and links) information focused on the "best remaining"

green (land based) and blue (aquatic) resources within Virginia's jurisdictional coastal zone. The first version of this application was released in the fall of 2006. It will be continually updated and improved through advisory workgroups, training sessions and ongoing interactions with Virginia's stakeholders.

Regional and local strategic conservation and green infrastructure efforts

Several green infrastructure efforts are underway in Virginia at the local and regional levels. Plans for incorporating green infrastructure planning at a regional level have begun in the Hampton Roads, New River Valley, Thomas Jefferson, Crater and Richmond regions. The regional planning district commissions are a logical entity for coordination and managing this collaborative planning approach with localities.

Hampton Roads Conservation Corridor Study synopsis

The Hampton Roads Planning District Commission (HRDPC) has completed development of the Hampton Roads Conservation Corridor Study, a green infrastructure based approach to identifying a regional open space network. The project involved multiple opportunities for stakeholder involvement and included a public education element. A corridor network was identified utilizing GIS modeling to analyze data from a variety of sources, including the National Land Cover Dataset, the National Wetlands Inventory and the Virginia Land Conservation Needs Assessment.

One of the products is a summary map that identifies areas that are highly suitable for conservation. The suitability ranking is based primarily on water quality and habitat protection value. In addition, opportunities for connectivity between these areas are identified. By outlining a linked corridor system, opportunities to minimize habitat fragmentation and protect contiguous riparian buffers are highlighted. The Hampton Roads Conservation Corridor Study final project report, maps and associated GIS data are available on the HRPDC web site: www.hrpdc.org/newpep/HRCCS.shtml.

Local comprehensive plans

Section 15.1-446.1 of the *Code of Virginia* requires that every local government must "prepare and recommend a comprehensive plan for the development of the territory within its jurisdiction." This is done for

Table IV-1. Local Resources for Green Infrastructure Planning

Zoning Tools/ Policy Options	Administrative Tools	
Sliding Scale	Dedication	Proffers
Performance Standards	Deed Restrictions	Agricultural or Forestal Districts
Planned Unit Development	Impact Fees	Urban Growth Boundaries
Cluster Development	Development Incentives	Conservation Subdivision
Overlay Districts	Adequate Public Facilities	Purchase of Development Rights
Transfer of Development Rights		Land Banking

“the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.”

The comprehensive plan serves as a planning tool rather than a regulatory device and generally includes two components: the policy plan and the land use plan. The policy plan outlines the community's goals and objectives for land use, transportation and housing, while the land use plan, usually a map, shows the location of planned land uses. This includes areas planned for environmental protection as well as future growth. Although not required by law, all communities should include an open space and recreation component within their comprehensive plans. They can also include conservation areas, agricultural areas and forestry areas, where appropriate.

As a significant element in a complete assessment of area resources, an open space and recreation plan evaluates local assets and needs. It also provides criteria and direction for protecting resources, acquiring open space, and focusing on the implementation of appropriate planning and land protection mechanisms. To be successful, each plan must be tailored to the unique characteristics of the community for which it is developed and should include input from members of the community that the plan will serve. The local comprehensive plan is intended to provide guidance to all public and private entities engaged in land use decision making, including governmental agencies, private nonprofit organizations, commercial developers and individual landowners.

Zoning tools

Zoning is the traditional method by which Virginia counties and municipalities direct development. If it is consistent with the goals and objectives of the locality's comprehensive plan, zoning can effectively mini-

mize impacts on significant or unique natural features. There are two types of zoning utilized by local government agencies, conventional zoning and conditional development. Conventional zoning allows for the development of a property “by right” and is subject to the conditions of the applicable zoning category. Conditional development is subject to government-imposed administrative requirements, or may reflect the developer's voluntary agreement to provide certain amenities to offset the impacts of development as a condition of rezoning to a more intensive land use.

Overall, local jurisdictions that create zoning districts with the intent to preserve open space are more apt to preserve large areas of land, and in turn, large ecosystems. Subject to the changing political climate in which it is developed and subsequently implemented, zoning is sometimes criticized as a temporary solution to long-term, emerging problems.

Zoning tools that can be used by local governments to preserve open space include:

Sliding scale zoning

In this case, a baseline number of development rights for a parcel is granted. The number of development rights subsequently permitted above the base number is inversely proportional to the size of the parcel developed. This approach is most effective when applied in rural counties before large tracts have been subdivided and development pressures mount.

Performance standards or zoning

This approach encourages innovative site plans that minimize negative impacts on natural features, including open space. In this case, standards and zoning are based on permitted impacts rather than uses. Factors considered in site plan review include design, local growth rate, existing and proposed infrastructure, and municipal services. Performance zoning targets single or multiple impacts and can supplement or replace traditional zoning regulations.

Planned unit developments (PUDs)

PUDs usually include mixed uses that are clustered so that individual lots are small and open space is preserved. This allows for flexible development practices while continuing to meet overall density and land use goals. Communities often require that PUDs set aside a portion of the developed area for recreation, open space uses or both. Frequently, such developments include deed restrictions that are transferred with the title whenever the property is sold. These restrictions are constraints on the property use recorded in the property's deed.

Cluster development

Cluster developments allow residences to be grouped on a portion of a site to preserve the remaining open space, agricultural land or a unique natural feature. The property owner is given the right to increase the density of development beyond applicable zoning regulations in one section of the site in return for leaving the remainder as open space. Clustered development also reduces infrastructure costs for roads and storm water management systems by as much as one-half the total cost of conventional development strategies, thereby creating major economic incentives to developers.

Reston's design reflects clustered development. The City of Charlottesville and its surrounding counties use this approach to preserve the area's rural character.

Overlay districts

By superimposing an additional district boundary or designation (for example, a floodplain district) over existing zoning, the overlay creates a supplementary set of regulations to protect specific features such as drinking-water reservoirs, vulnerable watersheds, viewsheds and other natural or unique features worthy of protection.

Governmental and administrative tools

Dedications

As a condition to obtaining approval to build, localities often work with land developers to determine how much of the land being developed will be dedicated to open space.

Development incentives

Types of incentives include bonus densities offered to landowners or developers who wish to set aside large portions of their land, usually more than half, as open space.

Impact fees

These fees are assessed to the developer to help fund

infrastructure and public amenity costs generated by new development. Impact fees may be applied to off-site and on-site improvements. Localities in Virginia have very limited authority for impact fees.

Adequate public facilities

In some states, the adequacy of services available to the type, timing and amount of land use demand are taken into consideration in zoning approvals. Concurrency policies require that public facilities be available to support development as it occurs. Although used in some other states, Virginia's legislature has not yet provided authorization to localities to consider adequate public facilities when granting development permits.

Policy option tools

Proffers

Used widely in Virginia, proffers mitigate development impact through the construction of public improvements or the donation of land or cash. Proffers have been used successfully to create vegetated buffers and open space for playgrounds within new developments on a localized scale, but are of limited use in preserving large areas as open space. The 2006 session of the General Assembly passed legislation that allows localities with population growth of 5 percent or more, and some adjacent localities, to include provisions pertaining to proffers in their zoning ordinances (*Code of Virginia* §§15.2-2298 through 15.2-2303.2).

Agricultural and forestal districts

These districts are created by agreement among landowners and the local government, and consist of a minimum of 200 acres that must be kept in agricultural, horticultural, forestal or open space use for four to 10 years, as specified by the agreement. Property owners may not subdivide their property for the term of the agreement. Landowners may withdraw from the program under certain defined circumstances. In exchange, the community agrees to minimize the impact of adjacent development on agriculture. The property is taxed at the use value tax rate whether or not a local ordinance for use value exists. For more information about land use value assessments and taxation, see Chapter II: Land Conservation.

Urban growth boundaries

Goals associated with the establishment of an urban growth boundary include containing urban sprawl and providing for an orderly transition from urban to open space uses. Strong regional planning and cooperation among localities is essential to success. The low cost of implementation and the ease with which this tool could be combined with a transfer of development rights program are primary advantages.

Conservation subdivision and limited development

This approach protects identified significant natural, historic, archaeological or unique features on a parcel by limiting development to a specified section to protect and preserve its significant features. This approach may be combined with the donation or sale of a conservation easement to assure resource protection.

Purchase of Development Rights (PDR)

In this case, the landowner is paid the difference between the value of the land based on its development potential and its value at its existing use. Once acquired, the property's development rights are extinguished by placing a conservation easement on the property that perpetually protects the conservation values associated with that land. Although government programs benefit from a dedicated source of stable revenue, funding sources for PDR programs vary between jurisdictions. Under Virginia law, service districts may be created to allow local governments to impose special assessments to generate funds, which may be used for the purchase of development rights determined to be of benefit to the community.

Table IV-2. Localities with Purchase of Development Rights (PDR) Program

Locality Name	PDR Program Status
Albemarle	developed - funding
Augusta	not developed - funding
Clarke	developed - funding
Culpeper	development in progress
Cumberland	development in progress
Fauquier	developed - funding
Franklin	development in progress
Frederick	developed - no funding
Gloucester	possible development
Halifax	possible development
Hanover	possible development
Isle of Wight	developed - funding
James City	developed - funding
Loudoun	developed - no funding
Nelson	developed - no funding
New Kent	developed - funding
Northampton	developed - funding
Rappahannock	developed - funding
Rockbridge	developed - funding
Shenandoah	possible development
Spotsylvania	developed - funding
Stafford	developed - funding
City of Chesapeake	developed - funding
City of Virginia Beach	developed - funding

(VDACS, May 2007)

Transfer of Development Rights (TDR)

The 2006 General Assembly authorized localities to establish a limited voluntary TDR program upon adoption of a local ordinance. TDRs, like PDRs, compensate landowners for reductions in their ability to develop the land and help preserve open land deemed important by the locality. Under a TDR program, development rights, or density units, are transferred from an area where preservation is desired (the "sending area") to an area that is more able to accommodate a higher density (the "receiving area"), usually an area with existing infrastructure. In this case, the developer, who stands to profit from the higher density in the development area, pays the landowner directly for the development rights. In a voluntary program, existing zoning in the sending area remains until a TDR sale or transaction occurs. Then the land is "downzoned," which means the density of permitted development is restricted.

Green infrastructure keys to success

Drawing on work underway in states, regions and communities across the country, steps to a successful green infrastructure initiative include:

- Create a leadership group to guide the green infrastructure initiative.
- Design a green infrastructure network to link green space components across scales and political boundaries.
- Develop an implementation plan to make the network design a reality.
- Prepare a management and stewardship plan that meets the restoration and maintenance needs of all green infrastructure network components.
- Inform and seek input from the public on green infrastructure network design and plan.
- Integrate green infrastructure into the planning processes of local, state and federal agencies and other community and regional planning efforts.
- Sell the public on the benefits of green infrastructure and the need for a green infrastructure network design.
- Build partnerships with the people and organizations that can help support and sustain the green infrastructure initiative.

(Source: Green Infrastructure by Mark A. Benedict and Edward T. McMahon. © 2006 The Conservation Fund. Reproduced by permission of Island Press, Washington, D.C., Table 4.1, p. 86.)

Community design trends

In many areas, the use of the automobile and the building of roads leading from traditionally urbanized centers to the suburbs have created a pattern of growth along linear corridors to accommodate low density, large lot development outside of the urban center. This pattern has resulted in fewer people living on more acres of land than in the past. These communities consume large acreages of land and fragment open space and natural areas, which stresses land and natural resources. These communities are not walkable and the automobile is essential for mobility. Green infrastructure planning creates an alternative development concept where environmentally sensitive land is purchased for preservation and regional transit systems are implemented. As development is proposed, the following community design methodologies may be incorporated into green infrastructure planning.

For the city is not a hostile and alien entity thrust upon the natural environment. The urban organism, like most others, depends for its well-being upon pure water, clean air, and productive soil. Problems of land use, water development, pollution, and wise use of natural resources are the concern of city and countryside alike.

—Robert C. Weaver, North American Wildlife and Natural Resources Conference, Houston, March 1968.

Community design planning methodologies for improved quality of life

Green infrastructure planning methodology may incorporate varied programs that address quality of life. A summary of methodologies that integrate outdoor recreation, cultural and natural resource conservation into planning include the following concepts.

Green infrastructure as defined by the Conservation Fund and the USDA Forest Service is the nation's life support system – a strategic and managed network of wilderness, parks, greenways, conservation lands and working lands with conservation value that supports native species, maintains ecological processes, sustains air and water resources, and contributes to the quality of life within communities. (www.greeninfrastructure.net)

Sustainable development recognizes the need to accommodate growth in a manner that preserves the character of the community, protects environmental resources and enhances economic vitality. It can be

practiced over time without depleting the existing or future natural resource base. Sustainable development is an ecological model that weighs economic development against the loss of open space, farmlands, forests and natural areas. Sustainable development may be achieved through green infrastructure planning. (www.epa.gov/sustainability and www.vsb.org).

Smart growth promotes revitalization, redevelopment and infill in urban and suburban areas and encourages development around established community centers already served by utilities and other public facilities. Smart growth links sustainable development with the availability of infrastructure, water and land based resources to support the community. (www.smartgrowth.org)

The Smart Growth Implementation Assistance Program is administered by the Development, Community, and Environment Division in U.S. EPA's Office of Policy, Economics, and Innovation. Through this program, a team of multidisciplinary experts provides free technical assistance to communities, regions or states that want to develop in ways that meet environmental and other local or regional goals. For more information and application materials, please go to www.epa.gov/smartgrowth/sgia.htm.

Active living, as promoted by Active Living by Design, promotes environments that offer choices for integrating physical activity into daily life. This philosophy recognizes the role transportation has, not only in how people move from place to place, but also in the character of the communities and choices and opportunities people are provided. (www.rwjf.org)

Livable communities are described as being attractive, walkable, have quality of public space, a variety of uses and building types, provide connection to people and their daily needs and places to walk for pleasure. (www.livable.com)

Leadership in Energy and Environmental Design (LEED) for Neighborhood Development was developed by the U.S. Green Building Council. The guidelines and rating system may be helpful in planning community design as a part of green infrastructure. (www.usgbc.org)

Context sensitive solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers total

context within which a transportation improvement project will exist. (www.contextsensitivesolutions.org)

New urbanism is a development strategy that addresses growth issues to reduce traffic, create sustainable development and make smart transportation investments by creating communities that are livable, walkable and sustainable, which raises the quality of life. (www.newurbanism.org)

Placemaking is addressed by the Project for Public Spaces. The goal of placemaking is to create a place that has both a strong sense of community and a comfortable image, as well as a setting for activities and uses that collectively add up to something more than each individual feature of a design. (www.pps.org)

Awahnee principles, espoused by the Local Government Commission for economic development, emphasizes community and regional collaboration that embraces economic, social and environmental responsibility for building prosperous and livable places. (www.lgc.org)

Low Impact Development (LID) is a comprehensive land planning and engineering design approach with a goal of maintaining and enhancing the pre-development hydrologic regime of urban and developing watersheds. This design approach incorporates strategic planning and implements various land planning and design practices to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. Goals of LID incorporate preserving open space and minimizing land disturbance, protecting sensitive natural features and natural processes and identifying and linking on-site and off-site green infrastructure. (www.lowimpactdevelopment.org and www.huduser.org/Publications/PDF/practLowImpctDevel.pdf)

Walkable Communities was established in the state of Florida in 1996. It was organized for the express purposes of helping whole communities, whether they are large cities, small towns, or parts of communities, become more walkable and pedestrian friendly. The Walkable Communities, Inc. reports that the key to urban ground transportation is the ability to walk in a

community. Urban communities that adequately accommodate pedestrians generally promote the sustainability of natural and economic resources, encourage more social interaction and physical fitness, as well as have fewer crime and other social problems. Walkable communities are pleasant and enjoyable communities that help people lead whole, happy and healthy lives. (www.walkable.org)

Traffic Calming involves techniques to minimize the impact of traffic by imposing elements of human scale and employing methods to slow traffic in pedestrian areas. Widened roadways constructed to facilitate increased traffic have severed more and more communities, making safe facilities for pedestrians limited. The American Society of Landscape Architects and the Federal Highway Administration, among others, are proponents of traffic calming measures that integrate pedestrians and bicyclists safely alongside vehicular traffic. (www.trafficcalming.org and www.fhwa.dot.gov/environment/tcalm)

Additional Resources for Green Infrastructure

The Conservation Fund (TCF) - This non-membership, non-advocacy organization is one of America's foremost conservation nonprofits that has led the way in promoting strategic land conservation through green infrastructure. www.conservationfund.org

Nonpoint Education for Municipal Officials (NEMO) – An educational program for local land use officials that addresses the relationship of land use to natural resource protection. www.nemo.uconn.edu

Active Living Leadership - A national partnership initiative supported by the Robert Wood Johnson Foundation to help state and local leaders create and promote places, policies and programs that enable active living and healthy eating. www.activelivingleadership.org

Community and Environmental Defense Services (CEDS) – Helps people defend their community and environment from the impact of sprawl and other flawed development projects. A nationwide network of attorneys, planners, environmental scientists, traffic engineers, political strategists, fundraisers and other professionals. www.ceds.org

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Freshly fallen snow blankets trees in Albemarle County. Photo By DOF.

Economic Benefits of Recreation, Tourism and Open Space

Communities around the country are learning that open space conservation is not an expense but an investment that produces important economic benefits.

—Trust for Public Land



U. S. Field Hockey National Training Center. Photo by City of Virginia Beach Parks and Recreation.

Six reasons why parks, recreation, open space and land conservation make good economic sense:

- Parks and open space often increase the value of nearby properties, along with property tax revenue.
- Parks and open space attract businesses and trained employees in search of a high quality of life.
- Parks and open space attract tourists and boost recreational spending.
- Parks and open space reduce obesity and health care costs by supporting exercise and recreation.
- Working lands, such as farms and forests, usually contribute more money to a community than the cost of the services they require.
- Conserved open space helps safeguard drinking water, clean the air and prevent flooding—services provided much more expensively by other means.

Adapted from The Trust for Public Land, Spring 2006.

Introduction

Communities can grow smart, attract investment, revitalize urban areas and boost tourism, all while safeguarding the environment and preserving parks and open space. The Trust for Public Land, in their publication, *"Economic Benefits of Parks and Open Space: How Land Conservation Helps Communities Grow Smart and Protect the Bottom Line,"* demonstrates that local governments can protect the environment and benefit economically.

Outdoor recreation is a key component of boosting local tourism. Many localities are now recognizing that by providing lands for outdoor recreation, they are able to attract tourists to their area. Hiking, camping, biking, birding, boating, fishing, swimming and skiing are some of the more popular recreation activities supported by public and private parks and open space.

Many of the same economic benefits associated with parks and open space are also associated with a strong program of recreation activities and sports. Residents and businesses looking to locate in a com-

munity examine recreation programs available to youth, adults and senior adults as an important "quality of life" factor. Communities that offer quality recreation programs can reduce crime and delinquency and increase the overall health of their citizens, thus demonstrating that recreation programs are great community investments.

Findings

- Tourism spending in Virginia reached a new high in 2005 of \$16.5 billion, which is a 9.6 percent increase over the 2004 figure of \$15 billion. Preliminary data from the Virginia Tourism Corporation (VTC) also indicates that 207,000 Virginians are directly employed in the tourism industry, with a total 2005 payroll of \$4.1 billion.
- Virginia State Parks report 741,043 overnight visitors and 6,255,332 day-use visitors to the parks in 2005. Using a formula that is calculated by \$75 daily spending for each overnight visitor and \$16 daily spending for each day use visitor, the direct economic impact of state park visitation was \$155,663,537 statewide.



Virginia Creeper Trail. Photo by Virginia Tourism Corporation.

- Three 2004 studies conducted for the Virginia Department of Conservation and Recreation (DCR) assessed the demographics, preferences and economics of the Washington and Old Dominion (W&OD) Trail, the Virginia Creeper Trail (VCT), and the waterway at New River Trail State Park (NRTSP).
- The W&OD Trail had an estimated 1.7 million users who annually spent \$12 million related to use of the trail.

Economic Benefits of Recreation, Tourism and Open Space

- VCT users, including locals and nonlocals spent about \$2.5 million over the sample period related to recreation visits. Of this amount, nonlocal visitors spent about \$1.2 million directly in the Washington and Grayson County economies, supporting close to 30 jobs.
- When looking at the waterway at NRTSP, the estimated 155,000 visits for water-based recreation accounted for \$5 million in total spending.
- In 2005, Virginia Tech's Office of Economic Development (OED) completed an economic impact assessment study of the Blue Ridge Music Center (BRMC) for the National Council for the Traditional Arts in cooperation with the National Park Service. The study examined the potential impact on jobs, spending and taxes to the Galax area of the BRMC expansion. The BRMC, through its mission, philosophies, location, new audiences, programs and exhibits, serves as a primary component of the larger regional efforts such as the Virginia Heritage Music Trail, also known as the "Crooked Road Project." www.econdev.vt.edu/clients.html#Tourism
- According to a December 2005 report from the Virginia Institute of Marine Science, recreational salt-water fishing in Virginia generated \$824 million in sales, \$478 million in income and 9,090 jobs.
- In Virginia in 2005, 14,520,721 visitors to National Park Service sites had an economic impact of \$263 million supporting 6,100 local jobs.
- Economic impact studies on the economic benefits of parks, recreation and open space specific to Virginia were not always available. Thus, information taken from other states and regions, as well as national research, was used to demonstrate these economic benefits.
- In Dallas, Texas, homes facing one of the 14 parks studied were found to be worth 22 percent more than homes a half-mile away from such an amenity (Miller, 2001).
- In Portland, Oregon, 193 parks ranging in size from .2 acres to 567.8 acres were, as a group, found to have a significant positive impact on the value of properties within a straight line distance of 1500 feet (Bolitzer & Netusil, 2000).
- The U.S. Fish and Wildlife Service conducted a survey of Americans on their participation and expenditures on fishing, hunting and wildlife-associated recreation. Survey findings are available at this website: <http://federalaid.fws.gov/surveys/surveys.html>
- Natural open space and trails are prime attractions for potential homebuyers. American Lives, Inc. con-



Environmental Education at Smith Mountain Lake 4-H Center. Photo by Franklin County High School.

Economic Benefits of Recreation, Tourism and Open Space

ducted a study of homebuyers for the real estate industry. They found that 77.7 percent of all homebuyers and shoppers who participated in the study rated natural open space as “essential” or “very important” in planned communities. Walking and bicycling ranked third. (www.americanlives.com)

- Properties next to the Mountain Bay Trail in Wisconsin sell faster and for an average of 9 percent more than similar lots away from the trail. (Brown County Planning Commission)
- Homes near the Monon Trail in Indiana command selling prices 11 percent higher than other homes in the area. (Central Indiana Center for Urban Policy and the Environment)
- Direct expenditures by birders visiting eight selected national wildlife refuges in the United States ranged from \$500,000 to \$14.4 million per refuge per year.
- One major component of ecotourism is education about the local culture or aspects of the natural environment. In the 2006 *Virginia Outdoor Survey*, 82 percent of Virginians felt that it was either “very important” or “somewhat important” to provide environmental education in Virginia state parks.
- Parks and open space create a high quality of life that attracts tax-paying businesses and residents to communities. Corporate CEOs report that employee quality of life is the third most important factor in locating a new business. Small company owners say recreation, parks and open space are the highest priority in choosing a new location for their business.
- Youth and adult sports events are major contributors to local tourism visitation, as are nonsport special events and festivals often sponsored by local parks and recreation departments.
- In Virginia Beach, the Sports Marketing Event Support Program is a program designed to assist organizations in attracting sports opportunities that meet one or more of the following criteria: generate year-round overnight visitation, contribute to the quality of life in Virginia Beach through sport, generate regional and national media exposure for the City, and increase out-of-area economic impact. The goal of this grant program is to attract high quality amateur and professional sporting events, conferences and meetings, which advance and promote year-round tourism, economic impact and quality of life in the City of Virginia Beach through sport.
- The James River Advisory Council publishes an annual brochure called James River Days promoting a variety of activities sponsored by both public and



Princess Anne Athletic Complex. Photo by City of Virginia Beach Parks and Recreation.

private organizations that occur on and along the James River from April to September. The brochure is a cost-effective partnership that promotes river activities and enhances the economic viability of the River and surrounding community.

- The USDA Forest Service reports that properly cared for trees are valuable and growing assets, worth three times their investment. In a year, 100 mature trees remove 53 tons of carbon dioxide and 430 pounds of pollutants from the air, and catch 538,000 gallons of rainwater. They can save homeowners 20 percent on air conditioning costs and 2 percent on heating costs. Trees can also raise property values, each front yard tree can add 1 percent to the sales price and a large specimen tree can add 10 percent to the value of a house.
- In their 2002 Urban Ecosystem Analysis, American Forests measured a 32 percent tree canopy cover in the Roanoke Metropolitan Region. A goal of 40 percent was then recommended to them. Less than a year later, the Roanoke City Council passed an Urban Forestry Plan as part of their comprehensive plan. The plan's top priorities are to achieve the 40 percent citywide tree canopy goal within 10 years and to plant enough public trees to reverse the current annual net loss.
- Software such as the Money Generation Model 2 (MGM2) can be used to estimate the economic impacts of visitor spending on a local region. MGM models estimate visitor impacts on local economy in terms of contributions to sales, income and jobs in the area. The MGM produces quantifiable measures of park economic benefits that can be used for planning, concessions management, budget justifications, policy analysis and marketing. (<http://web4.canr.msu.edu/mgm2>)

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Devil's Backbone State Forest in Shenandoah County. Photo by DOF.

- Programs such as CITYgreen can conduct complex statistical analyses of ecosystem services, create easy-to-understand maps and reports, and calculate dollar benefits based on specific site conditions. (www.americanforests.org/productsandpubs/citygreen)

Recommendations

- Natural resource and parks and recreation professionals at all levels need to promote the economic benefits of parks, recreation and open space to the public, as well as to policy makers and government leaders.
- Additional scientific studies should be conducted to evaluate the economic impact of parks, recreation and open space in the Commonwealth of Virginia. These studies can be used to inform and influence decision makers in support of recreation and open space projects.
- As a part of green infrastructure planning initiatives, each locality in the Commonwealth should develop a parks, recreation and open space plan that will identify important natural resources, identify future park and open space sites and identify public access opportunities. The economic benefit for open space, conservation and outdoor recreation should be included in the open space plan for each locality. A plan to fund the acquisition and development of these important natural resource investments should be integrated in to local budgets.
- DCR and VTC should develop a survey on outdoor recreation resources, including parks, blueways, trails and natural areas.
- Localities should consider using new technologies for evaluating economic models that assess the impact of parks, recreation and open space. State

agencies working on green infrastructure databases and modeling may in the future incorporate economic valuations of these lands.

- Localities should invest in protecting and enhancing their tree inventory. Trees provide environmental and aesthetic benefits, as well as energy savings, stormwater runoff reduction, cleaner air and higher property values.
- Public agencies need to identify eco-tourism, cultural tourism and outdoor recreation opportunities in their area, package the experiences and market them to attract additional tourists to their locality.
- Localities should seek to attract sport and recreation tournaments and events, as well as to sponsor special events and festivals that showcase their community and increase the economic vitality of their area.

In 2004, Prince Edward County commissioned a study entitled "*Evaluating the Economic Impact of the Proposed High Bridge Rail-Trail State Park.*"

- The study estimated 68,000 visitors per year that would have over a million dollar economic impact on the nearby community.
- The unique position of the region in Civil War history is expected to attract an additional 15,850 visits to the trail each year with an economic impact of \$295,127.
- Leisure travelers that visit the region because of local colleges or Green Front Furniture Store contribute 8,400 visits per year and an economic impact of \$156,408.
- Trail related walk and run events are also expected to realistically attract 2,500 visitors resulting in an additional \$33,500 in regional sales.
- A multi-day festival in Farmville could attract 20,000 visitors with an economic impact of \$501,900.
- Trail related activities could attract a total of 115,000 annual visits with a \$1.9 million impact.

Value of parks and open space

Municipalities are finding that the preservation of open space and parks is a wise investment and saves tax dollars. Green infrastructure and open space conservation are often the cheapest way to safeguard drinking water, clean the air and achieve other environmental goals. Forested lands control erosion, help clean the air of pollutants, absorb carbon dioxide and

other harmful greenhouse gasses, and help shelter our houses from heat and wind. Wetlands serve as wildlife habitat, absorb storm and flood water, and reduce pollutant and sediment loads in watershed runoff. Without wetlands, society would have to pay to engineer these services; however, these services are provided at no additional cost if adequate wetlands are preserved in the watershed.

The economic effects of building parks and protecting open space are sometimes easily identified, as in the case of a camp store located next to a park entrance. However, the economic connection to quality of life is subtle and difficult to ascertain. For example, when the deciding factor for locating a company in a particular community is the quality parks and recreation facilities and open space within the community, the exact economic value of these resources is difficult to determine. Many communities across the country have experienced an economic revitalization due, in whole or in part, to the development of parks or the preservation of open space. There is growing evidence of the positive impact of parks and open space on the economic vitality of a community.

While those working in the natural resource and parks and recreation fields have known the importance of natural resources for years, it is becoming better known by other professions and politicians that these resources contribute both directly and indirectly to quality of life and to economic viability of all communities across the Commonwealth.

Urban areas benefit from parks, community gardens and recreational open space through stimulated commercial growth and inner-city revitalization. The City Parks Forum, supported by the American Planning Association, describes the role of urban parks today: "They provide formal and informal gathering places for building community. They help positively influence property values. They give city dwellers a place to connect to the natural world. They make our urban areas more inviting for living, working and relaxing."

Parks contribute to a high quality of life that attracts businesses and residents to a community, and localities benefit from the higher real estate values associated with parks and open space protection. Because of increased property value, real estate near parks generates additional tax revenues. In some cases, increased tax revenues can pay for the cost of the park in a fairly short period of time.

Although a few studies have been conducted to assess the economic value of key outdoor recreational



Skyline Caverns near Front Royal. Photo by Nancy Sorrells.

resources in Virginia, there is a need for additional studies to document the wide range of benefits that open space and parks provide. Several studies and economic models done nationally and in other states are listed in the findings section of this chapter. These studies and resources should help local government to better identify and demonstrate the long term economic value of land conservation and support them in making stronger recommendations for investing in parks and open space.

Tourism

Recreation and tourism are many times synonymous. Both bring enormous economic value to localities throughout the Commonwealth. In order to maximize the impact of recreation and tourism politically, specific goals and objectives should be included in the comprehensive plan for each locality. In addition, strategic plans and budgets that facilitate the incorporation of parks, recreation and open space in tourism efforts need to be made at the local and state levels.

Virginia is famous for its history and scenic landscapes. Visiting historic and cultural sites is a major

Economic Benefits of Recreation, Tourism and Open Space

attraction of tourists in the state. Recent tourism initiatives include Virginia's invitation to the world in 2007 to commemorate the 400th anniversary of the founding of Jamestown. Festivals, exhibits and educational programs will share the legacies of Jamestown—where our representative government, political traditions, commercial enterprise system, cultural diversity and language began. Visitors will learn about history, while contributing to the economic vitality of the Commonwealth. To a smaller extent, there are annual festivals across Virginia celebrating shared culture, while providing economic rewards for the sponsoring communities.

Scenic views and vistas are also major attractions for travelers. Natural beauty and quality of the view were found by the Commission on America's Outdoors to be the most important criteria for tourists seeking outdoor recreation sites.

Value of recreation programs

Quality community athletic and recreation facilities can contribute to the local economy. By hosting local, regional, state and national tournaments and events, localities benefit from tourist dollars spent at local businesses, such as hotels and restaurants.

While the direct economic benefits of hosting these events may be fairly evident in sale of hotel rooms and meals at restaurants, it takes some time and diligence



Youth Soccer. Photo by Chesterfield County Parks and Recreation.

to demonstrate the long-term economic benefits of ongoing, local recreation programs. For example, youth sports programs have costs associated with them, and when local government budgets are limited, these programs must compete with schools, law enforcement and other important services for local dollars. The long-term economic benefits to the community may be tougher to determine, but evidence shows that participation in youth sports has verifiable benefits that reduce costs to individuals and the overall community. Study after study has shown that participation in youth sports helps reduce juvenile delinquency, increases productivity and supports a healthy lifestyle over the life span.

The Crooked Road

A wonderful example of a community and region assessing their cultural resources and promoting them to provide an economic boost is Virginia's Heritage Music Trail, "The Crooked Road," which is a driving route through the Appalachian Mountains from the western slopes of the Blue Ridge to the coalfields region of the state. The trail connects major heritage music venues in the Appalachian region such as the Blue Ridge Music Center, Birthplace of Country Music Alliance and the Carter Family Fold. The traditional gospel, bluegrass and mountain music heard today was passed down from generation to generation and lives on through a wealth of musicians and instrument makers along the trail. Annual festivals, weekly concerts, live radio shows and informal jam sessions abound throughout the region. In addition, this region is also rich in other cultural and natural assets, particularly crafts and outdoor recreation. A wide variety of traditional handcrafted woodwork, weaving and pottery can be found

along the trail in country stores and small workshops. The lush valleys and rugged mountains offer numerous opportunities for outdoor activities, from hiking and biking, to fishing and boating.

Complementing "The Crooked Road" is 'Round the Mountain: Southwest Virginia's Artisan Network which is a nonprofit organization whose mission is to promote sustainable economic development of the region's communities by assisting local artisans with marketing, educational and entrepreneurial opportunities.

The Virginia Tourism Corporation held a conference in 2006 on "Creating a New Economy in Southwest Virginia – Celebrating Cultural Tourism Partnerships." The purpose of the conference was to explore and showcase the cultural assets and opportunities of Southwest Virginia and learn about the emerging creative economy. It is a model worth exploring in other regions of the Commonwealth.

Selected resources

American Forests
P. O. Box 2000
Washington, DC 20013
(202) 737-1944
www.americanforests.org

American Planning Association
1776 Massachusetts Ave., NW
Washington, DC 20036-1904
(202) 872-0611
www.planning.org

American Recreation Coalition
1225 New York Avenue NW
Suite 450
Washington, DC 20005-6405
www.funoutdoors.com

Outdoor Industry Association
4909 Pearl East Circle, Suite 200
Boulder, CO 80301
(303) 444-3353
www.outdoorindustry.org

Rails-to-Trails Conservancy
1100 17th Street, NW 10th Floor
Washington, D.C. 20036
1-877-GRNWAYS
www.railstotrails.org

The Trust for Public Land
116 New Montgomery
4th Floor
San Francisco, CA 94105
(415) 495-4014
www.tpl.org

U.S. Fish and Wildlife Service
1849 C Street, NW
Washington, D.C. 20240
1-800-444-WILD
www.fws.gov

Virginia Tourism Corporation
901 East Byrd Street
Richmond, VA 23219
(804) 545-5500
Fax: (804) 545-5501
www.vatc.org

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Grant Opportunities for Outdoor Recreation and Open Space

*Study nature, love nature, stay close to nature.
It will never fail you.*

—Frank Lloyd Wright



Clinch River in Russell County. DCR photo by Irvine Wilson.

The challenge today, as in the past, is to secure the necessary funding resources that will provide Virginians with opportunities for wholesome outdoor recreational experiences and conserve significant open space resources. In order to achieve this, public recreation and open space resources must compete for available grants sources for funding to meet its goals. This chapter discusses grant opportunities only. For information on the General Obligation Bond or General Fund Appropriation process used by the State and many localities to fund projects refer to Chapter IX: Resource Agencies. State Parks.

Findings

- Most funding programs are reimbursement programs requiring a matching funding source.
- Funding for the outdoors is historically inconsistent.
- Federal grants are the most prevalent form of funding assistance available in Virginia.
- Other funding sources are available, but are difficult to locate.
- Many grant recipients have difficulty in completing projects within the required time frame. Grant projects not completed on time, which require extensions, jeopardize future funding for the given program.

Recommendations

- Virginia should restore funds for the matching grant program, the Virginia Outdoors Fund, for acquisition of open space and development of outdoor recreation facilities.
- Localities should establish funding for the planning, acquisition and development of outdoor recreation facilities.
- Unless grant requests are to fund planning and programming, potential grantees should be beyond the conceptual stage. Planning and construction documents should be completed before submitting grant applications.
- Grant requests involving land acquisition, either by fee simple or easement, need to show a firm commitment from the buyer for land acquisition.
- Federally funded assistance programs should be supported by local and state agencies.

- A Commonwealth of Virginia searchable grant website should be created to provide information on federal and state funded grant opportunities. The website could be organized according to Secretariat, and links provided where overlaps exist.



Appomattox Park. Photo by David Garrett.

History of the Virginia Outdoors Fund and the Land and Water Conservation Fund

In 1965, Congress created the Land and Water Conservation Fund (LWCF) for the purpose of funding land acquisitions for public use. The LWCF program has two components: a federal side and a state side. The federal side supports land acquisitions by the National Park Service (NPS), the U.S. Department of Agriculture Forest Service (USDA), the Bureau of Land Management, and the U.S. Fish and Wildlife Service. The state side is a 50 percent matching reimbursement program for the acquisition and development of public outdoor recreation areas that will be maintained in perpetuity. Eligible fund recipients include cities, towns, counties, Native American tribes and state agencies. In 1966, the Commonwealth created the Virginia Commission of Outdoor Recreation, which was responsible for outdoor recreation planning and administration of the LWCF. At that time, federal funds were supplemented with state appropriations and the Virginia Outdoors Fund was established (www.dcr.virginia.gov/prr/vof.htm).

From 1966 to 1982, the Virginia Outdoors Fund was responsible for distributing approximately \$100 million in grants for state, regional and local parks. By 1983, federal and state funding for the Virginia Outdoors Fund had diminished, and the General Assembly of Virginia dissolved the Commission of Outdoor

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Table VI-1. Land and Water Conservation Fund Accomplishments in 2006

National Program Goal	Performance Goal	Performance Measure	National Success	Virginia Success
1. Meet identified outdoor recreation resources needs to strengthen the health and vitality of the American people.	1. Increase quantity of outdoor recreation resources for public use.	Number of new parks created for outdoor recreation.	62 new parks	1 new park
		Number of new acres of land and water made available for outdoor recreation.	19,427 acres	73 new acres
		Number of parks where new outdoor recreation facilities were developed.	261 parks	5 parks
	2. Enhance the quality of outdoor recreation resources for public use.	Number of parks enhanced through new development or rehabilitation of outdoor recreation and support facilities.	373 parks	6 parks
	3. Ensure close to home public outdoor recreation resources.	Number of jurisdictions where LWCF grant projects are located.	399 jurisdictions assisted in 2006.	7 jurisdictions assisted in 2006. One park is multi-jurisdictional.
2. Increase the number of protected outdoor recreation resources and ensure their availability for public use in perpetuity.	4. Increase the number of acres of protected outdoor recreation resources for public use.	Number of new acres protected.	34,635 acres	116 acres
		Number of new sites protected under the LWCF Program.	3,323 sites	3 sites
	5. Ensure that outdoor recreation resources funded through the LWCF are retained and used for public outdoor recreation in perpetuity.	Number of LWCF projects inspected and determined to be open for public outdoor recreation.	2,452 projects	23 projects
		Percent of inspected acres funded by the LWCF determined to be open for public outdoor recreation.	100 percent of inspected areas.	100 percent of inspected areas.
3. Encourage sound planning and long-term partnerships to expand the quantity and ensure the quality of needed state and local outdoor recreation resources.	6. Stimulate initiatives to identify outdoor recreation needs and implement strategies to meet them.	Number of approved Statewide Comprehensive Outdoor Recreation Plans (SCORP).	54 plans	Only one SCORP per state. The 2007 <i>Virginia Outdoors Plan</i> is the current state SCORP.
		Number of SCORPs updated in 2005.	1 plan updated	
		Number of projects that exceed the 50 percent non-federal match.	45 projects	5 projects

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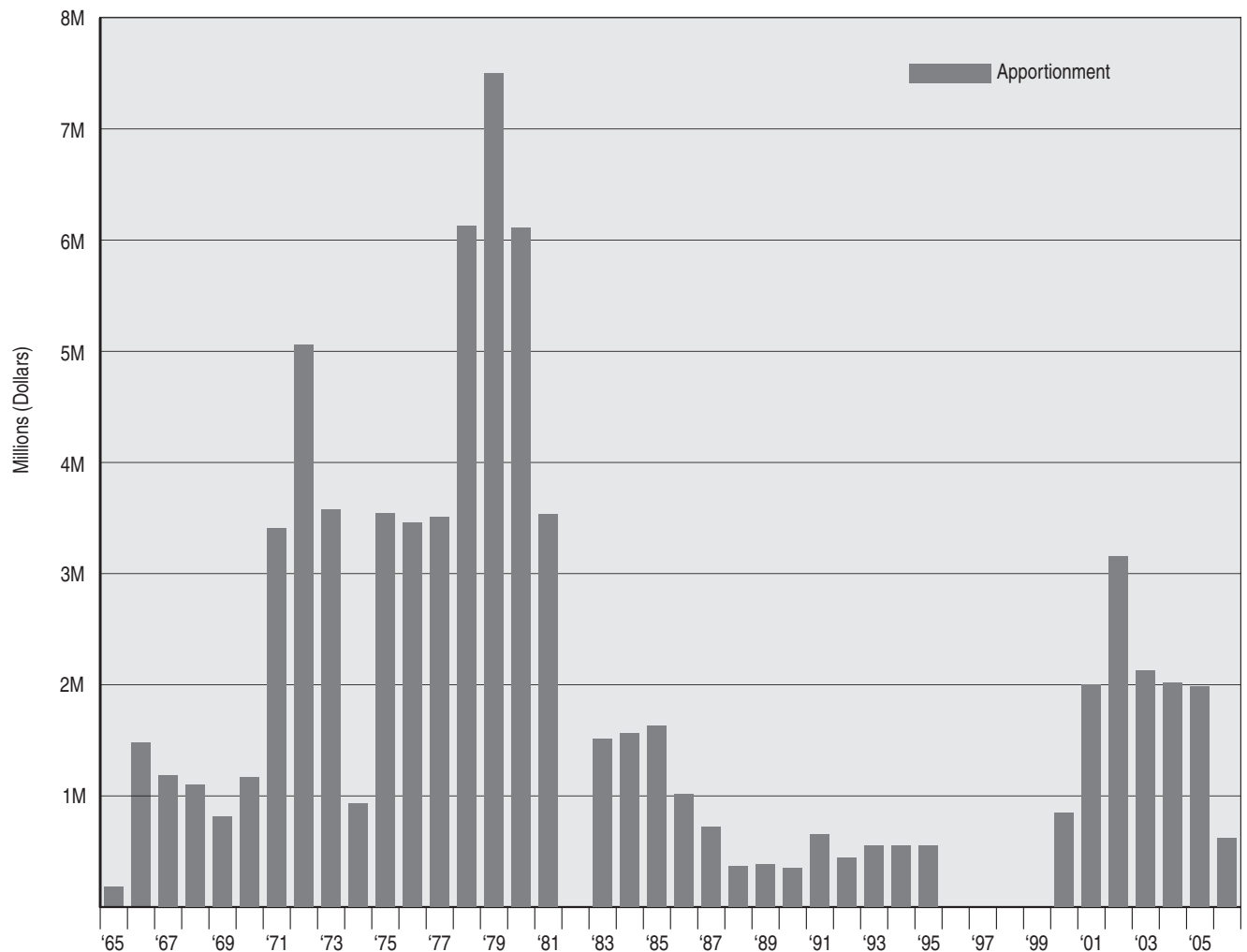
Recreation. The responsibilities for statewide outdoor recreation planning and grant assistance were then transferred to the Virginia Department of Conservation and Recreation (DCR). Between 1984 and 1987, state appropriations for the Virginia Outdoors Fund were significantly reduced, and the program would not have survived had it not been for the Land and Water Conservation Fund Program.

Concern about lack of funding for the Virginia Outdoors Fund prompted the General Assembly to appropriate \$4.2 million in the 1988 to 1990 biennium. However, an economic downfall occurred in Virginia, and these funds were rescinded. Since then, there have been no dedicated state appropriations for recreation in Virginia, and the Virginia Outdoors Fund Program has been funded entirely with federal LWCF "pass through" dollars. Unfortunately, the Land and Water Conservation Fund Program was not funded from 1995 to 1999. In fiscal year 2000, the federal LWCF Program received renewed appropriations from

Congress, and the Virginia Outdoors Fund was revived with \$850,000 for grants. For fiscal years 2001-2005, Virginia's annual apportionment was \$2 million dollars.

In 2003, the federal Office of Management and Budget (OMB) evaluated the performance of the state side LWCF. One reason for the review was the unexpended balance remaining on the books due to approved projects not being completed in a timely fashion. In its review, the OMB analyzed the purpose of the LWCF and its national relevance. The OMB concluded that the program lacked an appropriate process for measuring performance and could not adequately show national program accomplishments. In response, NPS, in collaboration with a team of state partners and constituent groups, developed three national program goals and seven performance goals that define the core purposes and mission of the state side LWCF. Thirteen performance measures were established to summarize key accomplishments.

Figure VI-1. Land & Water Conservation Fund Apportionments by Year



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For fiscal year 2006, the president proposed zero funding for the state side LWCF. However, through the 2006 Interior Appropriations Act (Public Law 109-55), Congress restored funding to the program by allocating \$27,994,976 for state and territory grants. Virginia's share of this allocation is \$615,971. For fiscal year 2007, the president again proposed zero funding for the state side LWCF. Hopefully, funding will again be restored by Congress.

Despite erratic funding over its 41-year history, the state side LWCF has been responsible for 40,400 projects nationally. In Virginia, LWCF has made more than 405 recreation projects possible in 117 localities.

A key component of the LWCF program is the requirement that any lands acquired or facilities developed with these monies be maintained in perpetuity for the purposes for which they were acquired or constructed. Section 6(f)(3) of the Land and Water Conservation Act clearly states that grant-assisted areas are to remain forever available for "public outdoor recreation use," or be replaced by lands of equal market value and viable recreation usefulness. Thus, the LWCF is, in fact, the most powerful piece of land conservation legislation in the nation.

Other government-funded recreational assistance programs

Virginia Recreational Trails Program

www.dcr.virginia.gov/prr/trailfnd.htm

While the LWCF program is the premiere funding program for recreation facilities in Virginia, other funding programs aid in the creation of recreational opportunities. One of the most popular is the National Recreational Trail Program, known in Virginia as the Virginia Recreational Trails Program. This program, administered by DCR in cooperation with the Federal Highway Administration (FHWA), offers 80 percent grants for the development and rehabilitation of trails and trail facilities for both motorized and non-motorized recreational trail users. Eligible fund recipients include private, nonprofit trail organizations, and city, town or county governments. Federal government entities may also be eligible to participate if teamed with private, nonprofit trail groups and organizations. A minimum of 30 percent of annual funding must be used for motorized recreational trail uses, 30 percent for non-motorized recreational trail uses, and the remaining 40 percent is discretionary in that it can be used for any type of trail project. However, preference



Fishing Pier at Leesylvania State Park. Photo by DCR.

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must be given to projects with the greatest number of compatible recreational purposes, provide for innovative recreational trails corridor sharing, or both. In Virginia, this program has made 194 trail projects possible in 109 localities.

On August 10, 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation bill was signed replacing the Transportation Equity Act for the 21st Century (TEA-21). This bill will provide annual apportionments for the Recreational Trails Program through fiscal year 2009.



Austin Tunnel along the New River Trail State Park. Photo by DCR.

Transportation Enhancement Program

www.virginiadot.org/projects/pr-enhance.asp

SAFETEA-LU is also the funding source for the Transportation Enhancement (TE) Program. The Transportation Enhancement (TE) Program is administered by the Virginia Department of Transportation. The TE program funds 12 categories of transportation-related community projects. Two categories include the conversion of abandoned railway corridors into recreational trails, and the development of bicycle and pedestrian facilities. Transportation enhancement activities can be stand-alone projects or can be implemented as part of larger transportation projects. In either case, the TE must relate to the intermodal surface transportation system in function, proximity or impact. Historically, trails and bicycle-pedestrian facilities have accounted for about one-half of all TE funding.

Recreational Access Roads Program

www.virginiadot.org/business/resources/localassistance-recreationalaccessguide.pdf

VDOT also administers the Recreational Access Roads Program. This program provides state funds for construction of recreational access roads to public

recreational areas. Proposals must include verification from the director of DCR that the area is a public recreation area, and recommendation from DCR that the Recreational Access Program funds be used at the facility. Project costs must be limited to the maximum project allocation amount as specified by Section 33.1-223 of the Code of Virginia governing the use of these funds. The Commonwealth Transportation Board has set the maximum funding limit for the program at \$3 million per year.

Federal Lands to Parks Program

www.nps.gov/flp

In addition to the Land and Water Conservation Fund, NPS administers the Federal Lands to Parks Program. This program serves to transfer surplus federal real property to state or local governments for public parks and recreation use. Applications for receiving the transfer property are submitted to the NPS Regional Federal Lands to Parks Program offices. Land transfers under this program are usually conveyed at no cost in return for the benefits derived by its public use. However, the applicant must incur the cost of grant application preparation, required land surveys, title searches, and site development and management plans. After approval and transfer of the land, NPS monitors the use of the property and development to ensure management in accordance with the terms and conditions of the deed provisions and approved management plan. A requirement of this program is that facilities must be maintained in perpetuity for public parks and recreation. In Virginia, 38 sites in 24 localities have been transferred into recreation use through this program.

Virginia Saltwater Recreation Fishing Development Fund

www.mrc.virginia.gov/vsrfdf

Funded through the collection of fees for saltwater fishing licenses, the Virginia Saltwater Recreation Fishing Development Fund provides funds to improve recreational fisheries in Virginia. Administered by the Virginia Marine Resources Commission (VMRC), this matching reimbursement program provides funding for water-access facility development, habitat improvement, education and law enforcement. For water-access facility projects, grant recipients are required to provide a hard dollar (cash or land) matching contribution at a minimum of 25 percent of total project cost. In addition, facilities funded through this program must be available for public use for a minimum of 20 years. The program has two funding cycles during the year: Cycle I- January through May and Cycle II-July through October.

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Shenandoah Valley sinkhole pond. DCR photo by Irvine Wilson.

Government funding for open space and the outdoors

Whether federally or state supported, locating funding sources for special open space and outdoor projects is difficult. Websites such as Grants.Gov (www.grants.gov) and the Catalog of Federal Domestic Assistance website (<http://12.46.245.173/cfda/cfda.html>) may be helpful. However, these national websites may not direct potential grant recipients to the state agency or program administrator. It would be enormously useful to the citizens of the Commonwealth if Virginia created its own searchable grant website, which listed available funding assistance programs for recreation, conservation, community development, education, transportation, water quality, or housing, etc. A Virginia grants website could be grouped according to Secretariat, and links provided where overlaps exist.

In keeping with the theme of the 2007 *Virginia Outdoors Plan*, and to the extent practicable, a sample of federal and state funding programs is listed below that may be useful in planning for open space, greenways, natural areas, environmental protection, historic preservation, land conservation and sustainable communities.

The Virginia Land Conservation Fund

www.dcr.virginia.gov/vlcf/index.htm

The Virginia Land Conservation Fund (VLCF) is a state-funded, 50 percent matching reimbursement program providing for the establishment of permanent conservation easements. It also funds the purchase of open space and park areas, natural areas, historic areas, farmland and forest lands for preservation in perpetuity. The program is a cooperative effort of the

DCR, DOF, Department of Agriculture and Consumer Services and Department of Historic Resources (DHR). State agencies, local governments, public bodies and registered (tax-exempt) nonprofit groups are eligible to receive matching grants through this program.

Available annual appropriations are divided equally among each of the project categories. Established in 1999, appropriations for this program have allowed four funding cycles. Those cycles have resulted in the approval of 67 projects that have resulted in the acquisition and protection of 20,266.49 land acres.

Open Space Lands Preservation Trust Fund

www.virginiaoutdoorsfoundation.org/ptf.html

Administered by the Virginia Outdoors Foundation, the Open Space Lands Preservation Trust Fund was created by the General Assembly to assist landowners with the costs of conveying conservation easements and the purchase of all or part of the value of the easements. Conservation easements preserve farmland, forestland, natural and recreational areas by restricting intensive uses, such as development and mining, which would alter the conservation values of the land. To be eligible for assistance, the easements must be perpetual in duration. Activities that qualify for reimbursement include the cost of appraisals, legal costs, and all or part of the value of the easement. Applications seeking only reimbursement of costs, demonstrating financial need, or covering a family owned or operated farm are given priority.

Wildlife and Sportfish Restoration Program and the State Wildlife Grants Program

www.dgif.virginia.gov

Two programs administered by the Virginia Department of Game and Inland Fisheries (DGIF) are the Wildlife and Sportfish Restoration Program and the State Wildlife Grants Program. These are used for the direct acquisition of lands for recreation and conservation. The funds may be used statewide and require a non-federal match between 25 percent and 50 percent. Annual funding for the program is provided through the U. S. Fish and Wildlife Service. Virginia's share for the Wildlife and Sportfish Restoration Program averages around \$9 million per year, while the State Wildlife Grants Program averages \$1.2 million annually. Recent examples of acquisitions made with these funds include the Cavalier Wildlife Management Area, the Feather Fin Wildlife Management Area, the Big Survey Wildlife Management Area and the Horsehoe Bend Boat Landing.

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Urban and Community Forestry Assistance Grants

www.dof.virginia.gov/urban/resources/2006-05-12-UCF-Grant-RFP.doc

The Virginia Department of Forestry (DOF) and “Trees Virginia,” in cooperation with the U. S. Department of Agriculture (USDA) Forest Service, administer the Urban and Community Forestry (U&CF) Grant Assistance Program. This program is designed to encourage projects that promote tree planting, the care of trees, the protection and enhancement of urban and community forest ecosystems, and education on tree issues in cities, towns and communities across the nation. Grants are awarded through this program to encourage local government and citizen involvement in creating and supporting long-term and sustained urban and community forestry projects and programs at the local level.

Eligible recipients include state agencies, local and regional units of government, approved nonprofit organizations 501(c)(3), neighborhood associations, civic groups, public educational institutions (college level) and community tree volunteer groups. Projects are divided among seven categories: planning, nonprofit organization support, support of local government urban and community forestry programs, education, research, demonstration projects and miscellaneous. Under the planning category, projects related to the planning and development of community greenways are eligible for funding. For those projects, funding may be applied to corridor and resource assessment, feasibility studies, maps and drawings, promotional and educational materials, and organizational development and staffing.

The Forest Legacy Program

www.dof.virginia.gov/mgt/index-flp.shtml

The Forest Legacy Program assists in the acquisition of forestlands or conservation easements from private landowners who are willing to donate or sell their land for preservation as forests in perpetuity. The USDA Forest Service delivers program funding and provides guidance to states. In Virginia, the FLP is administered by DOF, which completed all program participation requirements in 2000.

Virginia's FLP emphasizes environmentally important working forests, and greater credit is given those proposals emphasizing the working forest concept. Working forests are those which encompass all of the benefits healthy forests provide, for example, cleansing air, purifying water, providing products, serving as wildlife habitat and fostering recreational opportunities.

All areas of Virginia are eligible for FLP projects. Proposals must meet one or more of the following eligibility criteria to be considered: working forests threatened by conversion to non-forest use, conserving timber production capabilities, protecting habitat for threatened and endangered species, serving as a buffer for riparian protection, preserving historic and cultural resources, and encouraging preservation of scenic vistas.

Proposals for the FLP must involve tracts of land that are at least 20 acres in size, have a Forest Resource Plan or Multi-Resource Management Plan for the tract, are covered by at least 80 percent forest, and have a willing owner who agrees to a perpetual easement and allows annual monitoring, or is willing to sell the fee simple title to the tract.

The FLP funds up to 75 percent of acquisition cost for fee simple or easement purchases. The remaining 25 percent of the funds must be provided by non-federal sources.



Calcareous woodland. DCR photo by Irvine Wilson.

Virginia Landowner Incentive Program

www.dgif.virginia.gov

DGIF administers the Virginia Landowner Incentive Program. The program focuses on the restoration of riparian and instream habitats on private lands in watersheds that support species of greatest conservation need, which are identified in the Virginia Wildlife Action Plan. The target areas currently include the Upper Tennessee River, lower New River, upper Roanoke River and upper James River watersheds. Funding for the program comes from the U.S. Fish and Wildlife Service. DGIF currently has an award of \$1.2 million for riparian and instream restoration and is able to offer landowners up to 75 percent reimbursement on project costs.

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Cooperative Endangered Species Conservation Fund (Section 6 Funds)

www.fws.gov/endangered/grants/section6/index.html

The U.S. Fish and Wildlife Service, through Section 6 of the Endangered Species Act, provides funds to states and territories for species and habitat conservation. In 2006, four grant types were made possible through this fund: Conservation Grants, Habitat Conservation Planning Assistance Grants, Habitat Conservation Land Acquisition Grants and Recovery Land Acquisition Grants.

Conservation Grants provide funding for the conservation of listed species and at-risk listed species. Eligible projects include habitat restoration, species status surveys, public education, outreach, captive propagation and re-introduction, nesting surveys and management plan development.

Habitat Conservation Planning Assistance Grants serve to aid in supporting the development of Habitat Conservation Plans (HCP). Eligible activities include baseline surveys, inventories, document preparation, outreach and similar habitat conservation planning activities.

HCP Land Acquisition Grants provide funding to acquire land associated with approved HCPs. These funds do not fund mitigation required of an HCP permittee but rather support conservation actions by state or local governments that complement mitigation.

Recovery Land Acquisition Grants provide funding for the acquisition of habitat for endangered and threatened species in support of approved recovery plans.

States and territories must contribute a minimum of 25 percent of the estimated cost of approved projects. The 25 percent must be from non-federal sources.

Wildlife Habitat Incentives Program

www.dof.virginia.gov/mgt/cip-index-whip.shtml

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program, which offers private landowners cost-sharing to install practices to improve wildlife habitat. The program is administered by the USDA Natural Resources Conservation Service (NRCS). Current participation in a USDA program is not a requirement; however, legal ownership of the land is required.

Funds are available to private landowners, private companies, sporting groups, hunt clubs, environmental and conservation organizations and others.

The WHIP provides up to 75 percent cost-sharing for installation of practices, \$10,000 maximum cost-share per applicant, 10-year contracts and maintenance agreements. Eligible activities include disking, prescribed burning, mowing, planting habitat, converting fescue to warm season grasses, establishing riparian buffers, creating habitat for waterfowl, and installing filter strips, field borders and hedgerows.

State and Tribal Wildlife Grant

The State and Tribal Wildlife Grant program assists state fish and wildlife agencies and federally recognized tribes in the development and implementation of activities that benefit wildlife, including species that are not hunted or fished. In Virginia the funds are made available through DGIF. All activities that meet these criteria are eligible for funding. Consistent with the law, priority for use of these funds should be placed on those species with the greatest conservation need, taking into consideration the relative level of funding available for the conservation of those species.

For Virginia-related information and success stories accomplished through this program by DGIF, please visit the Teaming with Wildlife website at www.teaming.com/state_pages/virginia_cwcs.htm.

Federal Coastal Zone Management Act Funds

[www.deq.state.va.us/coastal/funding.html#Funding percent20Eligibility](http://www.deq.state.va.us/coastal/funding.html#Fundingpercent20Eligibility)

Federal Coastal Zone Management Act (CZMA) funds are available on an annual basis to the Virginia Coastal Program's partners (state agencies, planning district commissions and local governments) for implementation of the program. Financial assistance grants, under sections 306, 306A, 308, 309, and 6217 of the CZMA, provide Virginia with the means to carry out its goals of effective protection and careful development of its coastal areas. The Virginia Department of Environmental Quality (DEQ) administers the federal funds based on the National Oceanic and Atmospheric Administration's (NOAA) continuing approval. An annual grant application is submitted by the administering agency to NOAA in June of each year. Upon NOAA's approval of this application, the Virginia Coastal Program grant cycle begins in October of that same year and runs through September 30 the following year. Funding assistance through the Section 306A of the CZMA aids in the acquisition of fee simple and easement interests in land, low-cost public access improvement construction projects, or habitat restoration projects. Section 306A funding must be matched dollar by dollar with nonfederal fund sources.

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Conservation Reserve Enhancement Program (CREP)

www.dcr.virginia.gov/sw/crep.htm

Administered by DCR, the Conservation Reserve Enhancement Program aims to improve Virginia's water quality and wildlife habitat by offering financial incentives, cost-share and rental payments to farmers who voluntarily restore riparian buffers, filter strips and wetlands through the installation of approved conservation practices. CREP is an enhancement to the federal Conservation Reserve Program.

CREP is divided into two regions. The Chesapeake Bay region targets Virginia's entire bay watershed and allows for the planting of riparian buffer, filter strips and wetland restoration. The Southern Rivers region targets the same activities in watersheds outside the bay drainage basin.

State cost-share payments are administered through local Soil and Water Conservation District (SWCD) offices. The state reimburses up to 25 percent of conservation practice costs deemed eligible by the local soil and water conservation district. Reimbursement is limited to a maximum of \$300 per acre of restored buffer or wetland. There is also a 25 percent state income tax credit for out-of-pocket expenses. Federal reimbursement is made through the Farm Service Agency (FSA) for up to 50 percent of a participant's eligible expenses for implementing best management practices (BMP), such as fencing or alternative watering systems. Additional incentives are available for projects within the Chesapeake Bay region that involve restoration of riparian forest buffers.

In addition to financial incentives, cost-share and rental payments, the program offers the option of a permanent easement being recorded with the deed. DCR will make a one-time payment of up to \$500 per acre for the recordation of permanent open space easements. This option is available to participants in the program after completing the installation of conservation practices. The easements serve to restrict development, and enable the landowner to ensure, in perpetuity, their desire to protect water quality and wildlife habitat.

Virginia Water Quality Improvement Fund

www.dcr.virginia.gov/sw/wqia.htm

The purpose of the Water Quality Improvement Fund (WQIF) is to provide water quality improvement grants to local governments, soil and water conservation districts, and individuals for point and nonpoint source pollution prevention, reduction and control. Funding is

available in two distinct program regions: the Chesapeake Bay Watershed and the Southern Rivers Watershed.

The WQIF is a state-funded grant program administered by DCR (non-point source grants) and DEQ (point source grants). Program guidelines require a 50 percent match. Federal monies are eligible as match provided they have not been matched to another project, and as long as no policy or procedure of the administering federal agency is being violated.

Farm and Ranchlands Protection Program

www.nrcs.usda.gov/programs/frpp

The Farm and Ranch Lands Protection Program (FRPP) is administered by the Natural Resources Conservation Service (NRCS). This program aids farmers and ranchers in keeping their property in agriculture. The program provides matching funding to states, tribes, local governments and non-governmental organizations with existing farmland protection programs to purchase perpetual conservation easements or other interests in land.

Eligible land must be all or part of a farm or ranch. Land must contain prime, unique, or other productive soil, or historical or archaeological resources; be included in an offer from a state, tribal or local government or non-government organization's farmland protection program; be privately owned; be covered by a conservation plan for any highly erodible land; be of a size that can sustain agricultural production; be accessible to markets for what the land produces; and be owned by an individual or entity that does not exceed the Adjusted Gross Income (AGI).

Recipients of funding agree not to convert their land to non-agricultural uses and to develop and implement a conservation plan for highly erodible properties.

Properties that are already protected through existing deed restrictions or other legal restraints are not eligible for participation in the FRPP.

The NRCS share of the conservation easement cannot exceed 50 percent of the appraised fair market value of the conservation easement.

Wetlands Reserve Program and Wetland Reserve Enhancement Program

www.nrcs.usda.gov/programs/wrp

Wetlands Reserve Program (WRP) is administered by the Natural Resources Conservation Service (NRCS). The program provides technical and financial assistance to farmers and ranchers to address wetland, wildlife habitat, soil, water and related natural

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resource concerns on private lands in an environmentally beneficial and cost effective manner. The goal of the program is to encourage ranchers and farmers to stop cultivating on lands that were once wetlands and restore them to their greatest wetland function and value with optimum wildlife habitat.

Landowners are given three program participation options: a 10-year restoration cost-share option, a 30-year conservation easement or permanent conservation easements. NRCS provides financial assistance in the form of easement payments and restoration cost-share assistance.

Participants in this program continue to control access, have use of non-developed recreational activities, such as hunting and fishing, and maintain the right to lease the recreational use of their land for financial gain.

Wetlands Reserve Enhancement Program (WREP) is administered under the WRP and uses existing authority to enhance the delivery of WRP. Specifically, WREP provides an avenue for NRCS to form special partnerships with others to improve or expand the delivery of WRP, including, but not limited to, easement acquisition and activities associated with wetland restoration, creation or enhancement.

WREP does not alter the nature of WRP. The emphasis of WREP is restoring and protecting habitat for migratory birds and other wetland-dependent wildlife. Like WRP, landowners continue to have the opportunity to enroll land under a permanent easement, a 30-year easement, or restoration cost-share agreements. However, a WREP proposal may provide for emphasizing one enrollment type or another, such as increasing the utilization of 30-year WRP easements in a particular watershed by the partner purchasing a permanent easement overlay to the 30-year WRP easement, and the landowner receiving full compensation from the combined acquisition.

Funds are made available through a nationwide competitive process. NRCS accepts proposals for single- or multi-year projects, not to exceed three years, from eligible entities including federally recognized Indian tribes, state and local governments, non-governmental organizations and individuals. Proposals are solicited for multiple-program operations, wetland creation and enhancement on projects enrolled in WRP prior to FY 2006, easement management, and proposals that provide for technical assistance contributions from partners.

NRCS state conservationists submit the top two priority proposals based on state natural resource concerns and technical assistance needs. In making its selections, NRCS emphasizes proposals that provide for significant levels of technical assistance provided by a partner. The proposals may address WRP program delivery; wetland restoration, creation, and enhancement activities; easement management; or a combination of these activities.

North American Wetlands Conservation Act Grants (NAWCA)

NAWCA provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada and Mexico for the benefit of wetlands-associated migratory birds and other wildlife.

Two types of grants programs are offered through the NAWCA: the Standard Grant Program and the Small Grant program. Both programs require a dollar for dollar match by the sponsor, which must be from non-federal sources.

The **Standard Grant Program** is a competitive grant program that supports public-private partnerships carrying out projects in Canada, the United States and Mexico. These projects must involve long-term protection, restoration, or enhancement of wetlands and associated uplands habitats. Applicants submit project proposals to the U.S. Fish and Wildlife Service's Division of Bird Habitat Conservation (www.fws.gov/birdhabitat/Grants/index.shtml). After a preliminary review, the applications are ranked and recommended projects are given to the Migratory Bird Conservation Commission for final funding approval. The division is responsible for administering the grants for the approved projects.

The **Small Grant Program** supports the same type of projects and adheres to the same selection criteria and administrative guidelines as the U.S. Standard Grants Program. However, project activities are usually smaller in scope and involve fewer project dollars. Grant requests may not exceed \$75,000, and funding priority is given to grantees or partners new to the NAWCA Grants Program.

National Fish and Wildlife Foundation (NFWF) Grants

The NFWF conserves healthy populations of fish, wildlife and plants, on land and in the sea, through creative and respectful partnerships, sustainable solutions and better education. The foundation meets

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these goals by awarding matching grants to projects benefiting conservation education, habitat protection and restoration, and natural resource management. Grants offered are of two types: general matching grants and special grants.

The **General Matching Grants** are awarded to projects that address priority actions promoting fish and wildlife conservation and the habitats on which they depend, work proactively to involve other conservation and community interests, leverage foundation-provided funding, and evaluate project outcomes.

Funding sources for NFWF matching grants include federal funds provided by annual congressional appropriations and agreements with federal agencies, such as the U.S. Fish and Wildlife Service, Natural Resource Conservation Service, Bureau of Land Management, Bureau of Reclamation, NOAA, and USDA Forest Service. The foundation also receives and awards contributions from select foundations, corporations and other non-federal entities. This program requires that each federal dollar awarded be leveraged with a non-federal dollar or equivalent goods and services. NFWF requires a 2:1 match.

Grants are awarded on a competitive basis. Eligible grant recipients include all levels of government, tribes, educational institutions and nonprofit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year.

The **Special Grants Program** involves numerous funding programs each with specific guidelines and time frames. Examples of some of the Special Grants include the following.

- Acres for America Program aims to conserve important habitat for fish, wildlife and plants through acquisition of interest in real property.
- Bring Back the Natives funds on-the-ground efforts to restore native aquatic species to their historic range.
- Chesapeake Bay Small Watersheds Grants Program provides grants to organizations working on a local level to protect and improve watersheds in the Chesapeake Bay basin, while building citizen-based stewardship.
- Five Star Restoration Grants Program awards funding on a competitive basis to support community-based wetland, riparian and coastal habitat restoration projects that build diverse partnerships and foster local natural resource stewardship through education, outreach and training activities.

- NFWF and BASS Federation Nation, a national volunteer organization, have started a More Fish Partnership Fund. This is a nationwide effort to raise awareness of critical fish and habitat conservation needs and to support local conservation action across the country. Grants between \$10,000 and \$100,000 will be awarded to community groups in support of fish conservation projects, including habitat restoration, water quality improvement, and watershed planning and management.
- The NOAA Marine Debris Program (NOAA MDP) provides grants to organizations working on projects to improve our understanding of the impacts of marine debris on our marine and coastal resources, and to reduce and prevent debris in our marine environment. Eligible applicants are institutions of higher education, nonprofits, commercial organizations, and state, local, and tribal governments whose projects have the potential to benefit NOAA trust resources through marine debris research and prevention projects.

Detailed information on both the General Matching Grants and Special Grant Programs through the National Fish and Wildlife Foundation is available at www.nfwf.org/programs.cfm.



Scenic rural landscape in Augusta County. Photo by Nancy Sorrells.

Scenic Byway Program Grants

This program recognizes roads having outstanding scenic, historic, cultural, natural, recreational and archaeological qualities. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) has provisions for providing funds for grants and technical assistance to states and tribes for use on highways designated as National Scenic Byways, All-American Roads, America's Byways, state scenic or Indian tribe scenic byways.

Grant Opportunities for Outdoor Recreation and Open Space

Federal funding through this program provides 80 percent of the total cost, requiring a 20 percent match from the recipient. Three websites are dedicated to the Scenic Byway Program. For more information on participating in this program please visit www.fhwa.dot.gov/safetealu/factsheets/scenic.htm, www.virginiadot.org/infoervice/prog-byways-ites.asp and www.bywaysonline.org.

State Historic Preservation Grants

www.dhr.virginia.gov/State_grants/State_grants.htm

This is a matching grant program managed by DHR. Historic Preservation Grants are available to local governments, nonprofit museums, historical organizations, and historic sites that need extra funding for operations, to complete rehabilitations or to maintain collections. The grants are funded by the Virginia General Assembly and make possible the revitalization of key community historic resources. Eligible activities include the rehabilitation, restoration, or renovation work on an eligible building, work to make the building accessible to those with disabilities, and work affecting collections housed in an eligible building owned by historical organizations. The outcome is viable cultural assets that attract tourists, educate citizens about their heritage, and instill a sense of place and cultural identity in communities.

Community Development Block Grants (CDBG) www.dhcd.virginia.gov/cd/default.htm

The Virginia Department of Housing and Community Development administers CDBG with funding from the U.S. Department of Housing and Urban Development. Virginia receives up to \$19 million annually, which is available for community development planning through Planning Grants, and project implementation through Community Improvement Grants (CIG). The objective of this program is to aid in the development of viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for people with low and moderate income.

All projects must meet one of three national objectives: activities benefiting low and moderate income people, activities that aid in the prevention or elimination of slums or blight, and activities designed to meet community needs having a particular urgency. Some of the project specific activities that can be carried out with CDBG funds include acquisition of real property, provision of public facilities and improvements, development of neighborhood centers, neighborhood revitalization and energy conservation projects.

Certified Local Government Program (CLG) www.dhr.virginia.gov/clg/clg.htm

The CLG Program was created by the National Historic Preservation Act of 1966, as amended in 1980, and establishes a partnership between local governments, the federal historic preservation program, and DHR. The program allows DHR, as the State Historic Preservation Office, to recommend certification for local governments that have put key elements of a sound local preservation program in place in their communities. CLG grant funds may be used for surveys of architectural or archaeological resources, preparation of National Register of Historic Places nominations, heritage stewardship planning projects (historic preservation plans, archaeological assessments, and preservation components of comprehensive plans), public education programs associated with a heritage stewardship program, and testing of archaeological sites for significance determination.

Alternatives to government funding for outdoor recreation and open space

In addition to the above-listed funding resources, there are many other resources that can be utilized in helping to achieve recreation and community development needs. Project sponsors should contact local corporations, businesses (grocers, car dealers, development companies) and foundations, which often have community outreach programs willing to contribute funding to community projects.

Three main nonprofit groups dedicated to land conservation include the Trust for Public Land, The Nature Conservancy and the Conservation Fund.

The Trust for Public Land (TPL) (www.tpl.org) is a national nonprofit organization working to protect land as parks and open space. TPL helps communities and government agencies identify land for protection. It aids in identifying funds that might be used to protect that land, and may sometimes assist in helping to raise needed funds. TPL bridges the needs of landowners seeking to protect a special property, and those of government agencies that acquire land for public benefit. TPL has extensive experience in land transactions and land conservation, making it a powerful partner in land conservation efforts. Except in very specific instances, TPL normally does not award grants. However, TPL can help its partners locate and apply for a grant in conjunction with an ongoing TPL project.

Grant Opportunities for Outdoor Recreation and Open Space

The Nature Conservancy (TNC) (www.nature.org)

is a conservation organization dedicated to the preservation of plants, animals and natural communities by protecting the lands and waters they need to survive. TNC works with landowners, communities, cooperatives and businesses to establish local groups that can protect land. Some of the tools used include land trusts, conservation easements, private reserves and incentives. TNC also works with conservation supporters and partner organizations to create funding for conservation.

The Conservation Fund (TCF)

(www.conservationfund.org) is an environmental non-profit dedicated to protecting important landscapes and waterways. Using a partnership driven approach, TCF works to preserve unique natural, cultural and historic places. This group provides conservation services to government agencies, corporations, foundations, nonprofit organizations and individuals. Services include land identification, acquisition, mitigation, disposition, and land advisory and training.

In addition, most federal, state and local agencies dedicated to conservation and recreation offer technical assistance. More information is available in the Land Conservation chapter.

Applying for grants

A successful grant proposal is one that is well-prepared, thoughtfully planned, and clearly and concisely presented. The potential applicant should become familiar with the program criteria related to the funding program from which assistance is being sought. Be aware that the basic requirements, application forms, information and procedures vary from one program and funding agency to another. Therefore, it is important to understand the philosophy and intent of the grant program from which you are seeking funding assistance. Each has its own eligibility, rules, regulations, criteria and compliance requirements that an applicant will need to understand in order to apply for assistance. Thus, it is important to use the applications provided by each grant program and answer all the questions presented, as well as providing all the information the application requests.

Because of the large number of applications received during open grant rounds, many grant reviewers quickly scan text to get an overview of the proposal. They look for how the project will be accomplished, how reasonable the proposal is, and how likely it is to be completed within required time frames. Applications that answer all the key questions and

provide all required information in an easy-to-read, concise manner will be viewed more favorably and have a greater likelihood of funding. Applications with overwhelming, rambling detail often make it difficult to understand the proposal and are likely to score poorly.

A key aspect of any grant application is the budget information. These cost projections reflect how projects will be implemented and managed. In preparing budget costs, it is important to understand the matching requirements of the program and to only include items the grantor would be willing to support. In assessing budgets, reviewers look at whether costs are reasonable for the proposal, and whether there is sufficient budget detail and explanations of budget items that are not cash.

Finally, it is important to understand that most funding programs have limited resources available for award. As such, many beautifully-assembled grant applications meeting the purpose of the given programs may not be funded.

Application Do's and Don'ts

Do

- Understand the program philosophy
- Understand eligibility criteria
- Understand post-completion compliance requirements
- Contact the administering agency with questions
- Follow formatting guidelines
- Be clear and concise
- Submit required number of copies
- Proofread

Don't

- Use jargon
- Submit a generic application
- Overwhelm reviewers with rambling details
- Skip questions on the application
- Wait until the last minute to start

Outdoor Recreation Programs and Initiatives

When we try to pick out anything by itself, we find it hitched to everything else in the Universe. —John Muir

Ongoing state programs and initiatives that address the issues and trends identified in the 2007 Virginia Outdoors Plan are outlined in this chapter. These programs include trails and greenways, water access, historic and landscape resources, scenic resources, scenic highways and Virginia Byways, Scenic Rivers, watersheds and environmental and land stewardship education.



Paddling the Clinch River. DCR photo by Irvine Wilson.

Life for two weeks on the mountaintops would show up many things about life during the other fifty weeks down below. —Benton Mackaye

Findings

- A growing population, accelerating land development, increasing transportation costs and public health concerns increase demand for trails and greenways close to home. One-quarter of the 20 most popular recreational activities in Virginia take place on trails.
- Studies indicate that trails have large, long-term economic benefits in both rural and urban areas.
- The growing complexity of trails and greenways demands better agency coordination and a defined, strategic approach from state and regional planners.
- A priority of the state trail program is to facilitate the development of state and regional, long-distance, multi-jurisdictional trunkline trails.
- Most localities report that they do not have an approved plan for trails outside of Virginia Department of Transportation (VDOT) right-of-way. Although most planning districts and some counties have developed a plan for bicycle or pedestrian facilities within VDOT right-of-way, implementation has not occurred in many areas.
- Trail planners need access to a comprehensive statewide inventory of existing, planned and proposed trail opportunities, and the public needs more information about existing trails.
- There is a need at all levels of government to plan for a system of trails and greenways that provide a variety of leisure experiences to help avoid user conflict, connect gaps in the trail system, and attract new users. Trail design standards should provide for a range of trail experiences and types, and allow for an appropriate range of risk levels.
- There is a pervasive need for additional funds for trail planning, construction, marking, maintenance and promotion, and a particular need for funds to develop trail systems along corridors outside of VDOT rights-of-way.
- Opportunities for trails exist along many rail corridors in Virginia, but there is no process for accom-

modating recreational use of railroad property for trail crossings or trails that parallel rails.

- Uniform signage using a consistent trail assessment system will help users negotiate trails, particularly those that cross jurisdictional boundaries, and help promote trail use and identity.

Recommendations

- Local governments should have a greenways and trails component in their comprehensive plan that provides for a variety of leisure trail experiences and promotes pedestrian and bicycle transportation alternatives.
- DCR should establish an institutional framework to support the implementation of the 2007 *Virginia Outdoors Plan* (2007 VOP) to include staff support and the re-establishment of a greenways and trails advisory committee to help develop a strategic plan for the state greenways and trails program.
- DCR should establish a state trails inventory and partner with Virginia Tourism Corporation to both promote these trails on their website and evaluate their economic impacts.
- State, regional and local governments should include funds for trail development, management and maintenance in annual capital and operating budgets, and seek creative ways to provide incentive funding for trail development.
- State, regional and local governments should strengthen the public's understanding of the connection between trails and public health and establish policies that support pedestrian and bicycle facilities in road construction and development and redevelopment projects.
- DCR should partner with planning district commissions and regional commissions to a) facilitate communications between trail providers, users and policy makers, b) encourage the private sector to improve regional and statewide trail opportunities and support, and c) focus on regional trail networks to establish a trunkline statewide trail system.

Trails and Greenways

- DCR should work with local governments and trail sponsors to determine the final alignments and plans for major trunkline trail networks and to facilitate the adoption of these corridors in local comprehensive plans. Trunkline trails include the Trans-Virginia Southern Trail, East Coast Greenway, Potomac Heritage National Scenic Trail, Great Eastern Trail, and James River Heritage Trail.
- DCR should partner with VDOT and the Virginia Department of Rail and Public Transportation (DRPT) to develop a process for negotiating with rail companies to provide opportunities for trails along and across rail corridors.
- DCR should adopt and disseminate a uniform trail assessment system and coordinate the development of standard sign templates. This will help users negotiate multi-jurisdictional trails and encourage private and government entities to promote a consistent brand.
- Local and regional trail managers should provide information about their trail at trailheads, in brochures and on websites so users can choose sections within their skill and capability levels.

Introduction

The greenways and trails movement has evolved through four distinct phases in the past century. Initially greenways were conceived as boulevards and parkways for scenic drives by carriage or car, like the Skyline Drive, Monument Avenue in Richmond or the Colonial Parkway connecting Williamsburg to Yorktown. The greenway was the scenery one passed en route to a destination, or the excuse for a Sunday drive. This social occasion allowed generally passive users to enjoy the view as they spent time together.

The idea of a trailway, which later evolved to greenway, was embraced by the Appalachian Trail Conference in 1937, and referred to an area dedicated to the interests of those on foot. Originally a mile on either side of the trail, this idea of a greenway was the broad swath of protected land that served as a buffer from the sights and sounds of civilization. The greenway provided an escape from civilization and an opportunity for spiritual growth and emotional healing as hikers tested their physical strength and endurance. Today, many hikers are challenged and enriched as they follow the scenic mountain corridors that have been preserved along this greenway through Virginia.

More recently, the idea of a greenway has been adapted for multi-purpose urban infrastructure, with narrower corridors that still serve to buffer and shade a variety of trail users on bikes, horses and skates, as well as on foot. The East Coast Greenway, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. The rails-to-trails movement has created a nationwide network of these multi-purpose trails from former rail lines. There are nearly 300 miles of rail-to-trail corridors in Virginia, including the 57-mile New River Trail in Southwestern Virginia and the 45-mile Washington and Old Dominion Trail in Northern Virginia. This concept of greenway includes the trail and the right-of-way through which it passes, generally less than 100 feet in width. Users may be seeking exercise, social opportunities or a chance to enjoy nature when they carve time for this active recreation out of their busy schedules.

Today, greenways capture all of these former uses as part of metropolitan networks and mega-trails that link to recreational areas, natural areas and other open space lands. Often used for both active and passive recreation, as well as transportation, the greenway is also a tool for linking conservation lands as part of an



Walking for pleasure at Douthat State Park. Photo by Nancy Sorrells.

extensive green infrastructure network. A greenway's ecological functions—buffering storm and flood waters, and providing migration routes for wildlife—are often the primary incentives for greenway development. A sustainable transportation system, where most people walk or bicycle to destinations, relies upon the development of extensive greenway networks, particularly in urban areas. A good example of this type of network is the Potomac Heritage National Scenic Trail (PHNST), a partnership to develop and maintain a system of trails for recreation, transportation, health and education. The PHNST connects outstanding natural and cultural features along a 700-mile corridor of the Potomac River, from the Chesapeake Bay to the Allegheny Highlands.

Virginia is very fortunate to possess such excellent examples of greenways for citizens to enjoy. Those who use these greenways appreciate their value—for the environment, as well as transportation, exercise, education and ecotourism. However, social values are best expressed as greenways and trails become part of daily life, used routinely as a means of accessing community resources, with people heading to work or play, and friends and neighbors exchanging greetings. This social interaction and activity along the trail creates a sense of community, a real commodity in the transient yet sedentary modern world.

Greenways and trails play an important role in building public support for green infrastructure planning. Accelerating issues related to chronic disease, transportation, and air and water quality fuel widespread demand for these linear corridors. Recreation is also driving demand, because people want facilities that not only allow families to spend leisure time together, but are also available and convenient at all times of the day. The 2006 *Virginia Outdoors Survey (VOS)* confirms that walking for pleasure is the most popular recreational pursuit in the state. This ranking is based on percentage of households participating (72 percent). Visiting natural areas (44 percent), jogging (24 percent), bicycling (21 percent), hiking/backpacking (16 percent), nature study, horseback riding and fitness trail use were within the top 30 activities.

A 2003 Roper survey reported the most popular recreation activity nationwide is walking for fitness or recreation; bicycling, jogging and hiking all fell within the ten most popular activities. This survey also reported an interesting correlation between recreation participation and environmental attitudes, with those most concerned about the environment being especially active in recreation. By providing space for popular outdoor activities, greenways and trails create the

means for citizens to experience the out-of-doors and get in touch with nature, in turn building support for natural resource conservation.

Greenways are important because...

- Connecting homes to shops and offices is good for businesses and convenient for customers.
- Fewer cars mean fewer crowded roads and less air pollution.
- Trails, natural views and green spaces attract homebuyers.
- Walking on pathways is healthy for both the body and the mind.
- People out walking promote community awareness while deterring crime.
- Trails cost less to build and maintain than many other recreational facilities, and can benefit everyone.
- The whole family may participate, while enjoying each other's company and the outdoors.

Source: Chesterfield County, Virginia brochure

Economic benefits of greenways and trails

The U.S. Forest Service and the University of Georgia report that Virginia Creeper Trail (VCT) users spent about \$2.5 million over the sample period (2003-2004) related to their recreation visits along this 35-mile scenic trail in rural southwestern Virginia. Of this amount, nonlocal visitors spent about \$1.2 million directly in the Washington and Grayson county economies. This nonlocal visitor spending in the area generated \$1.6 million in economic impacts and supported close to 30 jobs.

Although access to the VCT is “free,” there is substantial economic value to recreation visitors from access to the trail. Using conventional economic methods, it was determined that the net economic benefit to users of the VCT is between \$23 and \$38 per person, per trip. These values can be aggregated across the estimated 100,870 primary-purpose trips per year, leading to an estimated range of between \$2.3 million and \$3.9 million in net economic benefits to VCT users. (Bowker et al, 2004)



Cyclists enjoy the trails around Richmond. Photo by Bill Swann.

In the urbanized area of Northern Virginia, the estimated 1.7 million adult users of the 45-mile Washington and Old Dominion Trail (W&OD), spent \$12 million annually on expenses related to their recreational use of the trail. The estimated \$1.4 million in nonlocal spending generated about \$1.8 million in local economic impacts, supported 34 full-time job equivalents, and generated about \$642,000 in personal income. The annual net economic benefit of trail access to users was between \$14.4 and \$21.6 million, and the vast majority of these net economic benefits accrue to northern Virginia residents. (Bowker et al, 2004)

The National Park Service reports through *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors* and *The Impact of Rail-Trails* that there are various and numerous benefits to trail users, local landowners and trail communities. Although legitimate issues and concerns may be raised at the onset of many trail projects, studies indicate that such apprehensions are unwarranted. Residents and visitors of trail communities enjoy the benefits of trail use, along with aesthetic beauty, protected open space, and in some instances, higher property resale values typically found adjacent to trails.

Economic benefits of greenways

Real property values

Many studies demonstrate that parks, greenways and trails increase nearby property values, thereby increasing local tax revenues that offset greenway acquisition costs.

Expenditures by residents

Spending by local residents on greenway-related activities helps support recreation-oriented businesses and employment, and all other businesses patronized by greenway and trail users.

Commercial users

Greenways often provide business opportunities for commercial activities such as equipment rentals and sales, lessons, and other recreation-related businesses.

Tourism

Greenways are often major tourist attractions, generating expenditures on lodging, food and recreation-oriented services, while improving the overall appeal of a community to tourists and prospective residents.

Agency expenditures

The agency responsible for managing a river, trail or greenway can support local businesses by purchasing supplies and services. Jobs created by the managing agency may also help increase local employment opportunities.

Corporate relocation and retention

Evidence shows that the quality of life within a community is an increasingly important factor in corporate relocation decisions because it is important to employees. Greenways are often cited as important contributors to quality of life in a community.

Public cost reduction

The conservation of rivers, trails and greenways helps local governments and other public agencies reduce costs resulting from flooding and other natural and man-made hazards. The high cost of chronic disease is a major contributing factor to exploding healthcare costs. Exercising on trails and greenways helps prevent these diseases.

Intrinsic value

While greenways have many economic benefits, it is important to remember the intrinsic environmental and recreation value of making social and physical connections while preserving rivers, trails and other open space corridors.

Source: Adapted from *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors*; National Park Service, 1995.

Trail survey findings

A February 2006 survey was sent to local governments and planning district commissions for feedback on trail issues and problems. Survey results (see Appendix E) indicate that a lack of funding is the biggest challenge for trail planners, although difficulty acquiring the corridor and a general lack of political support were also problematic. For trail managers, a lack of funding for trail maintenance was clearly the biggest problem. For trail users, planning districts report that no trails close to home is the major problem. However, local governments report the largest problem is a lack of information on trails. Respondents to a 2006 survey by BikeWalk Virginia also reported that there was inadequate sharing of trail-related information, and the most sought-after user information was trail maps.

Statewide and regional trail systems

Asked to rank their organization's top need for trails, both regional planners and local governments responded that connected regional trail systems were most important. Local, regional and state planners should work together to realize this common goal. A combined effort is needed to mediate issues that arise when trails cross jurisdictional boundaries, to provide bicycle and pedestrian infrastructure (including signage and amenities) and to get information out to the public.

Proposed statewide trunkline trails

The East Coast Greenway (www.greenway.org), the Trans-Virginia Southern Trail, the Potomac Heritage National Scenic Trail (www.nps.gov/pohe), the Great Eastern Trail (www.greateasterntail.org) and the James River Heritage Trail are five regional trail systems being developed to feature off-road facilities. These proposed and planned trail networks are made up of many existing, locally-managed trails. See the trail map for the general locations of these trunkline networks and a list of their existing components.

The Potomac Heritage National Scenic Trail (PHNST), a unit of the National Park System, has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies over the past ten years. The PHNST corridor in Virginia generally follows the Potomac between the Chesapeake Bay and a portion of Harpers Ferry National Historical Park. With the completion of *A Development and Management Plan for the Potomac Heritage National Scenic Trail in Virginia* (February 2006) and *A Concept Plan for the Potomac Heritage National Scenic Trail in Virginia's Lower Potomac Region* (March 2006), the stage is set to complete a

braided trail network connecting a range of opportunities for boating, hiking, bicycling and equestrian activities throughout the corridor.

The planned Great Eastern Trail network will link existing trails from central Alabama to central New York. The Southeast Foot Trails Coalition and the Mid-Atlantic Foot Trails Coalition are undertaking this project formerly known as the Atlantic Crest Trail, which is being sponsored by the American Hiking Society. A major segment, the Tuscarora Trail, remains unprotected. One-third of this 250-mile trail, in a sparsely populated area of the Appalachian Mountains, passes through private property and along road shoulders.

The Trans-Virginia Southern Trail will stretch east to west from the Cumberland Plateau to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. The proposed Tobacco Heritage Trail will form the central piece of this network through five counties.

Stretching north to south, The East Coast Greenway will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects the urban crescent to suburban and rural America. The East Coast Greenway has a "close the gaps" strategy of connecting existing trails, parks, neighborhoods and historic sites. The ECG Historic Coastal Route is an east-west alternate route utilizing the Virginia Capital Trail that will connect Richmond with Virginia Beach and Wilmington, NC.

The James River Heritage Trail is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail follows the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia.

There are other trunkline trail systems that share road right of way. Virginia is home to more of the United States Numbered Bicycle Route system than any other state. Since both USBR 1 and USBR 76 cross the state, Virginia hosts about 41 percent of the total USBR system. USBR 1 crosses the state north-south from Arlington to the North Carolina border near Kerr Reservoir, and USBR 76 crosses east-west from Yorktown to the Kentucky border in Dickenson County. AASHTO, the American Association of State Highway and Transportation Officials, officially recognizes these federal routes. These routes are shown on VDOT's official county maps, and signed in the field.

Trails and Greenways

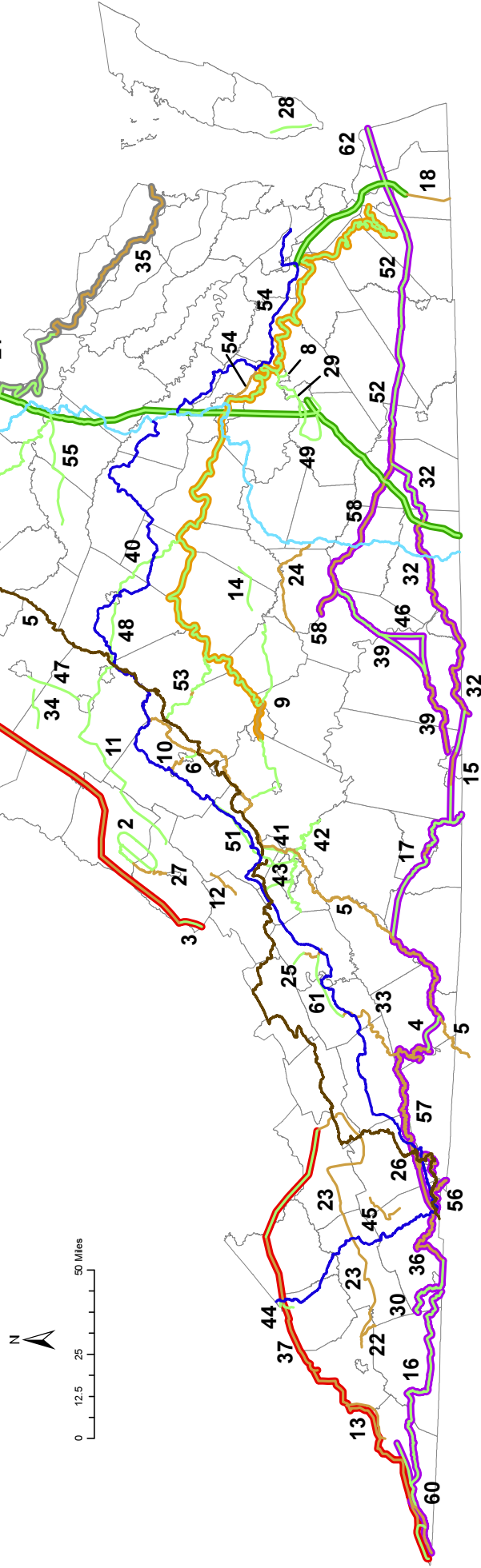
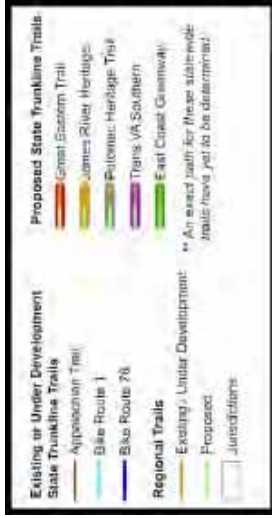
In addition, Virginia also hosts parts of four other long-distance bicycle routes documented by Adventure Cycling Association, a nonprofit organization dedicated to bicycle travel. The Trans-America Bicycle Trail crosses the country from Oregon to Virginia, and shares the same alignment as USBR 76 in Virginia. The Maine to Virginia Bicycle Route runs approximately

150 miles from Washington, D.C. to Richmond, Virginia, generally along the same alignment as USBR 1. The Virginia to Florida Bicycle Route covers 130 miles from Richmond to the North Carolina state line at Suffolk. Virginia also holds one-half of the Tidewater Potomac Heritage route between Arlington Memorial Bridge and Reedville.

Table VII-1. Existing and Planned Statewide Component Trail Systems

James River Heritage Trail America's Founding River	Great Eastern Trail (formerly Atlantic Crest)
Virginia Capital Trail Richmond James River Park Trail network Richmond Canals and Riverfront Blackwater Creek Bikeway Point of Honor Trail Lynchburg RiverWalk Ivy Creek Greenway James River State Park Trails	Tuscarora Trail Mill Mountain Trail Tibbett Knob Trail (or alternate) North Mountain Trail Snyder Trail Beech Lick Knob Trail Shenandoah Mountain Trail North River Trail Tearjacket Trail Benson Run Trail Piney Mountain Trail Warm Springs Mountain Trail Muddy Run Trail Hidden Valley Trail Bogan Run Trail High Top Fire Trail Meadow Mountain Trail Allegheny Trail Cumberland Mountain Trail Pine Mountain Trail Pennington Gap Trail Russell Fork Greenway
Potomac Heritage National Scenic Trail	Trans-Virginia Southern Trail Cumberland Gap to Chesapeake Bay
Potomac Heritage Trail segments in Loudoun, Fairfax & Prince William Counties The eastern Loudoun County linear park system Riverbend Park The River Trail, portions of the Ridge Trail and Difficult Run Trail in Great Falls Park Trail alignment in Scott's Run Nature Preserve Potomac Heritage Trail in George Washington Memorial Parkway (GWMP) Mount Vernon Trail (GWMP) Potomac Heritage Trail route, Prince William Forest Park Alexandria Heritage Trail Government Island Trail Historic Falmouth-Ferry Farm Trail and connecting routes George Washington Birthplace to Mt. Vernon Trail Northern Neck bicycling routes and trails	Seaboard Coastline Trail Multi-City Bike Trail Virginia Beach Pipeline The Virginian Trail NF&D Rail Trail Staunton River Trail Richmond & Danville Rail Trail Dan River Trail Danville Riverwalk Dick and Willy Rail Trail Martinsville Uptown Rail Trail Fieldale Walking Trail Smith River Trail Mayo River Rail Trail Blue Ridge Parkway Trails Blue Ridge/New River Trail Connector New River Trail State Park Virginia Highlands Trail Iron Mountain Trail Virginia Creeper Trail Overmountain Victory Trail Mendota Trail Daniel Boone Wilderness Trail Wilderness Road Trail
East Coast Greenway	
Richmond to Raleigh S-Line Rail with Trail Tobacco Heritage Trail Bull Run Occoquan Trail Accotink Stream Valley Trail Arlington Memorial Bridge Mount Vernon Trail Virginia Capital Trail Dismal Swamp Canal Trail and Greenway	

Map VII-1. Trails and Greenways



- | | | |
|--|--|--|
| 1. Accotink Stream Valley Trail / Fairfax Cross County Trail | 31. Mt. Vernon Trail Extension | 47. Staunton to Harrisonburg Rail Trail |
| 2. Allegheny Trail | 32. NF&D Rail Trail | 48. Three Notched Trail |
| 3. Blue Ridge / New River Trail Connector | 33. New River Trail State Park | 49. Trekking Dinwiddie Trail |
| 4. Blue Ridge Parkway Trails | 34. North River Trail | 50. Tuscarora Trail |
| 5. Brushy Blue Greenway | 35. Northern Neck Heritage Trail | 51. Valley Rail - Trinkle Trail |
| 6. Bull Run / Occoquan Trail Extension | 36. Overmountain Victory Trail | 52. Virginia Beach Pipeline |
| 7. Bull Run / Occoquan Trail Extension | 37. Pine Mountain Trail | 53. Virginia Blue Ridge Railway Trail |
| 8. Cabin Creek Trail | 38. Rappahannock River Heritage Trail | 54. Virginia Capital Trail |
| 9. Central Virginia Greenway | 39. Richmond & Danville Rail Trail / Dan River Trail | 55. Virginia Central Rail Trail |
| 10. Chesley Trail | 40. Rivanna River Greenway | 56. Virginia Creeper Trail |
| 11. Clifton Forge - Staunton - Waynesboro Rail with Trail | 41. Roanoke Lexington Horse Trail | 57. Virginia Highlands Trail |
| 12. Craig Valley Scenic Trail | 42. Roanoke River Greenway | 58. The Virginian Trail |
| 13. Cumberland Mountain Trail Extension | 43. Roanoke Valley Greenway | 59. W&OD Extension |
| 14. Cumberland - Appomattox Trail | 44. Russell Fork Greenway | 60. Wilderness Road Trail |
| 15. Danville River Walk | 45. Salt Trail | 61. New River Trail Extension |
| | 46. Staunton River Trail | 62. Multi-City Bike Trail / Seaboard Coastline Trail |

Trails and Greenways

Proposed Regional Trails

Description

The **Wilderness Road Trail** extension will connect the developed trail between Cumberland Gap National Historical Park and the Wilderness Road State Park to Rose Hill. The trail can then be looped through the national park to rejoin the existing trail at Cumberland Gap.

The **Daniel Boone Wilderness Trail** follows Routes 23 and 58 to connect Scott and Lee counties to the states of Tennessee near Bristol and Kentucky at the Cumberland Gap. This route can become part of the Trans-Virginia Southern Trail as improvements are made to enhance user safety.

The **Southern Appalachian Greenway Alliance** is a regional network of proposed and existing trails throughout a 10-county area of Northeast Tennessee and Southwest Virginia. Major existing trails in Virginia that fall within this network include the Iron Mountain Trail, the Virginia Creeper Trail, Osbourne Ridge Loop Trail, Chief Benge Scout Trail, Back Valley Loop Trail, Wilderness Road State Park Trail, Stone Mountain Trail, Wallen Ridge Trail, Devil's Fork Loop Trail and Osbourne Ridge Trail. Major proposed trails include the Daniel Boone Wilderness Trail bike route, the Pennington Gap Trail, the Melungeon Trail, the Wilderness Road Trail extension, the Mendota Trail, and a connector from Sugar Hollow Park in Bristol to the Salt Trail and Glade Spring.

The **Mendota Trail** could connect the City of Bristol along the Old Southern Railroad to Carters Fold in Scott County.

The **Russell Fork Greenway** could connect the town of Haysi in Dickenson County to Buchanan County and on to Kentucky through Breaks Interstate Park.

When complete, the **Pine Mountain Trail** will stretch nearly 120 miles to connect Breaks Interstate Park to the Cumberland Gap National Park in Kentucky as part of the Great Eastern Trail. The section in Virginia will connect Breaks to the Pound Reservoir in Wise County.

The **Heart of Appalachia Bike Route** runs on roughly half paved/half gravel roads from Burke's Garden in Tazewell County to the Guest River Gorge in Wise County.

The **Cumberland Mountain Trail Extension** will connect the Pine Mountain Trail in Dickenson County to the Cumberland Mountain Trail in Tennessee.

The historic **Salt Trail** could connect Emory and Henry College to Glade Spring, Saltville and the Clinch Mountain Wildlife Management Area throughout Smyth and Washington counties, and eventually tie in to the Virginia Creeper Trail.

The **Overmountain Victory Trail** could connect the town of Abingdon to the states of Tennessee, North Carolina and South Carolina along the 330-mile route of the Patriot militia taken in 1780.

The **New River Trail Extension** will connect the New River Trail State Park in Pulaski with the Huckleberry Trail in Christiansburg.

The **Huckleberry Trail Extension** will connect the existing trail in Montgomery County to the trail system in the George Washington and Jefferson National Forests.

The **Roanoke River Greenway** will connect Montgomery, Roanoke, Bedford and Franklin counties to the cities of Salem and Roanoke, and Explore Park. This network will tie into Roanoke Valley Greenways, connecting to Carvins Cove Reservoir, the Blue Ridge Parkway, the Appalachian Trail and Botetourt County.

The **Jackson River Scenic Trail** could connect Alleghany and Bath counties to the City of Covington.

The **Alleghany Highlands Trail** could connect national forest trails in Alleghany and Bath Counties with trails in Dougherty State Park.

The **Craig Valley Scenic Trail** could connect New Castle in Craig County to Eagle Rock in Botetourt County.

The **Valley Rail-Trinkle Trail** could connect Hollins University in Roanoke County to Lexington.

Blue Ridge Parkway Trails could provide routes for self-powered travelers along the parkway's length and connect to existing trails within adjacent networks like the Roanoke Valley Greenways.

The **Brushy Blue Greenway** plan connects Lexington in Rockbridge County to Buena Vista, and it could eventually connect with the George Washington-Jefferson Forest and the Blue Ridge Parkway.

The **North River Trail**, along the abandoned Chesapeake Western railway corridor, could connect the North River and Mossy Creek, from North River Gorge to Bridgewater in Augusta and Rockingham counties, and link the Shenandoah National Park to the George Washington-Jefferson National Forest.

A **Staunton to Harrisonburg Rail with Trail** along the former Norfolk Southern railroad corridor could connect Augusta and Rockingham counties to these cities.

The **Clifton Forge to Staunton to Waynesboro Trail** could connect these jurisdictions along an active CSX Railroad line if a rails-with-trails approach were considered.

The **Edinburgh to Mt. Jackson Trail** could link these two towns along the abandoned Norfolk Southern Railway.

The **Bull Run-Occoquan Trail Extension** could connect the existing 18-mile trail to the PHNST and Bull Run Mountain.

Trails and Greenways

Proposed Regional Trails (cont.)

The **Mount Vernon Trail Extension** would complete the existing trail from Roosevelt Island to Interstate 495.

The **Bull Run Mountain/Mill-to-Mill Trail** would connect Aldie Mill Historic Park in Loudoun County through the Bull Run Mountains to Beverley Mill in Prince William County.

The **W&OD Trail Extension** will connect the 45-mile existing trail to White's Ferry to the north, the Appalachian Trail to the west, and the Potomac Heritage National Scenic Trail to the east.

The **Accotink Stream Valley/Fairfax Cross County Trail** will connect Great Falls Regional Park to the Accotink Bay, linking to the W&OD Trail and the Potomac Heritage National Scenic Trail.

The **Rappahannock River Heritage Trail** could connect the City of Fredericksburg to Stafford and Fauquier counties, and tie in to the proposed Virginia Central Rail Trail linking Spotsylvania, Culpeper and Orange counties.

The **Virginia Blue Ridge Railway Trail** along the Piney and Tye Rivers could link Nelson and Amherst counties to the Appalachian Trail.

A **Rivanna River Greenway** system through Fluvanna and Albemarle counties could connect the Town of Columbia to the City of Charlottesville.

The proposed historic **Three-Notched Trail** could connect Richmond and the East Coast Greenway to Charlottesville and the Crozet Tunnel, eventually connecting to the South River Greenway in Waynesboro.

There is potential for a **Central Virginia Greenway** linking Peaks of Otter to the Appomattox Heritage Trail, connecting Bedford and Appomattox counties, and the cities of Bedford and Lynchburg. This trail could also connect to the James River Heritage Trail.

The following trails are potential segments along **The Tobacco Heritage Trail** and/or the statewide Trans-Virginia Southern Trail: The existing **Danville Riverwalk** and the **Richmond & Danville (R&D) Rail-Trail** in Pittsylvania could be extended to connect to South Boston; the **Dan River Trail** could connect South Boston to Staunton River State Park following the R&D rail line and Corps of Engineers flowage easements. The **Staunton River Trail** could connect Staunton River State Park and Staunton River Battlefield State Park. The **Virginian Trail** could link Meherrin and possibly the **High Bridge Trail State Park** to the **Virginia Beach Pipeline**. The southern part of the loop would be formed by the abandoned Norfolk, Franklin and Danville (**NF&D**), a.k.a. the Atlantic & Danville (**A&D**), Railroad from Danville through Occoneechee State Park to Lawrenceville. The statewide East Coast Greenway could utilize the portion of the NF&D Trail from Lawrenceville to US Bike Route 1 at VA Route 4 at John H. Kerr Reservoir.

With connectors at each end, the **Dick and Willy** (Danville and Winston) **Rail Trail/Smith River Trail**, which includes the existing Fieldale Walking Trail in Henry County and Martinsville's Uptown Rail Trail, could link the Danville trail system to the east and Philpott Reservoir to the west, with a spur to Stuart along the **Mayo River Rail Trail**.

The **High Bridge Trail** connects Pamplin City to Burkeville in Prince Edward, Cumberland and Nottoway counties, and will eventually connect to nearby public lands, greenways in Farmville, and the Appomattox Recreation and Heritage Trail in Appomattox County. There is also potential to connect this long-distance trail to the Tobacco Heritage Trail network.

The **Cumberland-Appomattox Trail** could connect Cumberland and Buckingham counties to the existing Willis River Trail and the proposed Lynchburg to Appomattox Trail.

The **Virginia Central Rail Trail** could link Fredericksburg to Spotsylvania and Orange counties.

The **George Washington Birthplace to Mount Vernon Trail** could connect our first president's national monument in Westmoreland County to his mansion in Alexandria and serve as a major segment of the Potomac Heritage National Scenic Trail.

The **Lower Appomattox River Trail** could connect Chesterfield, Dinwiddie and Prince George counties to the cities of Colonial Heights, Petersburg and Hopewell.

The trail system **Trekking Dinwiddie** could be connected to Petersburg through trails along the lower Appomattox River and to the East Coast Greenway.

The **Cabin Creek Trail** could link several parks in Hopewell to the Lower Appomattox River Trail.

The **Kiptopeke to Cape Charles Trail** will connect Kiptopeke State Park with the Cape Charles Coastal Habitat Natural Area Preserve.

The **Multi-City Bike Trail** could link the Alternate East Coast Greenway to the **Suffolk Seaboard Coastline** and **Western Branch** trails to the west and to trails in Norfolk and Virginia Beach to the east. Portions of this route could also be used as part of the Trans-Virginia Southern Trail to connect the Virginia Beach Pipeline to the Chesapeake Bay. The existing pedestrian access along the Route 264 Berkley Bridge, the Elizabeth River Passenger Ferry, or proposed improvements to the Midtown Tunnel could form the connection between Norfolk and Portsmouth as a link along the alternate East Coast Greenway.

The **Dismal Swamp Canal Trail and Greenway** will connect the historic Deep Creek community in Chesapeake to North Carolina to form part of the Alternate East Coast Greenway.

Study outlines top 10 features of active communities

A November 2006 study highlights the top 10 design and policy features that help make communities healthier and more active. These include:

- Land use and community design that promotes a mix of commercial and residential development and offers walking and bicycle trails to help increase activity.
- Offering transportation choices through mass transit and pedestrian infrastructure.
- Aesthetic features such as historic attractions and monuments that draw pedestrians.
- Institutional and organizational policies that support physical activity, such as physical education programs at schools and showers and gyms in the workplace.
- Promotional campaigns with messages about the importance of activity.
- Providing funding for bike lanes, and parks and recreation facilities.

The study also found that travel patterns figure prominently in how active a community is, because people are more likely to choose alternative and more active modes of travel, such as transit or walking, if they see other people choosing these modes.

(University of St. Louis study, Brennan et al., 2006.)

Local trail planning

DCR survey results showed that both regional planners and local governments agree that a lack of funding is a major problem for trail planners. Only a handful of local governments have a formally adopted trails plan. There are several ways having a locally adopted plan helps localities' chances of bringing bicycle and pedestrian facilities into existence. For example, for road construction projects, VDOT policy allows for using up to 20 percent of total project costs for the cost of bicycle facilities in cases where the improvements lie along a planned designated bicycle or pedestrian route. When proposed improvements do not lie along a designated route, the ceiling is 10 percent of project cost. Having a plan also helps localities compete for Transportation Enhancement and Recreational Trail grants. In addition, these plans can

identify priorities for how annual paved shoulder maintenance funds will be used. Bicycle and pedestrian projects do not have to accompany road projects; they can also be submitted as independent projects to compete against all other projects in a region's six-year transportation planning.

The level of detail and related implementation of existing plans across the state reflects the political climate of the jurisdictions. With only a small percentage of existing plans approved and integrated into the locality's comprehensive plan, there is a risk that future development will not explicitly include bicyclists and pedestrians. Green infrastructure planning at the local level could increase the number of trails and greenways that are integrated into development plans.

Statewide trail planning

Statewide synthesis of existing local plans, many of which have not been formerly adopted, is a challenge for the development of a statewide trails and greenways plan. Both regional and local plans take many forms; along with mobility plans there are bicycle-pedestrian plans, greenway plans, water trail plans, bikeway plans, and open-space plans that incorporate trails. Although most planning districts have a bicycle and pedestrian plan for sidewalks and bicycles lanes or paths within VDOT's right-of-way, implementation has been inconsistent across the state.

Thomas Jefferson Planning District Commission case study

Within any given region, the priority placed upon trail planning is related to the depth of understanding for how trails benefit communities. The Thomas Jefferson Planning District includes the needs of walkers and cyclists in all of their transportation plans, including safety studies, circulation plans, grants, long-range plans, transit plans, levels-of-quality guidelines, and disability-need studies and designs. They also provide local walkability workshops, regional greenways-and-trails forums, and have included \$6 million for walk and bike projects in the Metropolitan Planning Organization's (MPO) long-range plan. The region's concentration of people interested in sustainability has led to the development of the United Jefferson Area Mobility Plan, with the overarching goal to create a balanced, multi-modal transportation network by improving connections throughout the region; improving mobility within neighborhoods, towns, and counties; and making transportation choices which help foster livable communities.

Bicycle and pedestrian accommodations

With increasing interest in bicycling and walking, many localities are beginning or expanding efforts to include bicycle and pedestrian accommodations in their planning efforts. The Virginia Department of Transportation encourages bicycle and pedestrian planning as an element of transportation planning, and publishes a resource guide to assist local and regional planning agencies develop and implement bicycle plans. In 2004, the Commonwealth Transportation Board, which develops policy for VDOT, adopted the *Policy for Integrating Bicycle and Pedestrian Accommodations*, which establishes bicycling and walking as “fundamental transportation modes.” The policy can be found online at www.virginiadot.org/bikepedpolicy.

The policy establishes the principle that all highway construction projects must be approached with the presumption that they will accommodate cyclists and pedestrians. Specifics are determined in the process of planning and designing individual projects. VDOT is currently involved in an extensive implementation effort to work this new approach into the agency’s daily operations.

As with any planning process, the most important aspect of bicycle and pedestrian planning involves obtaining input from the public. Achieving a balance between conflicting demands on the transportation system is also essential. VDOT encourages localities to think in terms of enhancing connectivity, and improving corridors and networks. Many areas in Virginia have organized bicycling clubs that represent the interests of citizen cyclists and help gather and provide information. However, not all community bicycling needs are represented by clubs. Chambers of commerce and local tourism interests often advocate for bicycle and pedestrian accommodations to link points of interest, attractions, accommodations and restaurants. Furthermore, local governments attempting to reduce the number of vehicle trips made each day are interested in bicycle routes and walkways that encourage active living and link residential areas with schools, libraries, commercial centers, parks and employment centers.

Bicycle and pedestrian plans should be integrated into the transportation elements of local comprehensive plans, and plans developed at the regional MPO, planning district commission (PDC) and state levels. Multimodal planning recognizes the importance of integrating non-motorized transportation planning with transit plans and parks and recreation plans (see

chapter IX-B-6, Transportation Programs). To ensure that the improvements in a multimodal plan are carried out, implementation strategies must be developed, and the plan needs to be adopted by the locality or regional body. Facility design guidelines are provided in the *VDOT Road Design Manual*, the *AASHTO Guide for the Development of Bicycle Facilities*, and the *AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities*



VDOT's first official bicycling map is available online: www.virginiadot.org/bikemap.

Railroads and trails

Some of Virginia’s most popular and heavily used trails were once active railroads. As the automobile and the interstate highway system decreased use of railroads, unprofitable lines have been abandoned. Once the rails and ties are removed, the gravel surface remaining provides an excellent base on which to build multi-use trails. The Virginia Creeper Trail, New River Trail State Park, and the Washington and Old Dominion Trail are all former railroads.

The recreational potential of railroad rights-of-way has long been recognized. Congress enacted the National Trails System Act in 1968 to establish a nationwide network of trails. The act provided direction to encourage use of abandoned rail corridors as trails. After 15 years, the number of rail trails developed on abandoned railroads remained small, as most railroads don’t own all the land where their tracks lie. Instead, the railroads often have legal rights, or easements, to use the land of adjoining property owners. When the railroad abandons the rail line, these easements often are revoked, and the property reverts to the adjoining landowners. Establishing a trail under these circumstances requires an agreement with the railroad and all adjacent landowners.

Congress addressed this problem in the *National Trails System Act Amendments* of 1983. Those amendments preclude a railroad’s easement from

lapsing if the right-of-way is used as a recreational trail. As a result, trail-use proponents now only must have a formal agreement with the railroad. Before abandonment is granted to a railroad, posted notices tell the public and all potentially affected persons of the request so that comments and appeals can be solicited. Trail users should respond to the notice and tell the railroad of their interest in the right-of-way as a trail.

Crisscrossing Virginia is an extensive system of more than 3,000 miles of operating railroads. Over the past 30 years, a substantial amount of this railroad mileage has been abandoned. While a few have been acquired for trail use and become very popular recreation resources, the majority of these corridors weren't acquired for recreational use because property ownership reverted to adjacent landowners, or because there was no local support for converting them to trails.

Outside of abandonment, railroad companies usually discourage public use of railroad property because of concerns for the safety of their employees and the risk of liability created by inviting the public on to railroad property. In general, rail companies are reluctant to discuss trail crossings or rails-with-trails proposals. It may take General Assembly action to create an environment in Virginia where railroads will feel safe agreeing to rail-with-trail projects. Rails-with-trails are successful in other states, and these examples are illustrated in *Rails-with-Trails: Lessons Learned* published in 2002 by the Federal Highway Administration. A process for accommodating recreational use along active rail corridors needs to be established in Virginia.

The high-speed rail corridor, a proposed single-track corridor that will allow for high-speed freight and passenger service connecting Washington, DC to Raleigh, NC, is an opportunity for rail with trail through some sections of Virginia. A partnership with the Department of Rail and Public Transportation and railroads for trail development will maximize the public value of these corridors. This coordinated effort could provide a route for the East Coast Greenway through the urban crescent.

Utility corridors

Other utility corridors that may have potential for trail development include water lines, water storage project aqueducts, irrigation canals, historic transportation canals, flood control projects, electric power lines, sewer lines, fiber optics lines, gas and oil transmission pipelines, emergency access and road right-of-ways.

In Alexandria, some neighborhoods have been connected through unutilized street right-of-ways. The Rails to Trails Conservancy reports that 40 percent of current rail trails double as utility corridors under a variety of arrangements. The maintenance of the Washington and Old Dominion Trail in Northern Virginia is bankrolled by lease payments from utilities. The two and a half-mile Cushman Powerline Trail in Gig Harbor, Washington, and a proposed four-mile greenway in Naples, Florida, that will utilize an easement owned by Florida Power and Light, are other examples.

There is potential for utility corridors and trails to coexist and provide mutual benefits through shared maintenance costs. Trail users and volunteer patrols could provide additional monitoring of these shared corridors. Other benefits include making utility corridors more attractive, using a potentially divisive barrier as a connector, the opportunity for public-private partnerships promoting recreation and public health, better use of valuable urban land, and economy of development.

Trail users

Greenways should not all look alike, nor should each facility serve the same user group. One person may seek the solitude of a remote hike in the wilderness, while another wants to join neighbors exercising on a cushioned surface close to home. Someone else may prefer a safe paved path for the quickest possible commute to work or school. Others may wish to preserve a corridor's pristine natural resources, and exclude any recreational use. A well-planned system will meet diverse and expanding needs as new technologies bring additional uses, and better communication expands the user demographic base.

Mountain bicycling

The International Mountain Bicycling Association (IMBA) (www.imba.com) has been a leader in setting standards for mountain bicycling around the world. IMBA sponsors trail construction field schools to help users and land managers learn to build trails that are safe to use and gentle on the environment. User ethics and responsibilities, as well as trail construction techniques, are disseminated through publications and training seminars. Many mountain bicycling clubs have formed throughout the state and are employing IMBA's teachings in working with their public land managers to develop trail systems. Mountain Bike Virginia (www.mountainbikevirginia.com) is the statewide organization.



An IMBA trail building workshop at Pocahontas State Park. Photo by Jennifer Wampler.

DCR has signed a memorandum of understanding with IMBA that pledges both organizations will:

- Work closely in accomplishing common goals and objectives.
- Look for opportunities to conduct IMBA Trailbuilding Schools.
- Encourage collaboration to create, maintain and manage mountain bicycling opportunities where appropriate.
- Acknowledge and promote mountain bicycling as a recreation option at public lands where appropriate.
- Promote and support mountain bike related tourism in Virginia.
- Promote mountain bicycling as a family activity with health benefits.

Bicycling

BikeWalk Virginia (www.BikeWalkvirginia.org) and the Virginia Bicycling Federation (www.vabike.org) work together to advocate for the interests of cyclists across the state. They support a number of local bike

clubs and chapters to provide information and advocacy, lead organized rides, and promote public safety.

The Virginia Department of Transportation's Bicycle and Pedestrian Program strives to make bicycling and walking safer and more convenient for all Virginians. The program coordinator is based in the Transportation and Mobility Planning Division in the Richmond central office, and there is a coordinator in each of the nine VDOT district offices.

Equestrian trails

Trail riding is an increasingly popular recreational activity among Virginia horseback riders. The Virginia Horse Council (www.virginiahorsecouncil.org) appointed a committee to establish direction and coordination of statewide equestrian trail development and maintenance activities. Participating clubs have formed working relationships with public and private land managers across the state to improve and maintain existing trails, as well as to establish new trail riding opportunities. The results of this successful initiative can be seen in national forests, many state parks, state forests and local parks.



The Tobacco Heritage Trail turned a railroad right-of-way into a multi-user trail. Photo by Jennifer Wampler.

Hiking

The American Hiking Society advocates for the interests of hikers in Virginia as well as the rest of the nation. Although there is no statewide hiking organization, a number of active local and regional trail clubs maintain sections of the Appalachian Trail and other hiking trails across the Commonwealth. The Virginia Volkspport Association (www.walkvirginia.com) promotes the spirit of walking and events designed to appeal to all ages.

Motorized trails

The Virginia Off-Highway Vehicle Coalition (www.vohvc.org) represents the interests of OHV users to establish and improve OHV opportunities in Virginia through education, responsible land use, environmental sustainability, and the promotion of safe, friendly, family-oriented recreation. The Virginia Four-Wheel Drive Association (www.va4wda.org) is a family-oriented, nonprofit organization promoting safe, responsible and fun four wheeling. These groups are interested in developing more trails for legal off-road use, particularly in the Eastern part of Virginia.

The U.S. Forest Service reports that one of the fastest growing forms of outdoor recreation involves the use of OHVs. OHV owners and users have risen sevenfold in less than three decades—from about 5 million in 1972, to 36 million in 2002. While only a small number of OHV users leave lasting traces on the land, this small percentage has created undesired impacts. Decreasing availability of open space outside public land and increased population growth and urbanization, along with the adverse impacts of renegade OHV users, has led the Forest Service to attribute unmanaged recreation as one of four major threats to our nation's forests and grasslands. Management of OHV use in the national forests is guided by specific poli-

cies and procedures. In November of 2005, the Forest Service released its Final Rule covering OHV use that prohibits OHVs and other motor vehicles on undesignated routes. The Final Rule provides that Forest Supervisors and District Rangers shall make actual designation of routes after receiving public input.

In West Virginia, motorized trail systems have been created to permit OHV use. The Hatfield and McCoy Trail has become a destination for recreational tourism in a multi-state region. The trail contributes to the economics of the surrounding small towns. Much of the trail system is located on private and corporate timber lands and mining company lands. This land is made available to the public through an agreement with the State of West Virginia. Local and regional governments should look for opportunities to create a similar resource on private lands in Virginia.

Delfosse Trail case study

The Delfosse Trail was a joint project of Nelson County Parks and Recreation and the Delfosse Winery. The goal was to develop a trail that hikers and mountain bikers could share with All-Terrain Vehicles. Built in just four months, this 5.5-mile trail is a great example of a public-private partnership, which will bring business to the winery and provide recreation for residents and tourists. To control the use of this resource, Nelson County will lead scheduled ATV rides, with the trail left open to hikers and mountain bikers during nonscheduled ATV hours when the winery is open. This trail was built with a grant from the Recreational Trails Program.



The Delfosse Trail in Faber, Virginia. Photo by Jennifer Wampler.

User feedback

Users report that there is a need for more diversity within trails systems, particularly for the variety of skill levels within user groups. In many areas of the state where the public only has access to trails on federal land, the trails are generally primitive and appeal to advanced users. Some existing networks fail to provide many functional loops or less challenging trails for beginners or children. The International Mountain Bicycling Association (IMBA) reports that 95 percent of existing trails in the Shenandoah region cater to advanced users only. As a result of funding shortfalls at the federal level, trails in national parks and forests have deteriorated, and users must often have advanced skill levels to negotiate them, limiting the enjoyment of these publicly funded assets. Mountain bicyclers report that trail conditions have significantly deteriorated in the national parks and forests. Many enthusiastic volunteers are drawn from new users, so trails for beginners are important. Additional trails for beginners are desperately needed on public lands.

Other park facilities receive routine staff maintenance, but trail maintenance and monitoring often falls primarily on volunteer groups. The Potomac Appalachian Trail Club maintains approximately 630 miles of hiking, biking and equestrian trails in Virginia. The International Mountain Bicycling Association, through its Virginia chapters, has logged an average of 6,500 volunteer hours per year over the past two years. Roanoke Valley Greenways is currently tracking volunteer hours in a database (www.vast-network.org) that reports over 6,000 volunteer hours. Similar efforts are being made statewide by a committed handful of volunteers for the benefit of all people who enjoy trails.

Many trail user groups report a lack of younger, newer members. This could be the result of an aging population and also indicative of a less active younger generation. As these new members replace retiring volunteers, there is a growing concern that existing ranks may be depleted in future years.

Trail design and the leisure experience

When designing trails, it is important to remember that people use trails because they want to enjoy or challenge themselves, or to escape from hectic lives and become immersed in nature. Spiritual journeys are often made on trails, as people either seek reconnection with nature or the self-confidence that follows from reaching a personal goal. Although it is important to minimize risk, it is also important to design for the desired leisure experience. For trail users seeking soli-

tude, skill challenges, adventure or exercise, an over-built trail can spoil the experience.

At the 2006 Robert Wood Johnson Foundation Active Living Research conference, presenters discussed the features that draw users to trails, particularly in urban areas. Trails with shade, scenic views, and opportunities to see wildlife, large trees, large grassy areas or water features will be used more often. Trails are also more likely to be used if they are perceived as safe and well maintained, and if there are trailside services, particularly food service, available. The number, importance and proximity of destinations that can be reached by the trail also increases the amount of use. Design for amenities that draw users, especially parking, benches, bathrooms and water fountains.

Trail designers also need to know the types of use the trail should support, based upon input from the people who will be using and taking care of the trail. Guidelines or standards for trail development should support the experience(s) desired by these users. Some of these user groups have advocacy organizations that can be very helpful for reaching out to the volunteer network that supports the trail.

DCR has developed a guide for the organization, planning and development of local greenway and trails. The Greenways and Trails Toolbox can be downloaded from DCR's Web site at <http://www.dcr.virginia.gov/prr/docs/toolbox.pdf>

Trail assessment, classification and marking

While levels of risk can vary, the risk should be communicated to the user. Trail assessment, classification and signage should be included in each project to communicate risk and other important information. Trail users grow accustomed to how trail signs convey information if there is uniformity in the way trails are assessed and marked. Virginia should adopt and disseminate a uniform trail assessment system to increase user safety and enjoyment, while identifying and prioritizing maintenance, access and construction needs for the trail manager.

Trail managers should provide information about their trails that allows users to choose the trails within their skill and capability level. It is important for all users, but especially elderly or disabled users, to understand a specific trail's maximum grade and cross-slope, trail width, surface, obstacles and length before using the trail. The Universal Trail Assessment Process (UTAP) is a tool that land managers, agencies and individuals use to monitor, improve and document trails, which enable informed trail choices. This information should

be made available at trails heads, in brochures and on websites.

A comprehensive signage plan is needed to inform trail users about the safe and appropriate use of all facilities and to convey a sense of the place. The appeal and utility of a route is related to the quality, coherence, consistency and frequency of the signs along it. Good signage not only enhances the visitor's experience along the trail, it promotes the trail and conveys the community's economic vitality and civic pride.

Where trails cross jurisdictional boundaries, signs should remain consistent in design, color scheme and logo. Visitors should feel confident that they would not get lost along the route without a map. Clear signing toward and away from a trail system is as important as signs along each route. This alerts automobile traffic to watch out for self-powered traffic and advertises that an alternative to using the car is available.

European countries have developed good models for signing multi-jurisdictional trails. Directional signing for U.K.'s National Cycle Network uses one color for national routes, and another for regional routes. All signs have the user symbol (bicycle) and route number. At frequent locations along the route, signs include key destinations, directions and distances.

Key elements of successful trail system projects

General

- Each project includes a grassroots support effort with enthusiastic people and agencies.
- The projects have a clear plan that illustrates what the individual or group would like to do and how they intend to achieve their desired goals.
- Partnerships exist and each partner has a defined role that is carried out.
- There is access to funding and an understanding of how long-term maintenance and management will occur.

Major criteria for a quality project

- The trail system is sensitive to both natural and cultural resources.
- The trail system generates revenue, either through compatible leased use of the corridor, or through concessions or other trail-related businesses.

- The trail system is a reflection of social responsibility and enhances the community, region, state and country.

Criteria for successful trail system development

- The system must be well planned, including phasing, long-term maintenance and funding.
- The system clearly connects Point A to Point B and usually connects numerous points in-between.
- The trail system has a clear identity with a definitive name that attracts people and defines the trail's focus.
- The trail system is well signed, often with a special identity signage program.
- A well-designed and attractive map is readily available at numerous locations.
- Interpretation is provided. Examples range from simple explanation on maps or at trailheads, to more formal wayside exhibits or even visitor centers.
- Support service systems are available. This can range from highly sophisticated to primitive (for example, trailheads, restrooms, campgrounds, lodging, restaurants, supply shops). Many of the most successful trails link to towns where diverse services are provided.

(Adapted from *Innovative Non-motorized Trail Projects and Ideas*.)

Criteria for long-term viability

- There is a management strategy that describes how the trail will be managed, used and maintained.
- The management plan identifies how specific tasks will be carried out and who will be responsible for them, including schedules and assignments for maintenance activities and staffing requirements.
- The plan identifies management issues and user guidelines to address those issues.
- A monitoring program is established with an enforcement mechanism in place.
- A core of volunteers is maintained through regular meetings, programmed events and continued publicity.

(Adapted from *Creating Greenways: A Citizen's Guide*.)

Roles and responsibilities

Federally managed trails

Most of Virginia's existing long-distance hiking, horse-back-riding, and public off-road motorized trails are on federal lands. The George Washington and Jefferson National Forests contain 2,385 miles of system trails, including 375 miles of the Appalachian Trail. Most of the trails are non-motorized and multi-use, allowing hikers, equestrians and mountain bikers. The forests also have 78 miles of motorized trails open to unlicensed motorized vehicles (ATVs and trail bikes). Shenandoah National Park contains 516 miles of trails, including 101 miles of the Appalachian Trail and approximately 200 miles of horse trails. Together, these two resources provide 2,901 miles of backcountry trails.

In Eastern Virginia, Assateague Island National Seashore, the Great Dismal Swamp National Wildlife Refuge, Back Bay National Wildlife Refuge, Prince William Forest Park and the larger national battlefield parks all offer opportunities for trail users. The Colonial Parkway and the George Washington Memorial Parkway are popular bicycle trails.

The Appalachian Trail is unique because of its history of cooperative management. One-quarter of the entire trail, 550 miles, runs through Virginia. For more than 75 years, the many representatives of the Appalachian Trail Conservancy (ATC) have worked voluntarily with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the trail. The Appalachian Trail Conservancy and its member clubs manage the trail. Recognizing its importance, the Virginia General Assembly in the *Code of Virginia*, Chapter 10.1-203, as amended, designated DCR as responsible for acquisition, administration and management of the trail in Virginia. DCR has a signed agreement with ATC wherein DCR agrees to: review the trail's location on state-owned lands; ensure widespread understanding of the significance of the trail and the components of good stewardship; acquire lands or interests in lands to conserve trail values; delegate responsibility for developing, maintaining and monitoring state-owned trail corridor lands to ATC and trail-maintaining clubs; be a liaison between ATC and other state agencies; and meet annually with representatives of ATC to discuss management and concerns.

State managed trails

Virginia's state parks offer more than 460 miles of trails, many of which connect to the extensive trail and gated roads system in adjacent state and national forests. New River Trail State Park is a 57-mile rail-trail stretching from Pulaski to Galax in Southwest Virginia. The park is a multi-use, non-motorized trail for use by hikers, bicyclists and equestrians. It is connected to the trails in the Mount Rogers National Recreation Area and to the Virginia Creeper Trail that leads to Abingdon. This trail system is almost 175 miles long and intersects many side trails. The Wilderness Road Trail in Lee County joins the Wilderness Road State Park with the Cumberland Gap National Historic Park and uses portions of an abandoned railroad. In addition to hiking trails, many parks have trails for horse-back riding as well as trails designed specifically for mountain biking.

Virginia's Department of Transportation has a number of shared-use paths that run parallel to major roads. Since these are entirely within VDOT right-of-way, they are built and maintained by VDOT. Many of these paths, like the one beside the Fairfax County Parkway, are located in Northern Virginia, where bicycle plans have been in place for many years.

Virginia's Department of Game and Inland Fisheries, within its wildlife management area system, maintains numerous access trails for hunting, fishing and other wildlife-related outdoor recreation. These trails are also open for hiking and horseback riding, although it is not recommended during hunting season, except on Sundays. The popular Virginia Birding and Wildlife Trail, a thematic driving trail that links approved sites across the state, celebrates the diversity of Virginia's natural habitat.

The Virginia Department of Forestry also maintains many trails in 17 state forests. The Zoar State Forest trails, the Willis River hiking and canoe trails in the Cumberland State Forest, and the connector between the Cumberland and Appomattox-Buckingham State Forests are some of the more popular trails in use. Most state forests contain hiking trails (54 total miles) and an infrastructure of forest roads and trails, amounting to approximately 260 miles that are available for use by trail enthusiasts. Horseback riders have recognized the potential that this system of gated roads offers, and have worked with the state forester to build and maintain a system of horse trails in the Cumberland State, Appomattox-Buckingham, and Prince Edward state forests. Mountain bicyclists also use many of the same forest management roads as trails.

Other state-owned lands, such as colleges and universities, include trail systems. Students and the surrounding community heavily use many of these trails. University-owned lands that are not appurtenant to the main campus may have trail development potential and should be evaluated.

Locally and regionally managed trails

Local and regional parks have established lengthy multi-use trails, some of which take advantage of unique corridors in densely populated areas. The W&OD Railroad Regional Park, a National Recreation Trail, follows the bed of the abandoned Washington and Old Dominion Railroad. Administered by the Northern Virginia Regional Park Authority, it extends 45 miles from Alexandria to Purcellville in Loudoun County. The Virginia Creeper Trail, another National Recreation Trail, is a multi-purpose trail constructed on an abandoned railroad right-of-way between the towns of Abingdon and Damascus, and continues through the National Forest to Whitetop Station. In the Roanoke Valley, trails have been developed along streams, utility corridors, abandoned railroads, and through every park and greenway in the region in their combined effort to connect their communities. In Fairfax and Arlington counties, many trails have been developed along stream valleys in designated environmental-quality corridors and stream-valley parks. Short foot trails, such as interpretive and walking trails five miles or shorter in length, are found in nearly all recreational areas and in many local parks throughout the Commonwealth.

Trails on private land

Privately owned corporate properties also may help meet trail needs. In some cases, trail recreation may suitably interface with management activities on lands owned by forest product companies, utility companies, mining companies or agricultural lands. Cooperative management programs for limited recreational use have been developed with Westvaco Corporation on some of its lands. For example, Westvaco Corporation maintains a 2.8-mile nature trail along Buffalo Creek in Bedford County that is used for recreational and environmental education purposes. Hundreds of miles of corporate forest roads, which provide access to timber, offer a wide variety of potential trail opportunities. User groups should work with the companies to help develop and maintain these trails.

Private individuals often voluntarily offer trails through their property. They may give an easement on a portion of their land, or may allow access through an agreement with a governmental agency. In these instances, the landowner's liability is greatly limited (§29.1-509 of the Code of Virginia). Many local businesses have developed trails along their property, connecting to existing trails and providing key linkages for public trail systems. With more businesses realizing the value of trails for employees' physical and mental health, corporate trails are more numerous and should be included in local comprehensive trail plans. In addition, many developers realize that the incorporation of a trails system into their plans can help increase housing and office space values and boost sales. Private trails enhance the community and should connect into public systems.

Proffers

Trail and greenway facilities can also be proffered in on private developments. In order to increase funding leverage for proffers, locally adopted plans should identify areas for a trail network. Special attention should be given to areas where the locality anticipates development and where rezoning cases are likely. The presence of a bicycle or pedestrian route, located in a locally adopted plan that runs alongside a road or corridor adjacent or through a proposed development, provides the developer with additional motivation to proffer in that facility.

Citizens can also play a role in encouraging a developer to proffer in trails and greenways. Citizen groups should contact the developer as soon as the proposed development is announced and ask for specific bicycle and pedestrian accommodations. A developer who had not originally planned to provide these facilities may be willing to include them after a large show of community support. Citizens should be aware that proffers are legal documents, and the type of trail or greenway should be described in detail and reviewed by a lawyer. For example, language that just refers to "bike path" is too vague; the language should describe the length of the trail, location of the trail, the surface, the width and any other amenities desired, such as lighting or shoulders. (Adapted from VDOT's Bicycle Facility Resource Guide.)

Tips for working with developers

The Fifth Amendment's takings clause and associated legal precedent prohibits conditioning subdivision and site plan approvals upon a developer's willingness to allow or provide a public trail. When a landowner is requesting a zoning change, or if the zoning ordinance provides density or other bonuses to the developer in return for trail access, there may be an opportunity to negotiate for the desired improvements, especially if they are mentioned in the jurisdiction's comprehensive plan. It is important to have someone at the table early in the process who understands the leverage and mutual interests of each party to negotiate for a connected trail system.

Tips for local government

- Have reasonable language in an approved plan that is supported by the local planning commission and board of supervisors or city council.
- Have a good map that is easy to access showing the overall plan.
- Develop design specifications as part of a "Standards for Developers" manual. This manual should include trail classifications that relate back to the adopted plan.
- Develop trail language to include on the developer's checklist at project conception.
- Request the improvement early in the process. Negotiate for the desired improvement in the zoning process, preferably during the pre-application stage.
- Review zoning applications to ensure appropriate final language.
- Review site plans as early as possible to ensure that the project is designed correctly. In addition to plan compliance, ensure minimal disturbance to natural resources, low long-term maintenance cost, ease of maintenance access, appropriate surface for surrounding and predicted uses, access for people with disabilities and reasonable cost to developer.
- Inspect trail facilities prior to construction, under construction if needed, and at completion for compliance with approved plans and accepted standards.
- Allocate staff time to provide the review outlined above. Ensure that this staff person is qualified and can handle high-pressure situations.
- Develop a standard operating procedure (SOP) to outline the review process.

"Both the county's Design Standards Manual and the greenways section of the Open Space and Natural Resource Plan have useful information for developers. We also require a pre-application conference for any new development plan, where natural resource protection areas and bicycle-pedestrian connections are discussed."

—Dan Ashby Mahon, Supervisor, Greenway, Blueway Division, County of Albemarle Department of Parks and Recreation

Tips for advocates

- Ask your locality to create a position within parks and recreation, public works, planning or a related department to implement the recommendations for trails in the approved plan.
- Ask your locality to appoint a committee to act in an advisory capacity in the development of transportation plans. This committee should evaluate plan progress and recommend amendments and updated project descriptions. The citizens' committee can also present plan updates and recommendations for plan amendments to the metropolitan planning organization (MPO) for endorsement and approval by the MPO policy board. Made of members of the public, this committee should be appointed by localities and the MPO policy board. The committee should meet regularly to review and develop plans and assist in organizing and managing public meetings and comments.
- Ask your local board of supervisors to establish a pedestrian task force, consisting of citizens, appointed commission members and multi-disciplined staff, to review existing county pedestrian programs and activities, make recommendations on improving these programs, develop coordinated education and outreach efforts, and prioritize funding for pedestrian projects.
- Publicize and reward the work of developers, businesses and community leaders who support trail and greenway development.
- Bring something to the table such as money, equipment for trail development, or labor for trail maintenance or monitoring to demonstrate local support for the project.

For sample language in approved plans in Virginia, refer to page 104.

Implementation strategies

Although every greenway project is different, these strategies can help move a project from a great idea to a community investment.

Target a demonstration project

Focus on building one section of your greenway that will highlight the positive impacts on the surrounding community. Choose a manageable and popular project.

Secure the land

Develop a matrix or table that includes the parcels under consideration, current use and ownership, existing level of protection (if any), the degree of control needed over each parcel, potential future uses, development threats, available funding, and the needs and wishes of the landowners. Although outright or fee simple purchase of the property will provide the most control over the property, other agreements like easements, conservation restrictions, and negotiations for public access may be all that is needed.

Seek partnerships and work with landowners

Land trusts and other nonprofit organizations can help develop and implement an effective protection strategy and work directly with the landowner to discuss the available options and associated tax benefits. Begin the dialogue with landowners early in the process. Start with the easiest and most accessible properties as the cornerstones of the greenway project. Respect landowners concerns and make modifications as needed.

Develop an implementation strategy and map

Determine which land protection techniques to use for each section of the greenway, and develop a timeline for milestones at both the parcel and the corridor level. Estimate the funding needed for each phase of the project and begin fund raising. A project map should show the corridor in relation to areas already protected, key resources and linkages, and critical parcels. Continue to design, develop and publicize the greenway, and get it on local and regional land-use maps.

Adapted from *Creating Greenways: A Citizen's Guide*. Available online at <http://www.mass.gov/dcr/stewardship/greenway/creatinggreenways.htm>

The role for local governments

Since most projects evolve at the local level, all jurisdictions should have a trails component in their comprehensive plan that includes a variety of trail types to meet different user needs. Planners should retrofit local transportation plans to include bicycle and pedestrian accommodations. In Fairfax County, a greenways plan has led developers to connect planned developments to existing and proposed elements of the trail plan. Over the years, this has resulted in an extensive system and preservation of stream valleys. Incorporating trails and greenways into residential, commercial and industrial construction is an efficient way to build trail infrastructure, and it complements the public investment. Maintenance costs can also be shared with homeowners associations, businesses and other stakeholders if plans, standards and policies are in place.

Creative local funding

A variety of approaches has been used successfully in Virginia to fund trail development projects. Local governments may want to follow Augusta County's approach and implement a capital improvement incentive program that provides a match for private dollars committed to trail development. Augusta County has leveraged \$2 million in public funds with over \$4 million from the community since their match program was initiated in the late 1980s. In Chesterfield County, use of the sheriff's prisoner work force to build trails and bridges provides a community amenity while inmates receive training in carpentry and trail construction.



The Government Center Trail in Chesterfield was constructed with labor from the sheriff's work force. Photo by Jennifer Wampler.

Trails and Greenways

To provide for capital planning and management of trails within a city or county, planners should identify current gaps in information. To create plans that address more than just short-term, day-to-day operations, trail managers must have data on existing trail inventory, the condition of trails, what they are used for, what investments need to be made, how these investments should be prioritized and how a rational funding process can be implemented. Answering these questions is critical to the success of a comprehensive capital planning program that addresses the full spectrum of trail issues from budgeting and financing, to construction, maintenance and management.

To maximize trail promotion efforts, local governments should initiate efforts to have local trails designated as part of larger systems where appropriate. This may bring additional resources for maintenance as well through an expanded user base. The Occoquan Trail in Bull Run, an 18-mile hiking and equestrian trail, has recently been designated as a National Recreation Trail. This trail will be publicized on the American Trails website, www.americantrails.org, and receive markers to post along the trail.

The role of state government in trail planning

State agencies play many different contributing roles related to greenways and trail planning. Each agency representative should have an understanding of the various roles other agencies play when providing technical assistance for trail projects. As greenways continue to evolve, coordination of the related agencies and organizations becomes more complex. Backed by thoughtful planning, projects can draw on the strengths of these agencies as opportunities for partnerships emerge.

DCR's greenways and trails program

DCR is tasked by the *Code of Virginia* to develop a statewide system of trails. DCR does this in coordination with the various state agencies and organizations that are stakeholders in trail planning and development. DCR also provides assistance to communities to identify, plan and develop greenways through technical assistance and educational outreach. A trails and greenways strategic plan will be developed to prioritize the recommendations from the *Virginia Outdoors Plan*. The strategic plan is essential to develop action steps and promote partnerships for the success of the state program. An advisory committee will be appointed to assist with the development of the strategic plan.

Comprehensive Virginia greenways and trails plan

At this point, both DCR and VDOT lack a comprehensive plan for greenways and trails or bike and pedestrian facilities. Roles and responsibilities are not well defined, and there is a need for better communication with stakeholders. When the state trail inventory and database is updated, and additional local or regional plans are complete, the stage will be set for developing a comprehensive Virginia greenways and trails plan. Comprehensive planning is an attempt to establish guidelines for the future growth of the Commonwealth's greenway system. As the term "comprehensive" suggests, this is an all-inclusive approach to addressing the issue of how greenways will evolve in our communities. A comprehensive plan is the formal document produced through this process, and is designed to serve as a guide for decisions about greenway development. The plan is an instrument to be used by community leaders who establish policies and make decisions regarding the physical development of greenways. This plan should be a comprehensive, long-range, general guidance instrument that focuses on physical development, and relates physical design proposals to community goals and social and economic policies. A sustained and cooperative effort is important to realize the vision of a statewide network of trails and greenways connecting the Commonwealth.



The Sugarland Run Trail in Herndon connects homes to nearby long-distance trails. Photo by Jennifer Wampler.

Federally Designated Trails in Virginia		Tourism-Recognized Trails in Virginia	
National Recreation Trails DeHart Mountain Trail New River Trail State Park Virginia Creeper Trail Algonkian Regional Park Sanctuary Trail The Massanutten Mountain Trail Buffalo Creek Nature Area Rivanna Trail Bull Run-Occoquan Trail Apple Orchard Falls Hoop Hole Sprouts Run Jack-o'-Lantern Branch Heritage Trail Washington and Old Dominion Trail Wild Oak Trail Cornelius Creek Blackwater Creek Cascades Flat Top-Falling Water Cascade Little Stony Creek Mount Rogers Mountain Laurel Petersburg Battlefield Pine Mountain	Rock Castle Gorge Seashore State Park Spotsylvania Battlefield Potomac River Water Trail Fairfax Cross Country Trail Virginia Capital Trail	Virginia Heritage Trails Virginia Civil War Trails The Crooked Road-Virginia's Heritage Music Trail Captain John Smith Trail Jamestown Discovery Trail Civil Rights in Education Heritage Trail Overmountain Victory National Historic Trail	Bicycling in Virginia Virginia Capital Trail Virginia Creeper Trail Tobacco Heritage Trail US Bicycle Route 76 and Blue Ridge Parkway Heart of Appalachia Route New River Trail Northern Virginia Trail Network
	National Historic and Scenic Trails Appalachian National Scenic Trail Potomac Heritage National Scenic Trail Overmountain Victory National Historic Trail Captain John Smith Chesapeake National Historic Trail	Virginia Nature Trails Virginia's Birding and Wildlife Trail Virginia's Appalachian Trail Virginia Creeper National Recreation Trail	Trails on the Horizon Wilderness Road Trail 'Round the Mountain Artisans Trail On Hallowed Ground Trail
	National Millennium Trail East Coast Greenway Appalachian National Scenic Trail Civil War Discovery Trail The Underground Railroad	Virginia Winery Trails Blue Ridge WineWay Monticello Wine Trail Loudoun's Wine Trail Northern Neck Wine Trail Bedford Wine Trail Shenandoah Valley Wine Country Trail Heart of Virginia Wine Trail	
Community Millennium Trail			
James River Heritage Trail (Blackwater Creek) African American Trails-Charlottesville Alexandria Heritage Trail Bay View Trail-Lorton Bicentennial Trail-Blacksburg Bridle Trails-Sky Meadows State Park-Paris Civil War Discovery Trail-Arlington Fairfax Cross County Trail Fluvanna Heritage Trail-Palmyra Hanging Rock Battlefield Trail-Roanoke Heart of Appalachia Bike Route and Scenic Drive-Big Stone Gap Huckleberry Trail-Blacksburg		New River Trail State Park-Foster Falls Radford Pathways Network Riverway Reston Pathway System Shady Ridge Trail-Dublin Battlefield Trail-Randolph Williamsburg Historic Necklace Thomas Jefferson Parkway-Charlottesville Turtle Island Trail-Huddleston Twin Pinnacle Trail-Mouth of Wilson Virginia Civil War Trails-Richmond Washington and Old Dominion Railroad Regional Park-Arlington White Oak Trail-Newport News Wytheville Historic District	

Technical assistance and funding

The Department of Conservation and Recreation provides technical assistance to agencies and organizations interested in developing any of the different types of trails identified in this section. The Virginia Greenways and Trails Toolbox has been developed by DCR to assist trail proponents, planners and developers.

The National Park Service Rivers and Trails Conservation Assistance Program provides publications and technical assistance for greenways, blueway and trails projects.

The U.S. Department of Transportation Federal Highway Administration (FHWA) makes funds available to states to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses through the Recreational Trails Program (RTP). The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users program, known as SAFETEA-LU, will provide funding for public trails and enhancements for the 5-year period from 2005-2009

The Virginia Department of Transportation (VDOT) provides technical assistance in the development of pedestrian and bicycle accommodations and in planning the bicycle components of community transportation plans.

Funding sources for bicycle and pedestrian accommodations

For additional information about these funding sources please reference the *Virginia Bicycle Facility Resource Guide*, available on VDOT's website. When seeking funding, the first and most important step is to get a facility on a local plan.

- Get the accommodation listed on a locally adopted bicycle and pedestrian plan, preferably as part of the comprehensive plan, when the plan is updated (generally every five years).
- If no local bicycle or pedestrian plan exists, provide encouragement for the creation and adoption of a local plan.
- If the accommodation is part of the public facilities improvements listed in the comprehensive plan, funding may be available through the locality's Capital Improvements Program.
- If the accommodation is already on a plan but has never been implemented, encourage the locality to fund the improvement. Matching funds in the form of

volunteer labor, donated material or equipment are great catalysts for facility development.

Virginia Department of Transportation

- Highway Construction Funds
- Maintenance Funds (2 percent goal of budget to be used to pave shoulders)
- SAFETEA-LU Transportation Enhancement Program
- Congestion Mitigation and Air Quality Improvement (CMAQ) Funds
- Recreational Access Program
- Highway Safety Improvement Program
- Revenue Sharing Program
- Safe Routes to Schools

Federal Highway Administration

- SAFETEA-LU Scenic Byways Program
- SAFETEA-LU Public Lands Highways Program
- SAFETEA-LU Transportation and Community System Preservation Program

Virginia Department of Rail and Public Transportation

- SAFETEA-LU Transit Enhancement Program

Links to Sample Plans

Alexandria Open Space Plan

Available online at <http://alexandriava.gov/recreation/general/OpenSpacehome.html>. Also see the Draft Transportation Plan, bicycle and pedestrian sections at http://alexandriava.gov/tes/policy_and_program/draft_master_plan.html.

City of Charlottesville Comprehensive Plan

See Chapter 6: Transportation, and Chapter 10: Community Facilities. Available online at www.charlottesville.org/Index.aspx?page=1745.

Fairfax County

Review the organizational structure Fairfax County uses to oversee and implement bicycle and pedestrian projects at www.fairfaxcounty.gov/NMTC. For the Existing Trails Map go to www.fairfaxcounty.gov/NMTC/maps.html.

Resources

American Trails

P.O. Box 491797
Redding, CA 96049-1797
(530) 547-2060
www.americantrails.org

Appalachian Trail Conservancy

P.O. Box 807
799 Washington Street
Harpers Ferry, WV 25425-0807
(304) 535-6331
www.appalachiantrail.org

Bikes Belong Coalition

P.O. Box 2359
Boulder, Colorado 80306
(303) 449-4893
bikesbelong.org

BikeWalk Virginia

PO Box 203
Williamsburg, VA 23187-0203
(757) 229-0507
www.bikewalkvirginia.org

International Mountain Bicycling Association (IMBA)

207 Canyon - Suite 301
Boulder, CO 80302
(888) 442-4622
www.imba.com

Rails to Trails Conservancy

1100 17th Street, NW 10th Floor
Washington, D.C. 20036
(202) 331-9696
www.railtrails.org

Virginia Horse Council

P.O. Box 665
Mineral, Virginia 23117
(888) 467-7382

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Federal Highway Administration. The Universal Trail Assessment Process. U.S. Department of Transportation. www.fhwa.dot.gov/environment/sidewalk2/sidewalks213.htm

Greenways and Trails. Creating Greenways: A Citizen's Guide. Massachusetts Department of Conservation and Recreation. www.mass.gov/dcr/stewardship/greenway/creatinggreenways.htm.

Innovative Non-motorized Trail Projects and Ideas. Prepared for Colorado State Trails Committee, August 2000. <http://atfiles.org/files/pdf/InnovativeTrails.pdf>

Mackaye, Benton. 1921. An Appalachian Trail: A Project in Regional Planning. *Journal of the American Institute of Architects*.

Rivers, Trails and Conservation Assistance. Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors. National Park Service. www.nps.gov/pwro/rtca/econindx.htm.

One summer night, out on a flat headland, all but surrounded by the waters of the bay, the horizons were remote and distant rims on the edge of space. —Rachel Carson

Whether on Virginia's Chesapeake Bay, Atlantic Ocean, or the Commonwealth's lakes, rivers or streams, recreational waters are places of solitude, restful settings for picnicking, walking, jogging, sunbathing, swimming, fishing, surfing, boating, sailboarding and camping. With water access being one of the recreation resources in greatest demand throughout the Commonwealth, planning for these various types of water access is a priority. Because much of Virginia's shoreline is privately owned, to meet the growing demands on water resources indicated in the 2006 *Virginia Outdoors Survey* (2006 VOS), partnerships between private and public landowners are a necessity.

For the purposes of this plan, water access involves both motorized and non-motorized watercraft, fishing piers, bank fishing, beaches and natural water bodies suitable for swimming, natural area access, places to view the water, as well as water trails and blueways. "Water trails" and "blueways" are terms used synonymously in this plan. These resources follow linear river and stream corridors and often link all these types of water access together. Water trails and blueways are recognized for offering an array of recreational opportunities, both from the water and the land.

Based on the 2006 VOS, more than half of the survey participants felt the most needed outdoor recreation

opportunities include public access to state waters for boating, fishing, swimming and beach use. Participation rates for activities involving water access are listed below. Since planning for the *Virginia Outdoors Plan* began in 1965, fishing has remained a favorite outdoor recreation activity and continues to increase in popularity with each survey. Combined saltwater and freshwater fishing grew 8.7 percent between 2002 and 2006. Over the past five years, kayaking and canoeing has increased more than other water-dependent outdoor recreation activities with a 17.8 percent increase in participation between 2002 and 2006.

According to the 2006 VOS, swimming, sunbathing, fishing and boating are respectively the fifth, sixth, seventh, and 10th most popular outdoor recreational activities. Additional access to Virginia's rivers and streams is necessary to meet water-related recreational demands. To help meet this statewide public access need, lands should be acquired or use agreements arranged. Whenever roads cross water bodies or road improvements are planned, the potential for parking, fishing and boat launches should be evaluated. Appropriate portages designed around dams and other river obstacles are also needed to ensure safe recreational use on waterways.



Sixty-one percent of all swimming takes place in outdoor pools. Photo by City of Richmond Parks, Recreation & Community Facilities.

Table VII-2 Water-based Recreation

Activity	Participation Rate
Sunbathing at a Beach	37% of Virginia households participate
Swimming	44% of Virginia households participate
<u>Type of swimming</u>	<u>Ranking by type of swimming</u>
Outdoor Pool	61%
Indoor Pool	40%
Lake	23%
River	19%
Chesapeake Bay	19%
Other Place	35%
Boating	25% of Virginia households participate
<u>Type of boating</u>	<u>Ranking by type of boating</u>
Canoeing and Kayaking	10%
Power Boating	9%
Tubing	5%
Jet skiing/ Personal Watercraft	5%
Water skiing	4%
Sailing/Sailboarding	4%
Rafting	2%
Fishing	26% of Virginia households participate
<u>Type of fishing</u>	<u>Ranking by type of fishing</u>
Freshwater Fishing	20%
Saltwater Fishing	16%

(2006 Virginia Outdoors Survey)

Findings

General

- The 2006 *Virginia Outdoors Survey* shows a 17.8 percent increase in combined water access needs for Bay, river, stream and ocean activities and for outdoor swimming opportunities from 2002 to 2006.
- Regional authorities have demonstrated effectiveness in increasing and managing water access. For example, since the General Assembly authorized the establishment of Public Access Authorities on the Northern Neck and Middle Peninsula, these entities have been addressing the regional need for additional public access and management of access to waters of the state.

- The Chesapeake Bay Agreement calls for an increase of 30 percent (for a total of 66 public access sites) in the tidal region of Virginia by 2010. Since 2000, 36 public water access sites have been added.
- Many of the recreational rivers and streams of the state do not have adequate public access and there is no adequate funding mechanism to help address the variety of water access needs. Increasingly heavy use of popular water resources indicates a need for increased public access. Many water access sites struggle with conditions of overcrowding, overfishing, trespassing, littering and conflicts between user types.
- Recreational use of Virginia's waters is safer if enhanced by the presence of law enforcement.

Boating

- A formal process for evaluating, developing and managing public access sites for boating is needed.

Beaches

- There are currently 29 miles of public tidal beach-front land in Virginia and less than 1% of Virginia's shoreline is in public ownership.
- Beach advisories were posted on 11 beaches for 20 calendar days in 2004, on 8 beaches for 42 calendar days in 2005, and on 4 beaches for 40 calendar days in 2006.

Fishing

- Bank and pier fishing is sought after in all localities along rivers, streams, lakes and in the Bay and ocean.



Wheelchair-accessible fishing at Lake Anna State Park. Photo by DCR.

Water Access and Blueways

- Appropriate bank and pier fishing opportunities are needed to protect water and fisheries resources.
- There is a need for additional wheelchair-accessible fishing opportunities.

Water trails

- Approximately 1,160 miles of water trails exist in Virginia. The establishment of the Captain John Smith Chesapeake National Historic Trail added more than 2300 miles throughout the Bay area.
- Water trails are popular recreational resources that provide access along rivers, streams, the Bay and lakes while providing educational opportunities for learning about local and regional history and supporting local economies.
- Adequate support facilities at reasonable intervals along water trails encourage proper use and maintenance of water trails, and discourage public use of adjoining private lands.
- Coastal Geospatial and Educational Mapping System (Coastal GEMS) program may be used to identify resources and create water trail maps. Water trail maps provide an opportunity for resource managers to remind the user about stewardship responsibilities and outdoor ethics.
- The National Oceanic and Atmospheric Administration (NOAA) Chesapeake Interpretive Buoy project will revolutionize how water trails are marked and used. The buoys will collect real-time data and emit historical data. See <http://noaa.chesapeakebay.net/CbayBuoySystem.aspx>.
- Railroads parallel many water bodies and severely limit access to these resources.

Recommendations

General

- The Virginia departments of Conservation and Recreation (DCR) and Game and Inland Fisheries (DGIF) should work with local governments to identify and increase water access opportunities to Virginia's southern rivers, as well as to meet the commitments of the Chesapeake Bay Agreement for water access.
- Local governments should be involved in providing water access opportunities. City, county and town governments should take the initiative to provide water access areas and facilities.
- State and federal agencies should concentrate on

access to rivers constituting recreational resources of greater than local significance.

- Local public and private cooperation should be encouraged to provide water access. Park and recreation planners should identify corporate owners of riparian lands in their localities and determine their willingness to make land available for the development of water access facilities.
- DCR should continue to comment on highway projects, including all state and federally funded bridge projects, to encourage public access to the state's waters. If DCR knows that a locality wants an alternative bridge design at a particular location, this will be included in the comments that are provided to VDOT.
- The state should continue to develop public access authorities and regional park authorities to facilitate additional public access acquisition and partnerships.
- Minimum development standards for public water access sites should address signage, maintenance, trash, parking and public restroom facilities in high use areas.
- Users should abide by a code of ethics to cooperate with one another to resolve conflicts and maximize use of the water resource.
- Outfitters, users and local government officials should consider developing management plans to address problems such as: user conflicts, trespassing, litter, noise and sanitation issues on blueways and on public beaches.
- The Virginia Department of Environmental Quality (DEQ) should extend the Coastal GEMS mapping tool west of the Bay area.
- DGIF and DCR should work with law enforcement to develop partnership plans addressing water access issues, especially along water trails. Consider assigning a trained law enforcement officer on and along the river and at formal and informal access points.

Boating

- A state source for funding, or partnership for funding, the development of access points and support facilities for paddlers needs to be established that is an addition to federal motor boat access funds or other existing programs. Planning for public sanitation at existing and proposed sites should be prioritized.



Boating and fishing are top ranked recreational activities. Photo by DCR.

- Wherever a renovation, relocation or development project is planned for a highway that crosses a recreational body of water, the roadway should be evaluated to determine its suitability for public access, especially for boaters. Old ferry crossing and landing sites and bridge sites should be evaluated for their suitability to provide water access and water related recreation, particularly in the coastal area of Virginia.
- DGIF and DCR should study the suitability for powerboat access and recreational boating capacity on rivers showing a need for additional powerboat access.

Beaches

- Federal, state and local governmental agencies should continue acquiring and developing public access to beaches. Cooperative agreements among localities and other agencies, as well as private landowners, are encouraged in order to meet the increasing need for public access to beaches and other water-related recreational resources.
- Public agencies should maintain access to existing public beaches that may be jeopardized by changes in climate, land use and development activities.

- All agencies should provide adequate seasonal support facilities and services, such as restrooms, concessions, parking and maintenance at their existing public water and beach access areas.

Fishing

- Water trails should include points for informal bank fishing.
- Fishing should be considered in bridge design, especially in urban environments.
- Local and regional parks should consider wheelchair-accessible fishing areas and integration of fishing into parks and recreation programming.

Water trails

- Local and regional governments should consider managing navigable rivers of the state as water trails. Public access areas and support facilities should be developed at appropriate intervals along these rivers. Water trail brochures should be developed that map access points, use areas, campsites, hazards and the source for flow-level data. DCR should work with local and regional representatives to produce brochures and maps for each river showing access points, day use and camping areas, resupply points, hazards, points of interest along the river and other trip planning information. This infor-

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mation should be integrated into the expanding Coastal GEMS program.

- DCR should develop a water trail feasibility and assessment toolbox for local governments and non-profit organizations. This toolbox should include assessment criteria to measure the feasibility of establishing water trails, tips for minimizing user conflicts, and considerations regarding the carrying capacity of the resource. These criteria should be applied in developing regional priorities for water trail implementation.
- DCR should partner with DGIF and DEQ to develop a Geographic Information System (GIS) database for recreational water access to address user information needs, especially along water trails and blueways.
- Site managers should post signs at each public access area showing the range of safe river use.
- VDOT should install signs for boaters on waterway bridges that identify the road crossing the bridge.
- Local jurisdictions should encourage both private and public landowners to operate rest stops and boat-in-only campgrounds where needed on those areas of Virginia rivers that are capable of accommodating such use.
- Local, regional and state water trail supporters should work with the railroad industry to develop criteria and a process for evaluating and implementing access sites over or adjacent to railroad rights-of-way along Virginia's rivers and streams.
- DCR and the regional planning district commissions should work with the American Canoe Association and other nonprofit organizations to increase awareness and market the benefits of water trails and water access.
- Virginia should develop a system of measuring river miles in collaboration with other states and the Army Corps of Engineers.
- Outfitters and guides should follow Professional Paddle Sports Association guidelines.
- A partnership of federal, state, regional and local organizations should implement the goals for the Potomac Heritage National Scenic Trail (PHNST) in Virginia's Lower Potomac River corridor.
- DCR, regional and local organizations should continue to support the Captain John Smith Chesapeake National Historic Trail in Virginia to promote stewardship of Virginia's rivers and the Chesapeake Bay. A comprehensive access study

should be conducted to determine potential locations for visitor services along the water trail.

- The American Canoe Association's recommended water trails for 2006 includes the Lower Mattaponi-Pamunkey Canoe Trail.

Boating

The DGIF Boating Access Program traverses the Commonwealth providing access to all river systems, the Chesapeake Bay and the Atlantic Ocean. The program's success is due to its many partners. DGIF owns, operates or cooperates on 219 facilities. These include more than 90 facilities on local property, and approximately 55 sites at bridge crossings and terminated roads at waters edge in cooperation with the Virginia Department of Transportation (VDOT). These partners also support the boating access program by contributing to the operations and maintenance at certain sites. The remaining sites are owned, constructed, operated and maintained by DGIF.

The boating access program has sites located in 84 jurisdictions and on 106 water bodies. These facilities provide 419 launch lanes, 105 courtesy piers, 11 boat slides, 148 river access sites, 62 lake access sites, seven Chesapeake Bay access sites and two Atlantic Ocean access sites. The program has 31 saltwater sites and 188 freshwaters sites. There are more than 248,000 active registered boats in Virginia and on many weekends the facilities are full with overflow parking along the entrance roads. The boating access program provides boat launches for non-power sites along upland rivers and streams and facilities for powerboats on saltwater or open freshwater. For boating access sites and information, see the DGIF website at www.dgif.virginia.gov/boating/access.

The DGIF Boating Access Program works closely with a very important partner- the U.S. Fish and Wildlife Service. In 1950, Congress passed the Federal Aid in Sport Fish Restoration Act, also known as the Dingell-Johnson or D-J Program. This Act created the Sport Fish Restoration Program administered by the U.S. Fish and Wildlife Service. The objective of the program is: "To support activities designed to restore, conserve, manage, or enhance sport fish populations and the public use and benefits from these resources; and to support activities that provide boating access to public waters." Since the revenue to support this program is generated from a federal tax on gasoline used to fuel motorboats, the funds from this program can only be used on boating facilities for motorboat access.

While direct participation is limited to fish and wildlife agencies, the general public ultimately benefits. States are reimbursed up to 75 percent of the total project cost. Since 1986, DGIF has invested almost \$11 million of Sport Fish Restoration Funds in the development and maintenance of boating access facilities. These funds have been invested to develop 40 sites in more than 35 cities and counties, of which 26 sites provide access to freshwater and 14 sites provide access to saltwater. These 40 facilities provide 78 lanes to launch and retrieve boats and approximately 2,000 spaces to park a vehicle with trailer. DGIF has invested almost \$4 million of program funds for the maintenance of approximately 150 boating access sites each year.

DGIF has a prescribed process for evaluating and selecting boating access facilities. Some of the criteria used to evaluate sites are: sufficient land control and area to support the facility, water depth, environmental conditions, adjacent land use, terrain and topography, proximity to roads and other access sites, development and maintenance funding, and partners or cooperators. DGIF offers technical assistance to local governments and the general public when building access facilities and boat ramps. (www.dgif.virginia.gov/boating/bldg_boat_ramps.html)

Public need for boating access to the waters of our state is growing, and DGIF is continuing to seek, evaluate and select sites to develop. Boating access users are hunters, bird watchers, anglers, paddlers and powerboaters, wildlife enthusiasts, eco-tourists, conservationists, preservationists. They are every citizen of our great Commonwealth, and many of the visitors are from out of state.

America's Waterway Watch

www.americaswaterwaywatch.org

America's Waterway Watch is a public outreach program encouraging participants to simply report suspicious activity to the Coast Guard or other law enforcement agencies. America's Waterway Watch encourages recreational users to adopt a heightened sensitivity toward unusual events or suspicious behavior encountered around ports, docks, marinas, river shorelines, reservoirs, beaches and waterfront communities. The Coast Guard and local first responders cannot do the job alone. To report suspicious activity, call the National Response Center (800) 424-8802 or (877) 24-WATCH. In case of immediate danger to life or property call 911 or Marine Channel 16.



Boating on the tidal rivers. Photo by Virginia Tourism Corporation.

Tidal water access

Almost 2,400 square miles of the Chesapeake Bay, several smaller bays and estuaries, and Virginia's 115-mile Atlantic Coast have a total of more than 5,300 miles of shoreline. Collectively this represents one of the state's most important resources. It would seem that this abundance of water in the Bay and its major tributaries would provide more than adequate area to meet recreational demand. However, only one percent of the shoreline is publicly owned and available for public use. While commercial marinas provide the bulk of boating access facilities, there are still not enough access points, including those in the public sector, to meet the increasing demand.

In June 2000, governors of the Bay states signed the 2000 *Chesapeake Bay Agreement* to improve the quality of the bay and its tidal tributaries. One of the agreement's major initiatives is improving public access to the tidal waters of the Bay. This commitment calls for a 30 percent increase in enhanced or new access sites, including boat ramps to the waters of the Bay region. This commitment will require substantial resources for the future improvement of water-dependent and water-enhanced recreational opportunities. An integral component of that initiative was the 2000 *Chesapeake Bay & Susquehanna River*

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Public Access Guide, which contains maps and matrices showing the location of public access sites along with the facilities available at each. This map was updated in 2006 and distributed widely throughout the Bay states. This map serves as the baseline from which progress is measured in meeting access commitment.

Inland water access

Virginia's large lakes provide a myriad of recreational opportunities, including power boating, sailing and water skiing. The 2006 VOS measured more than 20 million annual activity days of demand for the combined fresh water activities. This represents a dramatic increase in use from that reported in the 2000 survey.

Historically, a majority of the public's recreational access to rivers and streams has been informal, consisting primarily of road rights-of-way at bridge crossings and some access across private lands with owner permission. In the past, these informal sites, in combination with facilities provided by DGIF and others, were adequate to satisfy the demand. However, dramatic increases in use during the last few years, coupled with the loss of a number of key informal access sites, has resulted in increased crowding in some areas and diminished use of other key stream segments. There is a need for a formal program that identifies, acquires, develops and manages inland public water access sites.

Water safety

DGIF has responsibility for water safety and fishing regulations throughout the Commonwealth. Localities supplement the work of the game wardens with local law enforcement to address concerns outside boating and fishing violations. In tidal waters, the Virginia Marine Resource Commission (VMRC) has jurisdiction for boater safety and regulations (see Chapter IX. Resource Agencies).

Virginia fishing and boating regulations may be found at www.dgif.virginia.gov.

Water safety planning issues are important for all recreational access. Safety factors vary with each resource, but typically include:

River traffic patterns – Recreation boaters and sportsmen should give special consideration to commercial boat traffic. Planners of water access need to consider the needs of recreational motorized and non-motorized traffic and ultimate river traffic patterns when planning facilities.

River hazards – Natural river hazards such as dams and underwater obstructions need to be identified and accommodations made for safe portages.

Tidal changes and winds – In planning boating facilities, tidal changes must be accommodated in the facility design. The presence of winds and tides varies with resources, but should always be considered during design and water trail trip planning.

Beaches

Beach resources are limited and dynamic. Because beaches are in high demand for human recreational uses, and also provide habitat for a variety of species, balanced planning efforts for beaches are essential. Management of beach resources for environmental and recreational reasons becomes increasingly important as more development occurs along Virginia's shoreline. The statewide beach inventory shows approximately 2,047 acres of beach available for public access, including beaches in coastal areas, as well as those located on lakes, streams and rivers west of the fall line. Man-made and natural beaches, including those enhanced by beach nourishment, are also included.

A beach is defined as a strip of sand or gravel along the shore separating land from water. To gain beach designation, this strip must extend 25 feet in width between the dune or bank and landward of the mean high tide or normal high water. Due to the forces of nature, most beaches do not maintain a constant shoreline profile.

Virginia's tidal beaches are predominantly on the lower Chesapeake Bay and Atlantic Ocean. Beaches on the Bay and on lower sections of rivers tend to be sandy,



Lake Anna State park beach overlook. Photo by DCR.

while those on the upper reaches of the rivers may have a thin layer of sand over a mud bottom. Other beaches listed in the Virginia inventory include a few sand and gravel bars along river corridors and man-made beaches created on lakes and ponds. Standards for beach design for public access are available in the *Chesapeake Bay Area Public Access Technical Assistance Report*, published in October 1990, and available from the DCR.

Non-coastal beaches are not as fast to change as those beaches located along the Atlantic Ocean, the Chesapeake Bay or the Commonwealth's tidal tributaries. Often these beaches are in recreational areas and parks that also offer camping, boating, fishing and hiking. The design of man-made beaches should consider the optimum use of the planned facility, and safe swimming conditions should be a priority. Avoiding potential use conflicts between boaters and fishermen is essential in locating swimming beaches in recreational areas.

Beaches open to the public in state parks

Douthat State Park
Hungry Mother State Park
Bear Creek Lake State Park
Twin Lakes State Park
Fairy Stone State Park
Kiptopeke State Park
Smith Mountain Lake State Park
Lake Anna State Park
Breaks Interstate Park
Holliday Lake State Park
Westmoreland State Park
First Landing State Park

Chippokes Plantation State Park, Hughlett Point and William B. Trower Bayshore natural area preserves, and Parkers Marsh Natural Area also have beaches; however, recreational use is not encouraged at these sites because of the sensitivity of the beach environments.

The 2006 VOS indicates that 44 percent of the Commonwealth's population sunbathe and relax at the beach. Sunbathing at beaches is ranked as the fourth most popular outdoor recreation activity in Virginia. The statewide inventory of beaches is 2,047 acres, while statewide demand is more than 1,883 acres, which shows a surplus of beach access. However, this surplus does not take into account that access to beaches such as Back Bay National Wildlife Refuge, Fort Story and other military sites, as well as False

Cape State Park is very limited. Of the people using the beaches, 73 percent depend upon a public beach. Virginia Beach is home to more than 13 miles of Virginia's 38.81 miles of public tidal beaches. Maintaining maximum beach access and increasing beach size in Virginia's state parks ensures maximum accessibility to state-owned beaches.

There is much less public access to beaches than needed to meet demand indicated in the 2006 VOS demand, supply and needs analysis. Much of the suitable beachfront in the Tidewater, Virginia area is private or in military use. Although there is adequate beach area to meet local demand in coastal areas (regions 17- Northern Neck, 18- Middle Peninsula, 22- Accomack and 23- Hampton Roads), the large influx of beachgoers from outside these areas increases the demand on existing resources beyond the existing land capacity.

Shoreline erosion of beaches may affect their suitability for recreation. DCR lends technical assistance for reducing shoreline erosion and enhancing recreational beach quality. If a beach is a locally-owned public beach as defined by the *Code of Virginia*, the Board of Conservation and Recreation provides assistance. There are approximately 38.81 miles of public tidal beach identified by the board, as shown in the following table.



Fishing is ranked seventh in the 2006 Virginia Outdoors Survey.
Photo by Stuart Connock, Jr.

Water Access and Blueways

Table VII-3. Public Tidal Beaches*

Locality	Site/Location	Miles	Feet
Accomac County	Assateague Island National Seashore	8.3	43,825
Northampton County	Kiptopeke State Park	1.1	5800
Cape Charles	Cape Charles	0.500	2,640
	Castlewood Park		
	Central Beach		
Colonial Beach	Total:	2.500	13,200
Gloucester	Gloucester Point	0.18	975
	Buckroe	0.760	4,000
	Grandview	2.460	13,000
	Salt Ponds	.760	4,000
Hampton	Total:	3.980	21,000
King George	Wayside Park Beach	0.27	1,400
Mathews	Diggs	0.17	900
Middlesex	Canoe House Landing	0.04	185
	Anderson Park	0.280	1,500
	Hilton Riverfront Park	0.100	500
	Huntington Park	0.100	550
	Lincoln-King Park	0.280	1,500
Newport News	Total:	0.580	4,050
Norfolk	Willoughby Spit to East Ocean View	7.40	39,072
Northumberland	Vir-Mar Beach	0.02	80
Stafford	Aqua-Po Beach	0.300	1,580
	Croatan Beach	0.82	4,330
	Ocean Park	1.030	5,438
	Resort Beach	3.330	17,600
	Resort Beach, North	2.670	14,080
Virginia Beach	Total:	13.05	68,904
West Point	Beach Park	0.01	50
York	Yorktown Beach	0.23	1,215
Totals:	16	38.81	204,876

**Public beaches as defined under the Public Beach Conservation and Development Act.*

Fishing

Fishing is ranked seventh in the 2006 VOS. Each year more than 721,000 freshwater anglers and 384,000 saltwater anglers spend some 14.5 million days fishing Virginia's 2,800 miles of coldwater streams, 25,000 miles of fishable warm water streams, 13,400 acres of public small impoundments, 139,100 acres of public large impoundments, 1.5 million acres on the Chesapeake Bay, and 5,300 miles of ocean shoreline. In Virginia, anglers boost the economy by spending \$640,728,000 annually on fishing related expenses. Recreational fishing accounts for a total annual economic output of \$1,213,253,000, supporting 11,238 jobs with \$278,441,000 in earnings.

Public fishing piers

DGIF, DCR, U.S. Forestry Service, U.S. Fish and

Wildlife Service, National Park Service, county and city governments, conservation organizations and private entities have all teamed up to help create a statewide network of assessable fishing piers and platforms at 51 different lakes and streams. These sites offer access to public waters ranging from mountain top trout streams to expansive tidal rivers. For a list of accessible public boat access areas and fishing piers and platforms, go to: www.dgif.virginia.gov/fishing/accessible.

Bank fishing

Bank fishing doesn't require a boat or fancy fishing equipment. It is one of the most sought after types of water access in Virginia. The simplicity of taking a fishing pole and a can of worms to the shore makes bank fishing affordable and accessible to all Virginians. Anglers will find places to fish banks along shorelines of most public fishing lakes and many



Pier and bank fishing are the most popular ways to fish. Photo by Virginia Tourism Corporation.

streams and rivers. For more information about freshwater fishing opportunities and facilities on public lakes, streams and rivers, go to the following DGIF website: www.dgif.virginia.gov/fishing.

Managers of public water bodies must consider the demand placed on the resource by anglers. Designed bank fishing opportunities not only protect the resource, but also create opportunities for those who don't have boats to access other parts of the water.

Water trails or blueways

Virginia is blessed with hundreds of miles of high quality recreational streams and rivers. Most of the streams that carry enough water to be useful during the prime recreational season are considered by law to be navigable. Navigable waters are public thoroughfares, the highways of the past. Where the lands along these waterways are privately owned, water access is only



The James River Sojourn highlights a popular water trail. DCR photo by Irvine Wilson.

afforded by land with the permission of the landowner. It is important to stress stewardship of resources and user etiquette along water trails to maintain positive relations with landowners along the trail.

Many people consider any corridor of open water used for recreational travel or string of lakes connected by portage to be a water trail. Camping accessibility by water along the route makes multi-day travel possible. Canoeing, kayaking, and, in some areas, personal-watercraft use are all popular ways to enjoy water trails.

—Roger Moore and Thomas Ross.

Blueways and water trails definition

Blueways and water trails are growing in popularity and becoming valued for their recreational, educational and economic potential. The 2007 VOP uses the term blueway interchangeably with water trail. In *Modern Water Trails Guide* by David Getchell, a water trail is defined as follows:

In contrast with traditional routes that were corridors of commerce and travel, the modern water trail is a recreational waterway on lake, river, or ocean between specific points, continuing access points and day use and/or camping sites for the boating public. A trail may include both public and private lands, with some or all of the latter open only to users specified by the owners. Camping facilities on some water trails may be restricted to those traveling by self-propelled craft while other trails are open to any type of boat. An important ingredient in the concept of the modern water trails, and probably most significant in its long-term effect, is an ethic of low-impact use and personal stewardship of the lands and waters being used.

For example, some riparian lands may not be suitable for outdoor recreation in order for wildlife habitats to be sustained. Sizeable areas of riverside land, or riparian buffers, may function for storm detention and infiltration purposes. When riparian lands are suitable and accessible for outdoor recreation, there will likely be opportunities to link resources along the river or stream with a water trail.

Simply stated, water trails are managed systems of access points and support facilities that allow trail users to plan multi-day trips with assurances that access points, camping sites, rest stops, and re-sup-

Water Access and Blueways

ply sites are clearly identified on maps and on signs visible from the water. Many canoe liveries and outfitters operating in Virginia rent canoes and kayaks and provide transportation to and from access points. Maps help guide the user along water bodies indicating points of interest and support facilities.

The U.S. Congress created the **Captain John Smith Chesapeake National Historic Trail** with more than 2,300 miles of water trail throughout the Bay area. This is the nation's first all-water national historic trail and will commemorate Captain John Smith's 1607-1609 exploration of the Chesapeake Bay (see Map VII-2). The National Park Service will manage the trail in partnership with the Commonwealth of Virginia and many other organizations. For more information see the National Park Service John Smith Trail website, www.nps.gov/cajo, and the Friends of Captain John Smith Chesapeake National Historic Trail website, www.friendsofthejohnsmithtrail.org.

Virginia's existing Captain John Smith's Adventures on the James River was created by the DCR with the assistance of many partners with funding from the National Park Service Chesapeake Bay Gateways Program and Jamestown 2007. This water trail incorporates a 40-site boating and auto-tour route in the Oxbow Loop, the Cypress Loop and the Oyster Loop. Virginia Tourism Corporation developed a supporting web site to promote local businesses along the trail at www.johnsmithtrail.org.

In addition to the James River trail and the Mattaponi, Pamunkey and York rivers Water Trail, other water trail segments in Virginia would complement plans for the Captain John Smith Chesapeake National Historic Trail.

Benefits of blueways and water trails

Many localities in Virginia have recognized that eco-tourism can be a major contributor to their local economy. To capitalize on their natural assets, such as local river or lake frontage, they are considering blueway projects. The necessary components for a successful blueway are public access points at suitable distances, adequate parking at those access areas, and rest stops with sanitation facilities. Longer trips may require canoe-in campsites, sources of re-supply of water, food and other supplies. Blueway planners need to be sensitive to the concerns of waterfront property owners to minimize trespassing on private

lands. The needs of paddlers and boaters should be addressed at appropriate intervals along the water trail before producing maps or advertising the blueway.

Mapping blueways and water trails

There are two types of water trail maps. At the larger trip planning scale, blueways maps show a large geographic area and highlight the key points of interest. At the more detailed level, blueways maps depict a river segment and show particular aspects of that segment, such as hazards, rapids, portages and points of interest. Detailed trip maps are often produced as a subset of a larger planning map. All maps should consider the types of watercraft, water conditions and potential user conflicts on individual water trails.

Mapping public access points along river corridors, lake shores and the Chesapeake Bay shoreline identifies opportunities for the establishment of water trails. Many efforts are underway across the state to develop water trails. A list of available water trail maps and projects are shown on Table VII-4. Also, water trails and blueways maps show known resources available for outdoor recreation in Virginia.

While there have been many successful blueway mapping projects completed in Virginia, there are many others that could be produced if adequate facilities existed to support the effort. Despite the continuing efforts of DGIF, DCR, local governments and the private sector, there remains a shortage of access points on many good sections of streams. Many of the access points identified in canoeing guides are on private property or at bridge crossings with no authorized access or parking. These "informal" accesses need to be acquired for permanent public use, proper parking, bank stabilization and signage. Likewise, blueway rest stops and camping areas need to be acquired and developed.

DGIF is analyzing the need for improved access and will solicit input from resource agencies and blueway supporters in the development of a State Boating Access Master Plan. An enhanced source for funding acquisition and development of these areas is needed, as is a strong partnership between users, resource agencies, outfitters and local governments to operate, maintain and manage these water trails and the supporting land-based use areas.

Map VII-2. Captain John Smith Chesapeake National Historic Trail Map



Source: National Park Service U.S. Department of the Interior, May 2006

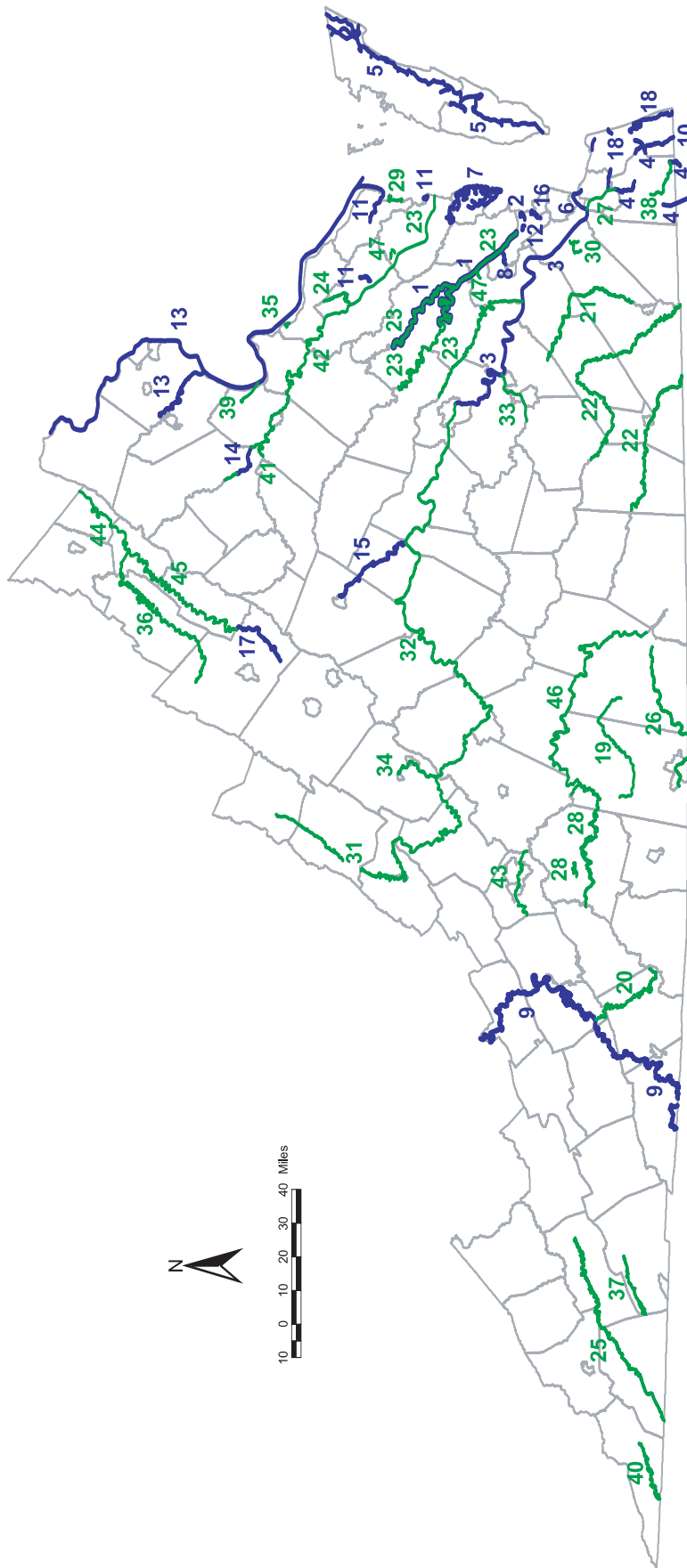
Water Access and Blueways

Table VII-4. Water Trails

Water Trail System	Trail Segment	Recreation Region	Existing or Proposed
Algonquin Trace Water Trail	York River	18	Existing
Algonquin Trace Water Trail	Mattaponi River	18	Existing
Algonquin Trace Water Trail	Pamunkey River	18	Existing
Brunswick County Blueways	Meherrin River	13	Proposed
Brunswick County Blueways	Nottoway River	13	Proposed
Captain John Smith Chesapeake National Historic Trail	Captain John Smith's Adventures on the James River	23	Existing
Captain John Smith Chesapeake National Historic Trail	Captain John Smith's Adventures on the Chickahominy River	15	Proposed
Captain John Smith Chesapeake National Historic Trail	Captain John Smith's Adventures on the York, Mattaponi and Pamunkey Rivers	18	Existing
Captain John Smith Chesapeake National Historic Trail	Captain John Smith's Adventures on the Rappahannock River	17	Proposed
Chesapeake Scenic Waterways	Northwest River	23	Existing
Chesapeake Scenic Waterways	Pocaty Creek	23	Existing
Chesapeake Scenic Waterways	Southern Branch Elizabeth River	23	Existing
Chesapeake Scenic Waterways	Dismal Swamp Canal Trail	23	Existing
Eastern Shore Seaside Water Trail	Raccoon Island Loop	22	Existing
Eastern Shore Seaside Water Trail	Oyster Loop	22	Existing
Eastern Shore Seaside Water Trail	Red Bank Loop	22	Existing
Eastern Shore Seaside Water Trail	Parting Creek Loop	22	Existing
Eastern Shore Seaside Water Trail	Folly Creek Loop	22	Existing
Eastern Shore Seaside Water Trail	Parkers Creek Loop	22	Existing
Eastern Shore Seaside Water Trail	Gargathy Creek Loop	22	Existing
Eastern Shore Seaside Water Trail	Assawoman Creek Loop	22	Existing
Eastern Shore Seaside Water Trail	Toms Cove Loop	22	Existing
Eastern Shore Seaside Water Trail	Fir Landing Loop	22	Existing
Eastern Shore Seaside Water Trail	Fisherman Island Loop	22	Existing
Eastern Shore Seaside Water Trail	Mockhorn Island Loop	22	Existing
Eastern Shore Seaside Water Trail	Red Bank to Willis Wharf	22	Existing
Eastern Shore Seaside Water Trail	Great Machipongo River Loop	22	Existing
Eastern Shore Seaside Water Trail	Folly Creek to Parkers Creek	22	Existing
Eastern Shore Seaside Water Trail	Parkers Creek to Gargathy Creek	22	Existing
Eastern Shore Seaside Water Trail	Gargathy to NASA Dock	22	Existing
Eastern Shore Seaside Water Trail	NASA Docks to Wisharts	22	Existing
Eastern Shore Seaside Water Trail	East Side Landing to Toms Cove	22	Existing
Eastern Shore Seaside Water Trail	Greenbackville Harbor loop	22	Existing
Eastern Shore Seaside Water Trail	ESVNRW to Oyster	22	Existing
Eastern Shore Seaside Water Trail	Oyster Harbor to Red Bank Boat Ramp	22	Existing
Eastern Shore Seaside Water Trail	Wreck Island	22	Existing
Eastern Shore Seaside Water Trail	Willis Wharf Harbor to Quinby Harbor	22	Existing
Eastern Shore Seaside Water Trail	Wachapreague to Folly Creek	22	Existing
Eastern Shore Seaside Water Trail	Quinby Harbor to Wachapreague Town Marina	22	Existing
Eastern Shore Seaside Water Trail	Wisharts Point Landing to Queen Sound Landing	22	Existing
Eastern Shore Seaside Water Trail	Queen Sound Landing to Greenbackville Harbor	22	Existing
Eastern Shore Seaside Water Trail	Gargathy to NASA Dock	22	Existing
Eastern Shore Seaside Water Trail	Greenbackville Harbor to E.A. Vaughn Kayak Trail	22	Existing
Eastern Shore Seaside Water Trail	Chincoteague NWR, Toms Cove to Assateague Island Canoe Trail	22	Existing
Eastern Shore Seaside Water Trail	Curtis Merritt Harbor to Chincoteague National Wildlife Refuge	22	Existing
Eastern Shore Seaside Water Trail	Curtis Merritt Harbor to Queen Sound Landing	22	Existing
Eastern Shore Seaside Water Trail	Wisharts Point Landing to Curtis Merritt Harbor	22	Existing
Eastern Shore Seaside Water Trail	Chincoteague Downtown Park	22	Existing
Franklin County Blueways	Blackwater River	12	Proposed
Franklin County Blueways	Pigg River	12	Proposed

Water Access and Blueways

Water Trail System	Trail Segment	Recreation Region	Existing or Proposed
James River Heritage Trail	Lower James River Trail	23	Existing
James River Heritage Trail	Middle James River Trail	15	Existing
James River Heritage Trail	Upper James River Trail	5	Proposed
Lower Appomattox River Blueway	Appomattox River Canoe Launch to Hopewell Riverside Park	19	Existing
Mathews County Blueway	East River Trail	18	Existing
Mathews County Blueway	New Point Comfort Trail	18	Existing
Mathews County Blueway	Winter and Horn Harbors Trail	18	Existing
Mathews County Blueway	Gwynns Island/Milford Haven Trail	18	Existing
Northern Neck Blueway	Tour of Monroe Bay and the Waterfront of Colonial Beach	17	Existing
Northern Neck Blueway	Headwaters of the Great Wicomico	17	Proposed
Northern Neck Blueway	Upper Reaches of Totusky Creek	17	Existing
Northern Neck Blueway	Fleets Island Water Trail	17	Existing
Pagan River Historic Blueway	Cypress Creek Water Trail	23	Proposed
Pagan River Historic Blueway	Jones Creek Water Trail	23	Proposed
Pagan River Historic Blueway	Pagan River Historic Blueway	23	Proposed
Potomac Heritage National Scenic Trail	Potomac River Water Trail	8	Existing
Potomac Heritage National Scenic Trail	Occoquan Water Trail	16	Existing
Potomac Heritage National Scenic Trail	Aquia Creek Water Trail	16	Proposed
Rappahannock River Water Trail	Rappahannock River Water Trail Guide	9	Existing
Rappahannock River Water Trail	Rapidan River Water Trail Guide	9	Existing
Shenandoah Blueway	North Fork Shenandoah	7	Proposed
Shenandoah Blueway	Shenandoah River	7	Proposed
Shenandoah Blueway	Lower South Fork Shenandoah	7	Proposed
Shenandoah Blueway	Upper South Fork Shenandoah	6	Existing
VA State Park Blueways	Taskinas Creek	18	Existing
VA State Park Blueways	Deep Creek	17	Existing
VA State Park Blueways	Mulberry Creek	17	Existing
Virginia Beach Scenic Waterways	Back Bay	23	Existing
Virginia Beach Scenic Waterways	North Landing River	23	Existing
Virginia Beach Scenic Waterways	West Neck Creek	23	Existing
Virginia Beach Scenic Waterways	Broad Bay	23	Existing
Virginia Beach Scenic Waterways	Rudee Inlet	23	Existing
Virginia Beach Scenic Waterways	North Bay	23	Existing
Virginia Beach Scenic Waterways	Elizabeth River	23	Existing
York County Blueways	Back Creek Park Loop	23	Existing
York County Blueways	New Quarter Park Loop (Queen's Creek)	23	Existing
York County Blueways	Old Wormley Creek Landing Loop (West Branch/Wormley Creeks)	23	Existing
York County Blueways	Smith Landing Loop (Poquoson River)	23	Existing
Individual water trail	Cat Point Creek	17	Proposed
Individual water trail	Cedar Creek	7	Proposed
Individual water trail	Chickahominy Watershed Guide	15	Existing
Individual water trail	Clinch River	1	Proposed
Individual water trail	Dan River	13	Proposed
Individual water trail	Elizabeth River Water Trail	23	Proposed
Individual water trail	Hughlett Point to Dameron Marsh Kayak Trail	17	Proposed
Individual water trail	Jackson River Blueway	7	Proposed
Individual water trail	Maury River	6	Proposed
Individual water trail	New River Water Trail	3	Existing
Individual water trail	North River Historic Homes Water Trail	18	Existing
Individual water trail	Powell River	1	Proposed
Individual water trail	Powhatan Creek Blueway	23	Existing
Individual water trail	Rivanna River Water Trail	10	Existing
Individual water trail	Roanoke River Blueway	5	Proposed
Individual water trail	Roanoke River Blueway	5	Existing
Individual water trail	Staunton River	13	Proposed



Existing Water Trails

1. Algonquin Trace Water Trail
2. Back Creek Park Trail
3. Captain John Smith Chesapeake National Historic Trail *
4. Chesapeake Scenic Waterway
5. Eastern Shore Seaside Trail
6. James River Heritage Trail - Lower
7. Matthews County Blueways
8. New Quarter Park Trail
9. New River Blueway
10. North Landing River
11. Northern Neck Blueway
12. Old Wormley Creek Landing
13. Potomac Historic National Scenic Trail
14. Rappahannock River Water Trail
15. Rivanna River Water Trail
16. Smith Landing Trail
17. South Fork Shenandoah
18. VA Beach Scenic Waterways

Proposed Water Trails

19. Banister River
20. Big Reed Island Creek
21. Blackwater River
22. Brunswick County Blueways
23. Captain John Smith Chesapeake National Historic Trail *
24. Cat Point Creek
25. Clinch River
26. Dan River
27. Elizabeth River Water Trail
28. Franklin County Blueways
29. Hughtlett Point to Dameron Marsh
30. Isle of Wight Blueway
31. Jackson River Blueway
32. James River Heritage Trail - Upper
33. Lower Appomattox River Blueway and Greenway

Proposed Water Trails

34. Maury River
35. Monroe Bay Water Trail
36. North Fork Shenandoah
37. North Holston River
38. Northwest River
39. Potomac Historic National Scenic Trail
40. Powell River
41. Rapidan River
42. Rappahannock River Water Trail
43. Roanoke River Blueway
44. Shenandoah Blueway
45. South Fork Shenandoah
46. Staunton River
47. VA State Park Blueways

* See Map VII.2 for details on the Captain John Smith Chesapeake National Historic Trail

New River Canoe Trail case study

The New River Canoe Trail was a joint project of DCR, the North Carolina Department of Natural Resources, the West Virginia Department of Natural Resources, the National Park Service and the U. S. Army Corps of Engineers. The goal was to develop a user-friendly map of the New River from the point of navigation in North Carolina, to the Gauley River Bridge in West Virginia. The National Committee for the New River and the New River Community Partnership played major roles in collecting information and mapping of the corridor. The success of this project was due not only to the rewarding partnership between the government agencies, but also to the support of other governmental and private sector entities critical to providing support facilities and services to trail users. The process used in completing this successful project is outlined below.

- Blueway supporters developed the initial format and criteria for the water trail map.
- Meetings were conducted with local and regional governments and local interest groups to review the proposal and provide input.
- A Memorandum of Agreement was entered into by agency partners that clearly established the intent of the trail and the roles of each agency.
- A practical format for the map was devised. Trails Illustrated agreed to produce and distribute the map. The map identifies all access and use areas in the corridor, important information on safety, accommodations, services, and cultural and natural sites of interest.
- The importance of good stewardship and "Leave No Trace" ethics is stressed on the map.
- To assist map users, important landmarks were noted and GPS coordinates listed for key sites along the trail.
- While not yet published, strip maps of the New River Canoe Trail by segment will be produced at a scale suitable for navigating the many challenging sections of the river.

Copies of the finished map can be purchased from DCR and the other partners, as well as at most outdoor stores that sell *Trails Illustrated* maps. In addition, technical assistance in the development of water trails is also available. Contact DCR at (804) 786-5046.

The New River is also designated a National Heritage River. This level of designation shows the interest in the resource from various levels.



Canoeing and kayaking are growing in popularity. DCR photo by Irvine Wilson.

Water trail guiding principles

The North American Water Trails Association (NAWT) is a coalition of organizations and individuals committed to opening recreational access to North America's wealth of waters. NAWT has developed a set of guiding principals for establishing effective water trails, which are outlined below.

Partnerships: cooperating and sharing. A water trail is the product of partnerships among governmental and non-governmental entities with volunteers as the key supporters and advocates of the trail. Together, these groups create and maintain a successful water trail with broad-based and long-term support.

Stewardship: "Leave No Trace". Water trails promote minimum-impact practices that ensure a sustainable future for the waterways and adjacent lands. Water trails embrace the "Leave No Trace Code of Outdoor Ethics" that promotes the responsible use and enjoyment of the outdoors. A trail user who is educated to respect the quality of affected water, land, vegetation and wildlife habitat is a good caretaker.

Volunteerism: experiencing the joy of involvement. Most water trails are created, promoted and maintained through the energy and dedication of local citizens, working individually and through "friends" organizations. Community involvement and volunteerism are the keys to developing a sense of trail stewardship, promoting the trail within the community, encouraging respect for the trail's natural and cultural heritage, and ensuring that local governments support the trail's existence.

Water Access and Blueways

Education: learning by experience. Through comprehensive trail guides, signage, public outreach and informative classes, water trail organizations encourage awareness of the natural, cultural and historical attributes of the trail. Serving as outdoor classrooms, water trails teach through seeing, listening, touching and experiencing.

Conservation: protecting our natural heritage. Water trail activities support the conservation of the aquatic ecosystem and adjacent lands. Trail builders and activists are a respected constituency advocating for resource protection and participating in resource restoration. The water trail community is a watchdog for prevention of environmentally harmful acts, striving to sustain the natural integrity of the trail and preserving the quality of the trail experience.

Community vitality: connecting people and places. A water trail is a network of recreational and educational opportunities. Hiking trails, bikeways, greenways, museums, historic sites, parks and preserves are connected by water trails creating opportunities for exploration, discovery and enrichment. These connections build a sense of place and strengthen community identity.

Diversity: providing opportunities for all: Water trails welcome all those who want to respectfully enjoy and appreciate the trail experience. Broad-based participation in trail activities is achieved through affirmative outreach and recruitment.

Wellness and well-being: caring for self and others: Awareness, education and skills training in health and safety promote the wellness and well-being of all water trail users. Safe use requires a commitment to safe design and sound management.

Resource agencies for water access

Virginia Department of Conservation and Recreation
Division of Planning and Recreation Resources
203 Governor Street, Suite 326
Richmond, Virginia 23219
www.dcr.virginia.gov

Virginia Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, Virginia 23230
www.dgif.virginia.gov

American Canoe Association
www.americancanoe.org

Water Trail Toolbox: How to Plan Build and Manage a Water Trail. www.baygateways.net/watertrailtools.com

References

Getchell, David. 2000. *North American Water Trails: A Guide to Establishing and Maintaining Recreational Waterways on Fresh and Saltwater*. Washington, D.C.: North American Water Trails, Inc.

Roger Moore and Thomas Ross. 1998. Trails and Recreational Greenways: Corridors of Benefits *Parks & Recreation*, January.



Kayaking on the Mattaponi River. Photo by Middle Peninsula Planning District Commission.

Through wars, droughts, fires and flood, Virginians have held on to their homes and land by making great sacrifices. These trials have caused them to see quite clearly that while many things may change, family home and land remain constant and dear. —Betty Wells Edwards

Findings

- The Virginia Department of Historic Resources (DHR) administers easements on more than 418 historic properties and 23,771 acres of land. The Commonwealth's Statewide Strategic Plan directs the preservation and enhancement of Virginia's natural and historic resources through a cooperative system of well-managed and high-performing agencies.
- Reusing the existing, built environment eliminates waste, reduces sprawl, conserves green and open space, creates housing, renews declining neighborhoods and attracts visitors. Sustaining historic resources promotes economic development, heritage tourism, education, community identity and smart growth.
- According to the 2006 *Virginia Outdoors Survey*, visiting historic sites is the 2nd most popular outdoor recreation activity for Virginians with at least 56% of the population participating in the activity.
- Historic resources are key assets in Virginia's \$16 billion travel and tourism industry. Heritage tourism visitors spend 2.5 times more money and stay longer than other travelers. Every year 275 historic attractions generate over \$6.5 million visits.
- Renewed historic resources strengthen local economies. Cumulative private investment in Virginia Main Street designated communities, which use historic preservation as a strategy for downtown revitalization, topped \$364.5 million in 2005. Since the Virginia Main Street program was created in 1985, more than 3,800 businesses have been created, retained or expanded, thereby stimulating the creation of over 10,700 jobs.
- DHR's 180,000 records on historic structures and archaeological sites, along with its collection of five million artifacts, are valuable resources for environmental stewardship and education. They are used publicly for comprehensive land use planning, building new highways, making zoning and land use management decisions, and privately for a wide variety of land use and research purposes. The Historic Data Sharing System (DSS) identifies the location of nearly 200,000 architectural and archaeological sites throughout the state. Licenses to access this database are available for a fee from DHR.
- Historic preservation is an economic and community revitalization tool for communities. Historic rehabilitation through public-private partnerships, combined with state and federal tax credits, has the added benefit of supporting smart growth and helping to stem sprawl in urban and suburban areas throughout Virginia. In 2005, Virginia ranked second among the 50 states in the use of federal tax incentives to rehabilitate historic buildings with 140 approved projects and 74 completed projects. State and federal rehabilitation tax credits can be combined to leverage 45 percent for eligible expenses, making multi-million dollar projects possible across Virginia.
- Since the federal program began in 1976, more than 1,700 deteriorated historically significant buildings in Virginia have been returned to productive service. This represents a private investment of \$1.7 billion. The parallel state program, initiated in 1997, has spawned over 330 projects generating over \$159 million of economic activity independent of the federal program. Every million dollars spent rehabilitating historic sites creates 29.8 new jobs and generates \$779,800 in household income.
- State and federal agencies own and operate historic resources, which offer a wide variety of educational and recreational opportunities. Good stewardship of these resources is necessary to sustain these opportunities for citizens and communities in Virginia.
- The erosion of Virginia's scenic and cultural landscape is a consequence of current population growth and development patterns. A change in land use planning policy to incorporate public appreciation for the economic value of cultural landscapes and scenic resources is important to long-term stewardship of these resources. Recognition programs, like the American Society of Landscape Architects Centennial Medallion Program, are important in identifying and promoting the protection of significant

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cultural landscapes. Scenic nonprofit organizations, such as Scenic America and Scenic Virginia, work actively to recognize the importance of cultural landscapes to economic success and community sense of place (See Chapter VII-D: Scenic Resources).

- The creation of a statewide system of heritage areas in Maryland and similar programs in other states, such as New York and Oregon, have generated economic development, produced new heritage tourism visitation, leveraged significant non-state funds, and built state and local partnerships. A 2003 analysis of the Maryland program indicated that every grant dollar invested in the program showed a return of \$4.61 in annual, ongoing state and local tax revenues. The analysis also indicated that the Maryland program's award of \$4.4 million in grants had leveraged about \$2.5 million from local governments, more than \$2.5 million from the private sector, and \$600,000 in federal funds. The state's \$4.4 million investment enabled \$10.3 million for heritage area projects.
- Heritage groups in several regions of the state are looking at promoting roadways or highways that have long histories, but may not qualify for designation as Virginia Byways. The promoters of these efforts are considering incorporation of their roadways into the National Scenic Byways program. The challenge is that a road corridor cannot be designated as a National Scenic Byway unless it has already received designation through a state road program.

Recommendations

- Each locality should make every effort to identify historic, archaeological and landscape resources for full enjoyment of their economic, tourism, recreational, community and educational benefits. These resources should be integrated into all local land use planning and decision-making processes promoting conservation and protection.
- Local historic attractions, historical societies, museums and other tourism organizations should build partnerships with the Virginia Association of Museums, Virginia Civil War Trails, the Association for the Preservation of Virginia Antiquities/Preservation Virginia, the Virginia Main Street Program, Virginia's chapter of the American Society of Landscape Architects and others to enhance local heritage tourism, and improve educational and recreational offerings. The Commonwealth of Virginia should consider adoption of a statewide system of heritage areas modeled after programs in other states such as Maryland and New York that serve to generate economic development, produce new heritage tourism visitation, leverage significant non-state funds, and build state and local preservation and tourism partnerships.
- The Virginia Departments of Conservation and Recreation (DCR), Transportation (VDOT) and Historic Resources (DHR) should cooperate in a study to determine the viability of developing a his-



Augusta County scenery. Photo by Nancy Sorrells.

toric roads designation for Virginia. The designation could apply to historic roads and highways that trace centuries of cultural development in Virginia. The designation could become an adjunct to the Virginia Byways program and could support communities wishing to participate in the National Scenic Byway program.

- DHR should continue to sustain and support community, individual and organizational preservation efforts through all of its program activities – most notably those on the inventory of historic sites, registration of historic properties and historic highway markers that help identify significant historic places. Also, DHR should continue to support easement programs for cultural resource protection, project review, historic rehabilitation tax credits and technical assistance to help localities and property owners make the best use of historic places and landscapes.
- DHR should continue to practice good stewardship of the records, information and artifacts that it holds for the benefit and use of the citizens and communities of the Commonwealth. Initiatives to increase accessibility of such information for all state, federal and local planning purposes should be pursued.
- DHR, the Association for the Preservation of Virginia Antiquities/Preservation Virginia, and all related organizations should continue to enhance educational efforts and outreach about preservation benefits, resources and tools through such activities as National Preservation Month in May and Virginia Archaeology Month in October.
- DHR and DCR should work together to share information on the potential recreational use of historic properties and to ensure sensitive treatment of historic properties managed by DCR or affected through its grants and programs. The two agencies should cooperate in developing and maintaining an updated list of historic properties that are open to the public for visitation and recreational use.
- State, federal and local agencies that own historic properties should be encouraged to manage those properties effectively for long-term protection of the public trust and to maximize public benefit consistent with the nature of the historic property.
- DHR will promote recognition of significant historic properties through listing in the National Register of Historic Places and the Virginia Landmarks Register, and through designation as National Historic Landmarks. State and federal designation of these places will foster greater awareness of the state's most important cultural resources and encourage



Natural Bridge Tunnel. Photo by Nancy Sorrells.

their preservation. DHR will support the designation of the Virginia State Capitol as a World Heritage Site. Additionally, these designations will promote the active use of federal funding for the preservation of Virginia's historic resources through the National Park Service (NPS) Historic Preservation Fund and the federal Save America's Treasures and Preserve America programs.

- DHR and DCR will support and promote the Historic American Landscapes program through partnerships with the American Society of Landscape Architects and others. They will identify and sponsor outreach related to the stewardship and management of cultural and scenic landscape resources.
- Education about the importance of visual and cultural landscapes and responsible stewardship of them shall be fostered through presentation of cultural landscape topics and management applications at the annual Environment Virginia conference. A technical bulletin and additional web-based support, which will provide information related to the stewardship of cultural and scenic landscapes, will be developed by DHR and DCR to improve outreach to managers of cultural landscapes.

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- DHR will encourage systematic study and recordation of cultural and historic properties on the Virginia landscape in every locality through its promotion and administration of the Cost Share Survey and Planning Program.
- DHR will cooperate with DCR in designing the public participation process for the 2012 Virginia Outdoors Plan and will explore the feasibility of integrating the goals, objectives and strategies of the next iteration of Virginia's statewide historic preservation plan with the 2012 Virginia Outdoors Plan.

Importance of stewardship of scenic and cultural landscapes

Virginia's experience and sense of place involve a tapestry of sites and features of historical value, natural elements, cultural and social elements, and recreational resources. Each component has its own value, but more importantly, together they build synergy and an expression of scenic and cultural landscape character. The preservation, interpretation and good stewardship of cultural landscapes can serve to create a memorable voyage of discovery for the Commonwealth's visitors and citizens.

It is important for Virginia to recognize that management of cultural landscapes is essential to preserve and continue valued journeys and stories of the rich heritage associated with the Commonwealth's resources. The quality and character of cultural landscapes, considered in both their historical and scenic contexts, need to be recognized and preserved. Stewardship of these resources must ensure their long-term integrity. Existing programs such as the designation of Virginia Byways, scenic rivers, historic districts, heritage areas, conservation and recreation lands serve as useful tools to recognize major components of important cultural landscapes. Large land tracts and public lands including state parks like Douthat, Chippokes, False Cape, Grayson Highlands and New River Trail must be viewed holistically and include buffer lands outside the parks. These state parks must not only be managed for their ability to offer a particular feature, or serve a specific use, but also for the inclusive cultural landscapes within and outside the park context. Resources included in the Virginia Byway and scenic river system, as well as local greenways, conserve Virginia's unique sense of place and scenic character and should be managed as important cultural landscapes.

Cultural resources program history and direction

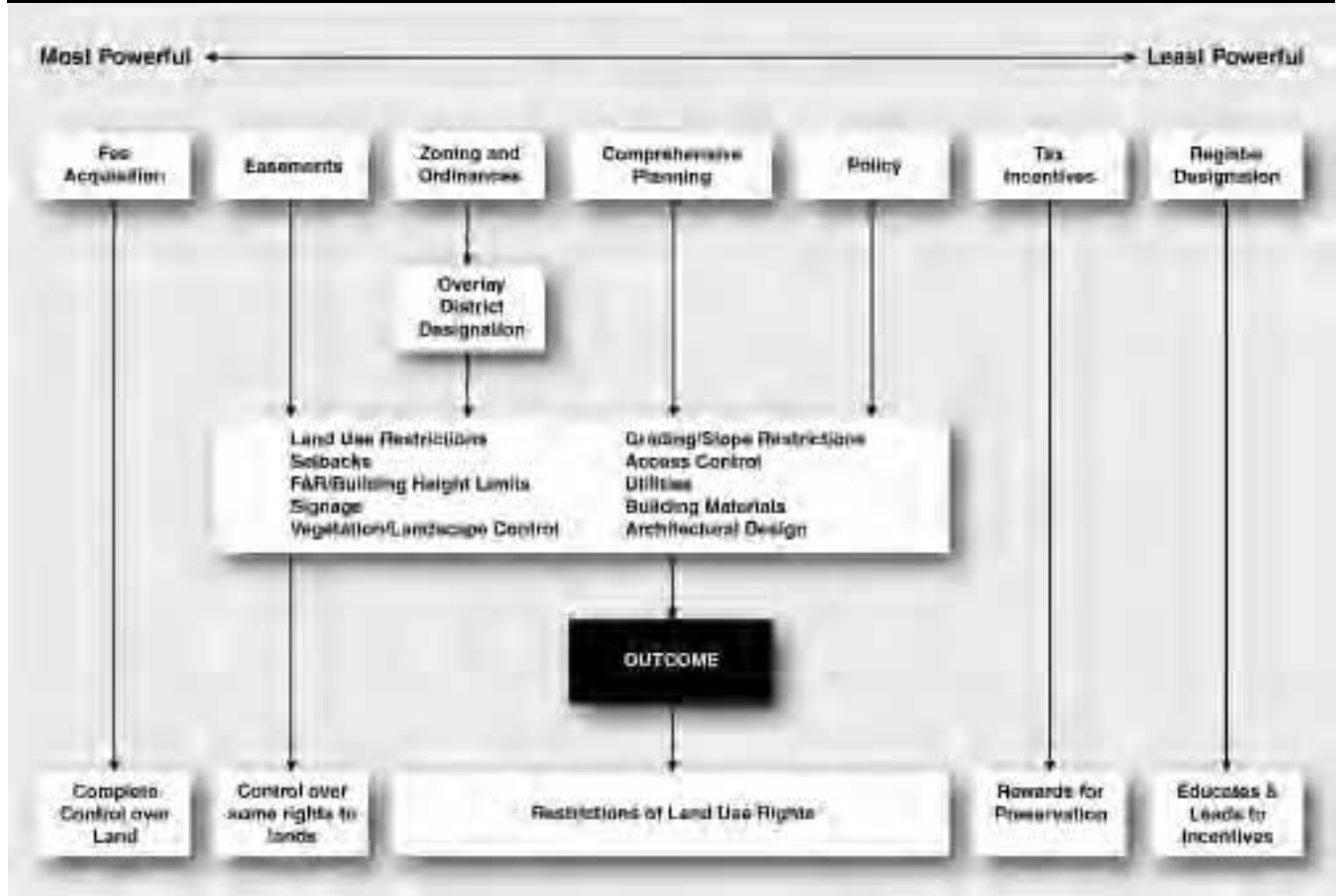
The national movement to recognize America's heritage and make it an important part of planning for the future began in Virginia. It has been the Commonwealth's official policy to confirm the importance of historic places and to provide information, recognition and incentives to support private stewardship. The state's historic preservation program began with the creation of the Virginia Landmarks Commission in 1966. DHR's Board of Historic Resources succeeded the Landmarks Commission, and the department's easement program has grown to protect more than 418 Virginia historic landmarks. The resources that are protected range from great colonial mansions, federal town houses and vernacular village dwellings, to slave quarters, archaeological sites with information on Native American, European and African-American heritage, and commercial buildings. The lands that make up the settings of these structures include tidal river marshes, farmland, battlefields, forests and urban gardens.

Virginia is blessed with possibly the richest and most diverse historic resources in the nation. These range from some of the earliest documented sites of human habitation in the western hemisphere to places that play a role in the ongoing exploration of space. The Commonwealth's resources include artifacts from thousands of years of Native American culture in Virginia, the birth of a new European nation, homes of the nation's founders, battlegrounds of both the American Revolution and Civil War, and public and private architecture that embodies the dynamic forces of immigration, frontier, and economic and industrial revolution and growth. Collectively, these resources help define Virginia's communities as places of character, texture and beauty. They are educational, cultural and economic assets; they connect Virginians to their heritage, enrich the quality of their lives, and fuel the economic engine that keeps Virginia thriving.

Local stewardship for cultural resources

Preserving these sites for future generations can play a vital part in building a sustainable future for the environment, businesses and communities. See Figure VII-1 for potential historic resource protection techniques. Development decisions to rejuvenate and reuse historic buildings conserve remaining open space and cultural landscapes, leaving Virginia's cultural legacy intact. Careful stewardship of historic resources creates communities with a strong sense of identity and place. That identity makes local heritage real and

Figure VII-1 Historic Resource Protection Techniques



meaningful for the people who live in Virginia and for those who travel to visit.

Localities continue the process of maintaining the integrity of their communities by reusing the pre-existing built environment. This has many advantages, including the elimination of waste, reduction in sprawl development, restoration of neighborhoods and creation of housing opportunities. Increasing a community's attractiveness to tourists strengthens local economies. This is evident by the creation of new jobs, as well as the generation of nearly \$800,000 in household income for every million dollars spent rehabilitating historic sites. The preservation of historic properties provides authentic and meaningful educational opportunities.

Cultural landscapes

Historic resources comprise different elements, including structures, buildings, sites, objects and districts that must be viewed within the context of the landscape. Collectively, these historic features comprise a

cultural landscape that is integrated with, and complementary to, the natural landscape. Cultural landscapes are expressions of human adaptation and use of natural resources. They range from formal courtyard gardens to rural tracts of land, and from state, suburban and urban parks.

Virginia's historic resources contribute significantly to the richness and diversity of the Commonwealth. Historic resources comprising cultural landscapes reflect cultural legacy, provide educational opportunities, give a sense of place and region, strengthen community identity and promote citizenship. Therefore, the stewardship of these resources is an important consideration in maintaining social, cultural, civic, educational and scenic values.

Natural features such as landforms, soils and vegetation provide a framework within which the cultural landscape evolves. The use of natural resources often reflected in the division and organization of a property including manmade systems of circulation allowing movement through a landscape, the types of struc-

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tures built, the types of use that influence texture and color in a landscape, and the purposeful planting of trees and shrubs (*Cultural Resource Management* NPS-28, U. S. Department of the Interior).

There are four types of cultural landscapes: historic designed landscapes, historic vernacular landscapes, historic sites and ethnographic landscapes. The four cultural landscape categories are not mutually exclusive. A cultural landscape may be associated with a significant event, include designed and/or vernacular features and be significant to a specific cultural group. An example in Virginia is Sailor's Creek Battlefield State Park, the site of an 1865 Civil War battle. In addition, the park's historic farmlands exhibit vernacular landscape characteristics.

Historic designed landscapes, deliberate artistic creations reflecting recognized styles, include those associated with important persons, trends or events in the history of landscape architecture. Many parks contain landscapes and related features designed by NPS landscape architects between 1916 and 1942, including the Blue Ridge Parkway, Virginia's original six state parks and many others. Oatlands, in Loudoun County, is an example of a property with significant architectural and landscape garden features.

Historic designed landscapes include:

- Estate or plantation grounds.
- Arboreta, botanical and display gardens.
- Zoological gardens and parks.
- Church yards and cemeteries.
- Monuments and memorial grounds
- Plaza, square, green, mall or other public spaces.
- Campus and institutional grounds.
- City planning or civic design.
- Planned communities and resorts.
- Commercial and industrial grounds and parks.
- Local, state, and national campgrounds.
- Battlefield parks and other commemorative parks.
- Parkways.

(*National Register Bulletin* No. 18, U.S. Department of the Interior).



Chippokes Plantation State Park. Photo by DCR.

Historic vernacular landscapes illustrate peoples' values and attitudes toward the land and reflect patterns of settlement over time. Chippokes Plantation State Park, for example, represents a continuum of land use spanning hundreds of years. Continually, the Chippokes landscape has been reshaped by its inhabitants, but the historic mix of farm, forest and shoreline remains. Vernacular landscapes are also found in small suburban and urban parks.

Historic sites are significant for their associations with important events, activities and people. Battlefields and presidential homes are prominent examples of this landscape category in the national park system and in some Virginia park systems. At these areas, existing features and conditions are defined and interpreted primarily in terms of occurrences during particular times in the past. Historic canals and transportation systems, converted to trail or greenway corridors, exemplify this category.

Ethnographic landscapes are typically characterized by their use by contemporary ethnic groups for subsistent hunting and gathering, religious or sacred ceremonies, and other traditional activities. In the national system, the expansive Alaska parklands include ethnographic landscapes where residents hunt, fish, trap and gather, and where features are imbued with spiritual or mythological meanings. This same quality can be found in the lands occupied or used by Native Americans or specific immigrant groups.

Historic landmark preservation

Private property owners, corporations and nonprofit organizations accomplish most of the historic preservation work in Virginia. This would include the efforts of the Association for the Preservation of Virginia Antiquities (APVA/Preservation Virginia) and numerous historical societies, local preservation foundations and individual historic property owners that work to preserve Virginia's most important historic sites. Similarly, most decisions about the use of historic resources are made by property owners and through local land use decision making processes (zoning, comprehensive planning, building permits, tax abatements, etc.). For the most part, state and federal agencies are involved only as a primary party in the preservation of publicly owned properties or in publicly funded or permitted projects, such as highway construction, wetlands permits and grants. The state and federal role is to encourage, support and stimulate private and local preservation efforts.

Since 1966, DHR has administered programs mandated by both state and federal law. The principal role of DHR is to identify and encourage the preservation of Virginia's historic, architectural and archaeological resources. DHR delivers programs and services to a wide range of customers, working in partnership with public agencies and private organizations and groups at the national, state and local level. Staff members assist homeowners and investors in rehabilitation when applying for tax credits, assist consultants, scholars and private citizens who research historic sites, and work with citizens and communities to identify, use and protect historic resources. DHR partners with localities for survey and planning projects, maintains the state's archaeology collection of more than five million artifacts (many of which are loaned to museums), and partners with other public and private cultural institutions for education and outreach. The department helps individuals and communities realize the benefits of preservation through the following broad range of incentives and services.

Survey and planning program

DHR partners with localities to:

- Partially fund and administer surveys, as well as to fund listing of properties and neighborhoods in the Virginia Landmarks Register and the National Register of Historic Places.
- Support and play an integral role in mandated local planning.
- Spur local and regional economic development, education and heritage tourism, setting the stage for application of historic rehabilitation tax credits.
- Identify and evaluate historic buildings, historic sites, and cultural landscapes.
- Give localities reports of findings, survey forms, maps and scripted slide shows for use in planning and educational initiatives.
- Support general research in the history and cultural background of localities, helping to foster pride and a sense of identity.
- Add thousands of properties to the state inventory, DHR's database of historic resources. This augments data on Virginia's historic resources for use by federal, state and local government decision makers, educational institutions and citizens.



Ruins at Rosewell plantation in Gloucester. Photo by Middle Peninsula Planning District Commission.

The Virginia Landmarks Register, National Register of Historic Places

DHR publishes the official listing of buildings, sites, structures and districts with local, state or national historic significance to:

- Formally recognize Virginia's most significant resources with 75 to 100 new listings each year.
- Represent more than 2,400 landmarks and landmark districts.
- Support key elements of the state's tourism industry.
- Encourage stewardship of historic resources for urban revitalization.

As a partner with NPS in the national historic preservation program, DHR nominates all places listed in the Virginia Landmarks Register for placement on the National Register of Historic Places. Listing on the National Register:

- Educates property owners and the public about the value of historic resources.
- Helps qualify property owners for historic rehabilitation investment tax.

- Affords protection for historic properties under Section 106 of the National Historic Preservation Act of 1966, as amended.

National Historic Landmarks and World Heritage Sites

NPS designates historic and cultural landmarks of national significance as National Historic Landmarks (NHLs). More than 110 properties have been so designated in Virginia. These properties receive a higher level of protection in federal project planning and greater consideration with federal funding for historic preservation grants. Designation can be accomplished without the participation of DHR, but their involvement is recommended.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is responsible for designation of sites on the World Heritage sites list. Thomas Jefferson's Monticello and the University of Virginia are listed as World Heritage sites. The Capitol Square Preservation Council is currently seeking this same designation for Thomas Jefferson's Capitol building in Richmond.

State Highway Markers

The state highway marker program:

- Commemorates state and local history through a highly visible and popular tool.
- Ranks among the largest marker programs in the country.
- Involves a partnership between local sponsors, DHR and VDOT.

Threatened sites

DHR identifies and encourages protection of endangered archaeological sites to:

- Provide emergency funding for threatened archaeological sites.
- Document archaeological findings at five to 10 sites per year, such as the internationally significant Cactus Hill site in Sussex County.
- Generate specialized reports used by researchers.

Preservation funding support

DHR administers the state General Assembly preservation grants to:

- Provide funding for the operation, maintenance and restoration of Virginia's historic sites and museums.

- Create major assets for education and tourism.
- Provide technical and design assistance to grantees.

Data Sharing System for Planning

DHR's Data Sharing System (DSS) is the product of a joint project between VDOT and DHR. The online system seamlessly merges the powerful analytical capabilities of a geographic information system (GIS) with a comprehensive information database of historic and prehistoric sites throughout the Commonwealth. Access to DSS is available to license-holding planners, consultants, local governments and educational institutions.

Project review

DHR reviews thousands of private and public projects annually for potential impact on historic resources including any action sponsored or funded by the federal government that may impact historic resources. The project review process is integral to state and federal environmental review processes and ensures public and private interests are fully considered and balanced with historic preservation issues.

Easements

DHR accepts preservation easements on properties of historic significance to:

- Provide a potent tool for private stewardship of historic properties through public-private partnership.
- Protect historic resources in perpetuity.
- Preserve several hundred million dollars of historic properties in fair-market value.
- Encourage investment in local economy.
- Support statewide land conservation efforts.

State and federal tax credit programs

DHR evaluates the appropriateness of rehabilitation work to reduce the taxpayer's liability under the Virginia Rehabilitation Tax Credit Program to:

- Support preservation and community revitalization through incentives.
- Stimulate private investment.
- Trigger reuse of historic structures.
- Provide tax credit of 25 percent of eligible expenses; combined with federal tax credits, totals 45 percent.
- Serve as cornerstone of brownfield development process.

DHR also administers the federal Rehabilitation Tax Credit Program in Virginia in partnership with NPS to:

- Provide federal tax credit on 20 percent of eligible expenses for certified rehabilitation of income-producing historic properties.
- Multiply benefits of the Virginia Rehabilitation Tax Credit Program.

Data and collections management

To date, approximately 140,000 architectural resources (see map VII-3) and 38,000 archaeological sites (see map VII-4) across the Commonwealth have been recorded at various levels of documentation. This data is housed in DHR's archives and used by DHR staff, government agencies, consultants, researchers and the general public. The survey documentation constitutes an invaluable source of information for a broad variety of disciplines and applications, including cultural resource management, public education, scholarly research, and preservation and environmental planning.

DHR staff provides long-term care and maintenance of the state's principal archaeological collection (5 million objects), which is used for educational and research purposes by colleges and universities, consulting firms and classrooms.

DHR loans objects for museum exhibitions throughout the state; clients include Virginia Historical Society, Jamestown Settlement, Francis Land House and Colonial Williamsburg.

Education, stewardship and outreach

DHR distributes the following invaluable educational references, publications and outreach for teachers, archaeologists, architects, historians and to all DHR clients:

- *Virginia Landmarks of Black History*.
- Award-winning *First People: The Early Indians of Virginia*.
- *Guide to Virginia's Highway Markers*.
- *The Official Virginia Civil War Battlefield Guide*.
- *Virginia Landmarks Register* (flagship publication).
- Archaeology reports such as the internationally known *Cactus Hill* report.
- Guidance and technical assistance publications.
- *Solving History's Mysteries: The History Discovery Lab*. The lab, a gallery in the Virginia Historical

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Map VII-4. Architectural Survey of the Commonwealth of Virginia

Virginia Department of Historic Resources 2000 Data



Map VII-5. Archaeological Survey of the Commonwealth of Virginia

Virginia Department of Historic Resources 2007 Data



Source: Department of Historic Resources, May 2007

Society, opens the way to using archaeological sites and historic places to illustrate the processes of discovering tangible evidence of our past.

- Statewide outreach: Coordinates Virginia Archaeology Month celebration with 40 to 70 tours, workshops, lectures and events every October and National Historic Preservation Month in May.
- *Virginia Time Travelers*
 - Stimulates visits from students K–12 and their families to museums and historic sites. There were more than 435,000 museum visits in 2005 and increase every year.
 - Popular educational program encompassing 320 different museum destinations.
 - Encourages heritage education and tourism in families and among communities.
 - DHR partners with Virginia Association of Museums (VAM).

Historic Districts

A historic district is a significant concentration of sites, buildings, structures or objects united historically or aesthetically by plan or physical development. There are four basic types of historic district designations.

Local Ordinance Historic District

- Designation by local governments, generally through a zoning ordinance recognizing and protecting a building or group of buildings from unnecessary destruction or insensitive alteration to the exterior.
- Only district designation that regulates the property owner's use of the property.
- Made independently of any listing of properties on the National Register of Historic Places or the Virginia Landmarks Register.
- Criteria for local district designation may be different from those for listing on the registers.
- Localities may offer tax or other preservation incentives to owners of designated properties.

National Historic Landmark District

- Official federal recognition of a group of historic resources determined to be nationally significant.
- Places no restrictions on the private owners of property within the district.



Main Street in Yorktown. Photo by Middle Peninsula Planning District Commission.

National Register Historic District

- A group of historically-related resources that meet the established criteria for eligibility and are significant at the national, state or local level.
- Designated by National Park Service.
- May contain both contributing and noncontributing resources.
- Public hearing and consent of the majority of property owners required.
- Places no restrictions on private owners of property within the district.

Virginia Landmarks Register District

- A group of historically related resources that meet the established criteria for eligibility and are significant at the national, state or local level.
- Designated by Virginia Board of Historic Resources.
- May contain both contributing and noncontributing resources.
- Public hearing and consent of the majority of property owners required.
- Places no restrictions on private owners of property within the district.

Heritage areas

Organizations and groups throughout the Commonwealth have identified potential national and regional heritage areas important for their variety of historic, cultural, natural and recreational resources. These resources combine to form a distinctive landscape arising from human activity shaped by geogra-

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phy. Preserving Virginia's open spaces will ensure that tourists continue to bring revenue to Virginia. The Mosby Heritage Area, the Journey Through Hallowed Ground Partnership and the Crooked Run Trail represent three vital heritage areas in Virginia. NPS is the key federal agency that designates national heritage areas with Congressional support.

The State of Maryland is one of several states that has created state heritage area programs in the recognition that heritage tourism is a powerful economic development strategy. Heritage areas certified under these state programs are geographic areas that contain high concentrations of unique historical, cultural and natural resources, and where motivated community partners are dedicated to the protection and development of those resources through heritage tourism. At the same time, heritage areas focus community attention on under-appreciated aspects of history, living culture and heritage, fostering stronger regional identities and local pride. Maryland offers a connecting framework that enjoys broad state support through the Maryland Heritage Areas Authority. Since the program's inception nine years ago, there are now 10 Certified Heritage Areas representing 18 counties and 62 municipalities, with three more areas pursuing certification. Every county in Maryland now includes a heritage area within its borders.

Battlefield management and preservation

Virginia is blessed with more important Civil War battlefields than any other state, as well as a legacy of battlefields and related military sites from colonial, early national and more recent periods of American history. About a fifth of them have been preserved for-

ever in national, state or local parks, and many remaining battlefields are cherished and protected under private ownership. However, during the past fifteen years, some of the most significant Civil War battlefields—from Ball's Bluff to Chancellorsville, from the Wilderness to New Market Heights, from Winchester to Cloyd's Mountain—have come under increased development pressure. Seventy-nine of Virginia's nationally significant battlefields encompass a combined total area of approximately 450,000 acres, 92 percent of which are unprotected. Without strong public support and wise private stewardship, these important historic resources could disappear. Every acre of battlefield land lost to pavement shuts another window into our rich cultural heritage.

Because battlefields typically encompass hundreds or thousands of acres of land, often on the edges of cities or suburbs, partnerships are key ingredients to their preservation. To succeed with preservation on this large scale takes hard work, commitment, money and creative thinking by landowners, interest groups and government agencies—all with a vision to see that ensuring a future for Virginia's Civil War battlefields and other important military sites will enrich the future of all Virginians.

Over the past decade, there have been notable advances in public and private efforts to preserve Virginia's Civil War battlefields. With the support of Governor Kaine and Speaker of the House William Howell, the 2006 Virginia General Assembly created the Virginia Civil War Historic Site Matching Grant Preservation Fund. Malvern Hill, once seemingly doomed, is now secured, thanks to federal, state and local funding, and a supportive developer. Likewise, some of the best earthworks near North Anna River, once threatened, have been saved and are now in a county park. With the support of the Virginia Land Conservation Fund, the Shenandoah Valley National Battlefields Foundation recently secured the preservation of the core area of Fisher's Hill Battlefield. Under the leadership of the Civil War Preservation Trust, working in cooperation with local preservationists and public officials at every level, parts of the Fredericksburg battlefields have been purchased. Fredericksburg preservation efforts include the Slaughter Pen Farm, noted to be the most expensive private preservation effort in American history. Land has been donated to Staunton River Bridge Battlefield State Park. Virginia Military Institute has acquired additional portions of the New Market battlefield. Wilson's Wharf in Charles City County is now preserved and accessible because of the efforts of the property owner and the assistance of DHR and other government agencies.



McDowell Civil War Battlefield in Highland County. Photo by Nancy Sorrells.



Whites Mill in Washington County. Photo by DHR.

The names of organizations dedicated to the preservation of Virginia battlefields are listed at the end of this section. They are involved either directly (as the Civil War Preservation Trust), indirectly (the American Farmland Trust, by helping farmers keep farming, saves land from development), or as part of a larger conservation mission (DHR, for instance). Every organization offers some form of membership, participatory programs or charitable funds. Contact the public information officer of DHR at www.dhr.virginia.gov for names of battlefield-specific organizations.

Special initiatives

Over the past four years, DHR has undertaken and will continue several special initiatives to leverage its core programs in order to strengthen statewide preservation efforts. The first initiative affirms that historic preservation should reflect the fullness of Virginia's historic legacy and be accessible to all citizens. By extension, the second initiative commits DHR to enhance educational opportunities about the importance of historic resources, the benefits of preserving them, and the tools available to all Virginians. A third initiative calls on all agencies of the Commonwealth to lead by example and to improve their stewardship of state-owned historic properties. A fourth initiative supports military installations in Virginia.

Diversity and accessibility initiative

A major agency-wide initiative focuses attention on the rich diversity of Virginia history and culture. This initiative involves all DHR programs and is important in recognizing places that represent the cultural contributions of African Americans, Native Americans and women to our Commonwealth. Since 2004, DHR has added 41 historic properties to the Virginia Landmarks Register, leveraged 34 historical highway markers, and reached 34,572 people through educational programs that highlight Virginia's rich diversity.

A notable example of DHR's diversity initiative and use of partnerships is the agency's role in preparations for the 2007 anniversary. The rediscovery of Powhatan's capital on the shores of the York River in Gloucester County, Werowocomoco, is a major, internationally-acclaimed archaeological achievement. Archaeological studies indicate that not only was this a major population center, it was clearly a sociopolitical center for centuries prior to 1607. The Werowocomoco investigations have created a model partnership among the private property owners, DHR, and the College of William and Mary in cooperation with Virginia tribes.

DHR envisioned and created a unique information technology solution to managing and sharing information in its historic resources inventory with no addition-

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Mattaponi tribal members demonstrate living history. Photo by Middle Peninsula Planning District Commission.

al funds, through partnerships with VDOT, NPS, and more recently with the Army Corps of Engineers. Combining the benefits of database and GIS, the “DSS” system is web-accessible, putting information on over 180,000 historic properties literally at the fingertips of public planners and decision makers throughout the Commonwealth. In response to hurricanes and floods over the past two years, FEMA relied extensively on this system to plan restoration efforts to communities with historic buildings and districts. DHR is committed to continuous enhancement of the data-sharing system and to data maintenance. In 2005, the agency created a new user friendly version of the GIS mapping interface. DHR is currently involved in long-range efforts to reconcile paper records, database and maps—updating information on all properties listed on the Virginia Landmarks Register or under easement and updating information for several localities.

DHR staff created an award-winning website with hundreds of pages of information about agency programs, answers to preservation questions, interactive educational tools, downloadable forms and publications. DHR not only posts its board meeting notifica-

tions and minutes on its website, but also scans and makes all individual and historic district nominations available to the public prior to each meeting. Virtually all agency guidance is available on-line and makes agency programs and services more accessible.

Education, training and outreach initiative

DHR has deepened its commitment over the past four years to preservation education and preservation training and outreach. The agency has largely contributed to the wealth of educational programming that is emerging from the investigations at Werowocomoco and from a compelling study into John Smith's Chesapeake voyages sponsored by DHR, the Chesapeake Bay Gateways Program and the Maryland Historical Trust. The study focuses on the 1607 to 1609 time period and the natural and cultural world of the Chesapeake at the time of English colonization.

DHR has developed an African-American Archaeological Resource Kit for use on loan by classroom teachers and home-schooling parents. DHR is distributing a teacher guide and activity book to social studies and science teachers that complements DHR's *Solving History's Mysteries* exhibition, the only permanent exhibition about historic preservation in the state, located at the Virginia Historical Society. DHR formed new partnerships with the Virginia Historical Society for development of traveling exhibits on the Civil Rights Movement in Virginia and on Three American Beginnings: Jamestown (1607), Quebec (1608) and Santa Fe (1609). Opportunities for learning outside the classroom also abound through the TimeTravelers Program. This program involves 320 museums and historic sites across the state and is cosponsored by DHR and the Virginia Association of Museums.

DHR's training and outreach efforts are enhanced through partnerships with the APVA/Preservation Virginia, the National Trust for Historic Preservation, and Virginia Military Institute. DHR is actively engaged in planning and delivery of the APVA Preservation Virginia's annual Statewide Preservation Conference and an annual series of regional training workshops. DHR has cooperated with the National Trust in presenting preservation forums at strategic locations across the state and training workshops to build the capacity and effectiveness of preservation organizations. In the past three years, DHR has played an increasingly stronger role in planning and delivery of the annual Environment Virginia Conference at VMI.

State stewardship initiative

DHR worked closely with the Department of General Services (DGS) during the careful interior and exterior refurbishing of the State Capitol and its below ground expansion. This renovation preserves this irreplaceable landmark while adapting it to serve 21st century needs. The restoration of the “Old State Library,” rededicated in 2005 as the Patrick Henry Building, and the Finance Building, renamed in honor of famed civil rights lawyer and trailblazer Oliver Hill also illustrate state leadership to reinvest in buildings and support of adaptive reuse of landmark properties. DHR has successfully collaborated with other resource management agencies including DCR, the Department of Game and Inland Fisheries and the Department of Forestry, as well as with state institutions of higher education such as the University of Virginia, Virginia Military Institute, Virginia Tech, and Virginia Commonwealth University to list historic properties in their care on the Virginia Landmarks Register and to incorporate these historic resources into future plans.

Preservation of historic military installations

Virginia leads the nation in helping military installations integrate historic preservation and reuse of historic buildings as they meet the demands of the 21st century. In recent years, DHR has worked closely with military leaders through the following projects.

- Making the most of historic buildings while modernizing thousands of housing units at Forts Belvoir, Eustis and Story, Quantico Marine Corps Base, and military installations across the state as they privatize military base housing. This massive, high profile project represents the first major overhaul of military housing since World War II.
- Helping the Navy balance preservation and interpretation of buildings important to telling the story of WWI as it revamps installations for 21st century warfare.
- Assisting Fort Monroe to recover from \$100 million of damage by Hurricane Isabel, to move forward with adaptive reuse of outstanding landmark buildings such as the Chamberlain Hotel and the YMCA building, and to fulfill its responsibilities under the Base Relocation and Closing process, including establishment of the Federal Area Development Authority and exploration of options for redevelopment and public interpretation of the site.

Resources

Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221
(804) 367-2323
www.dhr.state.va.us

U.S. Department of the Interior

Cultural Resource Management
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127
www.cr.nps.gov

National Trust for Historic Preservation

1785 Massachusetts Avenue, NW
Washington, DC 20036
(202) 588-6038
www.nthp.org

APVA/Preservation Virginia

204 West Franklin Street
Richmond, VA 23220
(804) 648-1889
www.apva.org

Civil War Preservation Trust

1331 H Street, NW, Suite 1001
Washington, DC 20005
(202) 367-1865
www.civilwar.org

American Farmland Trust

1200 18th Street, NW, Suite 800
Washington, DC 20036
(202) 331-7300
www.farmland.org

Conservation Fund

1800 North Kent Street, Suite 1120
Arlington, VA 22209-2156
(703) 525-4610
www.conservationfund.org

“Identification and protection of [scenic] assets is an important component of smart growth and scenic stewardship.” —National Scenic Byways Program

The Commonwealth of Virginia has abundant and diverse visual and scenic resources that entice visitors and have a lasting appeal for residents. From the majestic mountains and tranquil valleys, to the foothills of the Shenandoah, to the Atlantic's coastal white beaches and sand dunes, Virginia is a cornucopia of varied landscapes. Many vistas lure people to explore and visit cultural and historic sites rich in architecture. Quaint towns and rolling landscapes reminiscent of days past add to the scenic value and experiences sought by Virginia's tourists. Virginia's scenic rivers program recognizes exemplary beauty of designated rivers that bisect mountain ranges, farms, woodlands and tidal marshes throughout the state. The world-renowned Chesapeake Bay offers views of working water vessels and watermen, small coastal communities and vast tidal marshes and lowland swamps. Virginia's natural resource richness certainly is reflected in scenic character where the built environment is designed in harmony with nature.

Benefits of scenic quality

Recreation benefits

- Having attractive places to visit are critical in making leisure time decisions.
- Since people pay to experience scenic landscapes, scenic views and scenery are used to rate car, hiking and other tour routes by local, state and national entities to attract tourism to an area.

Economic benefits

- Virginia provides tax benefits to the private sector for preserving and managing lands with scenic and natural values through a law (*Code of Virginia* §§ 58.1-3229 through 58.1-3244), which permits localities to adopt a program of special assessments.
- Farmland is considered scenic and contributes positively to the state's economy.



Eastern Shore in Accomack County. Photo by Nancy Sorrells.

- Localities that protect scenic resources are sought after by residents and attract new residents (examples are in Albemarle, Loudoun, and Clarke counties).
- State park economic impact statements indicate that property values increase by 10 percent within a quarter of a mile of a major open space resource like a state park.
- There are economic values attached to trees and tree-covered areas. These are important and should be considered above the timber value when appraisals are done. The International Society of Arboriculture (www.isa-arbor.com) has developed a process for calculating landscape values of trees.
- Redevelopment projects may incorporate restoration of open space and reclaim the visual integrity of previously disturbed sites.

Psychological benefits

- Landscapes form a sense of place and provide a common point of reference over time for many generations.
- Visually attractive work and living environments have a positive effect on habits and attitude of workers contributing to the success of businesses and organizations.
- Scenic views have a beneficial impact on patients receiving treatment or recovering from medical procedures.

Findings

- Three of the top ten reasons for visiting or touring Virginia relate to scenic resources: visiting historic places, driving for pleasure, and visiting natural areas, preserves and refuges.
- As the rate of development increases, visual resources diminish.
- Homebuyers seek protected scenic areas and are willing to pay more for properties adjacent to protected resources.
- The Appalachian Trail Conservancy (ATC) has changed its focus from the acquisition of trail corridor to viewshed protection.
- Repeated studies show no decreases, and often an increase, in property values along greenways, parks and natural areas because of scenic values associated with these properties.

- Air pollution is having a major impact on some natural areas, their resources, scenic views and park visitation numbers.
- Studies on highway hypnosis show that wildflower beds, or other large areas of color, break up the view allowing travelers to be more alert.
- Light pollution is dramatically increasing, taking away the natural treasure of the night skies. Over 30 percent of outdoor lights are directed skyward and none of the state has excellent dark-skies as defined by the John Bortle's Light Pollution Scale.

Recommendations

- Each locality should conduct a visual resources assessment as part of their green infrastructure inventory and mapping process. Consider using universities and other institutions to help supplement and support this effort.
- Universities with landscape architecture and planning programs should incorporate visual assessment techniques in their curriculum requirements.
- Localities should ensure that a component of their comprehensive plan provides for the protection and enhancement of scenic resources, visual character and viewsheds.
- Localities should develop corridor management plans for scenic byways, blueways and greenways to assure preservation of the scenic quality of the corridor.
- DCR, along with other organizations, should prepare a brochure that enumerates the benefits of scenic environments and how stewardship of scenic resources is a basic tenant of smart growth.
- DCR should co-sponsor, along with other agencies, universities and organizations, a workshop on scenic and aesthetic resources and the tools and techniques available to evaluate, map, quantify and manage resources.
- Grant administrators should give extra consideration for funding of projects that protect or enhance scenic resources.
- DCR will continue to comment on highway projects, including all state and federally funded bridge projects. If DCR knows that a locality wants an alternative bridge design at a particular location, they will include that request in the comments that are provided to VDOT.
- Localities should develop light ordinances to limit light pollution.

Scenic Resources

Legislative references to scenic resources

It has been established through the court system that states and localities can protect scenic resources by upholding local landmark protection laws. In Virginia, scenic resources are recognized by the mention of the word 'scenic' in over 160 sections of the *Code of Virginia*. The *Code of Virginia* §10.1-108 defines environment as "the natural, scenic, scientific and historic attributes of the commonwealth." The effect of planning, transportation, mining, signage, advertising and management of the environment, including its scenic values are also referenced in the *Code of Virginia*. The establishment of boards and committees to protect scenic resources and the creation of a tax benefit for properties that protect scenic resources are outlined in legislation (see box on the Special Use Tax). Other statutes uphold local scenic protection laws and recognize the value of scenic resources through specially designed license plates.

A tool for the protection of scenic and open space resources:

The "Standards for Classification of Real Estate" regulation is under the Virginia Land Use Assessment Law, which requires consistency with the land use plan. The regulation identifies the following five major open space categories (Special Use Tax provisions of the *Code of Virginia*, Article 4 of Chapter 32, Title 58.1):

Park and recreation use lands: Public, semi-public or privately owned parks, playgrounds or similar recreational areas operated for public or community use.

Conservation or other natural resource lands: Lands protected for the preservation of forest and wildlife resources, watersheds, nature preserves, arboretums, marshes, wetlands and similar natural areas.

Floodways: Lands subject to periodic or occasional flooding that accommodate the passage or containment of floodwaters. These may include areas adjacent to floodplains reserved as additional channels for future floods.

Historic or scenic areas: Properties on the Virginia Landmarks Register or the National Register of Historic Places, as well as properties protected by scenic or open space easements and sites designated or recommended as scenic by the Departments of Conservation and Recreation, Historic Resources, Transportation, or other state or local agency.

Character landscapes: Lands determined to be of value in shaping the character of the region or the direction and timing of community development.



Lake Robertson in Rockbridge County. Photo by Nancy Sorrells.

Importance of scenic resources

Scenic resources are important to both the quality of life and the economy. The 2000 President's Commission found that Americans primarily choose a place to visit based on "natural beauty." The most recent *Virginia Outdoors Survey* supports this by reporting that 56 percent of Virginians travel to historical areas, 44 percent visit natural areas and 22 percent visit gardens and arboretums. The challenge is to maintain scenic quality and preserve landscape vistas and viewsheds at historically and culturally significant sites and throughout Virginia's communities. This will strengthen visual identity and character, support economic viability and create a better quality of life.

Much of the scenery in Virginia is associated with landscapes of agrarian activities and forestry. Changing trends in rural areas have opened opportunities for improved economies through tourism, new businesses, industry and commercial development. Protection of scenic resources in rural and suburbanizing regions of the Commonwealth is particularly important to ensure the continued viability of tourism, recreation and eco-tourism industries.

Throughout rural, suburban and urban areas, protection of scenic resources is integral in maintaining and creating a sense of community. Visual resources become icons for communities creating a sense of place and identity. Aesthetically designed communities that integrate natural landscape features into recreation destinations and enhance scenic character improve real estate values, create destination recreation and tourism opportunities, and make communities more attractive for redevelopment and new development.

Development and scenic resources

A visually pleasing community is critical to community development goals and is linked with environmentally sound economic viability and quality of life.

Throughout the Commonwealth, scenic resources are at risk from sprawling development and related gray infrastructure expansion of roads, utilities, windmills, cell towers, billboards and light pollution. As urbanization migrates from the urban core, farmland and forests are converted to subdivisions, commercial areas and other developments. Conserving scenic character in the transition from urban to rural landscape scenery is important for visual integrity and a community's quality of life.

Development and redevelopment of communities provide an opportunity to conserve visually sensitive areas and create new developments in harmony with existing landscapes. Design of new development and redevelopment should be appropriately scaled to fit the surrounding landscape and allow for healthy lifestyles while enhancing streetscape aesthetics. Investments that improve the appearance of traditional commercial areas, especially landscaping, attract new businesses, stimulate economic development and increase property values.

Local action needed for scenic resources

Localities need to positively influence scenic quality through local land use controls and by identifying and protecting scenic resources. Each locality has available a set of land use and conservation tools to improve and maintain scenic resources and open space. At the local level, it is important to identify visual character, viewsheds and scenic resources for protection. Comprehensive plans, technical resource studies and local ordinances are effective mechanisms for protecting and enhancing the visual environment. Often, conservation tools and strategies also may be implemented to maintain the scenic integrity of the landscape and community. These tools and resources can be applied to protect scenic assets

and prevent the cumulative impact of development on scenic resources, thereby preserving community economics and quality of life.

Scenic resource planning tools

- Comprehensive plans
- Green infrastructure plans
- Open space plans
- Parks and recreation plans
- Visual and scenic resources inventories and assessments
- Natural and cultural resource inventories
- Environmental inventories
- Greenways plans and studies

Methods are available for conducting visual assessments of roadways, rivers, resorts, mining, forestry, historic areas and communities. These evaluation methods quantifiably determine the quality of scenic resources and how major public works and larger-scale developments and policies will affect the scenic, natural and cultural landscape. There are also various methods to systematically identify, inventory, evaluate and prioritize visual and scenic attributes. Landscape architects and design professionals can help formulate strategies to protect views to and from a resource and the overall appearance of scenic sites and corridors.

Scenic resource management and conservation tools

Some of the tools available to local planners that help maintain or improve visual quality within communities include:

- Site planning.
- Requisite setbacks.
- Buffers for designated areas.
- Parking requirements.
- Screening requirements for designated areas.
- Landscaping requirements.
- Facade and architectural guidelines.
- Urban forestry or streetscape initiatives.
- Signage regulations.
- Transportation access control.

Scenic Resources

- Stormwater runoff control guidelines.
- Erosion and sediment control regulations.
- Landscape maintenance requirements.
- Ridge-top preservation ordinances.
- Conservation easements.

Other initiatives that enhance community driven scenic protection include:

- Supporting an aggressive anti-litter campaign to eliminate trash and illegal signs.
- Proposing underground utilities to reduce the cost of sidewalk widening.
- Proposing tree plantings and tree maintenance.
- Encouraging placement of development away from visually sensitive sites.
- Redeveloping unattractive sites using standards to create visual appeal and scenic quality.

Federal efforts supporting scenic resources in Virginia

Scenic views from and toward several federal parks and national forests within Virginia are being impacted by land use changes and air pollution in the viewshed. The National Park Service is monitoring and working with local governments to manage impacts that affect the views from the Skyline Drive, the Appalachian Trail and the Blue Ridge Parkway.

Appalachian Trail and Skyline Drive

The National Park Service (NPS) reports that along Skyline Drive and the Appalachian Trail visibility has shrunk to as little as one mile on smoggy summer days. The natural range of visibility in Virginia's mountains used to be 115 miles, but now the average visibility is approximately 15 miles. Pollutants are carried by wind currents to the park from the locations inside and outside of the state. As reported by NPS, acid rain and ozone impacts, are also affecting vegetation and habitat health in the area. Some plants are showing effects that range from visible injury on leaves, premature leaf loss, and reduced growth. While these effects have occurred gradually over time, they indicate a threat to forest resources and may hamper enjoyment of these park resources for future generations.

Information on the air quality in Shenandoah National Park.

www.rappflow.org/press/press_air-water-snp.html

Blue Ridge Parkway

Intensive residential development along the Blue Ridge Parkway detracts from the scenic character of the parkway experience, especially in the Roanoke area. As more and more people move to scenic areas near the parkway, the challenge to protect those values and resources increases. Landscape architects have held a key role in integrating and managing scenic resources while protecting and providing recreational assets along the Blue Ridge Parkway.

Protecting scenic resources throughout the Commonwealth

Scenic resource protection is recognized as an essential component in the conservation of natural resources. Conservation lands are sometimes established to maintain the visual integrity surrounding important habitats and special communities. In addition, green infrastructure planning methodology and greenway development may help to preserve scenic value within communities.

The Virginia Byways and Scenic Rivers programs systematically evaluate and recognize visual resources. Corridor management plans are needed to assure preservation of scenic qualities along these resources and within communities. Visual assessments conducted on a county or regional level, whether for road corridor plans, environmental review or historic landscapes, help establish a baseline for scenic integrity and may lead to visual management plans for communities. Viewshed studies and scenic data are needed to develop geographic information that may assist in modeling potential opportunities for conservation and enhancement of scenic resources.

Scenic areas endow communities with substantial benefits, such as higher property values and increased tourism revenue. Protecting scenic vistas and viewsheds from the effects of haphazard development allows a community to preserve its unique charm, build civic pride and attract positive growth to the area.

—National Scenic Byways Program

Planning for new roadways should include an assessment of the corridor's scenic environment by evaluating both the impacts of the proposed roadway as well as views from the roadway. Bridges are important design elements for creating visually interesting highways. Water is another aesthetic resource that can greatly enhance a highway's attractiveness. Older bridge designs generally allowed a water view and a unique architectural or engineering component to enhance structural appeal. New bridges should be designed to offer a safe, open parapet allowing vehicles and pedestrians a view of the open water and its surrounding landscape. Communities should stress a strong desire for visual and pedestrian access at all river crossings in their transportation planning efforts with VDOT. New and replacement bridges should provide recreational access to appropriate water bodies.

An assessment process is important in identifying scenic resources, both to and from the visual resources. Visual assessments help ensure the appropriate placement of new development while conserving existing scenic resources. Visual assessments are used to develop strategies for conservation and protection of resources, as well as to determine ongoing management techniques for long-term sustainability of resources.

Communities and citizens often need to become more aware of the importance of protecting scenic resources, both legislatively and voluntarily. Illustrating the economic development opportunities and benefits available to communities that undertake efforts to improve their appearance will encourage citizens to

protect and enhance their communities. Through green infrastructure planning, each community should identify and protect its scenic resources. Local communities working in concert with conservation and scenic interest organizations help retain the important scenic quality of the Commonwealth for years to come.

For the most part, protecting visual resources is not regulated by local land use ordinances, developmental and architectural guidelines, or state legislation. Local citizens and communities are responsible for identifying those visual resources that they consider important to their quality of life. Local measures are important in planning for and implementing strategies to protect scenic character in communities across Virginia.

Selected resources and references

Federal Highways Administration. 1994. *Visual Prioritization Process – User's Manual*. U.S. Department of Transportation.

National Scenic Byways Program. www.byways.org

Scenic America. www.scenic.org

Scenic America. 1996. *O, Say, Can You See: A Visual Awareness Tool Kit for Communities*. Washington, DC: Scenic America.

Scenic America. *Scenic Beauty Benefits Business: Basic Design Guidelines for Business and Historic Districts*. Washington, DC: Scenic America.

U.S. Forest Service. 2002. *Scenic Byways: A Design Guide for Roadside Improvements*. U.S. Department of Agriculture.



Rattlesnake Point in Shenandoah National Park. Photo by NPS.

Roads are designated as scenic byways because of their unique, intrinsic qualities. ...[to] invite the public to visit, experience, and appreciate... —Alan Yamada

Driving for pleasure has been ranked as one of the top five outdoor recreation activities for the past 40 years. The appeal of scenic roads is the intrinsic quality of Virginia's diverse landscapes and the ease of connecting with nature from the automobile. Traveling scenic byways provides an opportunity to have a relaxing, comfortable outdoor experience that nourishes the need for a connection with nature. In fact, the 2006 Virginia Outdoors Survey (VOS) ranks driving for pleasure as the third most popular outdoor recreation activity.

There are both national and state sponsored scenic roads programs. The Virginia Byways program in Virginia recognizes natural, cultural, historical, recreational and archeological amenities of the Commonwealth's scenic roads. In addition, the unique and varied culture and character of the geographic regions of the Commonwealth are represented by designated Virginia Byways.

Scenic Highway and Virginia Byway benefits

Scenic byways add economic benefits to the community. For example, the Blue Ridge Parkway, one of the state's three All-American Roads, adds more than \$945 million annually to Virginia's economy. The Virginia Byway program also:

- Promotes adjacent communities and the scenic byway corridor by including designated road segments on the state map for *Scenic Roads of Virginia* as well as information included on the Virginia Byways web site.
- Creates an awareness of the unique qualities surrounding scenic byways.
- Recognizes the beauty of unique places and may offer special funding opportunities for scenic roads projects with clear planning objectives.
- Provides additional economic opportunities, including being part of the coordinated promotional strategy for Virginia tourism.



Fall along Virginia Byway Route 22 in Louisa County. Photo by VDOT.

- Affords localities the opportunity to participate in the National Scenic Byway Program.
- Insures environmental review consideration for all federal and state funded projects.
- Restricts placement of outdoor signage along Byways corridors.

Findings

- The 2006 VOS listed driving for pleasure as the third most popular outdoor recreation activity with 56 percent of Virginians participating.
- The 2006 VOS also identified visiting historic sites and visiting natural areas as important outdoor recreational pursuits with 56.1 percent and 44.3 percent, respectively, of Virginians participating.
- Scenic roads are key community assets, and communities are often interested in designation and promotion of these scenic resources.
- Increased development threatens the integrity of Virginia Byway corridors.
- The Virginia Department of Transportation (VDOT) is working with Virginia Tourism Corp. (VTC) and others to develop a scenic byways website to promote the program attractions and connect communities.
- For the first time in Virginia history, four roads were designated as National Scenic Byways: Blue Ridge Parkway, George Washington Memorial Parkway, Skyline Drive and Colonial Parkway.
- For the first time in Virginia history, three roads were designated as All-American Roads: Blue Ridge Parkway, George Washington Parkway and Colonial Parkway.

Recommendations

- Update Virginia Scenic Byway designation procedures and program in cooperation with Scenic Virginia, VDOT and others. Consider adding a historic or heritage category to the program.
- Establish a process for benchmarking byway corridors, which will result in a more unified acceptance or denial of corridors for designation.
- Track changes and provide a basis for technical assistance opportunities for corridor management through annual visual inspections of designated byways.

- The Virginia Department of Conservation and Recreation (DCR) should incorporate Scenic Byway Corridors, existing and qualified, in the green infrastructure land planning effort, and management plans should be developed to support donation of conservation easements along designated byways.
- DCR, in partnership with VDOT and other agencies, should hold a workshop on scenic/aesthetics issues and develop a Scenic Byways Management Manual for localities.
- DCR and VDOT should assist local governments with the development of land use planning tools (i.e., overlay zones) along scenic highways and Virginia Byways to protect the attractive character of the scenic byways.
- Localities should partner with state, local and professional organizations to determine implementation strategies to protect the scenic assets of byway corridors.
- VTC and VDOT should continue to identify and employ funding opportunities for scenic byways promotion, corridor management plans, safety, maintenance and placement of visitor aids.
- The Commonwealth should establish a dedicated source of funds to maintain the integrity of Scenic Byways without using funds from other transportation programs.
- VDOT and the Commonwealth Transportation Board should implement the recommendations of the 1995 report to the General Assembly on "Road Design Standards in Scenic and Historic Areas."
- VDOT should incorporate accommodations to meet the needs of pedestrians and bicyclists when making improvements to designated scenic byways.
- DCR should continue to review and comment on permit applications to protect scenic roads and rivers, especially at bridge crossings and at major primary and interstate road crossings.
- DCR should partner with VTC, VDOT and others to promote and manage thematic driving trails.

Adventure beckons on the roads and highways designated as Virginia Byways. More than mere pavement between points A and B, a Virginia Byway offers travelers a side of the Commonwealth that is uncommon and enlightening. Each byway leads to scenes of natural beauty and places of historical and social significance.

(VDOT website, Virginia's Scenic Byways)

History of Virginia Byways

The Virginia Byways recognition program began in 1966, when the Virginia General Assembly passed the Scenic Highways and Virginia Byways Act (*Code of Virginia* §33.1-62). The Act authorizes the Commonwealth Transportation Board (CTB) to recognize roads for their outstanding features. Two legislated definitions apply to Virginia scenic roads designations. A Scenic Highway is a road designed and built within a protected corridor. While some roads in Virginia qualify as Scenic Highways, the more common designation is Virginia Byways. Virginia Byways are existing roads with significant aesthetic and cultural values that connect areas of historical, natural or recreational significance.

The Scenic Highways and Virginia Byways Act requires DCR, along with VDOT, to determine roads eligible for designation. Existing and potential Virginia Byways are shown on the regional recreation maps in Chapter X. As of spring 2006, over 2,780 miles of roads have been designated Virginia Byways. In addition, four National Scenic Byways totaling approximately 369 miles and the three U.S. Forest Service (USFS) byways totaling about 96 miles have also been recognized in Virginia.

While the Scenic Highways and Virginia Byways Act was passed by the General Assembly in 1966, the first Virginia Byway was not designated until 1974. This designation occurred after VDOT surveyed the more than 52,000 highway miles throughout the Commonwealth to identify potential byways. The initial list of Virginia Byways recommended more than 1,600 road miles for designation. Of that original 1,600 road

miles, all but 450 miles have been designated and are included in the total 2,782 miles included in the Virginia Byways system. Recommendations for Virginia Byway designation are based on visual qualities, historic interest and recreational opportunities. Potential Virginia Byway designations are revised every five years and included in the *Virginia Outdoors Plan*.

Many roads from the initial list of Virginia Byways have been designated; however, efforts are needed to geographically balance the distribution of Virginia Byways across the Commonwealth. Statewide interest in celebrating Jamestown 2007 has promoted a flurry of applications for Virginia Byway designation. Since June of 2005, over 700 miles of roads have been studied resulting in an additional 460 miles being recommended for Virginia Byway designation. Among the most notable designations are the four national parkways recognized in 2006 as National Scenic Byways. Three of these parkways were also designated All-American Roads.

Process for designation of Virginia Byways

Scenic quality is defined by the contribution of resources to the overall visual quality of the landscape. Elements of the landscape including landform, water, vegetation, community design and gray infrastructure influence scenic quality. Intrinsic qualities along Virginia Byways include cultural, historical and recreational features along the road corridor creating significant scenic views without interruption from detracting features. A byway's features must be representative of the intrinsic qualities, unique, irreplaceable or distinct characteristics of the area. A byway most often represents an exceptional example of a common regional landscape.

All Virginia Byways should share three characteristics of scenic quality:

- *Frequency* - Scenic features and views should be frequent enough to give a sense of continuity to the drive along the byway.
- *Consistency* - Along the road corridor, scenic features should consistently relate to each other as well as to cultural, historical and recreational attributes. A scenic road's relationship to the surrounding environment is important to the sense of cohesiveness and quality of the visual experience.
- *Variety* - A variety of viewing opportunities enhance the experience of a byway, including seasonal changes.



Peaks of Otter along Route 43 in Bedford County. Photo by VDOT.



Virginia Byway Route 39 in Alleghany County. Photo by VDOT.

The process of designating a road a Virginia Byway is initiated at the local level and generally follows the procedure outlined below.

1. A request for study is submitted by the locality to DCR or VDOT.
2. Land use, zoning information and historical documentation along the road corridor is submitted by the locality.
3. VDOT and DCR review traffic volumes and accident reports along the road corridor.
4. A field study is conducted by DCR and VDOT.
5. Field study results and preliminary recommendations are shared with the locality.
6. The locality holds a public hearing to receive input on supporting a local resolution for the Virginia Byway designation.
7. DCR and VDOT forward the recommendation and local resolution to the Commonwealth Transportation Board (CTB).
8. The CTB approves the designation.
9. VDOT erects Virginia Byway signage along the corridor and adds the road segment to informational materials.

Re-evaluation of Virginia Byways

Since Virginia Byways is a recognition program, designation is only the first step in protecting the Virginia Byway corridors. Over time, land uses and scenic road corridors may change. These changes cause concern about the continued eligibility of Virginia Byways to meet designation criteria. To assist with long-term tracking of the condition and scenic quality of Virginia Byways, VDOT district offices are responsible for conducting annual evaluations of all designated Virginia Byways.

In conjunction with VDOT, a cooperative initiative aimed at maintaining the integrity of the Virginia Byway program should be implemented throughout the Virginia Byways system to involve local governments, planning district commissions (PDCs), VTC and DCR. This cooperative initiative would establish scenic corridor baselines for Virginia Byways defining values and resources that determine the acceptance or denial for Virginia Byway designation. Local and regional land use and transportation plans would be referenced as part of the evaluation. This data and evaluation is key to maintaining the consistency of the program. Initial assessments could use car-mounted video cameras to document scenic and land use conditions. Follow-up recordings could be done every three to five years to provide comparative data and clearly articulate the unique characteristics of the corridor. Based on the baseline assessment and evaluations, recommendations for future additions or removals from the Virginia Byways system would be made and planning tools implemented for corridor protection.

Information about the Virginia Byways program and a statewide map may be referenced on the Virginia Byways website:
www.virginiadot.org/infoservice/faq-byways.asp.

A Virginia map for touring Virginia's Byways may be ordered at
www.virginiadot.org/infoservice/maporder.asp.

Federal Highway Administration National Scenic Byways Program in Virginia:
www.byways.org/browse/states/VA

Table VII-5. Scenic Roads Designations

Title	American Byways			Virginia Scenic Byways Program	National Forest Scenic Byways	American Automobile Assoc.
	National Scenic Byways Program	All-American Roads Program				
Mission/ Vision	Create a distinctive collection of roads, stories & treasured places; provide resources to the byway community to enhance local quality of life through efforts to preserve, protect, interpret, and promote the intrinsic qualities of designated byways.	Identify national scenic byways with multiple intrinsic qualities and that are destinations in and of themselves with exceptional traveling experiences to be had.		Identify road corridors containing aesthetic or cultural value near areas of historical, natural or recreational significance for designation. The program intent is to encourage travel throughout the state to interesting destinations and away from traffic corridors.	Officially designated byways represent the best of the 100,000 miles of roads running through US National Forests.	Identifies off the beaten driving pathways to interesting places and road corridors of scenic value.
Designation From	U.S. Secretary of Transportation	U.S. Secretary of Transportation		Commonwealth Transportation Board or General Assembly	U.S. Forest Service	AAA
Administrator	U.S. Department of Transportation, Federal Highway Administration	U.S. Department of Transportation, Federal Highway Administration		Dept. of Conservation & Recreation and Va Dept. of Transportation	U.S. Forest Service	AAA
Date Enacted	1991	1991	1991	1966	1988	1988
# Byways; # miles in Virginia	99 byways; 110 mi. in Va. Skyline Drive	27 roads; 277 mi. in Va. - Blue Ridge, Colonial, George Washington Parkways		2782 miles of designated Va. Byways	100 byways, 5,157 miles; 100 mi. Va.-Big Walker Mt.; Highlands, Mt Rogers	650 roads; 983 mi. for 15 in Va.; some highways & w/ other designations
Criteria for Designation	A road is to be of regional significance, and have 1 intrinsic quality that is distinct and represents the region. The 6 intrinsic qualities are: Archeological, Cultural, Historic, Natural, Recreational and Scenic.	It must have at least 2 intrinsic qualities, be a 'destination unto itself' and it must provide an exceptional traveling experience. Which is defined as one that driving the road is the primary reason for their trip.		It has important scenic values & a diversity experiences; links together & provides access to scenic, historical, recreational, cultural, natural and archeological elements; bypasses large roads; could have management along the route; safety features can be added to improve motorist experience; and local governments support the designation.	USFS Criteria Diverse landscape and vegetation, scenic views, unique geological formations, abundance of wildlife and numerous historic places.	A road can meet any of the 5 Classification: Traditional- that best represents the state, Cultural Heritage, Historic, natural beauty, and Classic/ Premier Drives that are derived from all of the classifications.
Impacts/ Restrictions	Must have a corridor management plan; no new outdoor advertising	Must have a corridor management plan; no new outdoor advertising		The only limitations could be the construction of new outdoor advertising signage.	Only those imposed by the forest service general management plan	None
Manager of Corridor	Localities or property owner, ie. USFS or NPS	Localities or property owner, ie. USFS or NPS		Localities	USFS	USFS, NPS, Localities depending
How to Add	Submissions are semi- annually as stated by FHWA & are complete digital reports.	During the selected time annually stated by FHWA a complete written and digital report.		Request from locality & completed report recommending designation by DCR		Added through Road Reporters Program of AAA
More Information	http://www.bywaysonline.org/	http://www.bywaysonline.org/		http://www.vdot.virginia.gov/info/service/faq-byways.asp	http://www.roadnotes.com/scenicdrives/va.htm	Call Local AAA Office

Other scenic roads

In addition to the Virginia Byways, there are other road designation programs including the Federal Highway Administration National Scenic Byways and All-American Roads Program, U.S. Forest Service byways, and the American Automobile Association program (see table VII-5).

The National Scenic Byways Program

(www.byways.org/learn) is part of the U.S. Department of Transportation, Federal Highway Administration. The program is a grassroots collaborative effort estab-

lished in 1991 to help recognize, preserve and enhance selected roads throughout the United States. The U.S. Secretary of Transportation recognizes certain roads as All-American Roads or National Scenic Byways based on one or more archeological, cultural, historic, natural, recreational and scenic qualities. Both designations involve lengthy processes and require corridor management plans.

- **National Scenic Byways** include the Skyline Drive, Blue Ridge Parkway and George Washington Memorial Parkway. Colonial Parkway also received this designation in 2005.

Intrinsic qualities of National Scenic Byways and All-American Roads

To be designated a National Scenic Byway, a road must possess characteristics of regional significance within at least one of the following intrinsic qualities. All-American Roads must possess characteristics of national significance in at least two of the following intrinsic qualities.

Archaeological

Archaeological quality involves those characteristics of the scenic byways corridor that are physical evidence of historic or prehistoric human life or activity that are visible and capable of being inventoried and interpreted. The scenic byway corridor's archeological interest, as identified through ruins, artifacts, structural remains and other physical evidence have scientific significance that educate the viewer and stir an appreciation for the past.

Cultural

Cultural quality is evidence and an expression of the customs or traditions of a distinct group of people. Cultural features including, but not limited to, crafts, music, dance, rituals, festivals, speech, food, special events and vernacular architecture are currently practiced. The cultural qualities of the corridor could highlight one or more significant communities or ethnic traditions.

Historic

Historic quality encompasses legacies of the past that are distinctly associated with physical elements of the landscape, whether natural or man-made, that are of such historic significance that they educate the viewer and stir an appreciation for the past. Historic elements reflect the actions of people and may include buildings, settlement patterns and other examples of human activity.

Historic features can be inventoried, mapped and interpreted. They possess integrity of location, design, setting, material, workmanship, feeling and association.

Natural

Natural quality applies to those features in the visual environment that are in a relatively undisturbed state. These features predate the arrival of human populations and may include geological formations, fossils, landforms, water bodies, vegetation and wildlife. There may be evidence of human activity, but the natural features reveal minimal disturbances.

Recreational

Recreational quality involves outdoor recreational activities directly associated with and dependent upon the natural and cultural elements of the corridor's landscape. Recreational activities provide opportunities for active and passive recreational experiences. They include, but are not limited to, downhill skiing, rafting, boating, fishing and hiking. Driving the road itself may qualify as a pleasurable recreational experience. The recreational activities may be seasonal, but the quality and importance of the recreational activities as seasonal operations must be recognized.

Scenic

Scenic quality is the heightened visual experience derived from the view of natural and manmade elements in the visual environment of the scenic byway corridor. The characteristics of the landscape are strikingly distinct and offer a pleasing and most memorable visual experience. All elements of the landscape—landform, water, vegetation and manmade development—contribute to the quality of the corridor's visual environment. Everything present is in harmony and shares in the intrinsic qualities.

Scenic Highways and Virginia Byways

- **All-American Roads** designated in Virginia in 2005 include the Blue Ridge Parkway, Colonial Parkway and George Washington Parkway.

U.S. Forest Service byways

The National Forest Service (USFS) began designating significant roads within forest boundaries in 1988. These roads are notably scenic and provide opportunities to experience nature first hand in the national forests. Three USFS byways traversing a portion of the USFS land in Virginia are also designated as Virginia Byways: Big Walker, Mount Rogers and the Blue Ridge Parkway. The Highlands Scenic Byway is another USFS scenic road designation, but it is unpaved and does not qualify for designation under the Virginia Program.

U.S. Forest Service Byways in Virginia

Big Walker Mountain Scenic Byway

An alternative to six miles of Interstate 77 and the Big Walker Interstate tunnel, the Big Walker Mountain Scenic Byway traverses 16.2 miles of State Highway 717 and US 52/21 in the Jefferson National Forest.

Highlands Scenic Byway

This National Forest Scenic Byway weaves through a landscape of diverse vegetation, scenic views, unique geological formations and an abundance of wildlife. In addition, there are numerous historic places, including the remnants of a once-thriving mining community.

Mount Rogers Scenic Byway

The Mount Rogers Scenic Byway traverses approximately 60 miles of the Jefferson National Forest and offers scenic views of mountains and rural America.

American Automobile Association

The American Automobile Association (AAA) program introduces travelers to Virginia's scenic amenities. This program has been in existence since 1988 and emphasizes directing travelers to little-known interesting places. Under the AAA program, there are five classifications of roads. These include Traditional roads that best represent the state, Cultural Heritage, Historic, Natural Beauty, and Classic roads, which are premier drives derived from all of the classifications. Virginia is host to 15 AAA roads. Some AAA designated roads include interstates that traverse through scenic areas lightly developed of the state, like U.S. Interstate 81.

Thematic driving trails

Thematic driving trails are growing in popularity and many more are being recognized and promoted for tourism. Most of Virginia's thematic trails help tell historical stories that crisscross the state tying small and large communities together through the experience of past events. Growing popularity for thematic trails inclusive of Virginia Byways may present opportunities for partnerships with DCR, VTC, VDOT and other organizations for promotion and management of these corridors.

A new and exciting effort is exemplified in the Journey Through Hallowed Ground (JTHG) partnership. The JTHG is a four-state, nonprofit, organization dedicated to raising regional, national and international awareness of the historic, cultural and natural resources in the region, which generally follows the Old Carolina Road (Routes 15 and 231) from Gettysburg, through Maryland, to Monticello in Albemarle County. Formed originally as a partnership between the National Park Service, the Virginia Department of Historic Resources, local, regional and national grassroots organizations, this partnership has the support of nearly every governmental body within the corridor. JTHG works to create educational leadership programs to increase civic engagement for students of every age and by creating heritage programs for every citizen within, and visitor to, the region.

National Park Service Parkways are managed as scenic routes, emphasizing scenic values, recreational features, wildlife viewing, cultural and historical features with scenic overlooks, waysides and interpretive sites. NPS works with adjacent property owners and localities to preserve and protect the views, vistas and environment along its roads.



Spring on the George Washington Parkway, an All-American Road. Photo by National Scenic Byways Program.

Thematic Driving Trails

- Civil Rights In Education Heritage Trail - www.varetreat.com
- Civil War Trails (10+ tours) - 1-888-CIVIL WAR, www.civilwar-va.com/virginia or www.virginiadot.org/programs/prog-byways-civil-war.asp
- Virginia Birding and Wildlife Trails - www.dgif.virginia.gov
- Journey Through Hallowed Ground - www.HallowedGround.org
- Crooked Road Music Trail - www.thecrookedroad.org
- Captain John Smith James River Trail - www.JohnSmithTrail.org
- Regional driving tours - www.virginia.org/site/features.asp?FeatureID=182
 - Blue Ridge Highlands — Music, Crafts and Mountain Memories!
 - Central Virginia — An African-American Heritage Tour
 - Chesapeake Bay — A Water-Lover's Dream
 - Eastern Shore — Birdwatchers' Paradise
 - Hampton Roads — Driving Tour Through Military History
 - Heart of Appalachia — Daniel Boone Territory
 - Northern Virginia — The World War II Heritage Trail
 - Shenandoah Valley — Southern Driving Tour Through History and Culture
- Daniel Boone Wilderness Trail - www.danielboonetrail.com
- George Washington - www.virginia.org/site/features.asp?FeatureID=200
- World War II - www.virginia.org/site/features.asp?FeatureID=181
- African-American Heritage - www.virginia.org/site/features.asp?FeatureID=196
- Alleghany Highlands - www.virginiadot.org/programs/prog-byways-alleghany-highlands.asp
- Capital Country - www.virginiadot.org/programs/prog-byways-cap-sites.asp
- Virginia's Millennium Legacy Trails - www.virginiadot.org/programs/prog-byways-legacy.asp
- Northern Virginia - www.virginiadot.org/programs/prog-byways-nova-sites.asp
- Southern Highlands - www.virginiadot.org/programs/prog-byways-so-highlands.asp

As more emphasis is put on traveling and tourism, it becomes increasingly important to protect the resources that provide pleasurable, scenic experiences for travelers. The challenge for scenic byways corridors is to integrate community development and growth into the protection of the scenic integrity of designated and potential byway corridors throughout the Commonwealth.

Selected References

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America's Byways Resource Center. *Conserving Our Treasured Places: Managing Visual Quality on Scenic Byways*. Scenic America.

Yamada, Alan, et al. 2003 *Scenic Byways: A Design Guide for Roadside Improvements*, U.S. Forest Service.

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America's waterways have always been a vital force providing opportunities for commerce, routes for exploration, inspiration of ideas, means of recreation, sources of drinking water and creating much of the natural beauty that helps define our national identity. Perhaps most importantly, our waters seamlessly connect our citizens, our land, and our communities to one another. ...

Throughout history, the path to prosperity has been plied down America's waterways. —Al Gore

The Virginia Scenic Rivers Act of 1970 created a statewide program to protect and preserve rivers or sections of rivers having natural or scenic beauty and cultural and historic interest. Since the first scenic river designation in 1975, 22 rivers totaling more than 505 river miles have been recognized, including one State Historic River. Thirteen additional rivers have been evaluated and found to qualify for scenic river designation. The most recent additions to the scenic rivers program are the Meherrin River, Brunswick County, and Goose Creek extended, designated by the Virginia General Assembly.



Governor Kaine signs 2006 legislation for the designation of 37 miles of the Meherrin River in Brunswick County. Photo by Lynn Crump

Benefits of Virginia Scenic River designation

- Provides opportunities to consider scenic, cultural and historic resources in planning and design.
- Requires Federal Energy Regulation Commission (FERC) reviews of hydropower or related project proposals to include multiple river values for affected rivers.
- Encourages closer review of projects and proposals by state agencies and localities.
- Requires General Assembly authorization for dams.

- Allows for continued appropriate riparian land uses.
- Allows state, local and federal projects on designated waterways to be reviewed and monitored by the Virginia Scenic River Board.
- Provides a framework for appointment of a local Scenic River Advisory Committee.
- Provides eligibility for land use tax considerations, if locally adopted.
- Provides the potential for additional economic benefits to the adjacent community.

More Scenic River Program information can be found at: www.dcr.virginia.gov.

Findings

- Virginia's most precious natural resources include more than 49,000 miles of rivers and streams.
- The Scenic Rivers program is more than 30 years old, and it continues to expand and support important river resources across the state.
- Rivers and streams provide drinking water, recreational opportunities, habitat for fish and wildlife, resources for commerce, and some of our most scenic vistas.
- Informal, traditional river access sites are being lost when land use changes from agricultural to residential, and the new smaller lot owners prohibit public use of the property.
- Scenic river designation promotes a greater awareness of the value of rivers among the citizens of Virginia.
- Virginia's rivers are facing increasing threats from pollution associated with development, poor farming practices and urbanizing landscapes.
- Waterways should be managed from a multi-use approach, including scenic and cultural values, wildlife resources, and recreation potential as well as for appropriate commercial use.

- Planning for an entire watershed, designation of appropriate land uses near waterways, and implementation of riparian buffers to protect stream-bank erosion and filter adjacent agricultural runoff is necessary to protect water resources.
- Ninety percent of all the physical resources cherished by residents of a region fall in water, wetlands and steep topography area (Lewis).

Recommendations

- Local governments should nominate candidate streams and rivers for study and possible Scenic River designation.
- The Virginia Department of Conservation and Recreation (DCR) should continue to administer and promote the Scenic Rivers Program and to re-evaluate and expand the base of information about rivers and streams.
- DCR should include scenic river corridors, existing and qualified, as elements of a green infrastructure land-planning model.
- DCR and the Scenic River Advisory Board should promote rivers qualifying for designation.
- DCR should monitor designated rivers to determine continued eligibility based on current conditions to ensure the integrity of the Scenic Rivers Program.
- The Scenic River Advisory Board should develop a Scenic River Manual outlining the benefits and process of designation, as well as procedures and tools for managing river resources. The board should co-sponsor a workshop on scenic and aesthetic resources along with DCR, other agencies, universities and organizations.
- DCR should continue to review and comment on various permit applications to state and federal regulatory agencies with respect to possible impacts on existing and potential components of the scenic river system. DCR will also continue to review and comment on all bridges to provide visual and boating access to rivers whenever possible.
- DCR should assist local governments with development of planning tools (for example, land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's Scenic Rivers.
- Scenic river signage should be coordinated with the Virginia Department of Transportation (VDOT) and DCR under the Tourist Oriented Directional Signage

(TODS) program to improve scenic river program awareness.

The Commonwealth of Virginia has diversity of rivers and streams that is matched by few other states. ... The scenery of these streams varies from remote canyons to urban areas, from coastal swamps to mountain cliffs, from open pasturelands to dense forests."

—Roger Corbett



The Scenic River Advisory Board evaluates the Appomattox River. Photo by DCR.

Program background

The Virginia Scenic Rivers system comprises both tidal and nontidal rivers, and extends from the coastal region of Virginia to the mountains. The fabric of the system includes rivers whose corridors are rich in history, natural resources and recreational opportunities. Many of the designated rivers flow through rural and undeveloped areas of the state. However, segments of the James, Appomattox, and Rappahannock scenic rivers trace their respective courses through more developed environments and cities. Each river is unique, but all possess qualities that make them worthy of recognition.

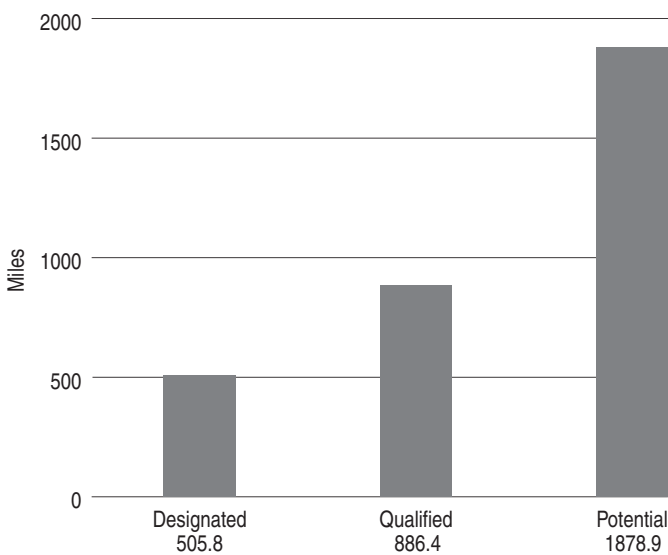
One hundred years ago, the importance of the Urban James River was almost totally commercial. It provided a seaport, a power source, a raw materials source, and a waste site. ... Our priority is to preserve its beauty, its flora and fauna, its artifacts, its water quality, and its ambience [as a] most important amenity.

—John Bryan

Scenic Rivers

Local support is needed to introduce a bill for scenic river designation or extension by the Virginia General Assembly. The General Assembly and the governor must approve each addition to Virginia's Scenic River system. The inclusion of a river in the scenic rivers system provides a framework whereby the preservation of that river is encouraged. The status of Virginia's scenic river miles are shown on Figure VII-2 and Map VII-6. Currently there are several scenic river designations at various stages of consideration (see Chapter X Regional Analysis/Recommendations).

Figure VII-2 Status of Scenic Rivers



The *Code of Virginia*, §10.1-401, assigns the following duties and powers to the director of DCR:

- Identify rivers or river segments, including shores and natural environs, to be considered for designation.
- Conduct evaluations of rivers or segments to be considered for designation.
- Recommend rivers or segments to be considered for designation to the governor and General Assembly.
- Should a river be designated, the DCR director may acquire real property or interest in lands which offer protection to the Scenic River, but eminent domain cannot be exercised in acquiring any such property or interests.

The *Code of Virginia*, §10.1-402, provides that DCR may fully review and make recommendation to federal, state and local agencies regarding the planning for

use and development of water and related land resources so that scenic rivers resources are protected.

The *Code of Virginia*, §10.1-407, states that after the designation of a scenic river, no dam or other structure that impedes natural flow thereof shall be constructed, operated or maintained in such river unless specifically authorized by an act of the General Assembly.

The Scenic Rivers Act prescribes the powers and duties of the administering agency, DCR in the *Code of Virginia*, §10.1-405. The duties include:









- Administration of the scenic river system to preserve and protect its natural beauty and to assure its use and enjoyment for its scenic, recreational, geologic, fish, wildlife, historic, cultural or other assets, and to encourage the continuance of existing agricultural, horticultural, forestry, and open space land and water uses.
- Periodically surveying each scenic river and its immediate environs and monitoring of all existing and proposed uses of each scenic river and its related land resources.
- Assisting local governments with problem solving associated with the Virginia Scenic Rivers System in consultation with the director, the board and other advisory committees.

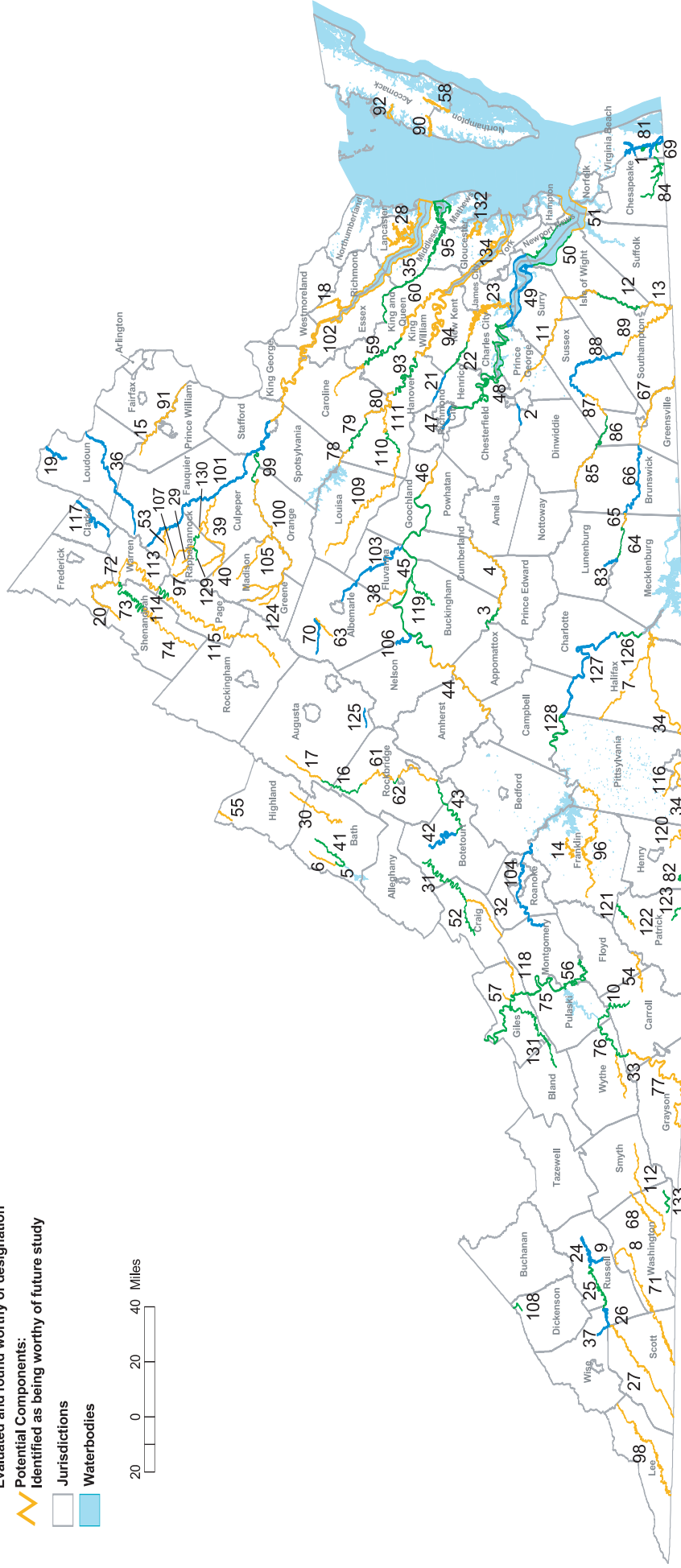
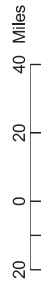
Scenic Rivers Advisory Board

The *Code of Virginia*, §10.1-406, established the Virginia Scenic River Board, consisting of citizen representatives from around the Commonwealth be appointed by the governor. The board considers all issues, plans and proposals that could alter rivers within the scenic river program and advises the DCR director and the agency regarding these matters. The board intends to develop a process, materials and outreach to enhance support of the program at all levels of government for improved scenic river management. This could take the form of a Scenic River manual.

Until the *Code of Virginia* was amended in 2003 to create a single Scenic River Advisory Board, each designated scenic river had a gubernatorial-appointed local advisory board. Currently, if citizens and localities surrounding a particular scenic river wish to appoint a local advisory board to advise on river protection issues, they can request such a board be appointed by the DCR director. DCR staff will provide technical assistance as needed to local advisory boards. The Historic Falls of the James and Goose Creek are two local scenic river advisory boards that

Map VII-6. Scenic Rivers

-  Scenic Rivers
-  Legislatively designated components
-  Desirable Components:
-  Evaluated and found worthy of designation
-  Potential Components:
-  Identified as being worthy of future study
-  Jurisdictions
-  Waterbodies



Virginia's Scenic Rivers

1. **Alton's Creek**
Entire River
2. **Appomattox River**
100 ft from Lake Chesdin Dam to Rte. 36 (Petersburg)
3. **Appomattox River**
Rte. 612 to Rte. 608
4. **Appomattox River**
Rte. 608 to Powhatan Co. line
5. **Back Creek**
Blowing Springs to Lake Moomaw
6. **Back Creek**
Dam Hollow at Sunrise to Blowing Springs
7. **Banister River**
Halifax County
8. **Big Brumley Creek**
Hidden Valley Lake to N. Fork Holston
9. **Big Cedar Creek**
Near Lenanon, 5.8 miles to confluence with Clinch River
10. **Big Reed Island Creek**
Rte. 693 to confluence with New River
11. **Blackwater River**
Headwaters to Zuni
12. **Blackwater River**
Zuni to Franklin City
13. **Blackwater River**
Franklin City to VA - NC line
14. **Blackwater River**
Rte. 220 to Smith Mountain Lake
15. **Bull Run**
Entire River
16. **Calfpasture River**
Marble Valley to Maurey River
17. **Calfpasture River**
Rte. 250 to Marble Valley
18. **Cat Point Creek**
Rte. 622 to confluence with Rappahannock River
19. **Catoctin Creek**
Town of Waterford to confluence with Potomac River
20. **Cedar Creek**
Headwaters to N. Fork Shenandoah River
21. **Chickahominy River**
Rte. 360 to Hanover, Henrico, New Kent Co. line
22. **Chickahominy River**
New Kent, Henrico, Charles Co. line to Rte. 618 Bridge
23. **Chickahominy River**
Bottoms Bridge (Rte. 60) to James River
24. **Clinch River**
Confluence with Little River to Rte. 645 - Nash Ford Bridge
25. **Clinch River**
Nash Ford to Rte. 58
26. **Clinch River**
Rte. 58 to confluence with Guest River
27. **Clinch River**
Confluence with Guest River to VA - TN line
28. **Corrotoman River**
Lancaster County
29. **Covington River**
Rappahannock County
30. **Cowpasture River**
Rte. 614 near Patna to Rte. 42 At Millboro Springs
31. **Craig Creek**
Newcastle to Strom
32. **Craig Creek**
Headwaters to Newcastle
33. **Cripple Creek**
Speedwell to New River
34. **Dan River**
Entire River in Virginia
35. **Dragon Run**
Headwaters to Piankatank River
36. **Goose Creek**
Confluence of N/S prongs of Goose Creek to confluence with Potomac River
37. **Guest River**
Rte. 72 to confluence with Clinch River
38. **Hardware River**
Rte. 708 to confluence with James River
39. **Hazel River**
Rappahannock County to Rappahannock River
40. **Hughes River**
Rappahannock County
41. **Jackson River**
Rte. 623 to Lake Moomaw
42. **James River**
2 miles west Rte. 43 crossing to Rte. 630 bridge at Springwood
43. **James River**
Springwood to Glasgow
44. **James River**
Lynchburg to Wingina
45. **James River**
Wingina to Maidens
46. **James River**
Maidens to Watkins Landing
47. **James River**
West limits of Richmond to Orleans Street (extended)
48. **James River**
Orleans Street (extended) to Surrey County
49. **James River**
Surrey County to Lawnes Creek (James City/ Surrey Co.)
50. **James River**
James City Co./ Newport News border to Isle of Wight/ Suffolk line
51. **James River**
Isle of Wight/ Suffolk line to Chesapeake Bay
52. **Johns Creek**
Craig Springs to Newcastle
53. **Jordan River**
Rappahannock County
54. **Laurel Fork**
Headwaters to Big Island Creek
55. **Laurel Fork**
Headwaters to the VA - WVA line
56. **Little River**
Rte. 8 to New River
57. **Little Stony River**
Headwaters to New River
58. **Machipongo River**
Entire River
59. **Mattaponi River**
Rte. 628 to Walkerton Bridge (Rte. 629)
60. **Mattaponi River**
Entire River (see item 59)
61. **Maury River**
Entire River (see item 62)
62. **Maury River**
Limekiln Bridge to Lexington
63. **Mechums River**
Entire River
64. **Meherrin River**
N. Meherrin confluence to Rte. 138
65. **Meherrin River**
Rte. 138 to the Brunswick Co. line
66. **Meherrin River**
Brunswick/ Lunenburg/ Mechlenburg Co. line to Brunswick/ Greenville Co. Line
67. **Meherrin River**
Greensville, Southampton Counties to VA / NC line
68. **Middle Fork Holston River**
Seven Mile Ford to Holston Lake
69. **Milldam Creek**
Entire River
70. **Moormans River**
Charlottesville Reservoir to confluence with Mechums River
71. **N. Fork Holston River**
Confluence with Big Brumley Creek to Tennessee state line in Scott County
72. **N. Fork Shenandoah River**
Confluence with Cedar Creek to Front Royal
73. **N. Fork Shenandoah River**
Burnshire Bridge (Rte. 758) to Cedar Creek at Stasburg
74. **N. Fork Shenandoah River**
New Market to the Burnshire Bridge
75. **New River**
Claytor Lake to VA - WVA line
76. **New River**
Buck Dam to Reed Junction
77. **New River**
VA - NC line to Buck Dam
78. **North Anna River**
Lake Anna to Rte. 738 (Anderson Bridge)
79. **North Anna River**
Rte. 738 to Rte. 1 at Chandler Crossing
80. **North Anna River**
Rte. 1 at Chandler Crossing to confluence with Pamunkey River
81. **North Landing River**
VA - NC line to North Landing Road (Rte. 165)
82. **North Mayo River**
Rte. 695 to VA - NC line
83. **North Meherrin River**
Rte. 712 Bridge to junction of South Meherrin River
84. **Northwest River**
Entire River
85. **Nottoway River**
Brunswick, Dinwiddie Co. line to Rte. 609
86. **Nottoway River**
Rte. 609 to Rte. 630
87. **Nottoway River**
Rte. 630 to Rte. 40 bridge at Stony Creek
88. **Nottoway River**
Rte. 40 bridge at Stony Creek to Rte. 653 (Carey's Bridge)
89. **Nottoway River**
Rte. 653 to VA - NC line
90. **Occohannock Creek**
Entire River
91. **Occoquan River**
Entire River
92. **Onancock Creek**
Entire River
93. **Pamunkey River**
Rte. 614 to Pampatike Landing
94. **Pamunkey River**
Entire River (see item 93)
95. **Piankatank River**
Dragon Run to Chesapeake Bay
96. **Pigg River**
Entire River in Franklin and Pittsylvania Counties
97. **Piney River**
Rappahannock County
98. **Powell River**
Lee County
99. **Rapidan River**
Germanna Ford to confluence with Rappahannock River
100. **Rapidan River**
Headwaters to Germanna Ford
101. **Rappahannock River**
Headwaters to Rte. 3 Bridge at Ferry Farm
102. **Rappahannock River**
Rte. 3 Bridge at Ferry Farm to Chesapeake Bay
103. **Rivanna River**
Wollen Mills to confluence with James River
104. **Roanoke River**
Shawsville to Smith Mtn. Lake
105. **Robinson River**
Madison County
106. **Rockfish River**
Rte. 693 at Schuyler to confluence with James River
107. **Rush River**
Rappahannock County
108. **Russell Fork**
Entire River in Break Interstate Park
109. **S. Anna River**
Lake Gordonsville to Rte. 673
110. **S. Anna River**
Rte. 673 to Rte. 686
111. **S. Anna River**
Rte. 686 to confluence with Pamunkey River
112. **S. Fork Holston River**
Sugar Grove to South Holston Lake
113. **S. Fork Shenandoah River**
Overall to Front Royal
114. **S. Fork Shenandoah River**
Goodes Mill to Overall
115. **S. Fork Shenandoah River**
Port Republic to Goods Mill
116. **Sandy River**
Pittsylvania County
117. **Shenandoah River**
Warren/Clarke Co. line to VA - WVA line
118. **Sinking Creek**
Rte. 680 to confluence with New River
119. **Slate River**
Rte. 20 to James River
120. **Smith River**
Confluence with Reds Creek to VA - NC line
121. **Smith River**
Rte. 704 to Philpott Reservoir
122. **Smith River**
Rte. 8 to Rte. 704
123. **South Mayo River**
Stuart to VA - NC line
124. **South River**
Greene County
125. **St. Marys River**
Headwaters in Augusta Co. to GW-Jeff National Forest boundary
126. **Staunton River**
Rte. 360 to Staunton River State Park
127. **Staunton River**
Rte. 761 (Long Island) to Rte. 360
128. **Staunton River**
Town of Altavista to Long Island
129. **Thornton River**
Entire River (see no. 130)
130. **Thornton River**
Fletchers Mill (Rte. 522) to Rte. 729
131. **Walker Creek**
Point Pleasant to New River
132. **Ware River**
Gloucester County
133. **Whitotop Laurel Creek**
Confluence with Green Cove Creek to vicinity of Damascus
134. **York River**
Entire River

Table VII-6. Scenic River Designations

Scenic River Designations			
Title	National Wild & Scenic River System	American Heritage Rivers Initiative	Virginia Scenic Rivers Program
Mission/ Intent	to protect designated river segments	to foster community empowerment, help protect & restore the environment, revitalize the economy, renew the culture & preserve history.	to identify, designate and enhance the protection rivers & streams that possess outstanding scenic, recreational, historic and natural characteristics of statewide significance for future generations through wise use & conservation
Designation From	U.S. Congress or the Secretary of the Interior	Presidential decree	Virginia General Assembly
Administrator	National Park Service	Environmental Protection Agency	Department of Conservation & Recreation
Date Enacted	1968	1997	1970
# Rivers	156 (2004); none in VA	14; New & Potomac	19; +436 miles
Criteria for Designation	possessing outstanding or remarkable scenic, recreational, geological, natural, historical, cultural, or other similar values	distinctive inherent characteristics of river, effective community plan of action, strength & diversity of community support, partnerships capability	river corridor vegetation, flow modifications, human development, historic, landscape, quality of fishery, endangered species, water quality, parallel roads, crossings, special features, and aesthetics
Area Defined	within 1/4 mile of ordinary high water mark	none	river bottom to ordinary low water mark
Impacts/ Restrictions	free-flowing condition and are not dammed or otherwise improved.	more effective use of federal resources w/ help of River Navigator to facilitate community-agency interchange	No dams may be put on the river without General Assembly action
Manager of Corridor	ACOE, BLM, NPS, USFS, USFWS, & various states	localities	localities
Funding	through managers	none	none
How to Add	any time w/ complete report & acceptance of management plan	through congressional decree	request from locality & complete report
Additional information	http://www.nps.gov/rivers/	http://www.epa.gov/rivers/	http://www.dcr.virginia.gov/prr/srmain.htm

remain active and provide input to the state Scenic Rivers Advisory Board. The state and local advisory boards work closely with local government agencies and area citizens providing expertise instrumental in resolving resource management issues. DCR continues to provide technical assistance to local communities on river corridor planning, preservation and management upon request.

Local government involvement

Scenic river protection and management rests with local governments. Through comprehensive planning, zoning and special use tax incentives, localities are able to maintain the quality of their scenic river resources while allowing continued development and other important landowner activities. DCR works with local governments and citizens to study potential scenic rivers and encourages their participation in the evaluation process. Following evaluation, if the river qualifies as a scenic river, the locality must advocate for designation. Once designated, local governments have the primary responsibility for protection of the designated corridor.

Steps to designation

Scenic river designations result from local partnership initiatives of concerned citizens, local governments, state agencies and the Virginia General Assembly. This partnership begins in the evaluation phase and continues through and after the designation process. The grassroots effort of many citizens ensures the quality and continued success of the program.

A methodology has been established that is used to objectively evaluate potential scenic rivers and determine their eligibility for designation. The same tool is used to monitor changes on system components to ensure each section continues to meet the standards. The evaluation and ranking procedure provides data for formulating goals, objectives and priorities for management of designated scenic river corridors.

1. The designation and scenic river nomination process is initiated with a request from a localities' governing board to DCR for a study of the candidate river segment.
2. DCR and local representatives then conduct a study and determine the eligibility of the river segment based on scenic river attributes.
3. Following the evaluation, DCR writes a report of the findings and makes a determination of eligibility for the studied river.

4. The local governing board must pass a resolution endorsing designation of the qualifying river segment after the study is completed.
5. Once the resolution is passed, a legislative sponsor will submit the bill to the General Assembly.
6. After acceptance by the General Assembly, the governor signs the bill designating the river as a Virginia Scenic River.
7. The localities then work with VDOT to erect scenic river signage and work with the Virginia Scenic Rivers Boards to manage the river resources.

Scenic River designation is based on the following attributes:

- Stream corridor vegetation
- Streambed and stream flow modifications
- Human development of visual corridor
- Historic features
- Landscape
- Quality of fishery
- Rare, threatened or endangered species
- Water quality
- Parallel roads
- River crossings
- Other special features affecting aesthetics

Federal river initiatives

Several federal agencies help to manage, protect and promote the river systems of Virginia (see Table VII-6). The Department of the Interior's Wild and Scenic Rivers Program, which has been in existence since 1968, is administered by the National Park Service and helps to protect river sections through designation and planning technique implementation or ownership. None of the 156 federally designated rivers are located in Virginia. However, there is currently an effort to designate part of the New River in Virginia and West Virginia as a national scenic river.

The American Heritage Rivers Initiative, a program administered by the Environmental Protection Agency (EPA) is geared toward fostering communities to take advantage of their river resources for economic revitalization and protection of resources. Federal resources

Scenic Rivers

are coordinated with the help of a river navigator. Both the New and the Potomac Rivers and its tributaries are recognized under this program.

EPA has a program that helps preserve and promote the sensitive aspects of rivers. The America's Most Endangered Rivers Program, in existence since 1986, recognizes the rivers with critical and near-term threats. The threats can be from a number of sources, including damming, overdevelopment, industry and sewage waste. Each year, a report identifies threatened rivers and offers solutions for protection. It also highlights the successes of rivers listed in previous years. In 2006, the Shenandoah River was listed. Seven other Virginia rivers have been on the endangered rivers list in previous years with various success rates. Those rivers are: James, Saint Mary's, Clinch and Powell system, Potomac, Pagan, Mattaponi and Paine Run.

An amendment to the National Trails System Act in 2006 designated the Captain John Smith Chesapeake National Historic Trail as the nation's first water trail (see Water Access subsection of this chapter). At the same time, a resolution in the senate had been brought forth to recognize Virginia's James River as "America's Founding River." These efforts illustrate the immense importance of rivers and their protection both at a national and state level. Because the John Smith Trail and Founding River initiatives are a part of the Jamestown 400 celebration, there is additional attention to these nationally significant resources.

The United States Forest Service (USFS), although it does not have a designation process, helps protect the waters of Saint Mary's Virginia Scenic River. The river is completely contained within National Forest Service lands. Management is the responsibility of the USFS, as opposed to private or other governmental entities, which can make the protection easier.

The Virginia Scenic Rivers Program and the federal river programs focus on conservation and appropriate

use of scenic rivers and river corridors. All state and federal agencies must consider how their projects and programs affect state scenic rivers.

...our rivers are a part of our national commons – a meeting ground where Americans from all walks of life gather to trade, reflect, rejoice, and restore. As we move into the twenty-first century with a renewed sense of stewardship and appreciation for our rivers, we must carry that spirit with us.

As quoted by Al Gore (Cronin and Kennedy, 1997, p.12)

Technical assistance for Scenic River designation or protection

DCR provides technical assistance to agencies and organizations interested in designating rivers under the scenic river program and developing corridor management plans for the protection of river corridors.

Department of Conservation and Recreation Division of Planning and Recreation Resources

203 Governor Street, Suite 326
Richmond, Virginia 23219
(804) 786-5054
www.dcr.virginia.gov

Selected resources

Bryan, John. 1997. *The James River in Richmond: Your guide to enjoying America's best urban waterway*. Charles Creek Publishing.

Corbett, H. Roger. 2000. *Virginia Whitewater: A paddler's guide to the rivers of Virginia*. Seneca Press.

Cronin, John, and Robert F. Kennedy Jr. 1997. *The Riverkeepers: two activists fight to reclaim our environment as a basic human right*. Scribner.

Lewis, Philip H., Jr. 1996. *Tomorrow By Design: A regional design process for sustainability*. John Wiley and Sons, Inc.

The health of our waters is the principal measure of how we live on the land. —Luna Leopold

Findings

- Programs and partnerships have been established in Virginia to address watershed planning and management.
- Local communities benefit from state and federal programs that address water quality and watershed management.
- Many outdoor recreation activities are dependent upon watershed management to sustain natural resources and water quality.
- In 2002, of the Virginia streams monitored, Virginia's Department of Environmental Quality (DEQ) listed 4,318 stream or river miles as impaired. This is an increase of 1,484 miles since 1998 (www.deq.state.va.us/wqa/303d.html).
- Additional funding is needed to achieve the water quality goals of the Chesapeake 2000 multi-state Bay agreement and to meet water quality goals throughout Virginia. (www.naturalresources.virginia.gov/Initiatives/WaterCleanupPlan)



Healthy streams are dependent on watershed management practices. Photo by Irvine Wilson.

Recommendations

- State watershed management planning efforts should be incorporated into green infrastructure initiatives.
- Local planners and decision makers should incorporate green infrastructure into local watershed management plans.
- Encourage, nurture and recognize partnerships between local jurisdictions and nonprofit organizations working to facilitate land use planning and conservation options at a local level.
- Regional and local governments should protect watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans.

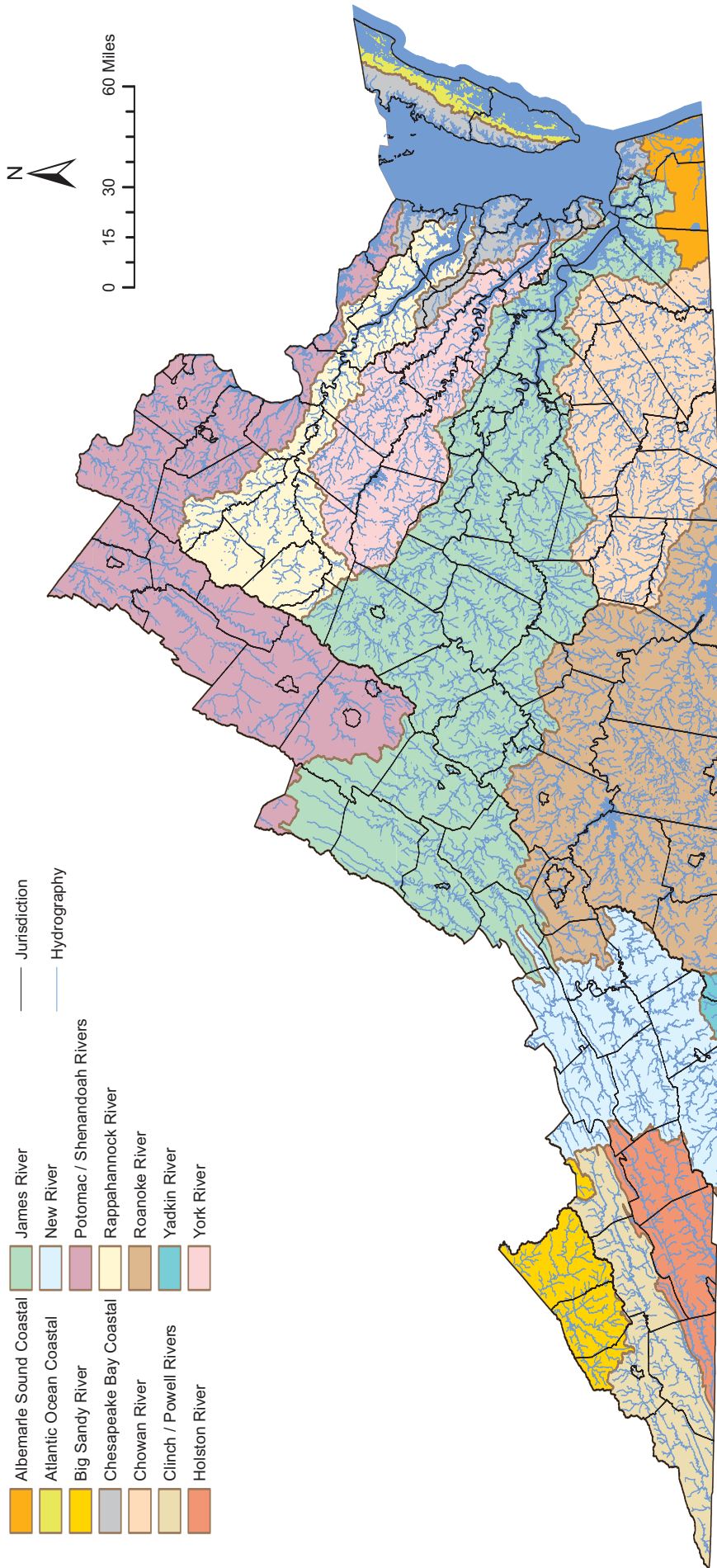
Importance of watershed planning and programs to outdoor recreation and conservation lands

To maintain and improve water quality and ensure that future generations have adequate water supplies, it is essential to understand and incorporate watershed protection into development planning using green infrastructure models and watershed planning. The enjoyment of popular outdoor recreation activities such as fishing, swimming and boating is dependent on access to clean and abundant waters. Streams and rivers in the Commonwealth should be available for primary contact recreation and should provide drinking water for existing and future populations.

Virginia watershed boundaries

All land in the Commonwealth is within a watershed. A watershed is simply the area of land that drains into a particular body of water. Bodies of water used to define a watershed may be a creek, pond, river, bay or ocean.

Virginia has defined 497 subwatersheds that make up the state's 14 major watersheds. These 14 watersheds



Data Sources:
 USGS - Hydrology
 VA-DCR - Hydrologic Units / Jurisdiction Boundaries

are divided into two larger watersheds, the Chesapeake Bay and the Southern Rivers. The Chesapeake Bay watershed includes the geographic area in the northern half of the state where all waters eventually drain to the Chesapeake Bay or Atlantic Ocean. The Southern Rivers watershed represents the lands draining the southern half of the state into the Albemarle-Pamlico Sound in North Carolina, or across the southwestern portion of the state into the Ohio River and then to the Mississippi River and the Gulf of Mexico.

www.dcr.virginia.gov/soil_&_water/wsheds.shtml

Southern Rivers watersheds

Albemarle Sound, Coastal
Big Sandy
Chowan
Clinch-Powell
Holston
New
Roanoke
Yadkin

Chesapeake Bay watersheds

Eastern Shore and Bayside Basins
Atlantic Ocean Coastal
James
Potomac-Shenandoah
Rappahannock
York

Watershed programs

The Department of Conservation and Recreation (DCR) has eight watershed field offices (www.dcr.virginia.gov/soil_&_water/swintro.shtml) providing support to local governments, soil and water conservation districts and communities. These offices support watershed program initiatives dealing with watershed planning, nonpoint source pollution removal, water quality related issues, conservation initiatives, education, outreach and training.

Southern watersheds field offices

Abingdon: Tennessee-Big Sandy Watersheds Office

252 W. Main Street, Suite 3
Abingdon, Va. 24210
Phone: (276) 676-5528
Fax: (276) 676-5527

Dublin: New River Watershed Office

P. O. Box 1506
Dublin, Va. 24084
Phone: (540) 643-2590
Fax: (540) 643-2597

Suffolk: Chowan-Albemarle Coastal Watersheds Office

1548 Holland Road
Suffolk, Va. 23434
Phone: (757) 925-2468
Fax: (757) 925-2388

Chesapeake Bay watersheds field offices

Clarksville: Roanoke Watershed Office

11632 Highway 15 South
Clarksville, Va. 23927
Phone: (434) 374-3648

Richmond: James River Watershed Office

101 N. 14th St., 11th Floor, Monroe Building
Richmond, VA. 23219
Phone: (804) 225-4468
Fax: (804) 371-0771

Staunton: Shenandoah Watershed Office

44 Sanger Lane, Suite 102
Staunton, Va. 24401
Phone: (540) 332-9991
Fax: (540) 332-8956

Tappahannock: York-Rappahannock Watershed Office

P. O. Box 1425
Tappahannock, Va. 22560
Phone: (804) 443-6752
Fax: (804) 443-4534

Warrenton: Potomac Watershed Office

98 Alexandria Pike, Suite 33
Warrenton, Va. 20186-2849
Phone: (540) 347-6420
Fax: (540) 347-6423

Virginia's Watershed Programs

Watershed tools and technical assistance

DCR provides technical assistance, guidance and information on local and regional watershed management planning. As the lead agency for nonpoint source pollution control, DCR produced a DVD on watershed planning entitled *Catch the Watershed Wave, A Case Study on small watershed planning in two Virginia Communities*. The DVD encourages local planners to consider watershed boundaries and to include a wide range of economic, environmental and social factors when prioritizing goals. The DVD is a companion tool for watershed planning guidebook entitled, *Local Watershed Management Planning in Virginia: A Community Water Quality Approach*. This guidebook can be found online here:

www.dcr.virginia.gov/soil_&_water/documents/wshedguideb2b.pdf

A summary of programs and agencies that support watershed management are summarized below.

Virginia Water Quality Improvement Act (WQIA)

www.dcr.virginia.gov/soil_&_water/wqia.shtml

Through this program, DCR's regional watershed offices work with local governments to develop effective nonpoint source pollution reduction strategies. The Water Quality Improvement Act also established the Water Quality Improvement Fund that provides grants for a variety of water quality programs.

Chesapeake Bay Preservation Act

www.dcr.virginia.gov/chesapeake_bay_local_assistance

The Virginia General Assembly enacted the Chesapeake Bay Preservation Act in 1988. The Bay Act established a land use management program that is implemented by local governments pursuant to regulations promulgated by the state. The program focuses on reducing and preventing nonpoint source pollution from new development and redevelopment. The Division of Chesapeake Bay Local Assistance (CBLA) within DCR and the Chesapeake Bay Local Assistance Board are responsible for the implementation of the Act. CBLA addresses the impact of land use upon the waters that feed the Chesapeake Bay by working directly with local governments to develop and implement programs that are compliant with state law. The next phase of Chesapeake Bay Preservation Act implementation will lead to the incorporation of specific water quality protection measures, such as low impact development practices, into local zoning and subdivision ordinances. Part of this effort will

include the integration of watershed management planning into local comprehensive plans and ordinances.

Better Site Design is an initiative by DCR's Division of Chesapeake Bay Local Assistance that uses information compiled by the National Site Planning Roundtable to shift the focus of stormwater management away from traditional best management practices, such as stormwater ponds, as the sole means of treating pollutants from urban development. The Better Site Design program adapts 16 of the 22 model development principles developed through the National Site Planning Roundtable in an effort to help localities achieve the three general performance criteria of minimizing land disturbance, preserving indigenous vegetation and minimizing impervious cover to reduce the amount of pollution generated by new development. By reviewing site plans early on for opportunities to conserve trees, minimize the impacts of parking, promote open space development, reduce setback and street-width requirements, among others, communities can help reduce runoff and the pollutants reaching local waterways long before construction begins.

Stormwater management

www.dcr.virginia.gov/soil_&_water/stormwat.shtml

DCR's Stormwater Management Program seeks to protect water quality and property from damages caused by increased volume, frequency and peak rate of stormwater runoff. This program also protects resources from increased nonpoint source pollution carried by rainwater runoff.

Erosion and sediment control

www.dcr.virginia.gov/soil_&_water/e&s.shtml

DCR provides on-the-ground assistance to local staff and the private sector through a training and certification program. Staff members also oversee local programs through periodic evaluations to ensure that they control soil erosion, sedimentation, and nonagricultural runoff from land-disturbing activities.

Agricultural conservation practices

www.dcr.virginia.gov/soil_&_water/costshar.shtml

DCR provides funding, guidance and technical assistance to plan and install agricultural conservation practices in concert with Virginia's 47 soil and water conservation districts.

Nutrient management

www.dcr.virginia.gov/soil_&_water/nutmgt.shtml

DCR certifies private and public sector nutrient management planners. The program offers technical assistance to farmers, planners, universities and other state agencies to develop nutrient management plans, either on a voluntary basis or when required by state law.

Nonpoint source pollution biennial assessment and prioritization

www.dcr.virginia.gov/soil_&_water/npsassmt.shtml

DCR evaluates the potential for water quality degradation due to nonpoint source pollution on a hydrologic unit basis. To better target water quality improvement solutions, the assessment indicates where water quality degradation might have its greatest impact.

Riparian buffers

www.dof.virginia.gov/rfb/index.shtml

www.dcr.virginia.gov/soil_&_water/crep.shtml

www.dcr.virginia.gov/chesapeake_bay_local_assistance/ripbuff.shtml

The Virginia Department of Forestry (DOF) is the lead agency for tracking and promoting the preservation and establishment of riparian buffers statewide. DCR and its partners, through the conservation reserve enhancement program (CREP), promote the establishment of buffers on agricultural lands. In the portion of the state subject to the requirements of the Chesapeake Bay Preservation Act, buffers are required along perennial streams and other protected land features.



Monitoring the Tye River. DCR photo by Irvine Wilson.

Water quality and water supply

www.deq.virginia.gov

DEQ administers a number of water quality programs that focus on municipal and industrial discharges, Total Maximum Daily Load (TMDL) development and implementation, and water supply and wetlands protection. In addition, DEQ tests Virginia's rivers, lakes and tidal waters for over 130 different pollutants to determine whether the waters meet water quality standards that determine whether they are suitable for swimming, fishing or drinking. Waters that do not meet standards are reported to the U.S. Environmental Protection Agency (EPA) in the 303(d) Impaired Waters Report.

The segments of streams, lakes and estuaries that exhibit violations of water quality standards are found on DEQ's website at

www.deq.virginia.gov/tmdl.

Also, beach closures due to Virginia Health Department Advisories are found at:

www.vdh.virginia.gov/epidemiology/DZEE/BeachMonitoring

Soil and water conservation districts

www.vaswcd.org or

www.dcr.virginia.gov/soil_&_water/swcds.shtml

Soil and water conservation districts (SWCDs) were established in the 1930s to conserve soil resources, prevent soil erosion and prevent floods. In Virginia, 47 districts serve as local resources for citizens in nearly all of Virginia's counties, cities and towns. Since the mid-1980s, DCR has relied heavily on districts to help deliver many programs aimed at controlling and preventing nonpoint source pollution.

U.S. Department of Agriculture Natural Resources Conservation Service

www.nrcs.usda.gov

The Natural Resources Conservation Service (NRCS) provides technical and financial assistance to help agricultural producers and others care for the land. NRCS has six mission goals that include high quality, productive soils; clean and abundant water; healthy plant and animal communities; clean air; an adequate energy supply; and working farms and ranchlands. To achieve these goals, the agency implements three strategies:

- Cooperative conservation: seeking and promoting cooperative efforts to achieve conservation goals.

Virginia's Watershed Programs

- Watershed approach: providing information and assistance to encourage and enable locally led, watershed-scale conservation.
- Market-based approach: facilitating the growth of market-based opportunities that encourage the private sector to invest in conservation on private lands.

Homeowner programs

Stewardship education programs that focus on backyard gardens and horticulture as a recreational activity can incorporate environmentally friendly techniques.

Many state and nationally recognized efforts provide wildlife and water quality friendly education to the gardening community. Some links for further information on this topic include:

A Virginian's Year-Round Guide to Yard Care: Tips and Techniques for Healthy Lawns and Gardens
www.dcr.virginia.gov/soil_&_water/documents/yardcare.pdf

Virginia Cooperative Extension
www.ext.vt.edu/resources

Backyard Wildlife Habitat
www.ext.vt.edu/pubs/wildlife/426-070/426-070.pdf

Habitat at Home
www.dgif.virginia.gov/wildlife/habitat/habitat.asp

BayScapes for Wildlife Habitat
www.dgif.virginia.gov/wildlife/habitat/bayscapes.pdf

Backyard Conservation Wildlife Habitat
www.dgif.virginia.gov/wildlife/habitat/backyard-conservation.pdf

Native Plants for Conservation
Restoration and Landscaping
www.dcr.virginia.gov/natural_heritage/native-plants.shtml

National Wildlife Federation Backyard Habitat
www.nwf.org/backyard

Private and nonprofit watershed groups

Numerous nonprofit, regional and local watershed groups are active within each planning region. These groups are listed under the watershed information for each region in Chapter X. Specific watershed programs coordinated by The Nature Conservancy follow:

Clinch Valley Program

www.nature.org/wherework/northamerica/states/virginia/preserves/art15030.html

Rivanna River Basin Commission

www.nature.org/wherework/northamerica/states/virginia/news/news1614.html

Southeastern Virginia

Southern Rivers Program

www.nature.org/wherework/northamerica/states/virginia/preserves/art15066.html

Chesapeake Rivers Program

www.nature.org/wherework/northamerica/states/virginia/preserves/art2671.html

Green Sea Program

www.nature.org/wherework/northamerica/states/virginia/preserves/art2694.html

Center for Watershed Protection

www.cwp.org

Founded in 1992, the Center for Watershed Protection is a nonprofit 501(c)3 corporation that provides local governments, activists and watershed organizations around the country with the technical tools for protecting some of the nation's most precious natural resources: our streams, lakes and rivers. The center has developed and disseminated a multidisciplinary strategy to watershed protection that encompasses watershed planning, watershed restoration, stormwater management, watershed research, better site design, education and outreach, and watershed training.



Native plantings using backyard conservation techniques are good for the watershed. Photo by Scott Williams.

Southern rivers watershed programs

The Southern rivers watershed encompasses the southernmost part of Virginia and includes eight sub-watersheds. Portions of the Southern Rivers watershed area drain into North Carolina's Albemarle-Pamlico Sound. However, Virginia's westernmost rivers eventually drain to the Mississippi River.

Big Sandy Watershed and the Russell Fork River Connection Project

The Big Sandy watershed covers 11,012 square miles. The Levisa Fork and Russell Fork rivers dominate this region's hydrology. With abundant rainfall in this region, the rivers and tributaries run deep and swift, carving this landscape and creating deep hollows and tall ridges.

Collaboration between the Elkhorn City Area Heritage Council, the National Trust for Historical Preservation, the National Park Service: Rivers, Trails and Conservation Assistance Program, and the 606 Studio design team at California State Polytechnic University, Pomona, resulted in a June 2005 study entitled *The*

Russell Fork River Connection: An Interstate Trail and Open Space Conceptual Plan. The Russell Fork River region within the Big Sandy watershed was studied to identify issues, opportunities and design recommendations for environmental, recreational and economic enhancement. Conceptual plans for a land and river trail including site and issue-based design responses are presented in the document. This document provides a framework to assess, analyze and respond to land planning opportunities and constraints; it is a timely first step towards building a healthy, vital and regenerative future for the region.

Tennessee Valley Authority

www.tva.gov

Through its Clean Water Initiative, which began in 1992, TVA builds partnerships with community residents, businesses, The Nature Conservancy, other nonprofits and government agencies to promote watershed protection. TVA's Watershed Teams are responsible for carrying out the program. They focus on improving water and shoreline conditions so that people and aquatic life can benefit from having clean water.

Virginia's Watershed Programs

EPA Albemarle-Pamlico National Estuary Program (APNEP)

www.apnep.org/pages/APNEPprogram.html

The Albemarle-Pamlico National Estuary Program—formerly known as the Albemarle-Pamlico Estuarine Study—was among the first National Estuary Programs established by the U.S. EPA in 1987. The mission of the APNEP is to identify, restore and protect the significant resources of the Albemarle-Pamlico estuarine system.

The APNEP is a cooperative effort jointly sponsored by the North Carolina Department of Environment and Natural Resources (DENR), the U.S. EPA and DCR. This unique program targets a broad range of issues and engages local communities in the process.

Chesapeake Bay and Coastal watershed programs

The Chesapeake Bay watershed includes part of six states (New York, Pennsylvania, Maryland, Delaware, Virginia, West Virginia) and the District of Columbia. In Virginia, the Chesapeake Bay watershed drains over 60 percent of the total land area and includes the watersheds of the James, Potomac-Shenandoah, Rappahannock and York rivers. A summary of Chesapeake Bay programs follows.

EPA Chesapeake Bay Program

www.chesapeakebay.net

This multijurisdictional partnership was established by the first *Chesapeake Bay Agreement* signed by the governors of Virginia and Maryland, the mayor of the District of Columbia, the administrator of the U.S. EPA and the Chairman of the Chesapeake Bay Commission in 1983. The focus of the agreement was to address nutrient over-enrichment, toxic pollution and the decline in underwater Bay grasses. Pennsylvania joined the partnership in 1985.

In 1987, the partners signed a second agreement and set additional goals; the most notable goal being a 40 percent reduction in nitrogen and phosphorus entering the Bay by 2000. In 1993, each partner agreed to develop tributary-specific strategies to achieve the nutrient reduction.

The Chesapeake 2000 Agreement (www.chesapeakebay.net/agreement.htm) was signed by Virginia and its partners in 2000 with more specific goals related to a variety of habitat, natural resource, public engagement and water quality commitments. In addition, the

“headwater states” of West Virginia, New York and Delaware agreed to participate in the implementation of the water quality commitments.

Chesapeake Bay and Virginia tributary strategies

www.naturalresources.virginia.gov/Initiatives/WaterQuality

In 2005, Virginia published *The Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy*. Current and future actions and projected costs are summarized in this document for Virginia's five major Chesapeake Bay river basins: Shenandoah-Potomac, Rappahannock, York, James and Bay Coastal. Detailed strategy documents have been developed involving local stakeholders within each of these watersheds and new watershed management tools are continually developed and integrated into these plans.

Virginia Coastal Zone Management Program

The Virginia Coastal Zone Management (CZM) Program helps governmental agencies, local governments and others develop and implement coordinated coastal policies. Virginia's coastal zone encompasses the 29 counties, 17 cities and 42 incorporated towns in Tidewater Virginia and all of the waters therein, and out to the three-mile Territorial Sea boundary. The coastal zone includes all of Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle-Pamlico Sound watersheds. A map of this area is provided.

Since 1986, the Commonwealth has received over \$48 million in federal funds, matched by over \$42 million in state and local funds, to implement the Virginia CZM Program. As a “maximum-funded state” Virginia receives about \$3 million annually (see chapter VI. Grant Opportunities for Outdoor Recreation and Open Space).

The Virginia CZM Program is part of a national coastal zone management program, a voluntary partnership between the federal government and the U.S. coastal states and territories authorized by the Coastal Zone Management Act of 1972. The Virginia CZM Program was established in 1986 and is reauthorized every four years by an executive order signed by Virginia's incoming governor. This executive order directs state agencies to carry out their legally established duties consistent with this Program and its ten goals. It also designates the Department of Environmental Quality as the lead agency for the networked program and outlines a conflict resolution process should any state actions be deemed inconsistent with the Program. This executive order is available on the program's website at www.deq.virginia.gov/coastal/exorder.html.

Map VII-8. Virginia Coastal Management Program Area



Virginia's Watershed Programs

Virginia CZM Program projects and programs that directly interface with goals and objectives of the VOP include:

- **Conservation corridors** include lands, typically along water bodies, that have been identified as priorities for protecting water quality and habitat or that provide opportunities for connecting these areas. Virginia CZM has helped establish corridors in the Hampton Roads area and will be providing assistance for developing conservation corridors in the remainder of the Coastal Zone.
- **Regional public access authorities** have been established for the Middle Peninsula and Northern Neck regions and are active in prioritizing access needs and sites and leveraging funds to acquire these sites. Virginia CZM has provided assistance to these authorities and will be working to establish and assist new authorities in the remainder of the Coastal Zone. Public access is the focus of a two-year project to be undertaken by a NOAA Coastal Management Fellowship Program Coastal Fellow who is working with the Virginia CZM Program and the Middle Peninsula Public Access Authority. The project, which began in August 2006, deals with improving public access information availability for the entire coastal zone and developing and implementing public access standards for the Middle Peninsula district.
- **Virginia CZM's Coastal Geospatial and Educational Mapping System (GEMS)** makes available online maps and information about the best remaining land and water based resources in Virginia's Coastal Zone, as well as many conservation tools. The website for this initiative is: www.deq.virginia.gov/coastal/coastalgems.html
- **The Coastal and Estuarine Land Conservation Program (CELCP)** provides federal funds for acquisition of important coastal lands. Virginia CZM is developing a CELCP plan that prioritizes lands for acquisition, in coordination with the organizations and agencies involved in land protection and resource protection planning in the Coastal Zone.
- **Ecotourism infrastructure** has been developed over the past five years using Virginia CZM funds for such things as a Seaside Water Trail, Ecotour guide and teacher certification course and construction of nine different projects involving a lighthouse renovation, three boardwalks, an observation platform, interpretive signage, four floating docks for canoes and kayaks. In addition, Virginia CZM and CELCP funds have funded 12 land acquisition projects that provide public access opportunities.

Virginia Coastal Zone Management Program enforceable policy areas

- Tidal and nontidal wetlands
- Fisheries
- Subaqueous lands
- Dunes
- Point source air pollution
- Point source water pollution
- Nonpoint source water pollution
- Shoreline sanitation
- Coastal lands (Chesapeake Bay Preservation Act)

Geographic areas of particular concern

- Spawning, nursery and feeding grounds
- Coastal sand dunes
- Barrier islands
- Significant wildlife habitat areas
- Significant public recreation areas
- Significant sand and gravel resource deposits
- Underwater historic resources
- Highly erodible and high hazard areas
- Waterfront development area



Saltmarshes are important spawning, nursery and feeding grounds. DCR photo by Irvine Wilson.

The greatest thing we can do, broadly speaking, is teach Virginians the benefits of environmental stewardship...The more we preach the message of river and Bay cleanup, the more we pitch the virtues of our Blue Ridge Mountains, and the more we preserve our historic structures, then the more our citizenry will develop an inherent desire to be good stewards of our land, water and air. —Preston Bryant, Secretary of Natural Resources

Need for environmental and land stewardship education

Environmental and land stewardship education must be incorporated into planning and outreach at all levels of government. An informed citizenry with knowledge of resources and their needs for long-term sustainability are essential to good management and planning for outdoor resource and conservation lands. Local recreation programming, regional restoration efforts like Chesapeake 2000, and statewide programs like Virginia Naturally and Stewardship Virginia all work toward developing more informed communities working for improved stewardship.

The need for these programs and campaigns is evident in results from the National Environmental Education and Training Foundation's (NEETF) research

showing most Americans believe they are more aware of environmental issues than they actually may be. In the NEETF study, about 80 percent of Americans surveyed were influenced by incorrect or outdated environmental myths and only 12 percent of those surveyed passed a quiz on energy. In addition to environmental literacy for adults, the emphasis on standardized testing in public schools limits hands-on environmental education experiences to field trips. To improve environmental literacy among students and increase visitation to outdoor education facilities, hands-on experiences must be integrated into school curriculums. In Virginia, the Chesapeake 2000 requirement for a meaningful watershed experience for all students somewhat counters this trend by encouraging schools within the Chesapeake Bay watershed to offer at least one hands-on experience for each student before high school graduation.



A meaningful watershed experience at York River State Park. Photo by Gail Brown.

Environmental and Land Stewardship Education

Research documents that use the *Environment as Integrating Context* (EIC) are directly correlated with improvement of academic achievement in reading, math, science and social studies (Lieberman & Hoody, 1998). EIC uses a school's surroundings and community as a framework within which students can construct their own learning, guided by teachers and administrators using proven educational practices. There is an urgency and necessity to encourage the use of outdoor facilities for environmental education in order to raise the environmental literacy among students and citizens of all ages. In order to achieve an ethic of outdoor stewardship for our natural, cultural and scenic resources as well as outdoor recreational opportunities, the level of understanding and connection to the out-of-doors must first be elevated throughout the Commonwealth.

Findings

- Environmental literacy needs to increase among citizens to begin to foster stewardship.
- A consistent stream of funding is needed to support environmental literacy efforts in our schools and communities.
- Virginia does not have a coordinated multimedia campaign to promote conservation and stewardship to all citizens.
- A personal connection with nature and the environment achieves long-term stewardship.
- There is a need to correlate outdoor environmental education facilities with Virginia's population.
- Increased support is needed for environmental education training of nonformal education program providers.
- Improved academic achievement is related to hands-on outdoor experiences and environmental education.
- Outdoor classrooms provide an appreciation for the natural environment and the way systems work together. This nurtures students to become well rounded thinkers and policy makers with an ability to make sound planning and environmental decisions.
- Nonformal outdoor education programs are not always correlated with Standards of Learning (SOLs).
- There is a need to increase Meaningful Watershed Education Experiences (MWEE) offered for K-12 students.

- A comprehensive range of educational media is required to get the conservation message to all who have yet to hear and adopt it.

Recommendations

- All the state natural resource agencies should partner with Virginia Naturally (community partners) for a multimedia campaign to improve environmental literacy using simple shared messages, clear and achievable calls to action, and measurable common goals.
- Nonformal environmental education providers should encourage use of the North American Association for Environmental Education (NAAEE) guidelines.
- The Department of Environmental Quality (DEQ) and Virginia Resource Use Education Council (VRUEC) should host an annual statewide environmental education conference for nonformal environmental educators.
- Virginia Naturally, state parks and local site managers should foster use of existing outdoor environmental education facilities.
- Create new, or upgrade existing, environmental education facilities where needs exist.
- State agencies should continue support of Stewardship Virginia, Virginia Naturally, Virginia Master Naturalist Program and the VRUEC.
- State agencies should support VRUEC efforts to promote the use, development and maintenance of nonformal facilities for environmental education. A formal inventory of statewide facilities should be conducted.
- State agencies should continue statewide efforts and work with partner states to implement the environmental education goals identified in the *Chesapeake Bay Program's 2000 Chesapeake Bay Agreement*.
- Federal, state, regional and local agencies should provide citizens access to stewardship education and conservation resources.
- Federal, state, regional and local agencies should promote the value and benefits of outdoor experiences and their relationship to an environmentally literate citizenry.

Background and history

Baby boomers grew up spending more time outdoors than their children and grandchildren do today. While there are no longitudinal studies to support the claim, many older adults can cite examples of outdoor activity—walking to school, biking around town, raising farm animals, or just hanging out “in the woods” or a vacant lot. These direct experiences are personally meaningful and positive influences in their lives.

Studies are now documenting the therapeutic value of nature and benefits of a relationship to other living things such as pets and gardens. The growing body of research links our mental, physical and spiritual health directly to an association with nature and suggests that thoughtful exposure to nature can provide therapy for attention deficit disorders, depression and obesity. In his book *“Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder,”* Dr. Richard Louv has coined the term “nature-deficit disorder” to describe the severed bond between youngsters and the environment. Nature-deficit is not a medical condition but refers to costs of alienation from nature.



Simple activities like picnicking are important outdoor experiences for children. Photo by Richmond Parks, Recreation and Community Facilities.

Some of the forces that have contributed to alienation from nature include:

- The rise of air conditioning in homes and vehicles.
- The increase in electronic recreation (TV, computers, video games).
- Shrinking community open space and private yards.
- An increased perception of dangers outdoors.
- A fear of litigation and increased insurance costs.
- Increased building and environmental regulations.
- Community covenants restricting the use of open space.



Pearson's Corner Elementary School students enjoy hands on activities in the York River. Photo by Gail Brown.

It is important to have personal experiences with natural resources, especially for children. Children who understand and respect nature are better enabled as future resource managers and stewards of their environment. A child's fondness for nature results from regular outdoor experiences; however, there is decreasing exposure between children and their natural surroundings. Reasons for this lack of interaction may be that continued development creates less nature with which children have to interact, fear of encounters with strangers, liability issues and potential dangers they may encounter.

There are many recognized proponents who stress the need for children to interact with nature. One such modern proponent is Louv. In his writing, Louv points to research showing that outdoor experiences reduce stress. He also finds exposure to nature “engages a child mentally and physically in a ‘natural’ way, consistent with how humans have evolved.” A look into American environmental history shows Louv is certainly not the first to write on the need for experiences within nature, whether they are childhood or adult experiences. Noted Americans such as Henry David Thoreau, Aldo Leopold and Theodore Roosevelt have all shared a common belief in having experiences in the outdoors for children and adults alike.

As a result of technology, Americans' interaction with natural resources has changed. Historically, technology has focused on progress while paying little attention to any broad consequence on the many aspects of society (Stine, 1998). It is argued that technological historians have a responsibility to share environmental concerns with society because their insights offer special understanding (Stine, 1998). Such insight allows for greater preservation of resources and, as a result, preservation of individual experiences with resources.

Environmental and Land Stewardship Education

Over the past 50 years, technology has grown at a tremendous rate allowing greater and faster resource modification and consumption. American interaction with resources has decreased as a result of such changes. However, as shown, Americans do wish to have stake in resource decisions, first and foremost because they care (Stine, 1998).

...Now is time to be good stewards, to work together in partnership to protect Virginia's outdoors. Now is time to fulfill our obligation to our children's children.

—Gov. Tim Kaine, April 20, 2006

Land stewardship

Land stewardship is the foundation of our economic and ecological vitality. Land stewardship is the practice of carefully managing land usage so that natural systems are maintained or enhanced for future generations. In turn, this protects the goods and services we depend upon.

There is a vast body of knowledge related to ecological functions and benefits of natural systems. Understanding how ecosystems work, maintaining living resources and biological diversity, and conserving renewable and nonrenewable resources while addressing cultural values and ethics are essential to environmental literacy and land stewardship. These fundamental concepts are included in every grade level K-6, in Virginia's Standards of Learning for Science. They are further developed in Life Science, Earth Science and Biology, which are taught in the upper grades. Today, more urgently than ever before, people need to understand the connections between our resource use and quality of life, health and economic vitality. The old joke among farmers of the teacher asking the child, "Where does milk come from?" and the child answering, "Safeway," is no longer a surprise. People protect only what they value and will only value what they understand.

Changing behaviors for stewardship

Communication and education campaigns have made great strides in spreading awareness of environmental issues. A May 2004 survey conducted by the Chesapeake Bay Program indicated that nine out of 10 of the citizens surveyed reported being aware and concerned about the deterioration of the Bay's health. Almost half – 48 percent – described themselves as

"very concerned." Yet, when it came to the way many residents reported they behave – overfertilizing lawns, neglecting septic tank maintenance and leaving pet waste to flow into the Bay – nothing had changed.

So, why do these and other educated citizens fail to adopt behaviors that they know effect natural resources? It may be message fatigue. It may be a fog of apathy. It may just be inaction. Dr. Doug McKenzie-Mohr, an environmental psychologist, writes in his book "*Fostering Sustainable Behavior*," that there is a general lack of willingness for most people to significantly alter their behavior for the sake of the environment alone. His research points out that behavior change rarely occurs as a result of simply providing information. As the Chesapeake Bay Program survey illustrated, understanding what needs to be done does not always lead to a change in behavior and better environmental practices ("Got Message?" Virginia Coastal Zone Management magazine, Spring/Summer 2006).

*In the end we will conserve only what we love.
We will love only what we understand. We will
understand only what we are taught.*

—Baba Dioum, Senegalese conservationists, 1937

"Social marketing" is a tool for affecting change in behaviors. There is a great need for continued education to raise environmental literacy and awareness among the public. However, where we have been successful in generating awareness but not altering behavior, social marketing offers a means to affect this next step towards environmental stewardship. Alan Andreasen, author of "*Marketing Social Change*," defines social marketing as "the application of marketing technologies developed in the commercial sector to the solution of social problems where the bottom line is behavior change."

An example of how social marketing has been implemented in Virginia is the Bay Program's Chesapeake Club Campaign. This regional partnership to affect change related to lawn care practices coined the catchy slogan "*Save the Crabs... Then Eat 'Em*." In this new twist, the campaign uses social marketing to change how residents behave, not by appealing to the environmental reasons for not fertilizing in the spring, but because of the culinary and lifestyle implications. Specifically the message suggests that the behavior of fertilizing in spring will damage a tasty regional icon, the blue crab. The campaign is unconventional. It steers away from "preachy" messages and intro-

duces a memorable element of humor. To read the entire “Got Message?” article and learn more about the social marketing techniques used in the Chesapeake Club Social Marketing Campaign go to: www.deq.state.va.us/coastal/documents/magss06-72.pdf and www.chesapeakeclub.org.

Learn more about social marketing for stewardship

www.deq.virginia.gov/coastal/neczmpps.htm#social
Judy Lander's presentation “Thinking Like a Marketer to Promote Environmental Changes” and a social marketing plan starter.

www.cbsm.com
Illustrates how to use community-based social marketing to design and evaluate programs, including a database of articles, reports, graphics and case studies.

www.social-marketing.org
Social Marketing Institute – Institute headed by Alan Andreason from Georgetown University

www.greenmediatoolshed.org
Green Media Toolshed – environmental social marketing tips, tools and case studies.

<http://hsc.usf.edu/medicine/ntcsm/TLM>
Online mini-course in social marketing.

Outdoor environmental education facilities

Outdoor recreation and environmental education facilities promote environmental literacy. The Governor's Advisory Commission on Environmental Education received more than 500 suggestions about ways to improve environmental education. Many of the suggestions include using outdoor experiences in teaching.

An informal assessment of outdoor environmental education facilities across the state was conducted in 2006 by soliciting input from informal environmental educators. See map VII-9 for more information.

Need for outdoor education facilities

The 2006 *Virginia Outdoors Survey* indicated that 92 percent of those surveyed responded that access to outdoor recreation is important. In addition, the survey indicated that 85 percent of those visiting state parks thought it was important to have nature and education

programs. Visiting natural areas ranked fifth on the list of activities enjoyed by citizens. When this statistic is correlated with the interest in educational opportunities desired at state parks, it is assumed there is also a similar interest in environmental education and naturalist interpretation at regional parks and natural areas.

A state parks survey requesting information about facilities for outdoor environmental education and interpretation was completed by 24 of the 34 state parks. All of the state parks responding showed that the parks engaged interested visitors in interpretive education. Central meeting rooms for large groups were needed most to expand environmental education venues and interpretation in the state parks.

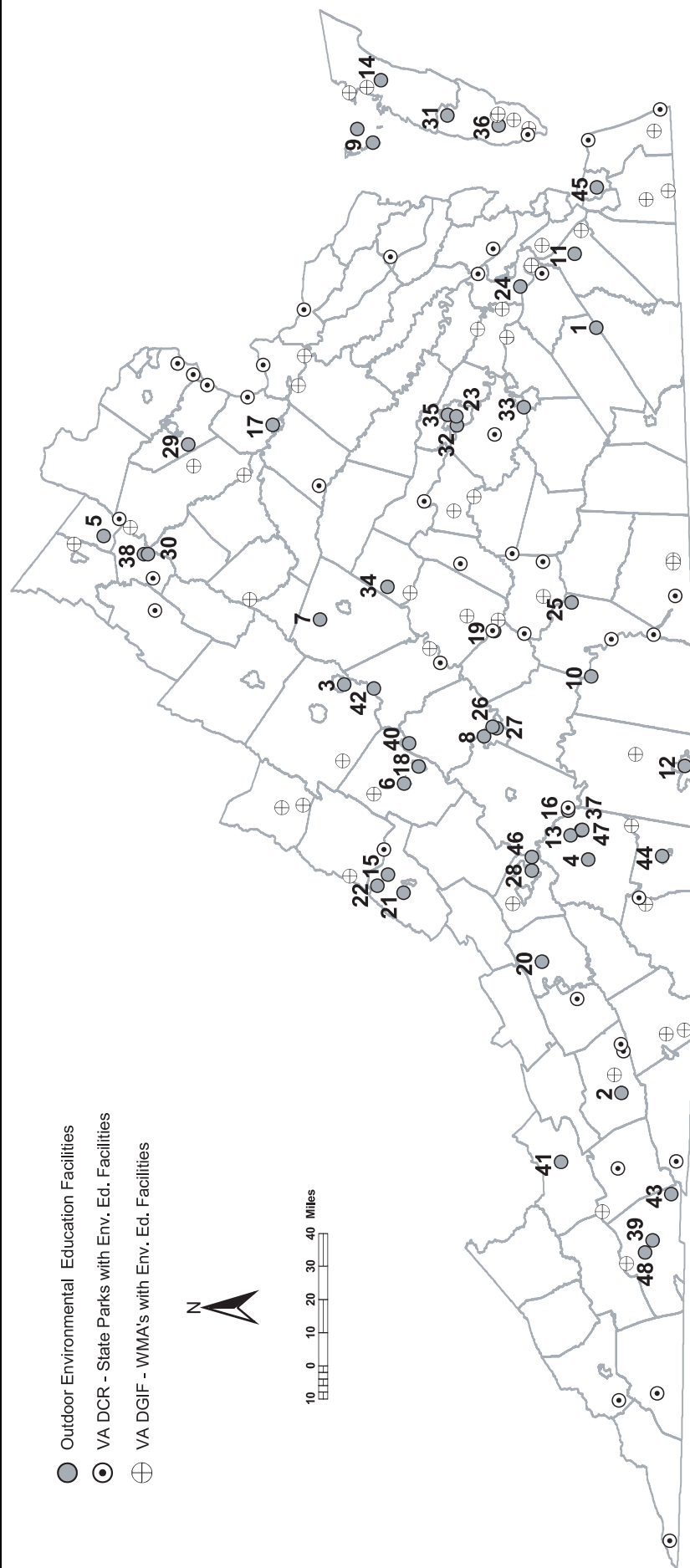
Nonformal environmental educators

Outdoor recreation and environmental education facilities are most often supported by nonformal environmental educators. A nonformal educator is a professional who may not be trained as a classroom



State park programs provide outdoor environmental education.
Photo by Gail Brown.

Map VII-9. Outdoor Environmental Education Facilities



* Data Source: Survey by Virginia Office of Environmental Education, September 2006.

teacher, but has an expertise and knowledge of natural and cultural resources. Nonformal educators most often have specific training in hands-on learning and interpretation of the natural environment. Typically, these professionals are employed as naturalists, interpreters and environmental educators.

There are two types of environmental education delivery programs most often employed by nonformal environmental educators. The informal program designed to attract visitors may be thought of as an interpretive program. These programs focus on teaching in an informal setting and are intergenerational, engaging adults, families and children. In formal programs, these same nonformal environmental educators work diligently to incorporate the Virginia Standards of Learning into programs for schools and youth classes. While the information conveyed in the formal and informal settings may be similar or the same, the audience of the classroom setting provides a captive audience and the informal setting allows participants the freedom to move in and out of the interpretive program. Both methods of education that take place are equally important. Interpreters in their informal delivery of information reach adults and others who may not otherwise have an opportunity to connect with a school group. Classroom programs reach children who may not otherwise have an opportunity to experience the out-of-doors.

North American Association of Environmental Education (NAEE) guidelines

The National Project for Excellence in Environmental Education, initiated by NAAEE in 1993, has developed a series of guidelines that set the standards for environmental education. It is the recommendation of this plan that nonformal environmental educators should follow NAAEE guidelines in providing instruction. Through this project, NAAEE is taking the lead in establishing guidelines for the development of balanced, scientifically accurate and comprehensive environmental education programs. Quality environmental education programs facilitate the development of an environmentally literate citizenry that can compete in our global economy; has the skills, knowledge and inclinations to make well-informed choices; and exercises the rights and responsibilities of members of a community. The latest versions of printed materials in the *Guidelines for Excellence* series are posted on the NAAEE website at www.naaee.org.

The NAAEE Guidelines for Excellence has completed interrelated efforts including the following.

1. *"Environmental Education Materials: Guidelines for Excellence:"* a set of recommendations for developing and selecting environmental education materials. A companion publication, *"Environmental Education Materials: Guidelines for Excellence - The Workbook,"* leads educators, step by step, through the process of using the *"Environmental Education Materials: Guidelines for Excellence."*
2. A series of educator resource guides to quality environmental education materials: *"Environmental Education Collection - A Review of Resources for Educators: Volumes 1, 2 and 3"* and *"The Biodiversity Collection"* produced by the World Wildlife Fund.
3. Environmental education learner guidelines: *"Excellence in EE - Guidelines for Learning (Pre K-12),"* and its companion piece *"Guidelines for Learning (Pre K-12) - Executive Summary & Self Assessment Tool,"* developed to support state and local environmental education efforts by setting expectations for performance and achievement in grades 4, 8 and 12.
4. *"Guidelines for the Preparation and Professional Development of Environmental Educators,"* a set of recommendations for the preparation and continuing education of teachers and other environmental educators.
5. *"Nonformal Environmental Education Programs: Guidelines for Excellence,"* a set of recommendations for the design and implementation of comprehensive nonformal environmental education programs.

Source: www.naaee.org



Sun-facing Coneflower. DCR photo by Irvine Wilson.

Environmental and Land Stewardship Education

Virginia Master Naturalist Program

www.virginiamasternaturalist.org

The Virginia Master Naturalist Program is a statewide volunteer training program that is designed to positively impact natural resource education and conservation across Virginia. The program's mission is to develop a corps of well-informed volunteers to provide education, outreach and service dedicated to the beneficial management of natural resources within their communities.

The Virginia Master Naturalist program is sponsored jointly by the Virginia Department of Conservation and Recreation (DCR), Virginia Cooperative Extension, the Virginia Department of Game and Inland Fisheries, the Virginia Department of Forestry and the Virginia Museum of Natural History. At the local level, partnerships that include other public agencies, as well as private organizations involved in conservation and education, are a cornerstone of the program.

The program consists of a network of local Virginia Master Naturalist chapters. Each chapter is responsible for recruiting and training volunteers and for working with partners to create and coordinate service opportunities. To become a certified Master Naturalist, an individual must complete a minimum of 40 hours classroom and field training and 40 hours of service.

The training consists of covering curriculum objectives that focus on ecology, natural resource management, basic natural history of the animals and plants of Virginia, and skills for teaching and field research. The service component can be in the form of education (such as leading an interpretive program in a state park), citizen science (such as collecting data on wildlife populations), or stewardship (such as restoring a natural area).

This program benefits Virginia's citizenry, its public lands and its natural resources. The development of a dedicated volunteer corps will expand the capacity of Virginia's natural resource agencies. The cooperative nature of the program provides a mechanism for state, local, nonprofit and other partners to work together towards the common goals of conservation and education. The volunteer service provides a purposeful way for citizens to spend time outdoors while improving Virginia's lands.

Stewardship Virginia

www.dcr.virginia.gov/stewardship

Stewardship Virginia is a statewide campaign that encourages and recognizes volunteer activities that have a tangible impact on Virginia's natural resources. The plan was initiated in 2002. DCR coordinates the



Volunteers work on trails in Colonial Heights. Photo by Wayne Walton.

campaign with activities in the spring and fall of each year with help from other state natural and historical resources agencies. Citizens and groups organizing a stewardship event may be assisted by the state's natural resource agencies, and all participants receive certificates of appreciation signed by the governor.

Each seasonal campaign registers between 150 and 250 community-driven stewardship projects with Stewardship Virginia. Funding and partnerships for these projects include corporate donations, involvement of local governments, and colleges and universities with community action organizations. Projects vary, but may include waterway adoption, trail improvement, planting of riparian buffers, invasive species control, habitat improvement and landscaping for conservation.

Stewardship Virginia bolsters efforts of Virginians that are engaged in conservation and encourages more people to become involved. Through community action, the campaign involves volunteers in the out-of-doors and provides opportunities for creating a long-lasting connection with Virginia's natural resources. Stewardship Virginia also encourages citizens of the Commonwealth to connect with land and water to better understand their value.

Virginia Naturally

www.vanaturally.com

Virginia Naturally is Virginia's gateway to environmental information and resources. Virginia Naturally provides citizens with "one-stop" shopping to programs and information to learn about Virginia's environment. The network of 600 organizations provides environmental education programs and services in Virginia, including volunteer and funding opportunities, teacher workshops and lesson plans, conferences, and community events. Adopted in 2000 as the official environmental education initiative of the Commonwealth, Virginia Naturally also recognizes schools and communities that are making extraordinary efforts to help citizens of all ages understand our world and lessen the negative impact on Virginia's natural and historic resources.

Public and private organizations and agencies are the heart of this initiative to link people to Virginia's natural and historic resources. Organizations who are interested in education can become a partner and participate in the statewide network to build knowledge and skills and an appreciation for life-long learning and personal responsibility to conservation. Partners advertise their programs and events on the website and share their



*Chesapeake Bay Gateways serve as an outdoor classroom.
Photo by NPS.*

success stories. They also receive free materials, a monthly newsletter, educational kits and participate in professional development.

Virginia Resource Use Education Council (VRUEC)

www.vanaturally.com/vruec.html

The Virginia Resource Use Education Council (VRUEC) membership includes representatives of natural resource agency educators at the state and federal level, Virginia Department of Education staff, and university professors involved in teacher education. The council's charter is to promote better understanding and conservation of Virginia's natural resources through education.

In 2000, Gov. Gilmore and the Virginia General Assembly appointed VRUEC members as support staff for the Virginia Naturally program and established a committee to coordinate the educational goal of the Chesapeake 2000 Agreement. As a result, the VRUEC hosts two Chesapeake Bay Academies for teachers each summer, issues the Virginia Naturally Classroom Grants, co-hosts the annual Environmental Education conference and coordinates other efforts to further natural resource education in Virginia.

2000 Chesapeake Bay Agreement

www.chesapeakebay.net/agreement.htm

The Chesapeake Bay Program's Communications and Education Subcommittee (CESC) works to increase awareness for higher public recognition of the Bay Program and its accomplishments. Goals of the subcommittee include building public understanding and support of the Chesapeake Bay ecosystem, as well as promoting restoration efforts and coordinating public information, education and participation commitments pursuant to the Bay agreement.

In addition, the work of this subcommittee builds and promotes a conservation ethic among residents of the Bay watershed through comprehensive communications efforts including media outreach, education and community engagement. A part of this work focuses on citizen involvement in Bay-related special events including restoration projects and K-12 educational initiatives.

The Chesapeake 2000 Agreement articulates stewardship and community engagement as an area of focus. The work promoted as part of this partnership agreement promotes individual stewardship and assists individuals, community-based organizations, businesses, local governments and schools. The agreement states that every school student in the watershed should have a meaningful Bay or stream outdoor experience before graduation from high school. This goal relates directly to the availability of outdoor educational facilities and programming to address the needs for stewardship, education and community engagement.

NOAA Chesapeake Bay Office

<http://noaa.chesapeakebay.net>

The NOAA Chesapeake Bay Office works to help protect and restore the Chesapeake Bay through its programs in fisheries management, habitat restoration, coastal observations and education, and represents NOAA in the Chesapeake Bay Program.

Virginia Natural Resource Leadership Institute (VNRLI)

www.virginia.edu/ien/vnrli

The VNRLI mission is to develop leaders in the Commonwealth who can help groups involved in contentious natural resources issues move beyond conflict toward consensus building and collaborative problem solving. The VNRLI vision is that Virginia's communities will engage in productive dialogue and collaborative problem solving of natural resource issues important to community sustainability and, thus, be able to effectively manage, conserve and protect Virginia's natural resources.

Project Underground

www.dcr.virginia.gov

Project Underground is administered by the Department of Conservation and Recreation. Its purpose is to create and build awareness of and responsible attitudes toward karst and cave resources and their management needs. The project is an environmental education program designed to promote better understanding of caves and karstlands.

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Outdoor Recreation Planning and Related Issues

Man must cease attributing his problems to his environment and learn again to exercise his will – his personal responsibility.

—Albert Schweitzer



Playgrounds provide outdoor opportunities for children to learn responsibility and social skills. Photo by Virginia Beach Parks and Recreation.

Several issues and trends identified during the fall 2005 public meetings for the Virginia Outdoors Plan fall outside typical outdoor recreation programmatic areas addressed in Chapter VII or are incorporated into multiple program areas. The sections of this chapter address some of these issues and trends including: *Demographic impacts on recreation resources, Carrying capacity of recreation and open space resources, Conservation and outdoor ethics, Crime prevention in public spaces, Landowner liability, Health and wellness benefits of outdoor recreation and Impact of climate change on recreation.* These issues are important to outdoor recreation planning and resulted in the recommendations presented in this chapter for implementation by a combination of local, state and federal agencies, as well as nonprofits and the private sector.

Demographic impacts on recreation resources

Everyone is kneaded out of the same dough but not baked in the same oven.

—Yiddish Proverb

According to the University of Virginia Weldon Cooper Center for Public Service, the population of Virginia is growing faster than the nation as a whole. Between 2000 and 2005, Virginia saw an increase of 500,000 people or a 7 percent growth. The major source of this increase is from people moving to Virginia for employment and economic opportunities. The population growth results in more congested highways, expanded housing developments and a greater demand for schools. A growing population also results in a heavier demand for parks and recreation services, and can place dwindling open space resources at risk.

Not only is Virginia's population growing in numbers, it is also becoming increasingly diverse, both as a whole and within individual localities. This diversity is demonstrated through differing cultures, ages, education levels and financial status. These varying characteristics are creating a new and different type of society with many complex issues and concerns. It is important to engage all citizens in enjoying outdoor recreational resources.



Skateboarding at Mount Trashmore in Virginia Beach. Photo by Virginia Beach Parks and Recreation.

Demographic findings

- Virginia ranks in the top 10 states for immigrant resident population and in the top 15 states for refugee resettlement.
- Virginia's Asian population grew by two-thirds between 1990 and 2000.
- Hispanics are currently the largest and fastest growing minority group in the U.S. with an estimated 39.9 million people. Virginia's Hispanic population grew by 112 percent between 1990 and 2000, and more than doubled again between 2000 and 2004. The median age of Hispanics in the U.S. is 25.8.
- In its informative study entitled *The Hispanic Community and Outdoor Recreation*, the Outdoor Industry Foundation states that as the Hispanic community is currently the largest minority population in the U.S., and is estimated to represent 1 in 5 Americans by 2012, this population is currently under-represented in outdoor recreation participation.
- According to the National Recreation and Park Association (NRPA) magazine, *Parks & Recreation*, the Hispanic community places a high value on leisure time, with 74 percent reporting that they spend their leisure time mostly or exclusively with other Hispanics.

- According to the U.S. Census Bureau in 2004, about 12.5 percent of the U.S. population and 11.2 percent of Virginia's population was 65 years old or more. By 2030, almost one in five Americans will be in this age group. Virginia expects similar growth.
- While Virginia's population is growing numerically, it is also becoming increasingly diverse. Using 2000 estimates for Virginia, Caucasians comprised 72 percent of the total population, African Americans comprised 20 percent, Asians comprised almost 4 percent, Hispanics comprised almost 4 percent, and American Indians comprised less than 1 percent of the total population. 2 percent of the population reported belonging to two or more races.
- Almost 40 percent of Americans are sedentary and more than one-third of children ages 9 to 12 do not engage in vigorous-intensity physical activity.
- Outdoor recreation linked to everyday activities encourages a healthy lifestyle and increases the number of persons involved in physical activity.
- Over the past two decades, obesity has grown to include 32.2 percent of adults, with 17.1 percent of children overweight. This epidemic is correlated in part with the lack of outdoor recreation and declines in pedestrian trips for daily activity (Ogden et al. 2006).

Demographic recommendations

- Establish trust relationships; hire bilingual staff; advertise in the Spanish media; host Hispanic-themed events; create programs with the community to better serve Spanish-speaking cultural groups.
- Invite, involve and include Hispanics in all aspects of service delivery. Similar strategies are effective for other cultural groups.
- Federal, state and local agencies should be more aggressive in their efforts to encourage multicultural and ethnic diversity in the professions of outdoor recreation and natural resource management.
- Due to the increase in cultural and ethnic diversity in the Commonwealth, consideration should be given to making signs, literature and audio displays available in other languages.
- State and regional agencies should place a high priority on providing recreation opportunities to the Commonwealth's urban population in "close-to home" settings to allow for better access and to avoid overuse of facilities planned for rural populations.

General population growth

As of July 1, 2005, The Weldon Cooper Center for Public Service at the University of Virginia estimated Virginia's population to be 7,567,500, which ranks 12th in population nationally. From 2000 to 2005, 60 percent of the Commonwealth's total population growth occurred in Northern Virginia metro area. This trend continues despite traffic congestion and crowding. The explanation for this continued growth is attributed to employment opportunities and Northern Virginia's close proximity to the nation's capital. The fastest growing planning districts in Virginia from April 1, 2000 to July 1, 2005 are: George Washington (formerly RADCO), 23.2 percent; Rappahannock-Rapidan, 14.2 percent; Northern Virginia, 12.6 percent; and Northern Shenandoah Valley, 10.3 percent.

The fastest growing localities in Virginia from April 1, 2000 to July 1, 2005 are: Loudoun County, 48.8 percent; City of Manassas Park, 27.2 percent; Stafford County, 26.9 percent; Prince William County, 26.5 percent; Spotsylvania, 26.1 percent; Fluvanna, 24.4 percent; City of Suffolk, 21 percent; and Culpeper County, 20.1 percent.

Localities with the greatest numerical growth from April 1, 2000 to July 1, 2005 are: Loudoun, 82,700; Prince William, 74,500; Fairfax County, 52,400; Chesterfield County, 26,600; Stafford County, 24,900; Spotsylvania County, 23,600; and Henrico County, 21,000.

While Virginia's population is growing as a whole, there are localities that are losing population. Rural Virginia, such as in the southwestern area of the state, is losing population as mining and farming opportunities decrease. Large farms are being subdivided into smaller farmettes and vacation estates. Similarly, other cropland is being converted to pasturelands and working forests. However, as environmental awareness increases, there are tremendous opportunities for resource-based ecotourism and rural resource-based recreation opportunities.

In addition, there is a growing interest in Virginia's rural population areas in programs like Landcare. This organization is a private-public partnership between people who work the land, communities, businesses and governments in order to strengthen America's ability to conserve natural resources, enhance profitability, and cultivate and expand a community conservation ethic.

Three Virginia planning districts lost population from April 1, 2000 to July 1, 2005. They are: Cumberland Plateau, -1.8 percent; West Piedmont, -1.1 percent and Southside, -0.6 percent.

Aging of Virginia's population

One of the more apparent issues is the "aging" of Virginia. Based on 2000 estimates by the Census Bureau, children younger than age 18 still comprise more than 24 percent of the population, while older adults (ages 65 and older) comprise slightly more than 11 percent. It is projected that by 2030, 20 percent of the U.S. population will be 65 years or older. Older adults are living longer, healthier lives; however, an aging population has differing recreational needs and desires than a younger population. While older adults currently use a significant proportion of community, private, and institutional recreation and park services, the number of such consumers is likely to skyrocket during the next 25 years.

As more adults retire and have more leisure time, there is expected to be an increased demand for "local" travel and tourist destinations. Destinations such as botanical gardens, museums and historical sites close enough to be day trips will become increasingly popular. Enhancing the quality of a community through the availability of open space and recreational resources will become a pressing issue for many localities.

Many individuals have more disposable income and leisure time than they previously did. This has led to an increase in the ownership rates of recreational vehicles, including motor homes, camping trailers and boats. Recreational facilities now face increased demand for amenities that accommodate the use of these types of vehicles.



2006 Virginia Senior Games. Photo by Virginia Beach Parks and Recreation.

As our society becomes more aware of the physical benefits of exercise, especially among older adults, there is great potential for an increased need for walking, hiking, fitness and nature trails. Trends in the 2006 *Virginia Outdoors Survey* show that 72 percent of households participate in walking for pleasure. Of those responding to the survey, approximately 15 percent were over the age of 65. This substantiates the trend in Virginia for older adults articulating the need for walking opportunities close to home.

Cultural diversity

While over 72 percent of Virginians were listed as white in the 2000 Census, the racial and ethnic composition of Virginia is dramatically changing. Today, Hispanic and Asian minorities are among the fastest growing population groups in Virginia. Between 1990 and 2000, for example, the number of Hispanics in Virginia increased 112 percent. These demographic trends have major implications for the way recreation and natural resource agencies (for example, local parks and recreation departments, Virginia state parks, the U.S. Forest Service and the National Park Service) do business. These population and demographic changes require increased awareness of the needs and expectations that differing cultures place on recreational facilities.

Virginia is at a crossroads with regards to diversity and the way recreation and natural resource agencies will respond to changes in the ethnic and racial composition of the state. Statewide and national educational efforts to promote outdoor recreation among minorities, and the promotion of diversity in Virginia recreation and natural resource agencies is recommended. Park managers must determine what practices best work in serving racial and ethnic minorities in recreation, natural and cultural resource settings, and attracting multicultural and diverse employees.

The U.S. Department of Agriculture Forest Service (USFS) attempts to address the diverse cultural backgrounds and values of its citizens in their programs and facilities. According to the USFS, with respect to the use of urban forests: "User expectations are often based upon cultural experience gained in other countries. The user population is extremely diverse... [and] different cultures have different resource ethics, which often conflict with Forest Service resource practices." While the statements are directed strictly to urban forests, they hold true for any natural area facility located near a diverse population. Cultural differences also affect the use of a park or any type of open space. Some cultures are accustomed to smaller open spaces than Americans. Americans hold dear

the wide-open landscape provided by many of our parks and open spaces. When designing open spaces and parks, planners and landscape architects must be aware of the diverse populations using the facilities.

Few natural resource and outdoor recreation management agencies enjoy a multicultural and ethnically diverse staff. Aggressive efforts need to be made to interest young minorities in a career in these fields. A successful program may need to start at the elementary school age. Incentives may need to be used to attract minorities to the study of the natural resource sciences and outdoor recreation in college.

The Outdoor Industry Foundation (OIF) reports that Hispanic youths are the fastest growing segment of the Hispanic population and the most promising for engaging in outdoor recreation. "Today's youth population is diverse by nature - more multicultural than their parents. Reaching and engaging Hispanic youth is paramount to cultivating the next generation of outdoor enthusiasts," noted Michelle Barnes, vice-president of OIF.

Fully one-third of Hispanics is under the age of 18 and suffers from obesity at much higher rates than the rest of the population. It is important for the health of our nation, and the health of our industry to introduce the active lifestyle to the Hispanic community, particularly young Hispanics.

Employment trends

According to a 2004 report by the Economic Policy Institute in Washington, DC, the total hours worked by all family members in a week rose 11 percent between 1975 and 2002. These hours have increased as more women have entered the workforce, creating dual-income families. The increase in family work hours affects the type of leisure activities and the quality of family life, in spite of the rise in family income. (Economic Policy Institute)

As employees work longer weeks, there is a trend for shorter vacations involving outdoor recreation closer to home. These leisure times are most often incorporated into busy lifestyles as extended weekends and on holidays. This trend impacts the need for a variety of outdoor recreation opportunities near populations. Also, the use of close-to-home facilities may impact carrying capacity of existing sites.

Knowledge management

As the baby boom generation reaches retirement age within the next five years, mature workers will leave with valuable institutional knowledge and job skills. According to the Computing Technology Industry Association, there could be as many as 21 million vacant jobs, but only 17 million workers to fill these posts by 2012. Although this so-called "Baby Boomer Bomb" will hurt many companies, it will be acutely felt in parks and recreation departments that have struggled to meet operational capacity and fulfill unfunded mandates and programmatic needs in the face of severe cutbacks.

Knowledge management, which captures, organizes and stores the knowledge and experiences of employees and makes this information available to others in the organization, will become increasingly important as the workforce shrinks. It is important for agencies to plan now to maintain ties with older workers and to set up mentoring programs with new talent. Good management will value intangible assets, like life experience, and develop a knowledge development plan to secure the learning experiences and work products of employees before a crisis unfolds.

Resources for demographics

2000 Census Lookup

www.census.gov/main/www/lookupdown.html

Landcare

www.landcareus.org

Outdoor Industry Foundation

www.outdoorindustryfoundation.org

University of Virginia's Weldon Cooper Center for Public Service

www.coopercenter.org

Virginia Employment Commission Community Profiles

<http://velma.virtuallmi.com/gsipub/index.asp?docid=342>

Carrying capacity of recreation and open space resources

Too often the number of participants has been our only criteria for evaluation. We count numbers—and after a while only numbers count.

—Clayne Jensen, *Outdoor Recreation in America*, 1985

As increasing farmland and forestland acres are developed and as Virginia's population grows, it becomes essential to ensure that recreational and natural areas are managed to handle increased demand of users and prevent the degradation of these resources that provide visitors with optimal outdoor experiences. The sustainability of a park or natural area with regard to certain types of recreational use is measured by carrying capacity. Carrying capacity is defined as the population that can be supported indefinitely by its supporting systems.

Carrying capacity findings

- Virginia's population is increasing, and the amount of recreation land available for public use is not keeping pace with the population growth.
- Many users of parks and open space resources are finding that enjoyment of their activity conflicts with other user groups due to an increase in competition for available lands and waters.
- Inadequate funding for staff, development of facilities and maintenance hinders the ability of recreation and open space managers to preserve the character of natural resources and to meet visitor expectations.
- When assessing the carrying capacity of recreation and open space resources, there are three factors to consider: natural resource, social and managerial.
- Carrying capacities cannot be established until objective, quantifiable management goals are determined.
- Public input from user groups is needed to balance visitor expectations and site sustainability.

Carrying capacity recommendations

- Federal, state and local agencies should ensure that adequate supplies of recreation and open space are provided to meet demand, and that those areas and facilities are adequately staffed, funded and maintained. A dedicated funding source for the acquisition, management and maintenance of recreation



James River Park in Richmond. Photo by Steve Hawks.

areas and facilities should be a priority for local, regional and state agencies and organizations.

- Park, recreation and open space planners and managers need continuing career education programs to enhance management skills that include techniques for identifying and resolving resource degradation effects associated with increased recreational use.
- Public input needs to be formally and systematically incorporated into the process of establishing management objectives to guide carrying capacity decisions based on user expectations and resource sustainability.
- Management objectives for all recreation and natural areas should be established. Assessment tools, such as the U.S. Forest Service's Limits of Acceptable Change (LAC) or the National Park Service's Visitor Experience and Resource Protection (VERP), should be employed to determine the carrying capacity for managed lands.
- To minimize user conflicts and increase economic and natural resource sustainability, activity user groups, along with local parks and recreation departments, should continue to educate outdoor recreation enthusiasts to be cognizant of the impacts they have on others.

Principles of carrying capacity

The concept of carrying capacity was first applied to wildlife and ecological areas. In this context, carrying capacity is the maximum number of individuals (plant or animal) that an area can support without degradation of the resources. This 2007 *Virginia Outdoors Plan* concentrates on human influences to outdoor recreation lands and ultimate carrying capacity of these lands. While the habitat needs and ecological components are not extensively addressed, these factors are of concern when developing guidelines for carrying capacity. Consideration of carrying capacity in the management of recreation areas can be traced back to the mid-1930s. But it was not until the 1960s and 1970s that the overuse of recreation areas began to be recognized as a management issue.

Carrying capacity plays an important role in the development, management and maintenance of sustainable communities. In the book, *The Living Landscape: An Ecological Approach to Landscape Planning* by Frederick Steiner, the author describes a concept developed by the Tahoe Regional Planning Agency called “environmental threshold.” It is defined as “an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific, or natural value of the region or to maintain public health and safety within the region.”

Thomas Dickert and Andrea Tuttle of the University of California, Berkeley advocate this concept as a means of controlling cumulative environmental impacts. They describe cumulative impacts as “...those that result from the interactions of many incremental activities, each of which may have an insignificant effect when viewed alone, but which become cumulatively significant when seen in the aggregate.” They suggest an alternative approach whereby the “rate or total amount of development is managed to stay below pre-stated threshold levels, and halted when such thresholds are reached.”

The Limits of Acceptable Change (LAC) planning system was developed by George H. Stankey and partners in conjunction with the Recreation Opportunity Spectrum in 1985 for the U.S. Department of Agriculture's Forest Service (See Appendix C: Guidelines for Outdoor Recreation Planning). Stankey's research discovered that while carrying capacity was fundamentally a quantitative term, many of the problems of recreational use were not so much an issue of the numbers of participants, but their behavior. This led Stankey to focus not on the question of “How many is too many?” but to ask instead, “What resource and social conditions are appropriate

(or acceptable), and how do we attain those conditions?” Thus, LAC as a planning system became a way for managers to reconcile the complex issues of visitor experiences with the problems of the social and biophysical impacts of these users.

Practically all recreation, open space and protected natural resource management agencies in the U.S. have recognized that developing a systematic approach to resource management is the most effective way to identify and resolve preservation and restoration issues, and ensure that the characteristics for which these areas were established are conserved. The challenge that exists for resource managers is to clearly understand the principles and concepts underlying the LAC planning system and to design and implement management plans that are specific to their resources.

Factors considered for Limits of Acceptable Change (LAC) planning system

In order to devise management objectives and an associated plan for a recreation area, it is essential to consider these factors as they relate specifically to the affected area.

Natural resource factors – The physical and biological characteristics of natural resources influence the degree of change in the environment resulting from recreational use. Although recreational use inevitably causes change in the environment, some resource bases are more fragile than others.

Social factors – The needs and wants of people are important in determining appropriate uses of natural resources. User perceptions and opinions of appropriate types and level of use are an essential element of carrying capacity prescriptions (See Appendix D).

Managerial factors – Legal directives and agency missions often play major roles in determining appropriate resource, social and management conditions. These factors prescribe what conditions should be maintained and what actions are needed to achieve those conditions.

For more in-depth information on the Limits of Acceptable Change (LAC) planning system and the Recreation Opportunity Spectrum (ROS), both developed by the USDA Forest Service, see Appendix C.

Implementing carrying capacity measures

To accommodate different types of users, a different set of management objectives may be necessary for individual subsections of a larger resource base. Management objectives address how much change is acceptable by deciding what types of recreation experiences a particular area should provide, the feel of naturalness, the kind of experience offered and the intensity of management practices.

One common misconception of carrying capacity is that controlling or limiting numbers of users is the key to limiting impact. Limiting visitors may not always provide the best resolution to carrying capacity. Choosing appropriate allocation and rationing techniques for visitation often alienates users. An alternative to limiting numbers of users is the encouragement of change in visitor behavior through education and regulations. Education and outreach initiatives move the user from a customer to a steward of the resources and encourages users to take ownership for park and natural resource preservation and protection.

When resource modification is insufficient or inappropriate in addressing carrying capacity, a resource manager may implement management practices that increase the carrying capacity of the resources to support more use, while limiting recreational participation in sensitive areas. These management practices help to maintain user expectations for their recreation experience (for example, a backcountry or wilderness experience) and meet user anticipation for social interaction. An effective communication program between managers and visitors ensures that carrying capacity needs and safety standards are met at outdoor recreation sites.

Increasing carrying capacity through site changes

Resource managers may increase carrying capacity of a recreation area without limiting visitor access by hardening sites and using LID techniques to protect resources. Defining the use area with a border such as railroad ties, wood or railings and then hardening the impact area with gravel, crushed stone, sod, wood chips or asphalt protects the site from overuse. This method directs user activities within a defined area and limits site impacts while protecting natural resources. Other examples of site hardening are sectioned off, hardened campsites, recreational vehicle (RV) camping sites and paved walking paths. Prohibiting campfires also reduces human impacts and risks at park sites. The construction of fire rings

and limiting fires to designated areas are often effective in managing campfire impacts.

It is important to note that though hardening of sites can increase carrying capacity, it may also potentially change the recreation experience for the user by modifying the natural setting. For this reason, it is imperative that site hardening and resource modification be designed and implemented to keep the setting as natural as possible.

Limiting recreational use

Limitations on the size and quantity of camping parties in one area at any given time allow managers to control the numbers of participants in an area and reduce recreational impacts. When the predetermined limit on the number of individuals who are camping has been reached, participants may be directed to another area. Reservation systems that issue permits for specific dates and use areas are most effective for ensuring high quality backcountry experiences. These tools give managers the ability to control how many visitors are present in an area and maintain an appropriate level of social interaction between participants. A registration system also maintains a log of where visitors are located in the event of an emergency. Limiting recreational use is more appropriate to backcountry recreation areas where the solitude and lack of social interaction are part of the mystique of the experience.

Site monitoring for carrying capacity

After establishing objectives for the management of an area, it is essential to monitor progress of the management plan. Monitoring is the periodic and systematic evaluation of biophysical and social conditions. Monitoring allows managers to maintain a formal record of natural resource and social conditions and track changes over time. The effectiveness of management actions may be evaluated and implemented in management practices through a monitoring program.

Funding for limits of acceptable change model

Funding is an important aspect of the Limits of Acceptable Change model that cannot be overlooked. Implementation of LAC practices, as with other planning systems, requires funding. Initially, funding may require directing monies to increase protection of important resources essential for long-term sustainability. An active public involvement process may actually enhance implementation of management proposals aimed at carrying capacity, as well as increase the support for funding.

Conservation and outdoor ethics

... [W]e're at a critical stage in the world. We have reached the point where we need to think about what kind of environmental future we're going to have. I believe we can live in harmony with our environment; we don't have to go out and pave every square inch. But we need a new ethic for living in our world. That's why I do what I do.

—Chuck Flink, President, Greenways Inc.

Conservation and outdoor ethics are essential for protecting water quality, maintaining plant and animal habitat, reducing the causes of global warming and protecting Virginia's outdoors. Adequate outdoor recreation and conservation lands must be maintained to ensure long-term health of the environment, and Virginia's citizens must be educated to protect these resources. Local, regional and state initiated education for conservation and outdoor ethics is needed as populations grow and lands continue to develop. The growth of a community-driven conservation ethic will strengthen the success of green infrastructure as a planning model. The difference between success and failure for outdoor resources will be made at the community and individual level where responsible actions of many people have the opportunity to change the complexion of the Commonwealth's outdoors for future generations.

Conservation and outdoor ethics findings

- If citizens cannot enjoy and recreate outdoors, they will not have the desire to protect lands for future generations; therefore, public access to outdoor recreation helps achieve conservation.
- As the social and economic fabric of Virginia has changed over time, so has the public's attitude toward land conservation and stewardship.
- Multimedia campaigns are effective in conveying the message for conservation and outdoor ethics and stewardship.
- Stewardship Virginia is a statewide campaign to encourage Virginians to engage in the conservation and care of the state's natural resources.
- Virginia Naturally enhances the depth and breath of conservation ethics through environmental education.
- Virginia's Adopt-A-Stream, Adopt-A-Highway and other cleanup programs focus on citizens involved in litter control along rivers, streams, road corridors and adjacent lands.



James River Advisory Council River Cleanup 2007. Photo by Gail Brown.

Conservation and outdoor ethics recommendations

- Local, state and federal government should provide opportunities for the Commonwealth's population to enjoy and access outdoor environments.
- DCR and local parks and recreation departments should provide opportunities to learn responsible use of public lands through the teaching of *Leave No Trace* and *Tread Lightly!* Skills.
- DCR and other natural resource agencies should provide leadership and be an example in operations and maintenance of outdoor facilities to model conservation and outdoor ethics.
- All state natural resource agencies should partner with Virginia Naturally and community partners for a multimedia campaign to improve environmental literacy and conservation ethics using clear, achievable calls to action and measurable, common goals.
- Work with partner states to implement the goals identified in the Chesapeake Bay Program's Chesapeake 2000 Agreement related to outdoor education, stewardship and conservation ethics.

Principles of conservation and outdoor ethics

Ethics is the discipline of dealing with right and wrong—a theory or system of moral values that govern the conduct of an individual or group.

Conservation includes the careful management and stewardship of natural resources to prevent exploitation beyond capacity, degradation and waste. By the late 1890s, the term ecology meant the study of how organisms interacted with each other and with their total environment. From its inception, ecology encompassed whole community systems, which allowed the discipline to be a fertile ground for environmental ethics. Aldo Leopold, one of the pioneers in American wildlife ecology, was among the first to see the connection clearly. “All ethics,” he wrote in 1949, “rest upon a single premise: that the individual is a member of a community of interdependent parts.”

Aldo Leopold's book *A Sand County Almanac and Sketches Here and There*, published in 1948, was a call to action and the beginning of the conservation movement. Since its publication, many voices have joined the call for sound management of the country's rich heritage of natural resources. A conservation ethic has evolved that is generally accepted as the path to a sustainable future. Communicating the ethic and gaining understanding and commitment from local and state elected leaders remains a challenge.

Importance of conservation and outdoor ethics

As more people spend their lives in metropolitan areas, they may lose connection with the land. There is evidence, especially in younger generations and children who have grown up with technology and spent less time outdoors, that the understanding of natural processes and affinity for the land is diminished. This weakening of the traditional attachment to the natural world has implications in how people view natural areas and behave in natural settings. In Virginia, the problem of a populace detached from kinship with the land has not reached acute levels. However, steps must be taken to maintain connections with the outdoors for the majority of citizens, especially children.

Role of nonprofit organizations in conservation and outdoor ethics

The efforts of organizations such as the National Geographic Society, the Wilderness Society, the Conservation Fund, the Nature Conservancy, the Audubon Society, Ducks Unlimited, Isaak Walton

League of America, National Wildlife Federation and others have been successful in bringing the need for conservation to the public's attention. Public school education programs such as Project WET, Project WILD, Project Learning Tree, Project Underground, *Your Backyard Classroom* and others relay the conservation message to children who then share it with their families. In addition, watershed initiatives sponsored by a variety of nonprofit organizations and soil and water districts are leading to greater awareness and improved water quality. (For more information, see Chapter VII-G: *Virginia Watersheds*)

Statewide conservation and stewardship campaigns

Adopt-A-Stream, Habitat at Home, Adopt-A-Highway, river cleanups and riparian buffer plantings are among the myriad of stewardship opportunities sponsored by Virginia communities, agencies and organizations. While many Virginians embrace these public efforts to improve stewardship of our natural, cultural, historic and scenic resources, many more have not been engaged. Nonpoint source pollution remains a serious problem for all of Virginia's outdoor resources. Litter dots the landscape, excess fertilizers run into our streams and rivers, and improperly maintained vehicles pollute our air and roadways. Coordinated multimedia information and education campaigns like the Chesapeake Club are needed statewide to carry simple conservation messages and calls to action. (For more information, see Chapter VII-H: *Environmental and Land Stewardship Education*.)

User conflict in outdoor recreation

User conflict is another component of conservation ethics that affects outdoor recreation. Too often, people participate in outdoor activities with no thought given to others who may be using the same resource at the same time. User conflicts have increased as different user groups vie for limited resources. User conflicts are more acute in urban areas where large populations compete for use of a small number of facilities.

Trails once built for hikers are now carrying mountain bicyclists and equestrians. The speed of the bicycles offends hikers and scares horses. The impact of horses detracts from the enjoyment of hikers. On waterways, the problem has become acute in areas where personal watercraft, also known as jet skis, have a significant impact on human powered watercraft, such as canoes and kayaks. Fishermen also feel impacted by the jet skis, as well as the loss of bank and bridge fishing sites in urban areas.

Outdoor ethics programs

Leave No Trace (www.lnt.org) - The Leave No Trace Center for Outdoor Ethics is a national non-profit organization dedicated to promoting and inspiring responsible outdoor recreation through education, research and partnerships. Leave No Trace builds awareness, appreciation and respect for our wild lands.

The underlying ethics and seven principles of Leave No Trace include:

- Plan ahead and prepare
- Travel and camp on durable surfaces
- Dispose of waste properly
- Leave what you find
- Minimize campfire impacts
- Respect wildlife
- Be considerate of other visitors

Tread Lightly! (www.treadlightly.org) - This non-profit organization offers educational materials, training courses, restoration opportunities, communication pieces and a variety of tools to help arm recreationists with an outdoor ethic. *Tread Lightly!* offers specific ways to minimize your impact when four-wheeling, off-highway motorcycling, mountain biking, geocaching, riding an ATV, hunting with an ATV, snowmobiling, camping, fishing, boating, hunting, horseback riding, back-country skiing, hiking, sand duning and using a personal watercraft.

Virginia State Parks

(www.dcr.virginia.gov/state_parks/kidfacts.shtml) and **The Camping Club** (www.thecampingclub.com)

address potential user conflict by promoting etiquette guidelines and ways to be prepared for camping.

The Isaak Walton League of America

(www.iwla.org/index.php?id=13) has taught sportsmanship to successive generations of hunters and fishermen. Their organization motto is, "We must leave our woods, waters and wildlife better than we found them, and we must dedicate ourselves to inspiring others to do the same." The Isaak Walton League of America inspires outdoor enthusiasts to accept personal responsibility for protecting outdoor resources. The organization offers an outdoor ethics program on the education and support of ethical behaviors in the outdoors.

International Mountain Biking Association

(www.imba.com) educates users and resource managers with regard to stewardship of the land and in ways to minimize user conflicts by proper facility design, education and outreach to users.

American Whitewater (www.americanwhitewater.org/content/Stewardship) has a mission "to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely."

Virginia Horse Council (www.virginiahorsecouncil.org/TrailsInformation.htm) provides user education about sharing trails with other users.

Virginia Off Highway Vehicle Coalition

(www.vohvc.org) has a mission "to establish and improve Off Highway Vehicle (OHV) opportunities in Virginia through education, responsible land use, environmental sustainability and the promotion of safe, friendly, family oriented recreation."

Using the outdoors responsibly without impact helps to sustain outdoor recreation sites and enables enjoyment by multiple users. The importance of maintaining the appropriate numbers and types of outdoor recreation facilities, with regard to populations throughout the Commonwealth, will assist management in minimizing outdoor recreation user conflicts. Teaching user groups how to share limited outdoor recreation areas with competing user groups in a responsible manner is a major challenge for resource managers. Responsible user groups educate their memberships about potential conflicts.

Crime prevention in public spaces

Crime and the fear of crime do not flourish in an environment of high energy and healthy interaction among law-abiding community members— the trail may be one of the safest places in the city.

—Kevin Scully, former chief of police, South Burlington, Vermont

Living and recreating in a safe place is an essential quality of life factor. Code of Virginia § 15.2-2283 recognizes this in the purpose of zoning ordinances which states: "Zoning ordinances are for the general purpose of promoting health, safety or general welfare of the public... and to these ends such ordinances shall be designed to give reasonable consideration.... to provide for adequate light and convenience of access and safety from fire, flood, crime and other dangers."

In addition to promoting the reduction of crime through zoning, all public space planning, design and management should be implemented to reduce or eliminate the opportunity for and incidents of crime as well as ameliorate citizen fears. This can be accomplished through the application of Crime Prevention Through Environmental Design (CPTED) techniques and principles.

Crime prevention findings

- No place is completely crime free; the challenge is to understand the real dangers versus the perceived dangers.
- Trails and managed open spaces are safe neighbors.
- Careful design and site management are critical to ensuring safe environments and does not have to cost a lot.
- Fully integrated security measures can create a positive experience in all landscapes.
- Program management is effective in creating physical security in public spaces.

Crime prevention recommendations

- Local communities and property owners should promote well-designed public spaces that reduce crime in the area around the site.
- Property owners should promote management techniques that promote safe environments.
- Project managers should repair broken or vandalized equipment or facilities immediately to minimize the impression of lack of interest or authority.
- Park managers should establish, publish and enforce park rules and regulations to maximize public enjoyment and safety.
- DCR, in conjunction with the Virginia Crime Prevention Association and the Virginia Safer By Design Committee, should provide education and technical assistance to communities on safe sites, including staff training and development of a technical document to be used by park and land management staff.

Importance of crime prevention in public spaces

Ultimately, individuals are responsible for their own safety, and crime cannot be eliminated. However, through the application of CPTED and other techniques, safer environments can be designed and result in a reduction in frequency and severity of crime. Using CPTED in public spaces is not new—it

has been practiced since the early 1970's. However, its application to park and natural settings is more recent. By implementing CPTED principles for crime prevention, limited public funds may be maximized.

Providers and users of outdoor recreation need to be keenly aware of ways to integrate safety and security into the design of outdoor facilities and programming of outdoor activities. Many social aspects of outdoor recreation are influenced by a person's sense of safety and security. For many, there is a great concern about the safety of public spaces. A community's high quality of life is dependent upon reducing the frequency, severity and fear of crime by making public spaces more comfortable and appealing.

Local citizens and organizations with vision and determination have accomplished the transformation of abandoned, crime-ridden sites into relaxing outdoor spaces, such as community parks and gardens. The use of CPTED principles and community driven support are key to these successes.

Principles of CPTED

Design, maintenance, program scheduling and community support contribute to safe parks and open spaces. Though design alone will not ensure that sites are completely crime free, it can provide a balance between perceived threats and maintaining a peaceful, natural environment. Applying CPTED principles early in the design process is cost effective at reducing the opportunity for and fear of crime.

The three design principles of CPTED are physical access, visual access and defined ownership. These core principles along with the two other management principles, programming and maintenance, work together to form vibrant and safe environments. Principle applications of CPTED need to be focused on places with high use at access points to pathways, parking areas, trailheads, restrooms, playgrounds and courts. Isolated or problematic areas receiving inappropriate use may also be improved by applying CPTED principles.

CPTED Design Principle 1: Physical Access provides control onto or off a site by directing people to and from the site in a specific direction.

Part of access control is "wayfinding." This is the ability to know where you are and where you want to go. A critical aspect is to be able to move easily through a space and feel safe. For safety, users of public spaces need to have clear signage that indicates location, maps, nearby places of interest, contact and support information.

Access must be obvious, especially between high-use areas, like parking and restrooms. Clearly delineated walks and trails protect the environment, as well as provide a sense of direction and security. Direct access needs to be limited in dangerous, problem or environmentally sensitive areas. Cut-throughs should be closed off or opened up and hardened to create a more safe and sustainable environment.

CPTED Design Principle 2: Visual Access

Visual access provides a secure sense of place for users and refers to the ability to see into, out of, and through a site, or portion of a site. Though maximum visibility is often sought, especially in urban situations, privacy may be desirable in more rural and natural settings. The determination for desired visibility is based on an assessment of risk and user expectations, as well as overall public safety.

Strategically placed viewing opportunities, which maintain an awareness of what others are doing, are key to creating a safe environment. Examples include seating near playgrounds, courts, beaches and concession stands, and overlooks at piers and ball fields. Vendors or shared public facilities located near entrances also create more traffic and visibility.

The strategic placement of trees and lighting can support a sense that the environment is safe and comfortable. Excessive trees and shrubs should not be planted in areas where visibility is needed. Vegetation should be pruned to appropriate heights and appropriately spaced next to facilities, paths, walkways, entranceways and parking spaces.

Lighting protects facilities and users; however, lighting in the absence of witnesses should never be equated with safety (McKay, 2006). Lighting should always reflect the intended hours of operation. For example, lighting of playfields or structures in local parks when not in use may actually encourage criminal activities. Motion-sensing lights can perform the double duty of providing light when needed and letting trespassers know that they have been seen.

CPTED Design Principle 3: Defined Ownership

Creating a sense of ownership maintains a safer outdoor site. Clearly delineated property boundaries are the most common form of defining ownership. Signage, logos, surface treatment, fencing and gateway treatments are other ways to express ownership. Buildings with front porches, flags, banners and flowers provide the same sense of security and ownership. However, ownership refers not only to the legal

owner, but also to friends groups, adjacent property owners and interested citizens.

Ownership is expressed in part by management of the site. Spaces that receive appropriate and timely maintenance demonstrate the presence of an owner. Appropriate maintenance includes timely trash and graffiti removal, quick repairs of broken facilities, up-to-date painting and regularly pruned vegetation. Efficient maintenance and management strategies often deter the occurrence of crime and vandalism.

CPTED Management Principle 1: Programming

Programming is the organization and sponsorship of activities at a site. Thoughtful programming will increase the number of users, thus decreasing the opportunity for criminal activity. This is especially true for sites that have traditionally been vacant or abandoned.

Planned activities and programs attract legitimate users. Programs targeting specific groups, like scouts and school children, encourage users to take ownership of the site. Education should be incorporated into site programming to make citizens more confident with site use. The Trust for Public Land notes that safe parks and recreation centers topped the list for what teens want when school is not in session. It has also been found that after-school programs for teens are a cost effective way to reduce many minor crimes of convenience.



*Trails do not have to be wide open spaces to be considered safe.
Photo by Jennifer Wampler.*

Resources for CPTED

Virginia Crime Prevention Association CPTED
Safer By Design Coalition
www.vcpa.org/CPTED.htm

Virginia Department of Game and Inland Fisheries
Crime Watch Program
www.dgif.virginia.gov/wildcrime

Seattle, Washington Police Department
CPTED program
www.ci.seattle.wa.us/police/prevention/Tips/CPTED.htm

CPTED Management Principle 2: Maintenance

Proper maintenance is essential for safe public spaces. Proper maintenance of a site, especially the landscape, also supports accessibility, visual access and defined ownership. Clean, well-maintained sites and trails create a sense of community ownership and pride, as well as reduce criminal activity.

The inclusion of liability and security experts in the planning and management of a site also provides an extra assurance of security. Creating a strategic plan for crime prevention management and problem resolution will cultivate an anti-crime culture. The plan should include familiarizing crime prevention and emergency personnel with site layouts to facilitate quicker, more effective responses, and keeping up-to-date data on site crimes.

Research shows that clean and well-maintained trail corridors will reduce the incidents of minor crimes (Tracey and Morris, 1998). In addition, if site problems are not repaired or maintained adequately and in a timely fashion, the sites are perceived as abandoned and quickly become a magnet for additional damage. By performing regular security and safety assessments, immediate maintenance can be applied to reduce vandalism, graffiti and invasive landscape maintenance.

Partnerships with business and community organizations promote an anti-crime culture and create safer outdoor environments. Crime watch groups composed of community volunteer organizations provide help and contribute to the maintenance of the site, reducing litter and preventing vandalism (Example: DGIF Crime Watch Program).

Landowner liability

Liability can be a major concern for landowners who consider allowing public access to their property. However, the Commonwealth of Virginia has a *Recreational Use Statute*, also known as the Landowner Liability Law, which protects landowners who allow public recreational use of their property. Also included is a provision that limits the liability of private landowners who enter into a lease agreement with agencies of the Commonwealth. In 1994, the code was amended to include easements for access to public parks, historic sites or other public recreation.

This legislation provides that “a landowner shall owe no duty of care to keep land or premises safe for entry or use by others...” for a variety of recreational uses. It limits landowner liability with the exception of “gross negligence or willful or malicious failure to guard or warn against a dangerous condition, use, structure or activity.” A landowner who receives a fee for the use of their property would not be exempt from liability, as outlined in the code.

Even though a public entity uses CPTED principles and practices, adjacent neighbors and other community members may feel that the development of a site for public use is not an acceptable action. Involving citizens into the planning and management process educates, incorporates ideas from the community, and reduces apprehension about public use of lands. In some cases, public access to a site may involve private property, and the concern for property owner liability needs to be addressed.

Private individuals often voluntarily offer trails or public access to water through their property. They may give an easement on a portion of their land or may allow access through an agreement with a governmental agency. In these instances, the landowner's liability is limited by Section 29.1-509 of the Code of Virginia.

Health and wellness benefits of outdoor recreation

Boy, Gramp! Nature's so much bigger in person than it is on TV.

—Hank Ketchum, *Dennis the Menace*, August 15, 2001

Outdoor recreation promotes health and wellness by providing open space and natural areas for public access, and by offering recreational programming that contributes to active lifestyles and vibrant communi-

ties. The significance of outdoor recreation in creating healthy lifestyles should not be underestimated. Health care costs are rising. The U.S. spends approximately 40 percent more than other countries on health care, while only 2 percent of this annual health care cost is allocated for disease prevention. An increased investment in outdoor recreation contributes to preventive health care and lowers health costs.

Three-quarters of Americans are not regularly active, and inactivity rates are increasing. With exploding health-care costs and the prevalence of chronic disease, prevention programs are gaining more attention and surfacing in recreation programs across the nation. Americans are shifting from a medical model to a more holistic model of health, which emphasizes promotion of wellness and prevention of disease. With increasing evidence demonstrating the connection between wellness and the use of park and recreation services, local recreation providers are compelled to expand their range of services.

In the report *Parks and Health: How Parks and Recreation Contribute to a Healthy Lifestyle*, the National Recreation and Park Association (NRPA) research shows that having access to places to get active is one of the most important factors linked to whether people will be active. Studies have revealed that parks and trails are positively associated with physical activity—the closer people live to a park or trail, the stronger the effect. In fact, a systematic review of studies performed by the Centers for Disease Control and Prevention found that increased access to places to be active can boost the number of people getting enough exercise at least three days a week by 25 percent.

Research also shows that proximity is the most important element of creating accessible parks. A large number of smaller neighborhood parks may be more effective at encouraging active living than building large sporting complexes on the edge of communities.

The NRPA report also discussed the findings of a recent survey by the International City/County Management Association that 89 percent of city managers think parks and recreation departments should take a leading role in developing a community conducive to active living. Because this is a new role for recreation providers, few departments have developed the operational capacity to contemplate neighborhood-scale community development. Leadership at all levels of government will be required to address the challenge of this service gap.

Municipal recreation and parks

- Park and recreation agencies must undergo a repositioning as part of the health services sector of government.
- Parks and recreation personnel must, in many cases, undergo a paradigm shift in their own conceptualization of their mission.
- Specific programs targeted to maintaining or improving health need to be developed and promoted.
- Practical research needs to be undertaken to demonstrate the health benefits of participation.

(Ho et al. 2003)

Running tracks or pathways are now being built at some elementary schools to encourage children and the surrounding neighborhood to become more active—an addition to this typical amenity at high schools and some middle schools. This is a good example of partnerships among local agencies promoting active living. In Chesterfield County, a health department study of the body mass index of public school children helped the Coalition for Active Children (COACH) target high-risk areas of the county for track development. COACH is also focused on improving nutrition and increasing physical activity among young people. The coalition began in 2002 with members from public and private organizations, including health, education, physical fitness and nutrition professionals, concerned parents, and community and business leaders.

By partnering with the health community, parks and recreation departments and other providers of outdoor recreation could play major role in reversing disturbing public health trends. The state does not have a specific program area developed to address health and outdoor recreation. Findings and recommendations related to health and outdoor recreation are discussed in existing program areas outlined in the *Virginia Outdoors Plan*. Partnerships with the Virginia Department of Health could strengthen this program area.

The state does not have a specific program area developed to address health and outdoor recreation, findings and recommendations related to health and outdoor recreation are discussed in depth in existing program areas outlined in the *Virginia Outdoors Plan*. Partnerships with the Virginia Department of Health could strengthen this program area.

Impact of climate change on recreation

While the impacts of climate change may not be felt within the next five years, this issue was raised during the public input meetings for the 2007 VOP. Climate change is anticipated to impact recreation, particularly in U.S. coastal areas where sea level is rising more rapidly than worldwide. Studies by the Environmental Protection Agency (EPA) and others have estimated that along the Gulf and Atlantic coasts, a one-foot rise in sea level is likely by 2050. Wetlands, which will be squeezed between coastal development and the rising sea, are also at risk.

The EPA reports that by 2100, Virginia's average temperature could increase by three degrees Fahrenheit in winter, spring, and summer (with a range of one to six degrees), and four degrees Fahrenheit in fall (with a range of two to eight degrees). Precipitation is estimated to increase by 20 percent in all seasons (with a range of 10 percent to 30 percent). Other climate models may show different results; more recent studies have suggested that the warming is likely to occur more rapidly over land than the open seas.

The International Panel on Climate Change expects the impacts of climate change on tourism and recreation to be centered on:

- The length of operating seasons:
- Extended seasons for warm weather activities may reap economic benefits at the expense of natural resources, mandating a "closed" season for over-used areas.
- Negative impacts on winter recreation, requiring adaptations like snowmaking or diversification of activities to generate year-round income and employment.
- The availability and quality of the resource base as recreation-dependent ecosystems are modified (shifts in vegetation and wildlife).
- The impacts from changes in the magnitude and frequency of extreme events (hurricanes, avalanches, fires and floods).
- The loss of structures, beaches and wetlands from sea level rise.
- Resource competition with declining resource availability and quality.
- The increasing cost of travel due to greenhouse gas reduction policies.

The distribution of fish species, an increase in summer stratification of water with more frequent and larger "dead zones," a loss of winter ice, possible increases in risk of insect and waterborne diseases, an increase in the accumulation of contaminants in fish, a loss of bird diversity, and degradation of winter recreation experience resulting from climate change may effect recreation and tourism. The potential impacts of climate change on outdoor recreation and tourism in the state of Virginia have not been evaluated.

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Resource Agencies

Always leave enough time in your life to do something that makes you happy, satisfied, even joyous. That has more of an effect on economic well-being than any other single factor. —Paul Hawken

This chapter of the 2007 Virginia Outdoors Plan includes information about federal and state land management agencies that offer opportunities for outdoor recreation. In addition, other state and federal lands not traditionally used for outdoor recreation are addressed. Findings and recommendations for regional and local parks and recreation providers, as well as private sector support for many aspects of outdoor recreation, are included.



Chippokes State Park. Photo by DCR.

The national park is the best idea America ever had. —James Bryce

Virginia and the National Park Service (NPS) have worked closely for many years to protect and conserve the important resources and rich heritage of the Commonwealth. The partnership has resulted in the creation of a network of river corridors, trails, heritage sites and conservation areas that bring numerous benefits to the citizens of Virginia. The following section provides a brief overview of the agency's mission, programs, opportunities and challenges facing the National Park Service in Virginia.

Findings

- The NPS presence in Virginia results in more than 14 million visitors to national parks, generating \$263 million and providing 6,100 jobs statewide.
- Although some parks, such as Assateague Island, Prince William Forest Park and Richmond National Battlefield have seen significant increases in visitation, the total visits to national parks in Virginia decreased slightly from 15,237,960 in fiscal year 2000 to 14,974,938 in fiscal year 2005, which is a decrease of 1.7 percent.
- Spending at NPS sites in Virginia was reported at \$263 million in 2005, resulting in approximately 2 percent of total travel expenditures in the state.
- In Virginia, NPS manages 20 parks with a combined acreage of approximately 400,000 acres.
- NPS enhances the capacity of states, communities and private organizations through its partnership programs.



Old Rag Mountain in Shenandoah National Park. Photo by NPS.

Recommendations

- State and local entities should continue to develop multi-modal connections to NPS sites as a component of an interconnected, statewide system of trails and greenways. Support efforts underway at parks, such as Petersburg, Appomattox and Richmond, that are currently engaged in efforts to link battlefields, historic sites, parks and communities.
- NPS should work with state agencies to elevate battlefield protection in various land conservation, scenic viewshed and heritage preservation initiatives. Utilize partnerships to identify, prioritize and develop strategies to protect critical resources.
- NPS should continue collaborative efforts with the Virginia Department of Game and Inland Fisheries, Department of Conservation and Recreation, U.S. Forest Service, U.S. Fish and Wildlife Service and Virginia Tourism Corporation to market heritage tourism and recreation opportunities.
- State and local entities should continue collaborative efforts through the Chesapeake Bay Gateways Network and Water Trails Program and Potomac Heritage National Scenic Trail to connect people to heritage, outdoor recreation, and educational opportunities and resources.
- Partnerships should be expanded between NPS, natural resource agencies and monitoring networks to address critical information gaps related to the monitoring of park vital signs and develop strategic plans to address issues.
- NPS and state and local entities should foster communication with state highway planners to identify alternative solutions that will minimize impacts from highways that bisect parklands.
- NPS should work with DCR and other federal, state, local and nonprofit partners to develop and implement a statewide green infrastructure program.
- NPS and localities should explore ways to enhance the physical and mental well-being of all citizens in Virginia through partnerships with DCR, Department of Health and others from the health community to promote active outdoor recreation and nature-based activities.
- DCR should take the lead on meeting with the NPS to discuss access issues that have arisen on specific NPS parks around the state.

National Park Service in Virginia

Units of the National Park System:	20
National Heritage Areas:	1
Affiliated Areas:	3
National Natural Landmarks:	10
National Historic Landmarks:	117
Rivers, Trails and Conservation Assistance Projects (2006):	12
Chesapeake Watershed Assistance Projects (2006):	3
Land and Water Conservation Funding (2006):	\$762,273
Chesapeake Bay Gateways and Water Trails (2005):	\$384,000

Economic Impact of Park Units

(does not include affiliated areas)

2005 Visitation:	14,520,721
Economic Impact:	\$263 million
Local jobs supported:	6,100 jobs

(Source: Visitation data reported by NPS Public Use Statistics Office, Economic Impacts reported by NPS Social Science Program, Gramann)

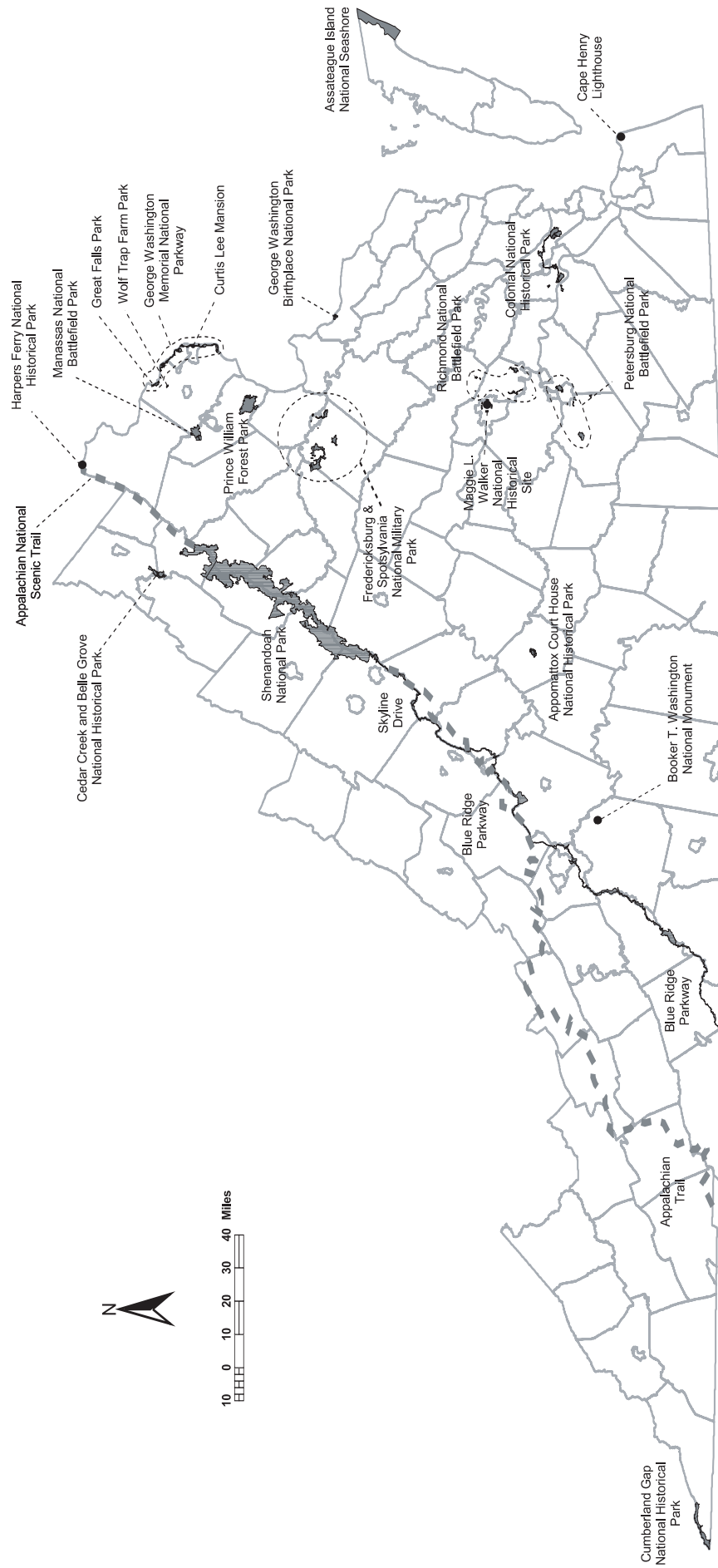
Mission, responsibilities and authority

NPS proudly carries out its mission of promoting, preserving and protecting parks and other heritage resources for the enjoyment, education and inspiration of current and future generations. The founding legislation of the agency, The National Park Service Organic Act of 1916, is the source for the agency's current mission statement:

"The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world."

In addition to managing units of the National Park System, NPS provides technical assistance in resource conservation planning to citizen's groups, local governments, and state and federal agencies. The following laws define these programmatic responsibilities and provide the broad context within which the NPS accomplishes its mission.

- The Antiquities Act
- The Historic Sites Act



- The Redwood National Park Expansion Act
- The National Trail System Act
- The Wilderness Act
- The Endangered Species Act
- The General Authorities Act
- The National Historic Preservation Act
- The National Environmental Policy Act
- The Outdoor Recreation Resources Act
- The Land and Water Conservation Fund Act
- The National Wild and Scenic Rivers System Act
- The Urban Park and Recreation Recovery Act

NPS operations are guided by a performance management system established in 1993 by Congress with the passage of the Government Performance and Results Act (GPRA). There are four goal categories established through GPRA:

1. Preserve park resources.
2. Provide for the public enjoyment and visitor experience of the parks.
3. Strengthen and preserve natural and cultural resources and enhance recreational opportunities managed by partnerships.
4. Ensure organizational effectiveness.

Each NPS unit provides an annual performance report that documents progress in meeting these goals.



Interpretive wildflower program in Shenandoah National Park. Photo by NPS.

In 2005, under the leadership of National Park Service Director Fran Mainella, a four-year strategic plan was completed to help guide the agency into the 21st century. The plan, *National Park Service Legacy Initiative and 4-Year Plan, Doing Business in the 21st Century*, outlines five broad goals to help keep the mission of NPS vital and to ensure its effective and efficient management. These goals, which provide overall policy guidance for NPS sites in Virginia, are management excellence, sustainability, conservation, outdoor recreation and 21st century relevancy.

Five goals from NPS strategic plan

Management Excellence: The National Park Service promotes management excellence and will epitomize government accountability. We will be a highly transparent organization whose productive, safe workforce reflects the diversity of our country and uses effective business practices to fulfill our core work.

Sustainability: The National Park Service will pursue sustainable facilities, operations, business practices, and resources through conservation, design, fiscal responsibility, information technology, partnerships, philanthropic support, and positive relationships with Congress.

Conservation: The National Park Service will continue to be a leader in natural and cultural resource conservation, protection, restoration, and stewardship. We will accomplish our work through partnerships with educational institutions, inter-governmental organizations, at local, state and federal levels, and interest groups.

Outdoor recreation: People's enjoyment and appreciation for the National Park Service is essential to its conservation. The NPS embraces critical responsibility to provide appropriate outdoor recreation and to contribute to the physical and mental well-being of all Americans. We will provide these opportunities through the National Park System and through our role in a seamless network of parks.

21st century relevancy: The NPS mission will be relevant to contemporary America by engaging the public, developing a seamless network of parks, and protecting America's cultural heritage.

Source: *National Park Service Legacy Initiative and 4-Year Plan: Doing Business in the 21st Century*

National Parks

Park visitation and economic impact

Virginia is located primarily in the NPS Northeast Region, with headquarters in Philadelphia, Pennsylvania, although areas of northern Virginia fall within the National Capital Region. The NPS Southeast Region, with headquarters in Atlanta, GA, administers the Blue Ridge Parkway and Cumberland Gap National Historical Park.

Park visitation

Based on best available data, total visits to National Park Service sites in Virginia decreased slightly from 15,237,960 in fiscal year 2000 to 14,974,938 in fiscal year 2005, which is a decrease of 1.7 percent. Virginia trends are somewhat more encouraging than national

averages, which have seen a dramatic decrease in visitation at national parks since visitation peaked in the late 1980s. This decrease in visitation has resulted in a reduction in funds. Changes in visitation to NPS parks in Virginia between 2000 and 2005 are shown in Table IX-. Visitation data on multi-state park units is also provided.

Economic impact

NPS sites contribute to the economic health of the Commonwealth and its communities through visitor spending. The Travel Industry of America reported \$13.3 billion in statewide travel expenditures in Virginia in 2005. Spending at NPS sites in Virginia was reported at \$263 million in 2005, resulting in approximately 2 percent of total travel expenditures in the state. NPS

Table IX-1. Recreational Visits to NPS Sites in Virginia: Fiscal Years 2000 and 2005

	FY00 Visits	FY05 Visits	% change
Appomattox Court House National Historic Park	194,983	142,012	- 27%
Arlington House, R.E. Lee Memorial	356,110	495,948	39%
Booker T. Washington National Monument	21,453	17,181	- 20%
Colonial National Historic Park	3,133,647	3,339,020	6.5%
Fredericksburg and Spotsylvania National Military Park	491,156	532,369	6.5%
George Washington Birthplace National Monument	135,738	61,903	- 54%
George Washington Memorial Parkway	7,685,862	7,327,162	- 5%
Maggie L. Walker National Historic Site	9,364	8,560	- 8.5%
Manassas National Battlefield Park	700,941	718,713	2.5%
Petersburg National Battlefield	173,385	149,911	- 13.5%
Prince William Forest Park	172,222	232,558	35%
Richmond National Battlefield Park	93,360	140,818	50%
Shenandoah National Park	1,363,348	1,141,102	- 16%
Theodore Roosevelt Island	178,795	106,237	- 40%
Wolf Trap National Park for the Performing Arts	527,596	561,444	6%
Total Visitation at Multi-State Park Units			
Assateague Island National Seashore (MD and VA)	1,803,138	2,014,428	12%
Blue Ridge Parkway (NC and VA)	19,399,689	17,548,387	- 9.5%
Cumberland Gap (KY and VA)	1,519,504	1,020,732	- 32%
No data available for the Appalachian Trail, Potomac Heritage National Scenic Trail, and Cedar Creek and Belle Grove National Historical Park. (Source: NPS Public Use Statistics Office)			

Table IX-2. Economic Impact of National Parks in Virginia: Results from the NPS Money Generation Model

	FY05 Rec Visits	Impact to Local Economy (\$000's)	Local jobs supported
Appomattox Court House National Historic Park	142,012	7,662	182
Arlington House, R.E. Lee Memorial	495,948	30,320	664
Booker T. Washington National Monument	17,181	1,476	35
Colonial National Historic Park	3,339,020	47,052	1044
Fredericksburg & Spotsylvania National Military Park	532,369	27,482	631
George Washington Birthplace National Monument	61,903	4,151	100
George Washington Memorial Parkway	7,327,162	12,465	333
Maggie L. Walker National Historic Site	8,560	90	2
Manassas National Battlefield Park	718,713	13,667	302
Petersburg National Battlefield	149,911	9,140	211
Prince William Forest Park	232,558	8,200	199
Shenandoah National Park	1,141,102	52,643	1,309
Theodore Roosevelt Island	106,237	6,302	136
Wolf Trap National Park for the Performing Arts	561,444	36,246	813
<i>No data available for the Appalachian Trail, Potomac Heritage National Scenic Trail, Richmond National Battlefield, and Cedar Creek and Belle Grove National Historical Park.</i>			
<i>(Source: NPS Public Use Statistics Office)</i>			

spending was derived from the sum of direct, indirect and induced effects through the National Park Service Money Generation Model 2 (MGM2). This increase in expenditures supported 6,100 jobs in the local economy. Economic impact per park is provided in Table IX-2. (Note: Multi-state parks Cumberland Gap (KY), Blue Ridge Parkway (NC) and Assateague Island (MD) are included in KY, NC and MD data reports, and not included in Virginia's total impact figure.)

National parks and partnership programs

In Virginia, the National Park Service manages 20 parks that have a combined acreage of approximately 400,000 acres. Although the majority of sites are historic, the greatest percentage of this acreage is natural and recreational areas, including Shenandoah National Park, the Blue Ridge Parkway, Prince William Forest Park and the Assateague Island National Seashore. The table lists the national parks in Virginia and each are described in the regional recommendations section of this plan.

National Park Service related areas

Appalachian National Scenic Trail

The Appalachian National Scenic Trail is a 2,175-mile long footpath stretching through 14 states from Maine to Georgia. Trail planning began in 1921, was first completed in 1937, and was named America's first National Scenic Trail in 1968. The Appalachian Trail (AT) is managed cooperatively by the National Park Service, the Appalachian Trail Conservancy (ATC), volunteers from 30 local AT Clubs, the USDA Forest Service, and other federal and state land-managing agency partners.

Shenandoah Valley Battlefields National Historic District

A National Heritage Area is a part of the country's landscape that has been recognized by Congress for its unique contribution to the American experience. In 1996, Congress established the Shenandoah Valley Battlefields National Historic District as a means to protect, interpret and promote 10 critical Civil War battlefields in the valley, and related historic and natural sites in an eight-county area. This is the only National

National Parks

Heritage Area in Virginia. In this same area, Congress is considering recognition of the thematic trail Journey Through Hallowed Ground (see chapter VII-E: Scenic Highways and Virginia Byways).

The National Park Service affiliated areas

Affiliated areas comprise a variety of locations that preserve significant properties outside the National Park System. Some of these have been recognized by Congress; others have been designated national historic sites by the Secretary of the Interior under authority of the Historic Sites Act of 1935. There are three NPS affiliated areas in Virginia: Green Springs National Historic Landmark District, Jamestown National Historic Site and Red Hill Patrick Henry National Monument.

Virginia's National Parks

National Parks of the Northeast Region

Appomattox Court House National Historical Park
Assateague Island National Seashore
Booker T. Washington National Monument
Cedar Creek and Belle Grove National
Historical Park
Colonial National Historical Park
Fredericksburg and Spotsylvania National
Military Park
George Washington Birthplace National Monument
Maggie L. Walker National Historic Site
Petersburg National Battlefield
Richmond National Battlefield
Shenandoah National Park

National Parks of the National Capitol Region

Arlington House, The Robert E. Lee Memorial
George Washington Memorial Parkway
Manassas National Battlefield Park
Potomac Heritage National Scenic Trail
Prince William Forest Park
Theodore Roosevelt Island Park
Wolf Trap Farm National Park for the Performing Arts

National Parks of the Southeast Region

Blue Ridge Parkway
Cumberland Gap National Historical Park

Partnership programs

In addition to units of the National Park Service and related areas, NPS enhances the recreation and tourism of states, communities and private organizations through its partnership programs. These programs work with agencies, nonprofits and the private sector to protect natural and cultural resources and to provide opportunities for outdoor recreation, wellness activities, tourism and education.

NPS provides the following programs in Virginia:

- American Battlefield Protection Program (ABPP)
- Chesapeake Bay Gateways and Water Trails Network
- Chesapeake Watershed Assistance Program
- Ferry Farm Special Resource Study
- Historic American Buildings Survey, Historic American Engineering Record
- Historic Surplus Property
- Land and Water Conservation Fund Program (LWCF)
- Monument Research and Preservation
- National Historic Landmarks (NHL)
- National Natural Landmarks (NNL)
- Rivers, Trails and Conservation Assistance Program (RTCA)
- Urban Park and Recreation Recovery Program (UPARR)

The benefits of these community partnership programs are extensive and far-reaching throughout the Commonwealth. For example, since 1966, the Land and Water Conservation Fund (LWCF) has contributed \$79 million through land purchase and protection of parks and open space. Recent projects include campgrounds at James River State Park and boating facilities at Leesylvania State Park, as well as sports fields, picnic areas and trails at Page County's first county-owned park.

The National Park Service's Federal Lands to Parks Program helps communities create new parks and recreation areas by transferring surplus federal land at no cost to state and local governments. Since 1949, 38 properties have been conveyed to Virginia, which totaled 5,294 acres and appraised for more than \$32 million. The most recent transfers are the 115-acre portion of the Lorton Correctional Complex in Fairfax County; a 136.57-acre parcel at Naval Radio

Transmitting Facility in Suffolk; and the 18.5-acre portion of Vint Hill Farms Station in Fauquier County.

The American Battlefields Protection Program (ABPP) fosters opportunities for stewardship of historic battlefields through grants and technical assistance that support public and private partners in identifying, evaluating and planning for preservation. Twelve grants in 10 states were awarded \$387,975 in the national 2004 grant round. Two of the 12 awardees are for Virginia Battlefields: to Buckland Preservation Society for the Buckland Mills Battlefield and to Radford University for the Saltville Battlefields. In 2006, the Town of Appomattox received \$34,000 in funding for the Appomattox Station Battlefield.

Since 2000, the Rivers Trails and Conservation Assistance Program has assisted more than 50 projects, consultation, workshops, conferences, and other recreation and conservation initiatives in Virginia. This assistance provides education, helps create trails and greenways, conserve rivers, and protect open space and scenic viewsheds. In addition, the newly created Chesapeake Watershed Assistance Program has assisted three watershed management planning projects in Virginia.

The Chesapeake Bay Gateways and Water Trails Network is a system of sites providing opportunities to enjoy, learn about and help conserve the Chesapeake Bay and its watershed. There are currently 43 sites and nine water trails in Virginia. In 2005, grants through the Gateways Program to Virginia communities totaled \$384,000.

Issues and challenges facing National Park Service sites in Virginia

The “no impairment” clause in the Organic Act of 1916 differentiates management of the National Park System from other public land management agencies. In order to accomplish this mission, NPS managers are confronted by numerous challenges. These include the adverse impact from growth adjacent to park boundaries, protection of natural and cultural resources within the park while allowing for visitor uses, and regional issues such as transportation, water quality and air quality.

Challenge of land protection and impacts from encroaching development

The impact of development on adjacent land is an issue for many parks in Virginia where the quality of the visitor experience is often dependent on compati-

ble land use planning and zoning by local jurisdictions. For example, Cedar Creek and other Civil War Battlefields in the Shenandoah Valley are losing their integrity and setting due to changes in land use and new developments. Other examples include encroaching development at Booker T Washington National Monument, Manassas National Battlefield, and Fredericksburg and Spotsylvania National Military Park.

Impacts from transportation planning and state highways that bisect parkland

Highway impacts are a concern at numerous NPS sites in Virginia. Some of these impacts are from proposed new construction or roadway expansion, such as impacts to Fredericksburg-Spotsylvania National Battlefield from a proposed four lane highway that would cut through the heart of Wilderness Battlefield. Another example is the impact on Booker T. Washington National Monument by the future widening of State Highway 122 from two to four lanes. The previous VOP recommended that the highway become a Scenic Byway, but with recent development around Smith Mountain Lake, the roadway may be losing the qualities required for designation.

In addition, NPS sites are impacted by existing roadways that bisect park sites. A good example is VA State Route 24, which bisects Appomattox Court House NHP. The VDOT objective is to move traffic efficiently and quickly, while NPS strives to preserve cultural landscapes. The conflict in mission and jurisdiction of resources between VDOT and NPS creates challenges for the park in managing visitor safety and enjoyment, as well as resource protection within its boundaries. A partnership for the management of resources should be developed to better accomplish the goals of both organizations.

Impacts from regional environmental challenges

Various environmental issues that are regional in nature, such as degraded air quality, soundscapes and night sky pollution, impact the parks in Virginia. For example, a major concern at Shenandoah National Park and the Blue Ridge Parkway has been air quality. Winds coming into the southern Appalachians carry emissions from the Tennessee, Ohio and Mississippi River valleys, the industrial cities of the Southeast and states surrounding the Gulf of Mexico. This has led to increased haze and severely reduced the distance visitors can see from overlooks on Skyline Drive and on the parkway.

A comprehensive report was recently completed for Shenandoah NP that identifies major source areas that contribute air pollution to the park. Also included were the results of various emission reduction modeling scenarios on stream chemistry, forest growth and composition, and visibility impairment. The report's conclusions were consistent with previous studies that significant emission reductions will be required to reverse existing adverse impacts on park resources.

Monitoring the health of park resources

Fiscal constraints have led to an inability to effectively monitor the ecological health of some park resources, notably wetlands. This challenge is illustrated by a recent report of the Mid-Atlantic Network Vital Signs initiative (MIDN). The goal of the project is to monitor the condition of natural resources at the parks through targeted "vital signs." In collaboration with the MIDN Science Advisory Committee, a process was formulated for identifying and prioritizing 20 vital signs. Five vital signs relate to air and climate, two relate to geology and soils, four relate to water, eight relate to biological integrity, and one to ecosystem pattern and processes. Four protocols are targeted for implementation by the network, including air quality, weather, water quality and forest health. Four other protocols are considered high priority, but will not be implemented due to current funding levels, including riparian areas and wetlands, land cover and land use, amphibians, and breeding birds.

NPS superintendents in Virginia have raised the concern that wetlands will not be included in the monitoring protocol. It is hoped that this gap may be addressed through collaboration with other surrounding networks, land management agencies, nonprofits and other collaborators.

Challenge of protecting park resources while allowing for compatible recreational use

Visitor services and recreational use must be compatible with the purpose of the park and managed in a manner that does not impair park resources. Accomplishing this goal and communicating the rationale behind management decisions to the public and other interests is a constant challenge for NPS managers. In the past, misunderstandings have occurred where park managers have not allowed expansion of recreational uses at some historic sites or monuments because the uses were found to be incompatible with preserving the park's natural and cultural resources. For example, there is interest in increased boater access at George Washington Birthplace National Monument. NPS believes this

action would adversely impact the historic setting and cultural landscape of the Potomac River plantation where the first president was born and spent the first few years of his life.

Opportunities and future directions

Visitor enjoyment and appreciation for opportunities provided through the National Park Service is essential to its conservation. The NPS embraces its critical responsibility to provide appropriate outdoor recreation and to contribute to the physical and mental well-being of all Americans. Future opportunities in Virginia include collaborative efforts to develop a network of parks and open space across the Commonwealth, protection of NPS sites and resources, and expansion of opportunities through research, planning, dialogue and implementation of new initiatives to meet current and future needs.

Developing a seamless network of parks, trails and open space

Cooperative regional trail and greenway planning

The *Virginia Outdoors Survey* confirms that walking for pleasure is the most popular recreational pursuit in the state, with 73 percent of the population participating. Based on survey findings, the second most popular activity was visiting historic sites, which jumped from fifth to second place with 56 percent participating. NPS units recognize this need in Virginia and are positioned to play an active role in connecting park sites through multi-modal transportation networks. Facilities such as trails and greenways allow for bicycling and walking, reduce traffic congestion and promote healthful family activities, while learning about and exploring Virginia's heritage.

Several parks have been working on trail connections:

- Petersburg National Battlefield has been working with Dinwiddie County and other partners to connect battlefields through trails.
- Appomattox Courthouse National Historic Park is working with the Town of Appomattox and Appomattox County to develop a network of trails to connect community and park resources.
- Blue Ridge Parkway is working with local partners in Roanoke to assess trail connections.
- Richmond National Battlefield Park is working with the Civil War Trail Program to connect Civil War battlefields, and with the City of Richmond and other museums to establish an urban trail of Civil War sites.

- Colonial Parkway and Richmond National Battlefield Park are key destinations and anchors on the Virginia Capital Trail, a 50-mile interpretive, recreation and transportation trail under development to connect the Capitol at Richmond to the Colonial Capitol at Williamsburg.

These trails will provide access to a diverse array of natural, cultural, historical and recreational sites, museums, parks, refuges, water trails, and interpretive and orientation facilities.

Gateways community initiatives

Park units in Virginia are advancing efforts to work outside park boundaries. A pilot program in the Northeast Region has introduced the community partnership workshop process for parks engaged in general management planning. The workshops bring together community leaders, local officials, agency representatives, adjacent landowners and others who have a special interest in the park. Workshops are convened with the goal of identifying issues, assets and opportunities shared by the park and community and formulating an action agenda through which mutual benefits can be realized. The two parks participating in the pilot program are George Washington Birthplace National Monument, which is beginning its General Management Plan, and Appomattox Court House National Historical Park, which is completing its plan.

Building partnerships through regional networks

The National Park Service Legacy Goals identify the need for development of partnerships to extend the benefits of resource protection and outdoor recreation beyond park boundaries. An example is the Chesapeake Bay Gateways and Water Trails Program, which is a developing network of sites that provide opportunities to enjoy, learn about and help conserve the Chesapeake Bay and its watershed. The Potomac Heritage National Scenic Trail is another example of NPS efforts to develop sustainable partnerships with local communities, connecting nationally significant natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands.

In addition, NPS has supported cooperative planning efforts led by state agencies and nonprofit partners to enable residents and visitors to learn about and explore Virginia's natural and cultural resources. Two examples are the Virginia Birding and Wildlife Trail and the Virginia Civil War Trail. Both of these initiatives unite sites into an interpretive network benefiting both visitors to the area, as well as local economies. Another collaborative effort is the Captain John Smith

Chesapeake National Historic Trail. For more information on this National Historic Trail see Chapter VII: Water Access and Blueways. NPS units and programs in Virginia have lent their assistance and support to development of these networks and will continue to explore avenues for future collaboration.

Chesapeake Bay Gateways Network

www.baygateways.net

The Chesapeake Bay Gateways Network is a partnership system of parks, refuges, museums, historic sites and water trails spanning the Chesapeake Bay watershed. This linkage of natural, cultural, historical and recreational sites is designed to help the public access, enjoy, understand and appreciate the natural, cultural, historic and recreational resources and values of the Chesapeake Bay and its tributaries. The program also promotes citizen involvement and stewardship projects at each of the network locations and throughout the Bay watershed. This network is managed as a guide and entry point for experiencing and learning about the Chesapeake Bay. The program represents a partnership, not only with sites throughout the Bay watershed, but also with state and local governments, to expand understanding and appreciation of the Bay so more citizens will become an integral part in conservation and restoration efforts. The Chesapeake Bay Gateways Network changes how people perceive the Bay by interpreting its resources in a meaningful manner to create a broader commitment to conserve and restore the Bay's natural environment.



Chesapeake Bay Gateways Program James River Water Trail recognition. Photo by NPS.

Protecting park natural and cultural resources

NPS will continue to place a high priority on protection, restoration, and stewardship of the natural and cultural resources entrusted to NPS by the citizens of the United States. In the future, there will be a continued emphasis on partnerships with educational institutions, intergovernmental organizations, and others to accomplish this goal as efficiently and as effectively as possible.

Partnerships previously discussed in this section include the protection of scenic vistas and battlefield resources, dialogue with state transportation planners, and research and monitoring of ecosystem health.

New initiatives

"The National Park Service embraces its critical responsibility to provide appropriate outdoor recreation and to contribute to the physical and mental well-being of all Americans. We will provide these opportunities both through the National Park System itself, and through our role in a seamless network of parks throughout the country."

—National Park Service Director Fran Mainella

Health and wellness

Increasingly, scientific evidence points to the fact that the American public needs to increase its level of physical activity to improve overall health and well-being. Recreation opportunities in parks and along rivers, trails and greenways are ideally suited for meeting this need. In March 2006, the National Park System Advisory Board Committee on Health and Recreation released its findings regarding the role of National Parks in promoting and providing healthful recreational activities. The report identifies seven pilot projects where parks are conducting health and activity research and will test the effectiveness of communications that encourage people to become more active.

In addition, the National Park Service Rivers, Trails and Conservation Assistance (RTCA) program has launched a national initiative to encourage healthful outdoor physical activity through partnerships with local communities. RTCA is working with Active Living by Design, the Centers for Disease Control and Prevention, and state and local partners to expand trail and bike-pedestrian infrastructure, and promote the use and health benefits of local parks and trails to support healthy lifestyles.

Green infrastructure

Green infrastructure is an interconnected network of protected land and water that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people. Efforts are underway by DCR, Virginia Department of Forestry and others to promote green infrastructure planning as a strategic approach to conservation, utilizing an ecosystem-based process of community involvement and science.

Green infrastructure planning supports NPS units by recognizing the value and function of protected resource lands as a component of a broader landscape network. Likewise, NPS units can play a role in supporting and assisting the creation of these physical networks to connect critical resource lands. In addition, support can be provided through the RTCA program, which is tasked with "implementing the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America." RTCA has launched a partnership with The Conservation Fund to support the development of community-based green infrastructure networks.

Special Studies: Captain John Smith Water Trail, and New River Wild and Scenic River.

There are two recent NPS study initiatives in Virginia:

- The U.S. Congress created the Captain John Smith Chesapeake National Historic Trail with more than 2,300-miles of water trail throughout the Bay area. This is the nation's first all-water national historic trail and will commemorate Captain John Smith's 1607 to 1609 exploration of the Chesapeake Bay
- A study of the New River is underway to determine its eligibility for Wild and Scenic River designation.

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The importance of natural forest ecosystems to human well-being cannot be overstated. Forests provide raw materials for food, fuel and shelter. In forests, ecosystem components such as microorganisms, soils and vegetative cover interact to purify air and water, regulate the climate and recycle nutrients and wastes. Without these and many other ecosystem goods and services, life as we know it would not be possible. —United States Forest Service

The United States Department of Agriculture's Forest Service administers the 1.8 million-acre George Washington and Jefferson (GW-Jeff) National Forests in Virginia. This National Forest constitutes nearly 50 percent of the public outdoor recreation land in the Commonwealth. The Forest stretches the length of the western portion of the state and has acreage in 31 western counties.

Findings

- The National Forests are managed for multiple uses and sustained yield. This means that all approved uses will be accommodated to the capacity of the land to support these uses without degradation.
- Recreation use on the GW-Jeff National Forests for calendar year 2006 was estimated at 1.37 million visits.
- The 1.8 million-acre GW-Jeff National Forests provides dispersed recreation opportunities.
- The 17 designated wilderness areas on the GW-Jeff National Forests provide the majority of wilderness opportunities in the state.
- The National Forests provide the only publicly managed motorized trails in Virginia.
- The GW-Jeff National Forests provides comprehensive equestrian trail systems with campgrounds, a range of trail types and lengths, and support facilities for horse riders.

Recommendations

The U. S. Forest Service (USFS) should:

- Continue to develop new partnerships to market recreational opportunities and rural economic development through tourism; work with the Department of Conservation and Recreation (DCR), Virginia's Blue Ridge Highlands Tourism, Inc., Shenandoah Valley Tourism Association, and the Virginia Tourism Corporation to develop regional and international marketing strategies to showcase Virginia's outdoor recreation opportunities.

- Retain manageable size parcels to avoid fragmentation on USFS lands.
- Continue to place program emphasis on areas designated by Congress such as the Appalachian National Scenic Trail, Mount Rogers National Recreation Area, Mount Pleasant Scenic Area, and Wilderness Areas.
- Identify opportunities to exchange land that consolidates public ownership; and enhance access to the land and water resources of national forest lands.
- Study the potential for National Forest Scenic Byways to become part of the Virginia Byways system. The USFS should work cooperatively with local communities, the Virginia Departments of Transportation, Historic Resources and Conservation and Recreation to develop Virginia Byways that have historic, cultural, scenic and recreational themes.
- Continue partnerships with the Department of Historic Resources (DHR) to enhance the preservation of historic and cultural sites; interpretation of cultural, historic and natural resources; and exchanging cultural resource information with the State Historic Preservation Officer (SHPO).
- Survey and protect natural heritage resources on national forest lands.
- Continue to plan for and develop outdoor recreational facilities compatible with National Forest objectives and that meet needs identified in the *2007 Virginia Outdoors Plan*.
- Facilitate the activities of guide services and outfitters who provide equipment and access to the backcountry areas of National Forests for persons who lack the gear, time or skills to access these areas on their own and incorporate education for backcountry skills.
- The George Washington and Jefferson National Forests should continue to work with the DCR to transfer management of New River Campground adjacent to the New River Trail State Park.



Cascade Falls in Giles County. Photo by USFS

George Washington and Jefferson National Forests

The USDA-Forest Service is the largest federal supplier of outdoor recreation in the nation. Recreation use on the George Washington and Jefferson National Forests for calendar year 2006 was estimated at 1.37 million visits. The USFS has a strong commitment to meeting the recreation needs of forest users and they have intensified their management of outdoor recreational areas in an effort to increase the carrying capacity while protecting the resource. A focal point for outdoor recreation, the national forest lands are vital to satisfying the increasing demand for dispersed natural resource-based recreation opportunities. The forests also provide spectacular upland scenery, unique ecosystems, trails and many other nature-based recreation opportunities. A comprehensive forest roads system, the Blue Ridge Parkway and 2,000 miles of trails, including the Appalachian National Scenic Trail, facilitate easy access to the forest. The proximity of large urban areas promotes high volume urban escapes, and the more rural lands are the backyard playgrounds and tourism attractions for many smaller communities.

National forests differ from national parks and other federal lands in their management concept. The multiple-use sustained yield concept ensures the continued provision of forage, recreation, timber, water, wilderness and wildlife resources needed by this and future generations. Although the opportunities for outdoor recreation are extensive and the public demand for these opportunities is seemingly endless, the forests' capability to meet these demands is neither static nor endless. Visitor preferences can shift over time, and both changing financial limitations and environmental impacts must be considered. The recreation management objective of the USFS is to enhance public use and enjoyment of its land. National Forest wilderness areas provide unique primitive recreation experiences. Congressionally designated, these areas optimize the natural processes of the ecosystem with generally minimal human activity. There are 17 designated wilderness areas in the George Washington and Jefferson National Forests with an additional 18 areas inventoried and found to have potential as wilderness areas or as additions to existing designated wilderness areas. Two of these areas, The Priest and Three Ridges were designated as Wilderness areas in 2000. The George Washington & Jefferson National Forests are the largest suppliers of primitive, backcountry recreational opportunities in Virginia. The designated wilderness areas ensure that these opportunities will be available for future generations.

In southwestern Virginia, the natural resources, especially national forests are major recreational destinations. The New River Recreation Area, adjacent to the New River in Carroll County, contains a campground and picnic area that complements the New River Trail State Park. This facility allows visitors direct access to the state park and to the river for hiking, bicycling, walking, fishing, tubing and boating. This facility also anchors the eastern end of the Virginia Highlands Horse Trail. Other significant recreation areas include the Mount Rogers National Recreation Area, and the Mount Pleasant National Scenic Area.

These are divided into several ranger districts to help distribute management resources throughout the Forest. Each Ranger District offers its own unique variety of special places, recreational resources, scenic areas, and outstanding trails. A description of these resources is available for each Ranger District on the USFS web site. An abbreviated example for one district follows.



High Knob Observation Tower in the Clinch Ranger District of the George Washington and Jefferson National Forests. Photo by USFS.

Glenwood-Pedlar Ranger Districts

<http://www.fs.fed.us/r8/gwj/gp/index.shtml>

Situated in the picturesque Blue Ridge Mountains, the Glenwood & Pedlar Ranger Districts stretch over 223,000 acres from just south of Waynesboro, VA to just north of Troutville, VA. Recreation opportunities abound for visitors, ranging from a short day hike along a shaded stream to a week-long backpacking trip up and down rugged mountain trails. There are over 300 miles of hiking trails, including approximately 120 miles of the Appalachian National Scenic Trail. The 65-mile Glenwood Horse Trail provides a variety of experiences for the horse enthusiasts, while the South Pedlar ATV Trail System is available to those wanting to ride their ATV's and dirt bikes.

Camping is available in the area as well as the opportunity to explore five wildernesses, St. Mary's, The Priest, Three Ridges, James River Face and Thunder Ridge. Also included in this district area is the Mount Pleasant National Scenic Area.

Special management areas

The National Forest also contains many special areas that have their own enabling legislation and special management direction. Examples of two of these follow.

Mount Pleasant National Scenic Area

http://www.fs.fed.us/r8/gwj/gp/recreation/trails/hiking/mt_pleasant/index.shtml

The Mount Pleasant National Scenic Area is located in the USFS Glenwood & Pedlar Ranger Districts. The area was established in the US Code under Title 16, Chapter 2, Subchapter II §545a. The 7,580-acre scenic area was established in 1994 within the George Washington National Forest. The Secretary of Agriculture administers the scenic area. As part of this designation, a management plan was developed for the area restricting new permanent roads and timber harvesting within the scenic area, except as necessary for control of fire, insects and diseases. Motorized travel is allowed on State Route 635 and on Forest Development Road 51. All other motorized travel is not permitted within the scenic area.

Mount Rogers National Recreation Area

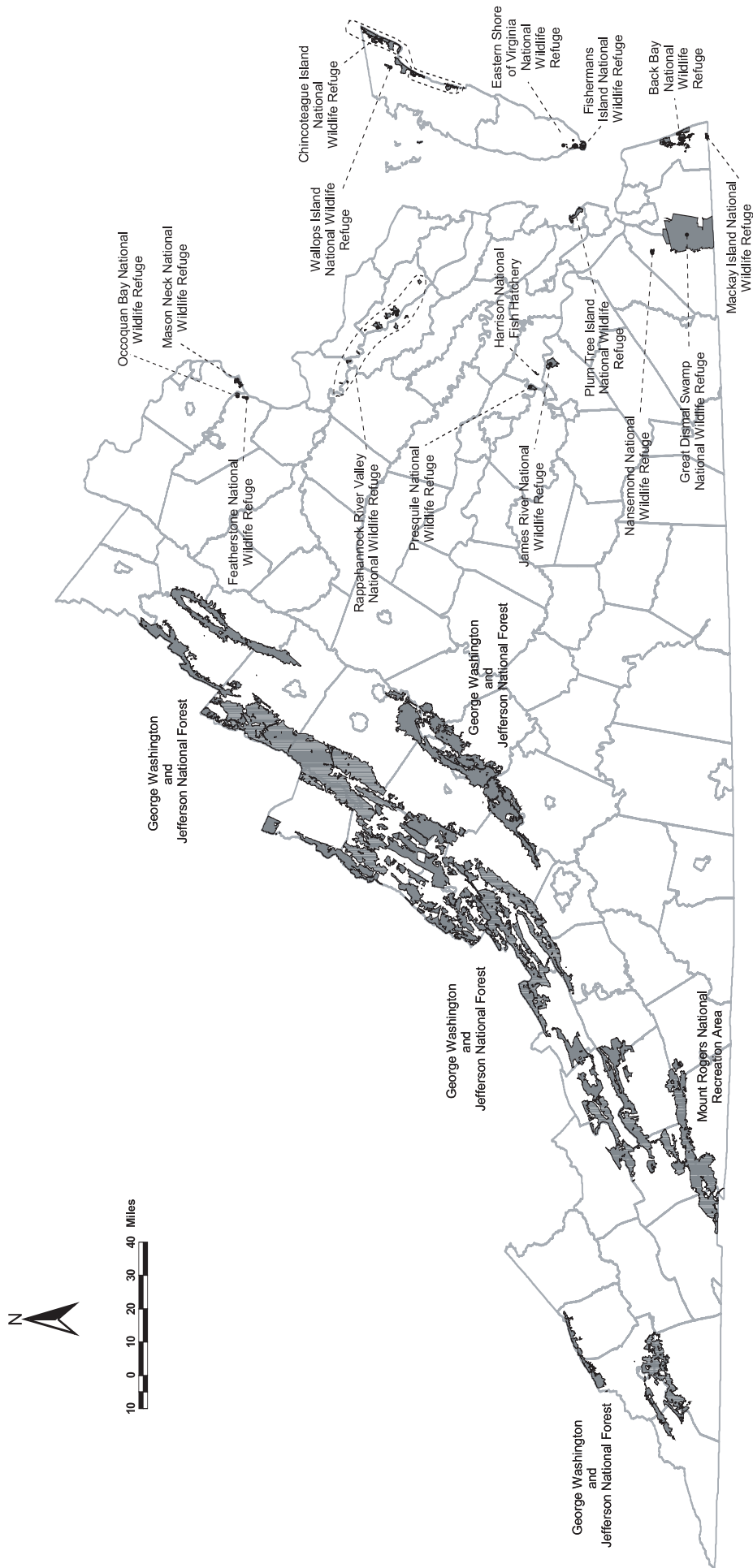
<http://www.fs.fed.us/r8/gwj/mr/>

The Mount Rogers National Recreation Area (NRA) was established by Congress to help bring eco-tourism benefits to an economically depressed region of the state. Located near the Virginia, North Carolina, and Tennessee state line intersection, the NRA's developed campgrounds, extensive trail system, variety of recreation settings, and spectacular scenery attracts visitors from throughout the country. These visitors have contributed significantly to the economy of the region. As an example, the Virginia Creeper Trail, 16 miles of which lie within the NRA, has been a significant economic generator for the Town of Damascus which lies on the southern end of the Mount Rogers NRA.

Horseback riding in Mount Rogers' Crest Zone is rapidly out-pacing the carrying capacity of the trails and the fragile alpine ecosystem. The U. S. Forest Service conducted a 'Limits of Acceptable Change' analysis of the crest zone to determine the best combination of management actions to accommodate appropriate levels of recreational use and to protect the resource. Some actions that have been undertaken to provide alternatives to trail riding in the crest zone are the extension of the Virginia Highlands Horse Trail to the New River Trail State Park and the ongoing development of the East End Horse Trail complex that contains several campsites and staging areas.

Mount Rogers has the potential to be an even greater recreation magnet for the eastern United States. Unfortunately, because of limited funding it has never achieved its potential as envisioned by the enabling legislation.

Map IX-2. National Forest and Wildlife Refuges



For if one link in nature's chain might be lost, another might be lost, until the whole of things will vanish by piecemeal. —Thomas Jefferson

The U.S. Fish and Wildlife Service (USFWS) manages 15 National Wildlife Refuges (NWR) and one national fish hatchery in Virginia comprising more than 161,032 acres. The refuges are managed primarily to provide habitat and to protect valuable ecosystems; however, they also provide significant outdoor recreational opportunities. Some of the refuges are grouped together into complexes with one project leader managing two or more refuges. The following discussion provides additional information about the role of the USFWS in meeting Virginia's outdoor recreation and open space needs.

Findings

- The NWR System Improvement Act of 1997 provides guidance for management and public use of the refuge system and requires each refuge in the system to prepare a comprehensive conservation plan by 2012.
- A key provision of the act defines compatible wildlife-dependent recreation as a legitimate general public use of the system and establishes the following activities as appropriate public uses: hunting, fishing, wildlife observation, photography, environmental education and interpretation.
- The refuge system helps to fulfill the following conservation objectives:
 - To preserve, restore and enhance the natural ecosystem of all species of animals and plants, including endangered or threatened species.
 - To perpetuate migratory bird resources.
 - To preserve the natural diversity of plants and animals.
 - To provide an understanding of wildlife ecology while offering refuge visitors safe, wholesome and enjoyable recreational experiences.
- Level or declining budgets for refuges nationwide, and accompanying increases in fixed costs, have caused some refuges in Virginia to reduce recreational opportunities.

Recommendations

The USFWS will coordinate and implement the following recommendations with regard to outdoor recreation and the NWRs.

- USFWS should continue to explore opportunities for partnership between the USFWS and others to provide compatible recreational and environmental education for Virginians.



Teacher Training at Presquille National Wildlife Refuge. Photo by Friends of Chesterfield's Riverfront.

- USFWS should evaluate significant areas where the USFWS can increase the availability of its resources for compatible recreational uses, especially those that are wildlife-dependent.
- The Harrison Lake National Fish Hatchery should remain in operation and sufficient funding be provided in order to maintain its important function in restoring anadromous fish to the Bay and its rivers, as well as provide public recreation opportunities.

National Wildlife Refuges and Fish Hatcheries

- USFWS should continue maintenance of the agreement allowing access through Back Bay NWR to False Cape State Park that accommodates the wildlife resources of the refuge and park visitors.
- USFWS should continue to explore opportunities to acquire additional sites along the Potomac River to help protect eagle habitat and other natural heritage resources.
- The proposed expansion of Plum Tree Island should be evaluated to possibly include public access to Back River and Lloyd Bay for fishing and wildlife observation.
- The westward expansion of Back Bay NWR should include provisions for canoeing and kayaking and bank fishing. This may be accomplished by renovating former boat ramps and through partnerships with Virginia and the City of Virginia Beach. High priority should be given to the relocation of the visitor center to the western side of Back Bay to improve accessibility to the refuge for environmental education.
- Continue to work closely with National Park Service and private partners to optimize compatible recreational opportunities at Chincoteague NWR and Assateague Island National Seashore while protecting sensitive beach habitat.

National Wildlife Refuge System Improvement Act

The National Wildlife Refuge System Improvement Act, signed into law October 9, 1997, provides guidance for the management and establishment of a national network of lands and waters deemed appropriate for conservation, and it is designed to encourage public access to the refuge system. As defined by the act, the mission of the refuge system is to *administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*

A key provision of the act defines compatible wildlife-dependent recreation as a legitimate general public use of the refuge system. It also establishes the following six activities as appropriate: hunting, fishing, wildlife observation, photography, environmental education and interpretation. The act establishes a formal process for determining compatible public use and retains refuge managers' authority to use sound professional judgement in determining whether or not that use will be permitted.

The act also requires each refuge in the system to prepare a comprehensive conservation plan within 15 years after passage of the bill and to allow for active public participation during the preparation and revision of the plan.

Conservation objectives

The refuge system helps to fulfill the following conservation objectives: 1) to preserve, restore and enhance the natural ecosystem of all species of animals and plants, including endangered or threatened species; 2) to perpetuate migratory bird resources; 3) to preserve the natural diversity of plants and animals; and 4) to provide an understanding of wildlife ecology while offering refuge visitors safe, wholesome and enjoyable recreational experiences. Planning for priority public uses should be based on the capacity of an area to provide a quality experience, not its ability to accommodate quantity.

Funding

While refuges in Virginia have enormous potential to provide additional high quality wildlife-dependent recreational opportunities, the federal budget for the NWR system will likely remain level, at best, over the next several years. With salaries, fuel and other fixed costs rising, a level budget results in a decreased ability to conduct necessary wildlife and habitat management activities. Three refuges in Virginia (James River, Plum Tree Island and Presquile) have been placed in preservation status, meaning that they will be minimally staffed and limited in the types and amounts of recreation they provide. USFWS will seek to invigorate existing partnerships and develop new ones to meet the challenges created by declining budgets. However, it is certain that refuge visitors will witness some declines in the type and amount of available recreational opportunities over the next several years.

National Wildlife Refuges in Virginia

For the location of these refuges see Map IX-2.

Great Dismal Swamp and Nansemond National Wildlife Refuges

The Great Dismal Swamp NWR, established 1974, lies in southeastern Virginia and northeastern North Carolina. The seasonally flooded wetlands consist of more than 111,200 acres. Lake Drummond, which is 3,100 acres and one of only two natural lakes found in Virginia, lies in the center of refuge. The refuge was

established to restore and maintain the historical natural biodiversity of the Great Dismal Swamp.

Habitat management issues include restoration of the globally rare Atlantic white cedar forest and conservation and management of the water resources, which are vital to the native wildlife and varied plant communities of a swamp ecosystem.

A variety of wildlife-dependent recreational opportunities are available on the refuge including hunting, fishing, wildlife observation, interpretation, wildlife photography and environmental education. Hiking, biking, boating and vehicular access help to facilitate these uses. Current resources include more than 80 miles of trails for hiking and biking, with most use focused at the Washington Ditch and Jericho Lanes entrances where parking is available. An auto tour to Lake Drummond is available with a special day pass from the refuge headquarters during business hours.

The refuge's comprehensive conservation plan calls for expansion of the public use program. Among other additions, a new visitor center is planned for the abandoned Highway 17 corridor in Chesapeake and a visitor services center and environmental education pavilion in Suffolk. The plan will also add an annual bear hunt to the refuge's hunting opportunities.

The Nansemond NWR, a satellite facility of the Great Dismal Swamp Refuge, is approximately 423 acres of marshland transferred from the U.S. Navy through the surplus property program. The facility is closed to public use.

Back Bay National Wildlife Refuge

In 1989, the USFWS received approval to expand the Back Bay NWR to the north and west of Sandbridge and along the western shore of Back Bay. When complete, the 6,340-acre expansion will provide additional protection for the marshes and fastlands (uplands above the high water mark) surrounding Back Bay and help to initiate the recovery of this important resource. Acquired acreage in 2006 was 9,102 acres. This refuge has an extensive environmental education program that promotes appreciation for the resource and provides some appropriate public use of these federal lands. In 2005, 4,889 school children participated in outdoor classroom activities at the refuge. After acquiring the lands from willing sellers, the USFWS will evaluate the suitability of these areas for incorporating compatible recreational opportunities. Among the facilities under consideration are water access points, fishing areas, wildlife observation decks, trails and environmental education centers.

A key issue concerning Back Bay NWR is the matter of access to False Cape State Park through the refuge. It is extremely important that the agreement be maintained, which allows access to False Cape State Park to accommodate park visitors and the wildlife resources of the refuge. The final Memorandum of Understanding related to park access was completed in the fall of 1996. Continued monitoring of that access will allow for enhanced educational and recreational opportunities at one of Virginia's most unique parks.

Mackay Island National Wildlife Refuge

Mackay Island NWR is located on the north side of Currituck Sound, straddling the Virginia-North Carolina border. The refuge was established to provide wintering habitat for greater snow geese and other waterfowl and now totals 8,024 acres. Of this, 824 acres are in Virginia. Recreational opportunities include wildlife observation, wildlife photography, deer hunting and fishing.

Chincoteague National Wildlife Refuge

Chincoteague NWR, one of the country's most-loved refuges, receives more than 1.4 million visits each year from people from all 50 states and numerous foreign countries. Visitors are treated to abundant bird and other wildlife, pristine beaches, accessible trails, and a variety of interpretive and educational programs. The state-of-the-art Herbert H. Bateman Educational and Administrative Center is equipped with 5,000 square feet of interactive exhibits, an auditorium, classroom and sales outlet. The center is an exemplary building for environmentally friendly construction. In addition, the refuge provides opportunities for the public to enjoy wildlife-dependent recreation, including hunting and fishing.

Featuring more than 14,000 acres of beach, maritime forest, and freshwater and saltwater wetlands, Chincoteague Refuge manages this unique barrier island ecosystem to allow many species of wildlife to co-exist. Originally established in 1943 for the greater snow goose, the refuge's scope of work has broadened to include the more than 320 species of birds that are known to occur on the refuge along with other native plants and animals. Several threatened and endangered species, including the endangered Delmarva Peninsula fox squirrel and the threatened piping plover, benefit from the refuge's management activities.



Wetlands at the Eastern Shore of Virginia National Wildlife Refuge.
Photo by Virginia Witmer/Virginia CZM Program.

Eastern Shore of Virginia and Fisherman Island National Wildlife Refuges

Eastern Shore of Virginia NWR was established in 1984 when the USFWS obtained the old Cape Charles Air Force Base. This 1,123-acre refuge is located at the southern tip of the Delmarva Peninsula and is a hemispherically important stopover area for migrating neo-tropical bird species. The USFWS, with its partners (Virginia, local governments and the private sector) are identifying critical areas for habitat conservation in Northampton County.

The refuge has a state-of-the-art visitor center, interpretive trails that include an historic coastal artillery site, wildlife observation areas and a photography blind. There is big game hunting for deer during the Virginia archery and gun seasons. The refuge participates in a number of local festivals including the Eastern Shore Birding and Wildlife Festival. The refuge has been identified as an anchor site in the *Birdwatcher's Guide to Delmarva*. It is also a site for the Virginia Coastal Birding Trail, and has been designated as an Important Bird Area by the National Audubon Society.

Fisherman Island NWR was established in 1969 and has been managed by the Eastern Shore of Virginia National Refuge since 1984. This 1,850-acre refuge is a stopover area for neo-tropical bird species during

spring and fall migrations, and is a major nesting site for American oystercatchers, brown pelicans and other beach nesting birds. The refuge is closed to the public due to the sensitive habitat, but guided tours are conducted during the non-nesting season.

Eastern Shore of Virginia and Fisherman Island refuges completed their Comprehensive Conservation Plan in 2004, in accordance with the 1997 Refuge Improvement Act. Public involvement occurred throughout the process. The plan contains recommendations for enhanced, wildlife-dependent, public recreational and educational opportunities.

Eastern Virginia Rivers National Wildlife Refuge Complex

In September 2000, James River, Presquile and Rappahannock River Valley NWRs were administratively consolidated as the Eastern Virginia Rivers NWR Complex. Plum Tree Island, formerly administered from Back Bay refuge, was added to the Eastern Virginia Rivers Complex in 2003. The headquarters for the complex is located in Warsaw, Virginia.

Presquile NWR is a 1,329-acre island in the James River, in the northeast corner of Chesterfield County. Historically, a USFWS-operated ferry provided access for pre-scheduled groups to view wildlife, enjoy the 0.75-mile interpretive trail and participate in a limited deer-hunting program. In 2001, concern for visitor safety prompted the USFWS to discontinue use of the ferry for visitor transportation. In 2006, the refuge was placed in preservation status due to budget constraints. Some limited public use may still be available during pre-scheduled special events, and a pontoon boat is available on those occasions for visitor transportation. The refuge deer hunt will continue, but no hunter transportation will be provided.

James River NWR, established in 1991, currently consists of approximately 4,300 acres of primarily forested habitat in Prince George County. The refuge and surrounding area supports one of the largest summer juvenile bald eagle concentrations in the east. Visitor and education facilities that were proposed in a 1991 station management plan will be re-evaluated during the comprehensive conservation plan process, scheduled to begin in 2009 (along with Presquile). James River refuge has also been placed in preservation status due to declining budgets. The refuge will remain open for limited deer hunting during the shotgun season, but no other visitor services are currently being planned.

Rappahannock River Valley NWR was established in 1996 along a 50-mile stretch of the lower portion of the river and includes parts of seven riverfront counties. The refuge currently contains nearly 7,800 acres with a protection target of 20,000 acres. Refuge wetlands and associated uplands provide critical habitat to a variety of plants, migratory birds, fish and other wildlife, including the threatened bald eagle and sensitive joint vetch. The refuge's Wilna Tract is open daily for freshwater fishing, photography and wildlife observation, and several tracts are open for public deer hunting in the fall. Three other refuge properties are open for wildlife observation by advanced reservation. The refuge began preparation of its comprehensive conservation plan in late 2005, with a scheduled completion date of mid-2007.

Plum Tree Island NWR in Poquoson is an extensive marsh system of more than 3,500 acres. The island was formerly an Air Force bombing range, which, because of potential hazards, is not available for public use. A boundary expansion in 1994 created the opportunity to acquire additional lands to the west of Plum Tree Island. New acquisitions would afford additional habitat protection and could provide opportunities for public hunting and wildlife observation. The 225-acre Cow Island Tract, acquired in 1996, was not part of the bombing area and is open for waterfowl hunting by permit. Plum Tree Island has also been placed in preservation status.

Potomac River National Wildlife Refuge Complex

Potomac River NWR Complex includes the Mason Neck NWR, Occoquan Bay NWR and Featherstone NWR. The three refuges comprise 3,247 acres located near the confluence of the Occoquan and Potomac rivers, 20 miles south of Washington, D.C.

Mason Neck NWR is located in Fairfax County and consists of 2,277 acres of mature oak-hickory forest, freshwater marshes, and 4.4 miles of shoreline. Mason Neck was established in 1969 as the first federal refuge preserved specifically for the protection of nesting, feeding and roosting habitat for the bald eagle. Seven bald eagle nests occur on or near the refuge, which has a wintering population of 60 eagles. One of the largest great blue heron rookeries in the Mid-Atlantic area (more than 1,400 nests) is located on the refuge. The refuge has more than 3.5 miles of hiking trails including the three-quarter-mile Great Marsh Trail which is paved and meets standards set

aside by the Americans with Disabilities Act (ADA). In addition, there is the three-mile hiking and biking trail known as High Point Trail connecting Gunston Hall, the refuge and Mason Neck State Park. High Point Trail also meets ADA standards. In cooperation with the adjacent state park, the refuge has a managed deer hunt each fall.

Occoquan Bay NWR was established in 1998 through the transfer of the Army's Woodbridge Research Facility to USFWS. Occoquan Bay NWR consists of 644 acres of native grassland, forest and tidally influenced marsh and wetlands. The unique variety and location of habitats on this relatively small refuge provides outstanding birding opportunities. The bird species list exceeds 220. Refuge management focuses on grasslands and grassland nesting birds. The refuge has six miles of hiking trails and roads and an auto tour loop. Future plans include an office and visitor center complex. The refuge has a managed deer hunt, and in cooperation with the Virginia Department of Game and Inland Fisheries, hosts a deer hunt for youth hunters.

The staff of the refuge complex also manages the 325-acre Featherstone NWR. Located near the confluence of Neabsco Creek and the Potomac River, this refuge currently has no public access.

Harrison Lake National Fish Hatchery

In 1992, the USFWS entered into an agreement with Charles City County, DCR and other state agencies to explore providing additional opportunities for recreational and environmental education at the Harrison Lake National Fish Hatchery. As part of the challenge grant, the USFWS permitted construction of barrier free recreational fishing and picnic areas. This construction included two fishing piers, a boat dock, wheelchair-accessible asphalt paths and parking area, and six picnic tables, two of which are also wheelchair-accessible. In addition, a watchable wildlife area has been established, and a nature trail extension was made. These projects, most of which were cost-shared by state and local agencies, were found to be compatible with the mission of the hatchery and resulted in only minor environmental disturbance. Plans for additional facilities are dependent on funding, compatibility with the mission of USFWS and Harrison Lake National Fish Hatchery, and environmental considerations. Any additional facilities constructed will be accessible in accordance with the Americans with Disabilities Act.

I would rather build a park where the plain people of Virginia can spend a pleasant outing and find pleasure and recreation close to nature, than to build a great church or endow a cathedral. —Will Carson

While the Virginia State Parks system was authorized in 1926 by an act of the General Assembly, it was not until 1936 that Virginia opened its first six state parks. In 2006, the Virginia Department of Conservation and Recreation (DCR) managed more than 66,000 acres of state parks lands, which had grown in size to include 34 state parks and associated historic and natural sites. Many existing sites have expanded in acreage and several have received historic or natural area preserve designation. In addition, as of January of 2007, DCR had acquired and land-banked property for five new state parks. Attendance at Virginia State Parks in 2006 exceeded seven million people, as compared to 91,000 in 1936 and 6.3 million in 2000. The following discussions detail the parks system's role in meeting the Commonwealth's demand for outdoor recreation opportunities and open space.

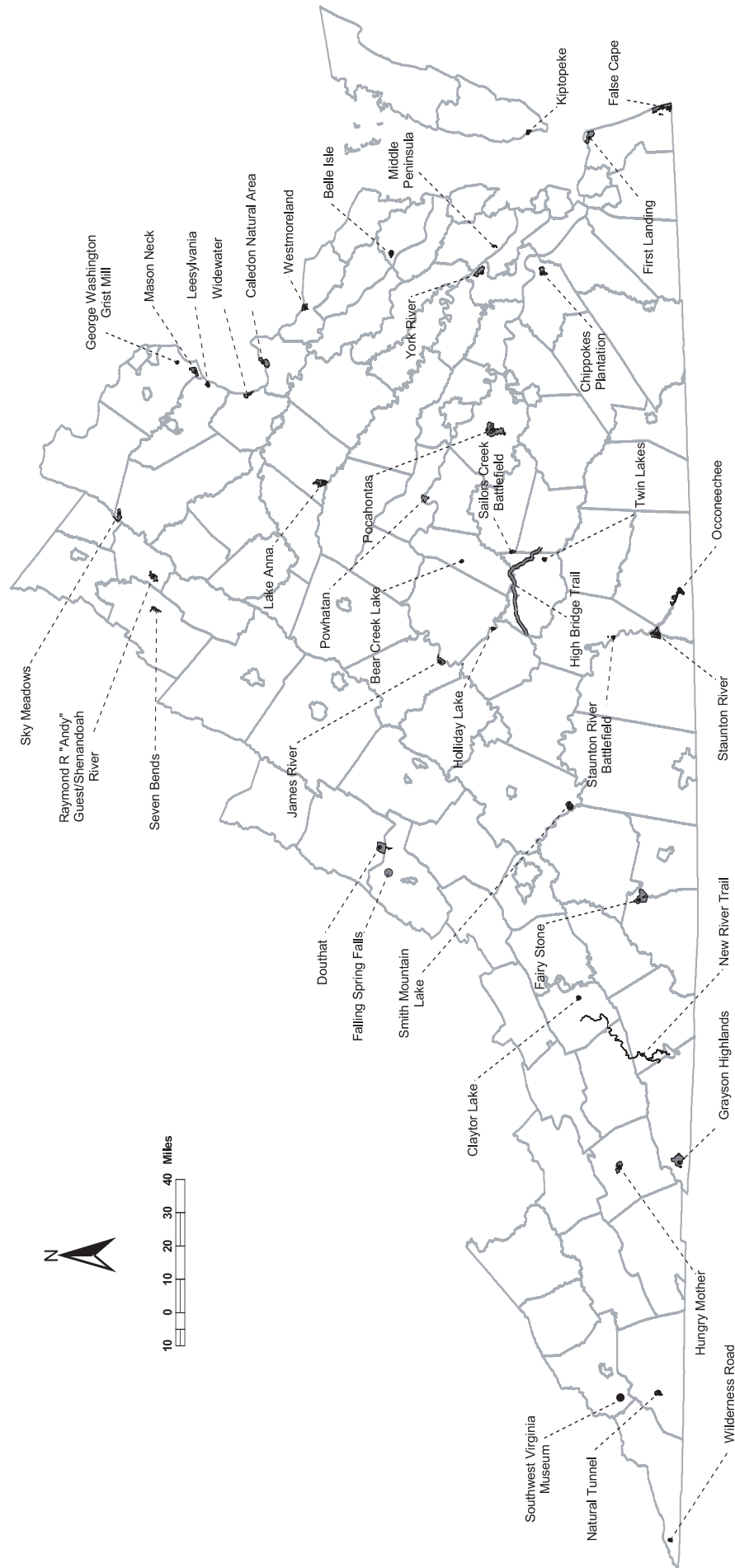
Findings

- Attendance at Virginia State Parks has continued to increase, exceeding seven million people in 2006. Most recent estimates are that approximately 40 percent of visitors come from outside the Commonwealth.
- State parks visitors provide an estimated \$157 million to the state's tourism industry. This is particularly important for many of the rural communities in which several state parks are located.
- From 2002 to 2006, state parks acreage increased by 6,900 acres, including land acquired for five future parks: High Bridge, Powhatan, Middle Peninsula, Seven Bends and Widewater state parks. There is a need for an additional 12,000 acres of park land to meet the standard for state park acreage based on the population projection for 2010.



Family tent camping. Photo by DCR.

- According to the 2006 *Virginia Outdoors Survey* (VOS), the top three reasons the public supports Virginia's State Parks system are because they conserve natural resources, provide people places to explore and enjoy nature and their cultural heritage, and provide places for walking, running and other activities that contribute to a healthy lifestyle.
- According to the 2006 VOS, the top rated facilities or activities that should be provided by state parks are trails, visitor centers, campgrounds, nature, historic and educational programs, play grounds, and water access for swimming, fishing and boating.
- In 2006, Fairy Stone, First Landing (formerly known as Seashore), Hungry Mother, Staunton River and Westmoreland state parks were listed on the state and national registers of historic places for their significance as Civilian Conservation Corps parks. Douthat State Park was listed in 1986.
- Since 2002, Virginia's governors and General Assembly have provided funding for 88 additional state parks positions. These positions have helped to address ongoing staffing needs associated with new facilities and responsibilities.
- As a result of the proceeds provided by the 2002 State Parks and Natural Areas General Obligation Bond (GOB), the number of parks with new or additional cabins or family lodges will increase from 11 to 18 parks; 23 parks will offer camping, including seven new campgrounds, and improvements or expansions to eight existing campgrounds; six parks will have equestrian campgrounds; 11 parks will have new or renovated visitor centers ; two parks will have new meeting facilities; and three parks will have new or renovated picnic areas and shelters (see Map IX-3).
- The 2002 GOB also provided \$2.8 million for enhancing and improving trails across the parks system. In 2005, a Memorandum of Understanding was established between the International Mountain Bicycling Association (IMBA) and DCR. IMBA has provided assistance in trail design and with training on the development and construction of sustainable trails. In 2007, Virginia State Parks had more than 490 miles of trail, including four parks with a combined 106 miles of rail-trail.
- DCR leadership made a commitment to use bond proceeds to construct new buildings using environmentally-friendly designs and materials. Accordingly, Wilderness Road State Park's visitor center is the first state-owned building to achieve Leadership in Energy and Environmental Design (LEED) certification. DCR has been recognized for this green building and currently has several additional park facilities in planning that will be designed to meet LEED standards.
- State parks are increasingly being used as venues for meaningful outdoor education opportunities. More than 12,000 interpretive and educational programs with approximately 241,000 attendees were offered in 2006, compared to 6,800 programs with 190,000 attendees in 2002.
- *Virginia's State Parks... Your Backyard Classroom* consists of SOL-based, teacher-led science and social studies activities for kindergarten through 12th grade and is available in three versions. The first version was for the Chesapeake Bay area parks and was produced in 1990 and revised in 1999. Versions have now been produced for the Piedmont and Mountain regions parks.
- Established in 2002, the Virginia State Parks Youth Conservation Corps was piloted at six state parks. By 2006, 19 parks were offering programs with 195 participants ranging in age from 14 to 17 years old.
- Virginia's population is becoming more culturally diverse. This increased diversity has led to changes in park management to address the need for multilingual staff and information, and an understanding of cultural differences as it relates to experiencing outdoor recreation and park usage.
- Volunteers remain an important source of alternative support and labor. Volunteer hours in state parks have increased by 23 percent since 2000, totaling more than 142,000 hours in 2006. Established in 1997, one of the key volunteer citizen organizations is the Virginia Association for Parks, which fosters the development of local support groups for state and federal parks in Virginia.
- In 2006, Virginia State Parks added cabins to its internet reservation system. The number of internet cabin reservations increased from 770 during the first three months of 2006, to 3,400 during that same time period in 2007. The internet reservation process allows potential customers to browse availability and make decisions on their own time and at their own convenience, as well as reduces the need for additional reservation staff.
- Operational funding is drawn from a combination of general funds and park-generated revenues (primarily user fees). Park-generated fees have increased to approximately 40 percent of the overall funding of operations. However, the ability to increase fees is reaching a threshold for users and will be limited by the number of revenue generating facilities and pro-



grams that are available. Additional fees will be generated as new facilities are provided. Some opportunities exist to develop new activities and offerings through the development of special events and group activities. A stable source of funding is needed to cover the full operational costs of the system.

- Requested by the General Assembly and conducted by state university researchers on behalf of DCR, a 2004 study showed that state parks fees continue to be comparable to fees charged for like facilities in the private sector.

Recommendations

- Although increases in funds and staff have been achieved in recent years, continued efforts are needed to achieve the full rebenchmarking of staff and operational funds for existing state parks.
- Newly acquired state parks should be land-banked until adequate funding is provided for development, operations and staffing. Funding for the five future parks should be phased so that all are open and operational by 2012, which would be 10 years after the passage of the 2002 GOB.
- State park resource management plans should be updated based on the natural, cultural and historic resources of the park, and management objectives should be established to ensure those resources are enhanced and protected for future generations. Resource management plans should be developed for the five future parks, and existing plans updated in harmony with the five-year review of park master plans.
- To meet the high demand for trails within state parks, increased efforts are needed to provide for more and varied types of trails, while minimizing the potential degradation to the natural and cultural resources of the site.
- With the strong national emphasis on the “nature-deficit disorder” plaguing the country’s youth, DCR should coordinate with other agencies, organizations and groups to expand interpretive and educational programming offered in the parks and encourage greater park utilization through outreach to schools and surrounding communities.
- To meet the challenges of changing demographics of park users, Virginia State Parks should continue to explore new park management opportunities that will encourage and facilitate the safe enjoyment and protection of state parks resources and facilities by all visitors.

- Virginia State Parks should promote and expand the Youth Conservation Corps program so that it is offered in each state park during summer months.
- In addition to camping and cabins, Virginia State Parks should expand the opportunities for online reservations for other state parks facilities, program offerings and recreational activities.
- DCR should develop and install touch screen electronic information stations (kiosks) in all parks. The stations will provide virtual tours of trails, park information and maps, area amenities and other relevant park user information.
- DCR should develop master plans for new park sites and revise plans for parks with expanded acreage in accordance with the *Code of Virginia*. Plans should recommend structure design using sustainable and energy efficient construction methods, striving for LEED certification where possible.

Need for a state parks system

On June 15, 1936, in one day, Virginia opened an entire state parks system consisting of six parks that totaled nearly 19,000 acres. Facilities in those first six parks were developed by the Civilian Conservation Corp. The leaders of the movement to create a state parks system recognized the value to individuals and the communities around those parks. Three key reasons were identified for acquiring land for state parks: being in nature could serve as a tonic to the mind, body and spirit; the protection of significant natural and cultural resources for the enjoyment of future generations; and the park’s ability to serve as an economic engine to the community and region.

By 1965, the parks system had grown to include nine parks, three recreational areas, several historic sites and six natural areas. In that same year, the state released *Virginia’s Common Wealth*, its first comprehensive study of outdoor recreation. That study stated, “Virginia’s land and waters have abundantly nourished its citizens, in body and spirit, for nearly four centuries. To neglect these resources – to abandon their conservation – to let heedless exploitation consume them or remove them from the reach of the great majority of our citizens – is to sell their birthright for a mess of pottage. Once sold, it cannot be recovered.”

Virginia’s Common Wealth served as an evaluation of Virginians’ demand for outdoor recreation and an assessment of the state’s resources for meeting those demands. It stated that the parks system fell far short of meeting the demands of Virginia’s citizens and visitors.

State Parks

As recreational and open space needs increased over the years, Virginia State Parks have expanded and developed. In 2001, the parks received the National Gold Medal for excellence in the field of park and recreation administration and management by the National Sporting Goods Association's Sports Foundation, Inc. in cooperation with the National Recreation and Park Association. Today, the parks system continues to receive strong public support. In the 2006 VOS, 91 percent of responders agreed or strongly agreed that state parks are very important places to participate in outdoor recreation.

The following were identified as top three reasons for having a state parks system: conserving natural resources (61 percent); providing people places to explore and enjoy nature and their cultural resources (59 percent); and providing places for walking, running and other activities that contribute to a healthy lifestyle (54 percent). By 2006, the parks system had expanded to 39 state parks, historic sites and natural areas that encompassed more than 66,000 acres.

State parks planning and protection

The mission of the Virginia State Parks system is to conserve the natural, scenic, historic and cultural resources of the Commonwealth, and provide recre-

ational and educational opportunities consistent with the good stewardship of these lands, waters and facilities that leaves them unimpaired for future generations. This is accomplished through active cultural and natural resource management and by providing recreational facilities and programs that compliment these resources. It is also accomplished by limiting the development of the major state parks to only 15 percent to 20 percent of the total land area.

Maximizing the public's enjoyment of state park lands, while minimizing the impacts on the resources, requires careful planning. The department accomplishes this through the use of resource management and master plans. Such plans allow effective management of the natural and cultural resources while providing recreational opportunities for Virginians. These planning tools facilitate compatible facility development and recreational use tailored to the resource's capabilities and limitations.

A park's resource management plan and master plan are the basis for future park development. The components of a state park master plan are described in the *Code of Virginia*, § 10.200.1, state park master planning. Virginia is possibly the first state to legislatively require that its state parks have an adopted master plan prior to developing the property. To develop or



Twin Lakes State Park. Photo by DCR.

revise master plans over the five year timeframe, DCR developed an open planning process that provides multiple opportunities for public involvement and participation. The inventory information of the resource management plan is used to determine constraints on development or areas of interest that might be appropriate for trails, recreational facilities or program activities.

Funding and development

The key to successfully implementing a park resource management plan or master plan is to have the needed funding and staff to manage the resources and to construct and operate new and existing park facilities. The governor and General Assembly allocated funding for 88 additional state parks positions from 2005 to 2008. The new positions represent a significant step in rebenchmarking the parks system, taking into account new parks and new facilities that have been added with proceeds from the 1992 and 2002 General Obligation Bond packages. Even with these new positions, additional staff positions are needed to address increased operational needs to fully operate existing and new GOB facilities, as well as provide minimal staffing of newly acquired parks.

In November 2002, with 69 percent in favor, Virginians voted to expand and improve the parks system by approving the 2002 Parks and Natural Areas General Obligation Bond (GOB) Referendum. The referendum approved \$119 million for the acquisition of new state parks and natural area preserves, and 75 projects to provide additional facilities and upgrade infrastructure in existing state parks.

New developments as a result of the 2002 GOB included:

- Eleven new or renovated visitor centers.
- Ninety-six cabins in nine state parks, five of which did not have cabins.
- Nine campground loops in seven different parks, four of which did not have camping, totaling 245 new campsites.
- New equestrian areas in five state parks.
- Two parks with new meeting facilities.

These facilities required the development of miles of roads, utilities and associated parking lots. Thus, while much progress has been made in meeting development, staffing and operational needs, more needs to be done as the new parks and facilities are established. Efforts to rebenchmark the system should con-



Hiking in the State Park. Photo by DCR.

tinue and it remains a top priority for agency leadership working with the Commonwealth's elected officials.

Trails in state parks

Trails continue to receive the highest ratings of importance as an activity within the parks system. The Virginia State Parks system has more than 490 miles of trails. This includes four parks that have a combined 106 miles of rail-trail. The 2006 VOS asked how important it was for Virginia State Parks to provide certain facilities or activities. Three types of trails ranked in the top seven items in order of importance: hiking trails were first (94 percent support), bike trails were fourth (85 percent) and multi-use trails were rated seventh (82 percent). The state parks' *Your Comments Count* customer satisfaction survey also shows park hiking trails to have the highest overall rating of all surveyed activities. However, park visitors who respond to the survey also rank trails as the second highest priority for improvement, showing that while visitors greatly enjoy these trails, they also recognize that many still need maintenance and additional signage.

Through the 2002 GOB, more than \$2.8 million was identified for trail improvement projects in state parks. To ensure that the variety of trails offered are well maintained, training sessions have been provided and specialized equipment acquired. In 2005, a Memorandum of Understanding was established between the

International Mountain Bicycling Association (IMBA) and DCR to encourage the development and construction of sustainable trails in Virginia State Parks. A component of this MOU was to conduct joint training sessions for state parks staff and local IMBA volunteers on current construction techniques for sustainable trails that require minimal maintenance.

Natural and cultural interpretation and education

A primary component of the Virginia State Parks mission is to provide educational opportunities consistent with good stewardship. Interpretative programs, exhibits and signage promote public understanding and support of that mission. State parks have long provided both personal and non-personal interpretive services in the form of programs, as well as interpretive exhibits and self-guided trails. In the 2006 VOS, 81 percent of respondents ranked nature, cultural, historic and educational programs as “important” or “very important.” During 2006, roughly 12,000 interpretive programs were delivered to more than 241,000 visitors, and 40,350 students attended 1,182 environmental education programs. The national movement to reconnect children with the natural world has cut across social, political and economic lines, making state parks a perfect venue for introducing children to the outdoors.

The historic and cultural resources of Virginia's State Parks create excellent opportunities for interpretation, education and special events. In 2006, the parks system celebrated its 70th anniversary. In conjunction with that celebration, five of the original six state parks, Fairy Stone, First Landing (formerly Seashore),

Hungry Mother, Staunton River and Westmoreland, were listed on the state and national registers of historic places for their historic significance as Civilian Conservation Corps parks. Douthat State Park had already been listed in 1986. The system also possesses significant Civil War sites, as well as two significant battlefields. In addition, numerous Native American sites have been documented at state parks. In 2007, Virginia State Parks hosted several events relating to the 400th anniversary of the Jamestown Settlement, including the re-enactment of the first coming ashore of the Virginia Company settlers at First Landing State Park in Virginia Beach.

A significant component of environmental education offerings is the program entitled, *Virginia's State Parks....Your Backyard Classroom*. Three geographically based versions are available covering the Chesapeake Bay, Piedmont and Mountain regions of the state. The program consists of teacher-led science and social studies activities, which incorporate Virginia's SOLs for grades kindergarten through 12, and is designed to accommodate educational programming at any of the parks. The general public and park visitors also show great support for nature and educational programs. The 2006 *Your Comments Count Customer Survey* ranked nature-related activities (educational programs and nature programs) as three of the top five highest rated activity areas. In the 2006 *Virginia Outdoors Survey*, visitor centers ranked second in importance (88 percent) as a facility that should be provided by state parks.

Through the 2002 Bond Referendum, DCR constructed or enhanced visitor centers in 11 state parks. Many of these visitor centers are designed with discovery centers that will further enhance educational opportunities within state parks. The Wilderness Road State Park visitor center was the first LEED certified facility within the parks system and the first state-owned building to achieve this distinction. DCR also set a goal to incorporate LEED components into all new visitor centers and obtain certification when possible.

Volunteerism

Volunteerism is vital to the support of state parks. Between 2000 and 2006, volunteer hours increased 23 percent with volunteers contributing more than 142,000 hours. AmeriCorps (the National Civilian Conservation Corps), college level alternative spring break groups and various camp host programs supplement volunteers who live near parks. State parks “friends” groups are vital in organizing volunteer efforts under park staff guidance. At the state level,



First Landing State Park Visitor Center with new kiosk information sponsored by Dominion. Photo by DCR.



Lake Anna State Park. Photo by DCR.

the Virginia Association for Parks (VAFP) is an organization that fosters the development of support groups for state and federal parks in Virginia. Since its establishment in 2000, the VAFP has focused its efforts on recruiting and training volunteers, as well as advocating for our state and national parks. Their efforts have assisted in the establishment of 29 support groups.

Community economic benefits and cooperative opportunities

State parks add to the overall quality of life in every community where they exist by attracting new businesses and tourists. Visitors to state parks have a significant impact on local economies, primarily to merchants and service providers in communities surrounding parks. It is estimated that state parks visitors add \$157 million to the state's economy. In addition, parks also contribute to the local economy through park spending and jobs.

State parks offer recreational opportunities and support facilities that provide local communities with a wide range of recreational and educational experiences. Opportunities exist to expand visitor services and facilities at state parks through fee-based programming, partnerships with private and public organizations and development initiatives. Examples include the annual Bay Seafood Festival at Belle Isle State

Park and the Chesapeake Bay Center at First Landing State Park, which is cooperatively managed by the City of Virginia Beach and the Aquarium and Marine Science Center. The Chesapeake Bay Center is unique in that the facility is staffed by the City and provides self guided exhibits and information about the park and ecotourism opportunities within Virginia Beach. The Aquarium offers hands on experiences for area students and visitors with the Bay lab and education programs.

Revenue generation

Revenues generated by park visitation are an increasingly important source of funding. All park revenues are returned to the state parks system and are used for operations, maintenance and equipment. Over the past five years, revenues from "normal" park activities (camping, cabins, parking, etc.) have increased by almost \$2.3 million (40 percent) due to the combination of increased visitation, opening of new facilities and park fee increases. Parks have also become increasingly successful with "park operated concessions" (merchandise, food, swimming, etc.). These activities now generate gross revenues of more than \$3.3 million and provide an important source of funds for equipment and improvements to snack bars, stores and swimming areas.

Information on parks

One key to getting people to appreciate and enjoy Virginia's State Parks is providing them with information about facilities and activities. When asked to identify the reasons for not using state parks, respondents of the 2006 VOS identified lack of information (31 percent) and other reasons (21 percent). The predominant written comment was lack of time and location of parks being too far away (20 percent).

The use of the Internet has proven to be a popular source of information on state parks. According to the 2006 *Your Comments Count* survey, the most common source of information was the Internet (20.8 percent), followed by friends (18.9 percent). General park information and availability of program offerings can be updated more frequently on the DCR website than with printed publications. Also, the ability to make cabin and camping reservations on the Internet has expanded options for potential park users. Efforts should continue to expand online reservation capabilities to include other facilities, program offerings and activities. In 2007, electronic information kiosks were placed in each park. Visitors can use a touch screen to identify program offerings at the park, access and print trail maps, obtain information on local businesses, and additional information about the park setting. The system also provides information on Virginia's other state parks.

Future state parks needs

DCR has continued efforts to acquire and protect significant natural and cultural resources and to meet recreational needs. The selection of a state park site is based on several areas of consideration. Certain basic criteria needs to be met for a potential site to qualify for acquisition as a state park, such as the size of the tract, the presence of a significant natural or cultural resource or its proximity to a recreational lake or river. Specific criteria for state parks are referenced in Appendix C.

The official methodology for identifying the need for additional land for state parks is based on the national standard for state parks, initially developed by the National Recreation and Parks Association, which is 10 acres of state park land per 1,000 people. This standard has been used in Virginia since 1999 in response to a legislative directive to develop an overall standard for Virginia State Parks. Based on this standard and projected population growth of 7.8 million people (based on the 2000 Census), there will be a need for more than 12,000 acres of additional state

park land by 2010. By 2020, the state's population is expected to increase by more than one million, creating additional demands on the available facilities and a need for almost 20,000 additional park acres.

The northern Virginia and Hampton Roads planning districts have the greatest populations and the least available and affordable land for state parks. Addressing unmet state parks needs in these areas will remain a challenge for the foreseeable future. Acquisition targets in these two planning districts will need to be considered in areas outside the district, but that are accessible to the public who live in these regions. For example, land for one future park has already been acquired in Stafford County that could serve a portion of the Northern Virginia region. Efforts to meet additional demand for state park lands in other regions of the Commonwealth will also need to continue (see Table IX-3).

Another consideration for identifying additional park land and facilities is the amount of time a user would be willing to spend in getting to a site. At the time the state released *Virginia's Common Wealth* in 1965, the goal was to have a state park located within an hour's drive of major population centers. While coming close to achieving this goal, other factors now appear to impact Virginians' ability to access state parks. In the 2000 and 2006 VOS, the travel distance from home and a lack of time ranked as the second and third reasons for not going to a state park. In the future, consideration may need to be given to acquiring state parks within a half hour to hour travel time from major populations, in part because of rising automobile fuel costs.

In the process of developing the 2007 *Virginia Outdoors Plan*, the public identified several areas as desirable locations for future state parks:

- Augusta County, Grottoes Area
- Clarke, Frederick, Loudoun counties
- Charlottesville region - Rivanna, Tye or Mechum rivers
- Chesapeake Bay counties - Middle Peninsula, Northern Neck
- Eastern Shore (ocean side)
- Hanover County - North Anna, Pamunkey rivers
- Henry County - Mayo River
- Highland or Rockingham County
- James River (east of Richmond)

- Mecklenburg and Brunswick counties - Lake Gaston
- Northern Piedmont region - Rapidan and Rappahannock rivers
- Sussex County - Nottaway River
- Tazewell County

During the next five years, DCR anticipates focusing state parks acquisition efforts on completing the Middle Peninsula Park, continuing negotiations on the Augusta County Grand Caverns site, and further investigation of the possible acquisitions in Hanover and Henry counties and in Southern Virginia.

Table IX-3. Virginia State Parks Acreage Need Based on 10 Acres per 1,000 People

Planning District	2010 Population	Acres Needed	Current Supply	Surplus / (Deficiency)
LENOWISCO (PD1)	90,700	907	1,103	196
Cumberland Plateau (PD2)	112,700	1,127	946	(181)
Mount Rogers (PD3)	194,100	1,941	8,087	6,146
New River Valley (PD4)	173,300	1,733	583	(1,150)
Roanoke Valley-Alleghany (PD5)	271,400	2,714	250	(2,464)
Central Shenandoah (PD6)	276,788	2,768	4,243	1,475
Northern Shenandoah Valley (PD7)	211,900	2,119	2,586	467
Northern Virginia (PD8)	2,181,000	21,810	2,390	(19,420)
Rappahannock-Rapidan (PD9)	160,600	1,606	1,860	254
Thomas Jefferson (PD10)	228,600	2,286	53	(2,233)
Virginia's Region 2000 (PD11)	242,399	2,424	1,053	(1,371)
West Piedmont (PD12)	251,200	2,512	4,537	2,025
Southside (PD13)	87,900	879	5,368	4,489
Commonwealth (PD14)	105,100	1,051	3,124	2,073
Richmond Regional (PD15)	989,500	9,895	9,483	(412)
George Washington (PD16)	318,800	3,188	6,448	3,260
Northern Neck (PD17)	53,500	535	2,127	1,592
Middle Peninsula (PD18)	91,800	918	431	(487)
Crater (PD19)	168,699	1,687	1,930	243
Accomack-Northampton (PD22)	53,700	537	536	(1)
Hampton Roads (PD23)	1,629,200	16,292	9,096	(7,196)
	7,892,886	78,929	66,234	(12,695)

It is, by common consent, a good thing for people to get back to nature. —Aldo Leopold

The Virginia Department of Game and Inland Fisheries (DGIF) has statutory responsibility to manage the Commonwealth's wildlife and inland fisheries, and to protect state and federally threatened or endangered species (excluding plants and insects). The mission of DGIF is *to maintain optimum populations of all species of wildlife and fish to serve the needs of the Commonwealth; to provide opportunities for all to enjoy wildlife, inland fish, boating and related outdoor recreation; and to promote safety for persons and property in connection with boating, hunting, and fishing.*

On November 7, 2000, the people of the Commonwealth voted to amend the Virginia Constitution to include the right of all citizens to hunt and fish. *Article XI. Section 4. Right of the people to hunt, fish, and harvest game. The people have a right to hunt, fish, and harvest game, subject to such regu-*

lations and restrictions as the General Assembly may prescribe by general law. The amendment became effective January 1, 2001.

Additionally, DGIF has specific authority to acquire and develop lands and waters for public hunting, fishing and public boating access to enhance recreational use of fish and wildlife resources. DGIF is a special fund agency whose operational and capital revenue is generated through the sale of hunting and fishing licenses, boat titling and registration fees, boat sales and use taxes, a portion of federal taxes on related outdoor recreational equipment and a portion of the state sales tax on hunting, fishing and recreation-related outdoor equipment purchases.

The 2006 *Virginia Outdoors Survey (VOS)* indicates that Virginians spend 11.2 million activity days hunting, which makes it the 22nd most popular activity.



Hunting is the 22nd most popular outdoor activity. Photo by DGIF.

Freshwater fishing is the seventh most popular activity, some of which occurs on the more than 3,000 miles of trout streams and 25,000 miles of warm water rivers and streams. Boating is the 10th most popular recreation activity, and more than 50 percent of the population felt that more public access to the state's waters is needed.

Findings

- The 2006 VOS found that 50.2 percent of Virginians felt that public access to water for boating, fishing, swimming and beach use was the most needed recreation facility in the Commonwealth.
- Virginians spend almost 11.2 million activity days sport hunting annually.
- Most public hunting lands in Virginia lie west of the Blue Ridge.
- Since September 11, 2001, military bases curtailed the acreage open for public hunting. This has created a significant shortage of public hunting lands in some regions of eastern Virginia.
- Some of the demand for hunting is met on private property. The statewide recreational inventory does not include private lands available for hunting.
- Fishing is the seventh most popular outdoor recreational activity in Virginia.
- Recreational fishery resources include some of the most varied opportunities found in any state, ranging from native brook trout fishing in small mountain streams, to off-shore saltwater fishing for tuna and billfish.
- The 2006 VOS indicates that boating is the 10th most popular activity among Virginians.
- According to a 2003 Responsive Management Survey conducted for the Northeast Conservation Information and Education Association, more than 51 percent of all Virginians viewed wildlife either near their home or took a trip in the previous year to watch wildlife. Sixty-five percent of all Virginians responded that they have participated in wildlife viewing.
- Approximately 80 percent of Virginia's wildlife habitat is in private ownership.
- Total expenditures on wildlife watching in Virginia in 2001 amounted to \$789 million. This included \$172 million for travel-related expenses. Non-Virginia residents spent \$94 million in 2001.

- DGIF maintains a list of 120 state endangered and threatened species (including subspecies) under its jurisdiction, 58 of which also are listed under the Federal Endangered Species Act.

Recommendations

The Virginia Department of Game and Inland Fisheries should:

- Continue to provide a professional law enforcement presence through effective conservation law enforcement training.
- Expand educational programs offered to the public that will emphasize environmental awareness.
- Use the Virginia Wildlife Action Plan, completed in September 2005, as a roadmap for future wildlife conservation decisions in the Commonwealth (www.dgif.virginia.gov). This proactive plan examined the health of all wildlife to prescribe actions to conserve wildlife and vital habitats before they become too rare and costly to protect (see Appendix G for more information about the Wildlife Action Plan).
- Evaluate biannually strategies to manage specific populations of waterfowl, fish, big game, small game, non-game, furbearers and exotic species.
- Establish long-term monitoring areas in each major habitat type in partnership with other agencies or organizations wherever appropriate.
- Continue surveys and inventories documenting distributions and habitat associations for non-game wildlife species.
- Complete recovery plans for state-listed threatened and endangered species, and establish public outreach programs with citizen advisory groups.
- Continue conservation and management of quality wildlife habitats through public and private cooperative efforts that include conservation easements, leases, gifts and acquisitions.
- Continue investigating and monitoring the occurrence and distribution of wildlife diseases associated with wildlife populations.
- Increase angling access, including shoreline fishing and picnic areas on warm water streams and lakes, wheelchair-accessible facilities at trout fishing areas where conditions are suitable, and overnight camping areas accessible by water for boaters.



Fishing the Appomattox River. Photo by DCR.

- Provide increased angling opportunity through fisheries management, access development and appropriate stocking of fish.
- Continue to develop trail systems within wildlife management areas to facilitate access for nature study, birdwatching, hunting and fishing.
- Provide increased wildlife viewing opportunities on state and private lands through cooperative agreements and partnerships.
- Place a priority on acquisition of public hunting lands east of the Blue Ridge.
- Establish a formal process for evaluating and developing public access sites for bridge crossings of recreational waterways. The Virginia Department of Conservation and Recreation (DCR) will continue to comment on highway projects, including all state and federally funded bridge projects. If DCR knows that a locality wants an alternative bridge design at a particular location, they will include that request in the comments that are provided to the Virginia Department of Transportation.

DGIF responsibilities

In the execution of its statutory responsibilities, DGIF provides access to lands owned by public and private entities through a combination of cooperative manage-

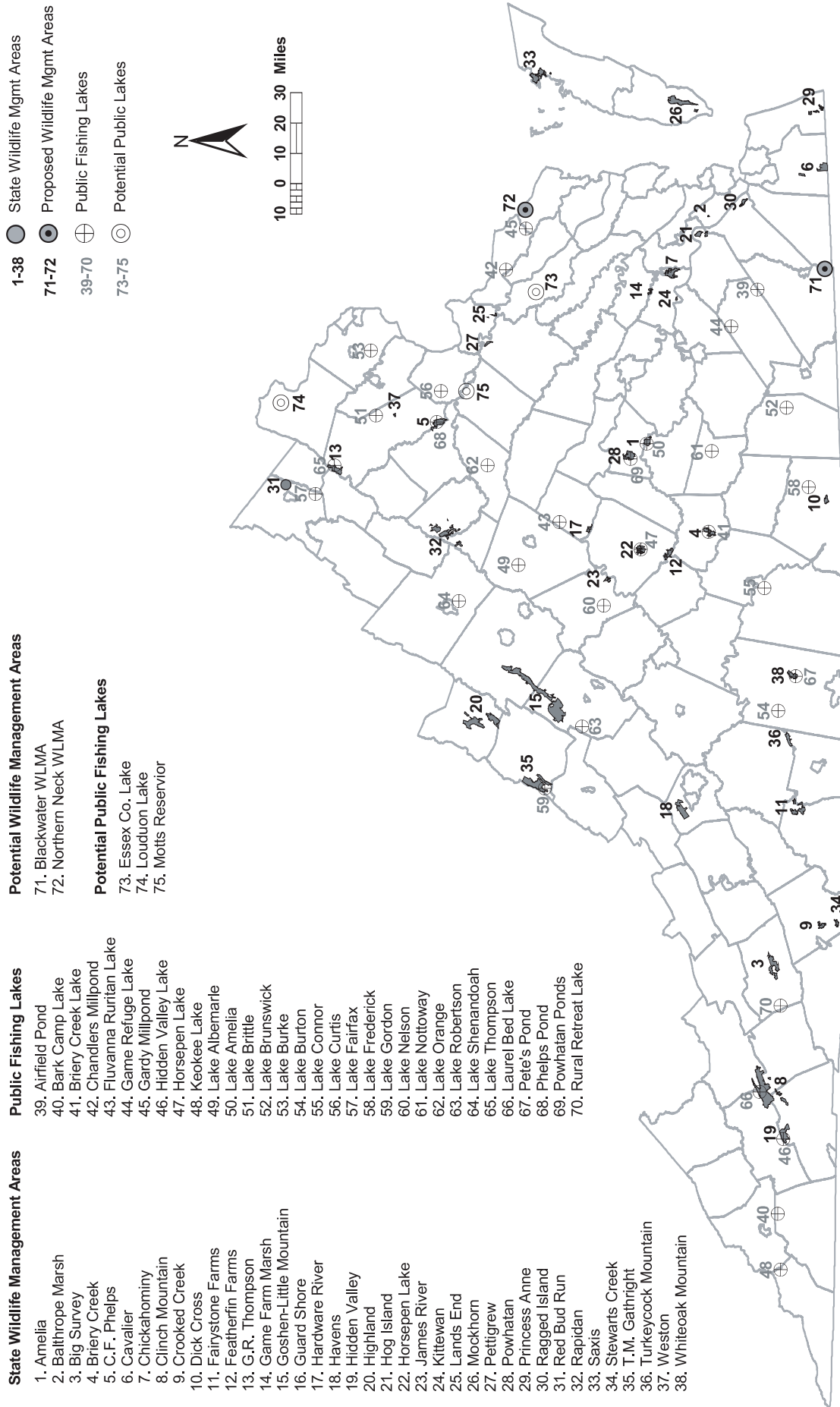
ment agreements and by acquiring and managing wildlife management areas. The Commonwealth owns, through DGIF, 36 wildlife management areas comprising 200,000 acres (see Map IX-4). DGIF also helps manage wildlife on an additional two million acres of land owned by the U.S. Forest Service, U.S. Army Corps of Engineers, U.S. Department of Defense, Virginia Department of Forestry, DCR and a number of private entities. DGIF also maintains four wildlife refuge areas totaling 1,060 acres of wildlife habitat where hunting is not permitted.

Fishery resources

DGIF has constructed and maintains 35 public fishing lakes with a combined total of 3,318 acres. In addition, the department has agreed to manage fishery resources through contractual arrangements with public entities on 24 large reservoirs and 166 small impoundments that comprise more than 173,000 acres of impounded water. Access is maintained to a large portion of the Commonwealth's 25,000 miles of warm water streams and rivers, as well as 3,000 miles of native and wild trout water.

Approximately 1.2 million trout of catchable size are stocked annually in more than 600 miles of streams and 400 acres of lakes included in DGIF's catchable trout program. The nine DGIF fish hatcheries produce and stock 10–20 million fish each year. DGIF has,

Map IX-4. Public Fishing Lakes and Wildlife Management Areas



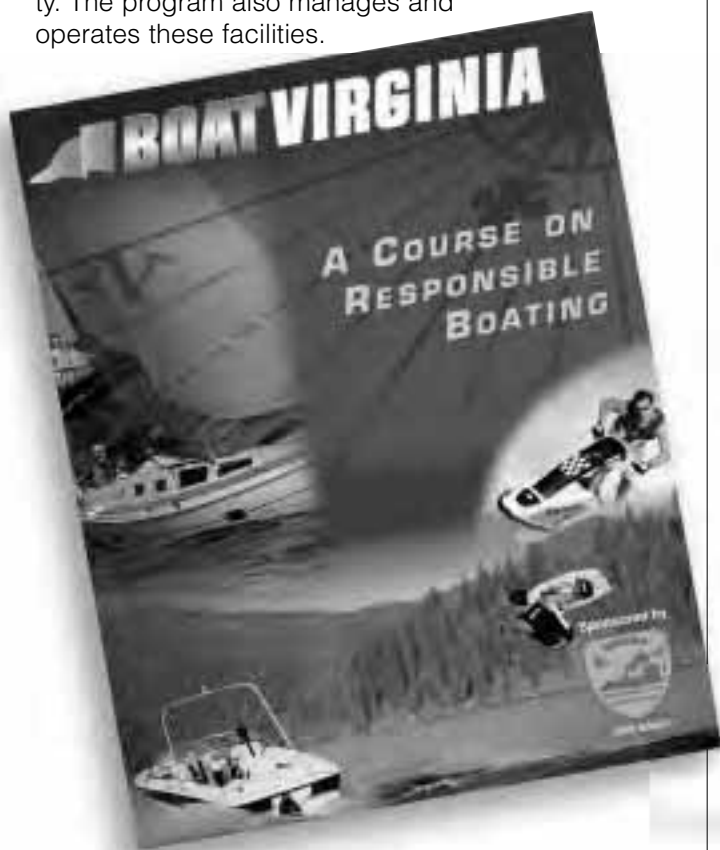
State Fish and Wildlife Management

along with partners on Virginia rivers, been active in the restoration of anadromous fish. Most notably, DGIF, the James River Association and the City of Richmond with public and private support completed the Boshers Dam Fish Passage in early 1999. For the first time in almost 200 years, the James River between Richmond and Lynchburg is open to migratory fish, such as shad and river herring, to spawn in their historic habitat.

DGIF worked with several partners to remove the Embury Dam on the Rappahannock River to reopen historic spawning grounds above Fredericksburg, and is currently stocking this important river with American shad as part of the restoration program. This represents an outstanding example of public-private partnerships to enhance and protect fish and wildlife habitat.

Boating Access Program

The Boating Access Program provides 219 boating access sites across the Commonwealth. Types of boating access provided include boat ramps, boat slides, low-water ramps and shoreline access depending on the site characteristics and water quality. The program also manages and operates these facilities.



Boating safety courses are offered each year. Photo by DGIF.



Boater registration is handled by DGIF. Photo by DGIF.

Education and outreach

The department's programs in wildlife education reach more than 30,000 students annually. DGIF conducts teacher in-service training workshops that are tied to the Standards of Learning, which support the Chesapeake Bay Agreement. The Outdoor Education and Hunter Education provide safety and introductory outdoor skills sessions to more than 45,000 participants annually. *Virginia Wildlife* magazine is published monthly and offers an array of information about hunting, fishing, boating and wildlife-related recreation. Currently there are 45,000 subscribers, and every public school in Virginia receives a complimentary copy of the magazine each month.

Law enforcement

DGIF has the responsibility to enforce all laws and regulations for the protection, propagation and preservation of wildlife species, including all fish in the inland waters of the Commonwealth. DGIF also enforces the boating laws of the state for compliance and safety.

Nongame Wildlife Program

In 1981, the Virginia General Assembly passed legislation giving taxpayers the option to donate a portion of their tax refunds to The Endangered Species and Non-Game Wildlife Fund. This fund helps support the DGIF Nongame Wildlife Program. The term "nongame wildlife" generally includes all species that are not actively sought by hunters, trappers or anglers. This includes more than 90 percent of the approximately 1,000 vertebrate species occurring in the Commonwealth, and virtually all of the thousands of native invertebrates. This tremendous variety of

species includes such animals as the regal fritillary butterfly, Virginia fringed mountain snail, pimpleback mussel, Roanoke logperch, carpenter frog, oak toad, eastern tiger salamander, timber rattlesnake, chicken turtle, eastern box turtle, Atlantic loggerhead sea turtle, Wilson's plover, great egret, cliff swallow, blue jay, bald eagle, short-tailed shrew, hoary bat, Delmarva fox squirrel and eastern chipmunk.

The primary components of the Nongame Wildlife Program include species and community research, species recovery planning and management, wildlife community inventories and surveys, interagency consultations, development of nongame wildlife regulations, and public education and assistance.

Projects include:

- Monitoring the nesting of bald eagles and peregrine falcons and implementing management actions to ensure their success.
- Conducting or funding surveys for species such as breeding shorebirds, colonial water birds, native crayfishes, calling frogs and toads, and endangered bats.
- Research propagation and augmentation of endangered freshwater mussel populations.
- Investigating the life history of species such as canebrake rattlesnakes, Roanoke logperch, bog turtles, northern flying squirrels and dwarf wedgemussels.
- Implementing interagency recovery programs for red-cockaded woodpeckers, Delmarva fox squirrels, bald eagles and freshwater mussels.

Environmental review

DGIF also participates in the interagency review and coordination of environmental permit applications and project assessments coordinated through the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U.S. Army Corps of Engineers, and other state and federal agencies. DGIF's primary role in these projects is to determine likely impacts on fish and wildlife resources and habitats and to recommend appropriate measures to avoid, reduce or compensate for those impacts. This review process is linked to the computerized Virginia

Fish and Wildlife Information System (VAFWIS) (see www.vafwis.org), which contains information about the natural histories and surveyed locations of more than 3,000 vertebrate and invertebrate species.

Virginia Birding and Wildlife Trail

DGIF continues to support and participate in the development and delivery of wildlife viewing opportunities for Virginians and visitors. Currently, four birding and wildlife festivals are co-sponsored with local partners. These festivals promote wildlife conservation awareness and education while providing opportunities for wildlife viewing activities. The Virginia Birding and Wildlife Trail, the first statewide wildlife viewing trail in the United States, was completed in 2004. This driving trail links together more than 650 of the state's wildlife viewing areas. The department provides technical assistance to landowners to provide public access for wildlife viewing and works with localities and local partners to improve wildlife viewing habitat for public enjoyment. In addition, the Wildlife Mapping Program and the new Virginia Master Naturalist Program (in coordination with four other state agencies) continue to promote volunteer participation in wildlife conservation efforts.

Specific site recommendations for additional water access and wildlife management areas will be found for each regional section (see Chapter X).



The Virginia Birding and Wildlife Trail is the first statewide wildlife viewing trail in the United States. Photo by DGIF.

The Marine Resources Commission serves as stewards of Virginia's marine and aquatic resources, and protectors of its tidal waters and homelands, for present and future generations.

The Virginia Marine Resources Commission (VMRC) has been in continuous service to the Commonwealth of Virginia for more than 100 years. Virginia established an oyster police navy after the Civil War. Two police schooners began enforcing state boundaries, keeping order and preventing poaching over a wide expanse of coastal waters where exploitation of seafood resources was increasing.

In the late 1800s, a State Fish Commission was created to devise conservation measures for the fisheries. This commission and the oyster police navy were merged before the turn of the century. Missions expanded throughout the 1900s to include the power to make and enforce conservation regulations. Shellfish leasing was assumed from the localities, and coastal surveying and mapping programs were developed during this time. Law enforcement to protect and preserve marine resources of the Commonwealth was expanded to cover more than 5,000 miles of shoreline on the Chesapeake Bay, its tributaries and Virginia's Atlantic Coast. Marine habitat programs were also developed to manage and protect submerged bottomlands, wetlands, coastal sand dunes and beaches.

Headquartered in the Tidewater region of Virginia, VMRC continues its responsibilities for balancing the needs of a growing population for development, commerce and recreation, with the goals of resource conservation and protection in the marine environment.

Findings

- Virginia is ranked third in the United States in volume of seafood products harvested and landed.
- Sales for recreational fishermen have increased over the past 10 years.
- Recreational fishermen are responsible for supporting more than 9,000 jobs in coastal Virginia.
- The estimated number of saltwater recreational anglers in Virginia has increased from 562,000 to 724,000 since 2002. Likewise, the number of saltwater fishing trips has increased from 2.6 million to 3.1 million during the same period.
- For the Habitat Management Division of the VMRC, the number of requests for habitat permits is expected to grow, generating an increased need to balance both public and private interests of marine resources of the Commonwealth.
- Approximately \$2 million are currently collected annually from the sale of Recreational Saltwater Fishing License. An additional \$750,000 is expected to be collected each year due to increases in recreational fisheries license fees.

Recommendations

VMRC should:

- Continue and expand programs to educate recreational fishermen and create a healthy conservation ethic with regard to marine resources.
- Promote a sustainable and financially viable recreational fishery in the Commonwealth that assists citizens in achieving a higher level of well-being and improves economic outputs based on increased tourism and travel.
- Collect and analyze information on fisheries stocks, harvest, landings and amount of fishing effort to manage quotas and allocations for harvests and landings, and to prepare fisheries conservation plans and regulations.
- Continue promotion of saltwater recreational fishing opportunities in the Commonwealth through continued construction of new reef sites and augmentation of existing artificial fishing reef sites.
- Continue to use funds from statewide saltwater fishing licenses to enhance fishing.
- Promote saltwater recreational fishing opportunities through an award program that recognizes exceptional catches, promote a catch and release program to conserve recreational fisheries, and continue to promote tourism and travel in Tidewater Virginia.

- Maintain a permit review process that fairly and timely balances private use of state owned submerged lands and the need to preserve habitat for sustainable fisheries.

Agency background

Established in 1875 as the Virginia Fish Commission, the Virginia Marine Resources Commission (VMRC) is one of the oldest agencies in Virginia State Government. Until the last decade, shellfish regulation has dominated much of the agency's activities because of the economic and cultural importance of the oyster industry. Private leasing of state marine bottom for the planting and propagation of oysters appears to have started before 1875, but it was not until 1884 that the Commonwealth set up the Board of the Chesapeake to handle the regulations of the oyster industry. Public oyster grounds were mapped during 1892-1895.

The Fish Commission, which at that time dealt with both fresh and saltwater fisheries issues, was consolidated with the Board of the Chesapeake in 1898 to form the Board of Fisheries. Later called the Commission of Fisheries, it was given the task of managing all shellfish and finfish issues statewide.

The Habitat Management Division of VMRC traces its origin to 1962 when the responsibility for permit encroachments in or over state-owned submerged lands was transferred from the Office of the Attorney General to the Commission of Fisheries. This made marine management in Virginia unique in that living resources, and the habitat on which they depend, came under the jurisdiction of the same agency.

A legislative study commission in 1967 recommended a broadened mission, which resulted in the agency being renamed the Virginia Marine Resources Commission in 1968 by an act of the Virginia General Assembly. The Virginia Wetlands Act was passed in 1972 and placed under the management of VMRC, as was the 1980 Coastal Primary Sand Dune Protection Act. In 1982, the General Assembly broadened the 1972 Wetlands Act to include non-vegetated wetlands. In 1984, a distinct Fisheries Management Division was created and its authority over fisheries issues was strengthened.

VMRC programs related to outdoor recreation

While VMRC was first established because of the cultural and economic importance of the oyster industry,

the impacts of recreation on the state's marine resources have become more significant. Virginia's recreational fishermen support a \$1.26 billion fishing industry and spend more money than their commercial counterparts. Saltwater angling totals \$820 million in sales and \$480 million in services provided. In 2004, saltwater angling supported more than 9,000 jobs. Several programs have been developed in an effort to manage these resources and encourage appropriate conservation ethics for those engaging in outdoor recreation in marine environments. VMRC programs also aim to balance user conflicts between commercial and recreational fishermen.



Striped Bass spawn in freshwater, live most of their lives in saltwater and may survive up to thirty years. Photo by Teta Kain.

Fishery management

In 1984, the Virginia General Assembly enacted a state fishery management policy with a goal to manage fisheries based on the best available scientific, economic, biological and sociological information. This policy marked a shifting away from fisheries controlled by legislation, to fisheries managed by plans and regulations of the VMRC. A legislative report recommended:

While fisheries management is now based upon professionally prepared plans for the major species, using the best available data and analysis, regulatory decisions are made in an open and democratic process by VMRC's nine-member commission. Public sessions of the nine-member citizen commission include hearings, open discussion of resource management issues, adoption of conservation regulations, and environmental permit decisions.

Virginia Marine Resources

The Fisheries Management Division carries out current and long-term state policies effecting recreational and commercial saltwater fisheries in Virginia's tidal waters. The goal is to provide the maximum benefit and long-term use of the Commonwealth's finfish and shellfish resources through conservation and enhancement. Its objectives are:

- To collect comprehensive and timely statistics and information on Virginia's fisheries to determine fishery stock conditions.
- To develop fisheries management plans for commercially and recreationally important species found in Virginia waters.
- To promote recreational fishing activity by the development of artificial fishing reefs and the Virginia Saltwater Fishing Tournament.
- To participate in organizations at the interstate and federal level regarding Virginia's fisheries and their management.

Artificial reefs

Approximately one million anglers go fishing each year in the tidal waters of Virginia. Recreational fishing is economically important for its contributions to travel, tourism and the sport fishing industry. Man-made reef structures enhance the bottom habitat, increase the production of fisheries and improve recreational fishing.

State-supported efforts to construct artificial fishing reefs began with six surplus World War II ships which were sunk offshore to create increased fishing opportunities. Virginia is currently using a variety of materials and structures to construct reefs in the Atlantic Ocean and Chesapeake Bay. Extensive research and study go into the planning, design, and construction of artificial reefs. Reef structures may include tires cast in concrete and pre-cast concrete igloo structures.

The Fisheries Management Division's Artificial Reef Department enhances recreational fishing opportunities through the construction of artificial fishing reefs. Twenty sites have been established, 15 in Chesapeake Bay and five in the Atlantic Ocean. A variety of materials, such as steel vessel hulls and demolition concrete has been used in addition to specifically designed habitat structures. Most of the sites are marked with yellow buoys, and established and maintained by the Artificial Reef Program.

Saltwater Fishing Tournament

The Virginia Saltwater Fishing Tournament operates a trophy fish citation program for marine recreational fishermen and promotes Virginia's diverse tidal fishing

opportunities. The program manages a database of citation records dating from 1958, which is utilized for recreational fisheries management purposes.

Virginia Saltwater Recreational Fishing Development Fund

In July 1992, the Virginia General Assembly enacted legislation authorizing the implementation of a saltwater recreational fishing license. Pursuant to the *Code of Virginia* § 28.3-302.3, funds collected by the Commonwealth of Virginia for the sale of those license are used to improve recreational fisheries in Virginia. These provisions include conserving and enhancing finfish species, fishing access and facilities, law enforcement, education, administration of the Virginia Saltwater Sport Fishing Tournament, fisheries research and data collection and habitat improvement. The Recreational Fishing Advisory Board is charged with advising VMRC on the management of this fund consistent with its enabling legislation.



Crabs depend upon vegetated tidal wetlands as habitat for spawning and nursery. Photo by Virginia Witmer/Virginia CZM Program.

Habitat management

The Habitat Management Division manages a permit program encompassing subaqueous habitat preservation and the protection and preservation of tidal wetlands, as well as coastal primary sand dunes. The Joint Permit Application, introduced in 1978, streamlines the permit process to handle local, state and federal requirements in one form.

The Commonwealth of Virginia is endowed with more than 5,242 miles of tidal shoreline, which encompasses 2,300 square miles of water surface and covers 1,472,000 acres of state-owned bottomlands. These submerged lands, greater in area than the State of Delaware, harbor some 21,000 acres of Chesapeake

Bay grasses, 251,000 acres of public oyster grounds and 90,000 acres of oyster grounds under private lease. These lands are a public resource and a valuable habitat for shellfish, crabs and finfish. Along the fringes of the myriad coves, creeks, great rivers and bays of the Chesapeake estuary grow 225,000 acres of vegetated tidal wetlands. These vegetated areas, particularly the salt marshes, constitute a vital spawning and nursery area and are an important element of the marine food webs for many economically valuable marine resources of the Commonwealth.

The evaluation of proposed shoreline projects requires the balanced considerations of often complex environmental, socio-political and economic factors. Perhaps nowhere else have the Commission's decisions been more difficult in the past several years than in the area of marina development. The issue of new marinas, particularly in localities without local zoning, and proposed marina expansions continue to conflict with shellfish growing areas. The continued emphasis on the Chesapeake Bay cleanup effort and anticipated population increases within the Tidewater area will continue to make this a very important issue.

Submerged lands

Much of the charge for ensuring that the Commonwealth's submerged lands resources are responsibly used rests with the Habitat Management Division, operating under the mandates of Virginia's Subaqueous Laws. The *Code of Virginia* vests ownership of "all the beds of the bays, rivers, creeks, and shores of the sea in the Commonwealth to be used as a common by all the people of Virginia." Permits are required from the Marine Resources Commission to encroach upon or over state-owned bottomlands. The division receives and reviews these applications,



VMRC staff meeting with property owners. Photo by VMRC.



Cape Charles Dunes. Photo by Rachel Bullene/Virginia CZM Program.

solicits public comment on them, applies public interest factors in assessing them and then prepares a recommendation to VMRC for a decision.

Tidal wetlands

While the value of marine habitat resources along the shoreline is recognized today, throughout most of Virginia's history, waterways and marshes were often filled to make land. Many coastal towns like Norfolk were built on fill placed over wetlands. A 1972 state law recognized the environmental value of tidal wetlands. This legislation authorized a permitting system for their protection. It also authorized a network of local wetlands boards to determine conservation needs with regard to tidal wetlands.

Dunes and beaches

Inappropriate development on coastal primary sand dunes and beaches can destroy vegetation, alter storm-protecting contours, increase erosion flooding and property damage, destroy wildlife habitat, and lead to increased expenditures of public funds. Coastal primary sand dunes and beaches were added to marine habitat protection legislation in 1982. Following the same principles previously established for wetlands protection, the Coastal Primary Sand Dunes Act requires permits in order to ensure that development is reasonably balanced with the protection and preservation of these coastal features.

The greatest wonder is that we can see these trees and not wonder more.

—Ralph Waldo Emerson

Virginia's forests are extremely diverse and important in cleansing air, purifying water, providing products and supporting outdoor recreation. Forests also provide important habitat and serve as wildlife corridors for the movement of terrestrial animals and maintenance of species biodiversity. Of the Commonwealth's 15.8 million forested acres, 77 percent are in private ownership. It is estimated that 26,100 acres of Virginia's forests are converted to non-forest uses each year.

While the Virginia Department of Forestry (DOF) manages almost 50,000 acres of state forest land, Virginia's forests are predominantly privately owned. These working forests provide forest products, wildlife habitat, water quality protection, recreation opportunities and aesthetic benefits needed to sustain Virginia's ecological balance, as well as a healthy quality of life. Conservation of Virginia's working forest lands as a part of the Commonwealth's green infrastructure is essential.

Findings

- Urban and suburban sprawl areas are causing significant loss of Virginia's commercial forest lands.
- With 15.77 million acres of forested land, Virginia is 61.5 percent forested. According to DOF, from 2001 to 2004, urban growth and development resulted in an average net loss of 26,100 acres per year. This is an accelerated rate of loss when compared to the 20,000 acres per year estimate for the 1992 to 2001 time period. More acres of forest are developed each year, but reversion of some agricultural land to forest partially offsets the loss. If current development trends continue, it has been projected that Virginia will lose a million acres of forest in the next 25 years.
- Growing fragmentation of forest cover due to an increased number of landowners and pressure from population is associated with the loss of total acreage. The transition from rural to urban forests occurs when the population rises from 20 to 70 people per square mile.



Niday State Forest on John's Creek Mountain in Craig County. Photo by DOF.



Conway Robinson State Forest in Manassas. Photo by DOF.

- Small woodlot management is becoming increasingly important as it allows forest management activities on smaller acreages.
- The loss of forest land has an adverse impact on timber related economy, but the economic impact of forest loss in terms of ecosystem values, such as clean water and air, is of equal concern.

Recommendations

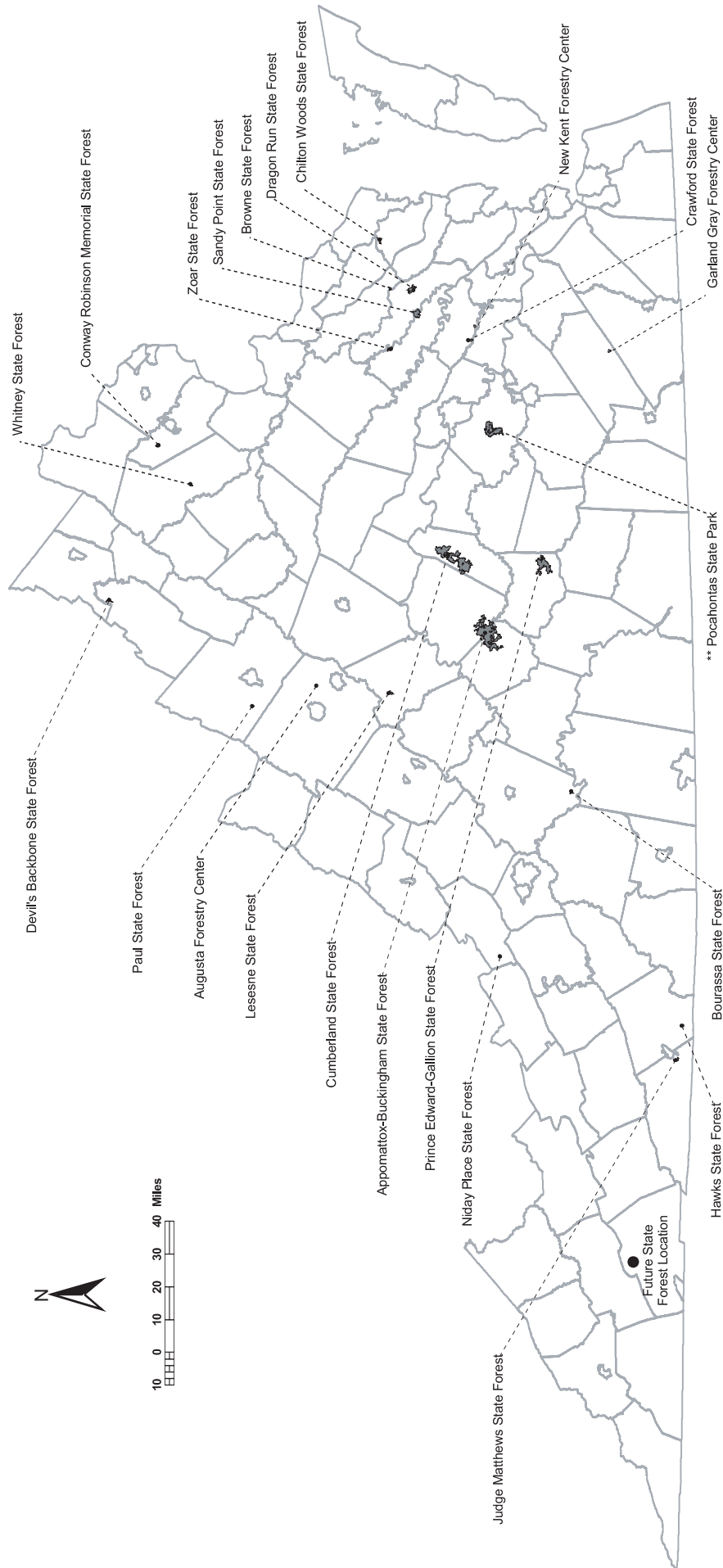
DOF should:

- Continue to educate Virginians about the importance of land conservation, green infrastructure and natural resource stewardship related to maintaining forested resources important to the Commonwealth's environment and economy.
- Encourage a green infrastructure approach to land protection and management by providing training in these concepts.
- Continue to emphasize best management practices and stewardship of forest land for properties adjoining the recreation systems identified in the 2007 Virginia Outdoors Plan (VOP), such as Scenic Rivers, Virginia Byways, state natural area preserves and state parks.
- Coordinate with, and seek the assistance of, trail and river user organizations to develop forest trails and publish maps for each state forest as well link these trails with greenways.

- Continue to acquire inholdings and other properties to improve forest boundary lines, improve management and add environmentally diverse property to the state forest system.
- Initiate and maintain cooperative agreements to support the Virginia Department of Conservation and Recreation (DCR) Natural Heritage Program's natural resource database.
- Work with other natural resource agencies to promote good resource stewardship principles on state forest land and conduct citizen education and outreach activities on state-owned land.
- Promote urban forestry practices by stressing the importance of the urban canopy and assisting localities in making assessments and setting goals.

Economics of Virginia's forests

Since 1607, Virginia forest resources have contributed to the state's economic prosperity. Virginia's forests provide a vital income source for rural areas and smaller cities. Based on the 2006 Virginia Forests: Our Commonwealth, the forest industry is worth \$25.2 billion in annual total economic output. This also includes "multiplier effect"-jobs and income created as forestry and forest product workers buy goods and services. The industry also generates 184,000 jobs, and landowners received \$276 million for timber stumpage, or the right to cut standing timber.



** Deed held by the Department of Conservation and Recreation. 5,823 acres of the park are managed for multiple use forest by the Department of Forestry.

State forest history

Virginia's State Forests system began in 1919 with a gift of 589 acres of land in Prince Edward County. In the mid-1930s, additional land was added as a result of federal government acquisitions under the Bankhead-Jones Farm Tenant Act. The majority of state forest land continues to be donated to the state by the federal government and private individuals. The original purpose of state forests was for public use, recreation, wildlife management and forest production to demonstrate good forest practices for private landowners, provide educational opportunities for the public, and establish and maintain long-term research efforts.

State forests are managed by DOF, which became a department-level agency in 1987. The forests system comprises 17 state forests consisting of 48,463 acres (see Map IX-5). In addition to managing the state's forests, DOF operates two tree nurseries that produce more than 34 million seedlings annually.

Virginia Department of Forestry mission

The DOF mission is to "protect and develop healthy, sustainable forest resources for all Virginians". The DOF strategic plan, entitled *DOF 2014: Shaping Virginia's Forests*, names four land management goals for the agency as follows:

- Protect the citizens, their property and the forest resources from wildfire.

- Protect, promote and enhance forested watersheds, non-tidal wetlands and riparian areas.
- Conserve the forest landbase.
- Improve the stewardship, health and diversity of the forest resource.

DOF accomplishes these goals through work with private, non-industrial landowners, localities and other stakeholders. To conserve, manage and protect Virginia's forests, conservation organizations, such as land trusts and other non-government organizations, assist DOF with protection, conservation and management efforts.

DOF assists landowners with demonstrations of wetland practices, preparing forest stewardship plans, implementation of best management practices, hardwood improvement practices and other projects. An urban forestry program offers cities and smaller communities the expertise to maintain a forest canopy and take advantage of the environmental and aesthetic benefits provided by the tree cover. DOF is also the lead state agency for the conservation and restoration of riparian forest and other buffers in the Commonwealth.

DOF strives to educate Virginians about the importance of land conservation and natural resource stewardship. The agency's conservation education efforts are targeted to both youth and adults. In both cases, programs are delivered mainly by DOF staff at the local level.



New Kent Forestry Center near Providence Forge. Photo by DOF.

State Forests

Adult outreach focuses on helping landowners maintain their land as a forested resource through management that is both environmentally sound and economically prudent. Programs include forestry tours, workshops and one-on-one planning. Youth education, using Project Learning Tree and other research based materials, reaches youth in schools, youth organizations and at community events.

State forests and other state lands provide excellent venues for place-based education or outdoor environmental education. DOF encourages outdoor recreation on state forests, recognizing that time spent outdoors develops a conservation ethic and stewardship behaviors. Forest education centers are being planned for DOF properties near Providence Forge and Galax. These centers will provide access to forest lands, self-guided learning opportunities and educator-led programs about forest resources.

Existing state forests

The 17 state forests and two state nurseries help meet outdoor educational and recreational demands. The management of each state forest considers watershed protection, recreation, timber production, applied forest research programs, and wildlife and fisheries management. Although the focus of the state forest system is the practical application of sound forestry practices, a small portion of land has been set aside for purposes other than timber production. For example, some state forests support long-term research efforts including manipulation of the forest cover to study changes in water quality, studies on the re-introduction of the American chestnut and programs supporting natural resource stewardship.



*DOF staff prepare forest stewardship plans for property owners.
Photo by Friends of Chesterfield's Riverfront.*

The majority of state forest acreage is in the central Piedmont region between Richmond and Lynchburg. Four of the largest state forests provide a resource base to the state parks located within them. These forest lands adjacent to state parks support camping, picnicking, interpretive programs and swimming facilities. Acquisition of additional units throughout Virginia is being considered. Existing areas are shown on map IX-4.

Natural areas designated in the forest system are used for environmental studies and management. The wildlife and fishery resources in state forests are managed with the assistance of the Department of Game and Inland Fisheries. This successful partnership affords Virginia's hunters, fishermen and nature lovers excellently-managed lands for outdoor recreation enjoyment.

To keep every cog and wheel is the first precaution of intelligent tinkering. —Aldo Leopold

Virginia is blessed with a great diversity of habitats, as well as the plants and animals, that inhabit them. Sandy beaches, wind-tide marshes, cypress-tupelo swamps, Piedmont prairies, boulder-strewn rivers, and spruce and fir-capped mountains are just a few of the places that support the great variety of plants and animals – some 32,000 species – that comprise our “common wealth”. The Department of Conservation and Recreation’s (DCR) Natural Heritage Program is charged with protecting this biodiversity by focusing on the most rare and imperiled species and natural communities, and it plays a central role in the Commonwealth’s overall land conservation efforts. Working closely with other state, federal and local agencies, nonprofit conservation organizations and private citizens, the Natural Heritage Program gathers and distributes information on the state’s biodiversity and seeks protection of sites that support rare species and significant natural communities. DCR manages the state’s growing natural area preserve system, which supports many populations of rare species and examples of the state’s diverse natural communities. The lands set aside as natural area preserves are vital, not only to our sense of place, but also improve our scientific understanding, enhance public education and increase outdoor recreation opportunities.



Hughlett Point Natural Area Preserve. Photo by Irvine Wilson.

Findings

- Virginia ranks fourth among Eastern states for the number of federally endangered and threatened species.
- Fewer than 8 percent of Virginia’s 1,500 rare plant and animal species are legally protected under federal or state law.
- The 2006 *Virginia Outdoors Survey* (VOS) found that the fifth most popular activity was visiting natural areas, up from 11th in 2001.
- Southwest Virginia is the country’s leading hotspot of aquatic diversity, but many of the freshwater mussels and fish found there are at risk of extinction. Classification and understanding of Virginia’s freshwater biological diversity, which is fundamental to its conservation, remains a significant challenge.
- DCR conducts the only comprehensive statewide inventory that documents the location and ecological status of natural communities and rare plant and animal species.
- DCR is developing better mechanisms for the planning, targeting and protection of key resource lands through the development of an expanded *Virginia Outdoors Plan* and its work on the Virginia Conservation Lands Needs Assessment.
- Private lands will play a critical role in the protection of Virginia’s natural heritage resources. At least 60 percent of identified sites supporting natural heritage resources occur on private lands.
- Virginia has 627 identified globally significant conservation sites that total more than 740,000 acres. These are not adequately protected to ensure the long-term viability of the natural heritage resources they support.
- Virginia is rich in karst resources with more than 4,300 known caves. Karst aquifers supply drinking water to rural citizens throughout the western part of the state. Karst springs support the base flow of most of the major rivers west of the Blue Ridge, and are critical to the protection of water quality and

Natural Heritage Program



*Exotic species like Japanese stiltgrass (*Microstegium vimineum*) are a major threat to biological diversity. Photo by Gary Fleming.*

quantity. More than 110 cave organisms are globally rare and many live in only one or two caves.

- DCR's Natural Area Preserve system is a statewide network of 50 dedicated natural areas totaling 42,296 acres, as of September 1, 2007 (see Map IX-8).
- Invasive exotic species have become the second greatest threat, after habitat loss, to biological diversity. More than 300 exotic species have been reported in Virginia.

Recommendations

- DCR, other natural resource agencies and academic institutions should expand biological inventory efforts across the state to better understand the distribution, status and population trends of natural heritage resources.
- DCR should expand efforts to create and provide natural area conservation information and make it available to a diverse group of clients and users, including completion and full utilization of the Virginia Conservation Lands Needs Assessment by the fall of 2007.
- DCR should support and expand Virginia Commonwealth University's Interactive Stream Assessment Resource (INSTAR) to better understand and conserve the Commonwealth's freshwater biological diversity.

- The Commonwealth should work toward implementation of the Department of Game and Inland Fisheries' Virginia Wildlife Action Plan.
- The Commonwealth should increase assistance to localities in their planning efforts for the protection of natural areas as a part of their recreational offerings.
- The Commonwealth should secure a broad-based stable funding source for land conservation, including lands that support natural heritage resources, and ensure representation on protected lands for all of the state's natural community types and rare species.
- State and local land conservation organizations should work to conserve natural heritage resources through conservation easements.
- DCR should expand the Natural Area Preserves system by adding lands to the existing preserves to enhance protection of their designated conservation sites. The system should also be expanded through a combination of acquisitions and easements for an additional 30 high-priority conservation sites as natural area preserves across Virginia by 2012.
- DCR should increase awareness of the environmental significance of Virginia's karst regions (limestone areas with underground streams, sinkholes and caves) through the Natural Heritage Karst Program.



Exploring karst areas. Photo by Irvine Wilson.

- DCR should increase its capacity to assist public and private land managers and owners with the management and restoration of natural heritage resources on their properties.

- DCR should secure the resources necessary to meet the stewardship needs of an expanded system of lands supporting natural heritage resources, for example: improved resource management, increase public access opportunities and improve site security.
- Local and state natural resource agencies should enhance efforts to determine the distribution and status of invasive exotic species and to devise effective measures for their control, particularly where they threaten rare species or unique natural communities.

History and overview

The Virginia Natural Heritage Program was started in 1986 to protect the state's natural diversity. It originated as a cooperative effort of DCR and The Nature Conservancy, a private nonprofit organization, and in 1988 it became a division exclusively within DCR. The Virginia program is a member of NatureServe, the international network of natural heritage programs that includes all 50 states, all Canadian provinces and 18 Latin American countries. This partnership greatly enhances the quality and utility of Virginia's conservation information through training, consultation and information exchange. In 2006, Virginia's program was recognized by NatureServe as the most outstanding natural heritage program in the Western Hemisphere.

The Natural Heritage Program focuses on the identification, protection and stewardship of natural heritage resources defined in the *Code of Virginia* as the habitat of rare, threatened or endangered plant and animal species, rare or state significant natural communities or geologic sites, and similar features of scientific interest benefiting the welfare of the citizens of the Commonwealth. The habitat of the Shenandoah salamander, limestone caves, freshwater tidal marshes and shorebird nesting sites are but a few examples of these natural heritage resources.

Central to this mission is the identification and protection of natural areas, both lands and waters, supporting habitats for rare species and significant natural communities. Natural areas are significant for the living resources they support, but they are also important for their outdoor recreation values and are a critical component of a comprehensive outdoor recreation system. The 2006 VOS found that the fifth most popular outdoor activity of the public is visiting natural areas. Many of the nation's state natural heritage programs were launched with Federal Land and Water Conservation Funds, based on the recognition that natural areas provide a critical component to any outdoor recreation portfolio.



One of many stewardship responsibilities involves counting shorebird nests on Wreck Island Natural Area Preserve. Photo by Sandra Erdle.

Many tasks must be accomplished in order to protect and manage Virginia's diverse array of native plant and animal species and natural communities. DCR's Natural Heritage Program divides those tasks among five interdependent units – inventory, information management, project review, natural area and karst protection, and natural area stewardship.

Inventory

The Natural Heritage Program inventory staff members conduct the only comprehensive statewide inventory that documents the location and ecological status of natural communities and rare plant and animal species. This ongoing inventory is conducted by staff ecologists, botanists and zoologists, contract staff, volunteers and cooperators. These staff members assist private and public land managers and local governments with regional and county natural area surveys. Recent inventories have included all National Park Service lands, the Appalachian Trail, major Department of Defense facilities, national forest lands and selected state parks.

Inventory biologists also help assign global and state rarity ranks to all of Virginia's native species. These ranks reflect a species' risk of extinction throughout its

Natural Heritage Program

entire range (global rank) and within Virginia (state rank). With this ranking system, Natural Heritage Program staff are able to prioritize inventory and protection needs by identifying those natural heritage resources most likely to be lost without conservation action. Inventory ecologists continue to refine the state's natural community classification system with descriptions for Virginia's 120 natural community types, including state and globally rare limestone barrens, shale barrens, sea-level fens and tidal freshwater marshes. This community classification can be viewed on DCR's website at: www.dcr.virginia.gov/natural_heritage/nctoc.shtml.

Another initiative is to assist with the development and publication of the first comprehensive manual of Virginia's flora in modern history. Inventory staff are working in cooperation with the nonprofit Flora of Virginia Project to have the book and an accompanying website ready by 2011. It will help meet the urgent needs of scientists, students and other citizens interested in plants and their habitats by providing a deeper understanding and appreciation of Virginia's flora and ecosystems.

The rapid pace of changes in Virginia's landscape necessitates more comprehensive inventory of natural heritage resources. The Commonwealth must increase biological inventory efforts by DCR, as well as other agencies and institutions. The Department of Game and Inland Fisheries' Virginia Wildlife Action Plan requires ongoing support for data collection and implementation of the plan. Another critical need is to develop a freshwater aquatic community classification system to permit consistent assessment of the biological diversity of our streams and rivers through expanded support for Virginia Commonwealth University's Interactive Stream Assessment Resource (INSTAR).

Virginia has more than 1,500 plant and animal species that are rare within the state. Five plants, five vertebrates and many invertebrates are found only in Virginia. At least 26 species of vertebrates, as well as freshwater mussels, have been extirpated from Virginia. Due to habitat alteration from dam construction, water withdrawal, sedimentation, pollution and introduction of non-native species, 75 percent of Virginia's freshwater mussels are at risk. Southwest Virginia is the country's leading hotspot of aquatic diversity, but more understanding of Virginia's aquatic species and communities is needed.

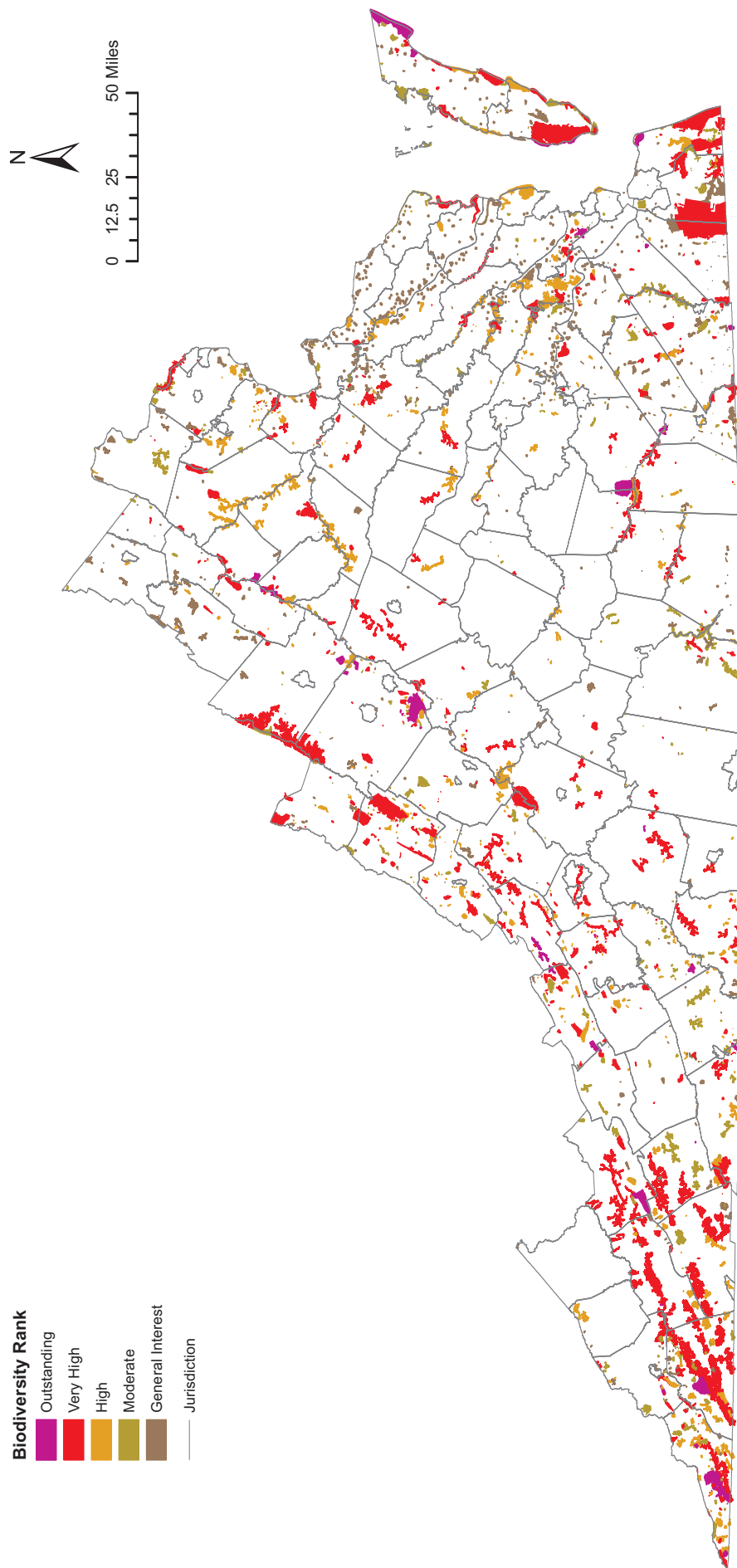
Information management

Protecting and managing natural heritage resources requires that large amounts of data be carefully catalogued and stored. Such data must also be made accessible to a variety of users. DCR's natural heritage information staff members use an assortment of GIS and database platforms to manage collected data. Data maintained by DCR are used internally, as well as by other land and resource managers and citizens in order to set protection and management priorities and provide a scientific basis for land management planning. A central component of data collected by DCR is conservation sites. These sites are the most critical areas to protect in order to secure habitat for terrestrial natural heritage resources. Similarly, important aquatic habitats, referred to as stream conservation units (or SCUs), have been delineated, as have significant karst areas. Nearly 2,200 conservation sites, SCUs and significant karst areas have been delineated (see Map IX-6).

DCR makes data available, by way of a subscription service, to land trusts, local governments and environmental consulting firms. The level of detail available to subscribers is restricted to protect sensitive information.

Another GIS-based initiative is the Conservation Lands Database. Conservation lands are public (and some private) lands in Virginia that have value for natural resource conservation, outdoor recreation and open-space protection (see Map IX-7). Included are federal and state lands, for example national parks, national wildlife refuges, forest service lands, some Department of Defense lands, state wildlife management areas, state forests, and state parks and natural areas. Also included are local parks, lands owned as preserves by nonprofit conservation organizations such as The Nature Conservancy, and lands held under conservation easement by the Virginia Outdoors Foundation or other land trusts. This information serves as the Commonwealth's official database on protected lands and is available online at www.dcr.virginia.gov/natural_heritage/conslandmap.shtml.

Closely tied to the Conservation Lands Database is DCR's Conservation Lands Needs Assessment (VCLNA), an ongoing effort to identify the most important areas for future land conservation and undeveloped corridors to connect them. While DCR anticipates completing and fully implementing this project by the fall of 2007, the VCLNA will require ongoing refinement and updating in future years. DCR has a strong commitment to share the VCLNA with all of Virginia's land conservation agencies and organizations, so that the benefits of this powerful tool can be realized.





Land protection of special areas like old growth cypress-tupelo swamps should be a priority. Photo by Irvine Wilson.

DCR's natural heritage project review plays a key role in evaluating proposed development projects so that they do not adversely affect natural heritage resources. DCR staff provide guidance to developers to help avoid impacts on rare species habitats. Project review staff members also respond to requests from the public for information about rare species and natural communities and provide outreach to localities in their planning efforts. As Virginia's population grows, the importance of DCR's efforts to protect natural heritage resources will be essential.

Natural area protection

Key to natural area protection is careful conservation planning that ultimately leads to land protection. Natural area protection can involve non-binding agreements, conservation easements or fee simple acquisition of land to secure habitat for the rarest and most threatened examples of our natural heritage. Protection methods are chosen based on the specific conservation goals for each natural area. Examples of tools for protecting biodiversity include dedication of natural areas into a legally established system of state natural area preserves, acquisition of land, acquisition of conservation easements, establishment of management agreements and voluntary protection by the landowner through the Virginia Registry of Natural Areas.

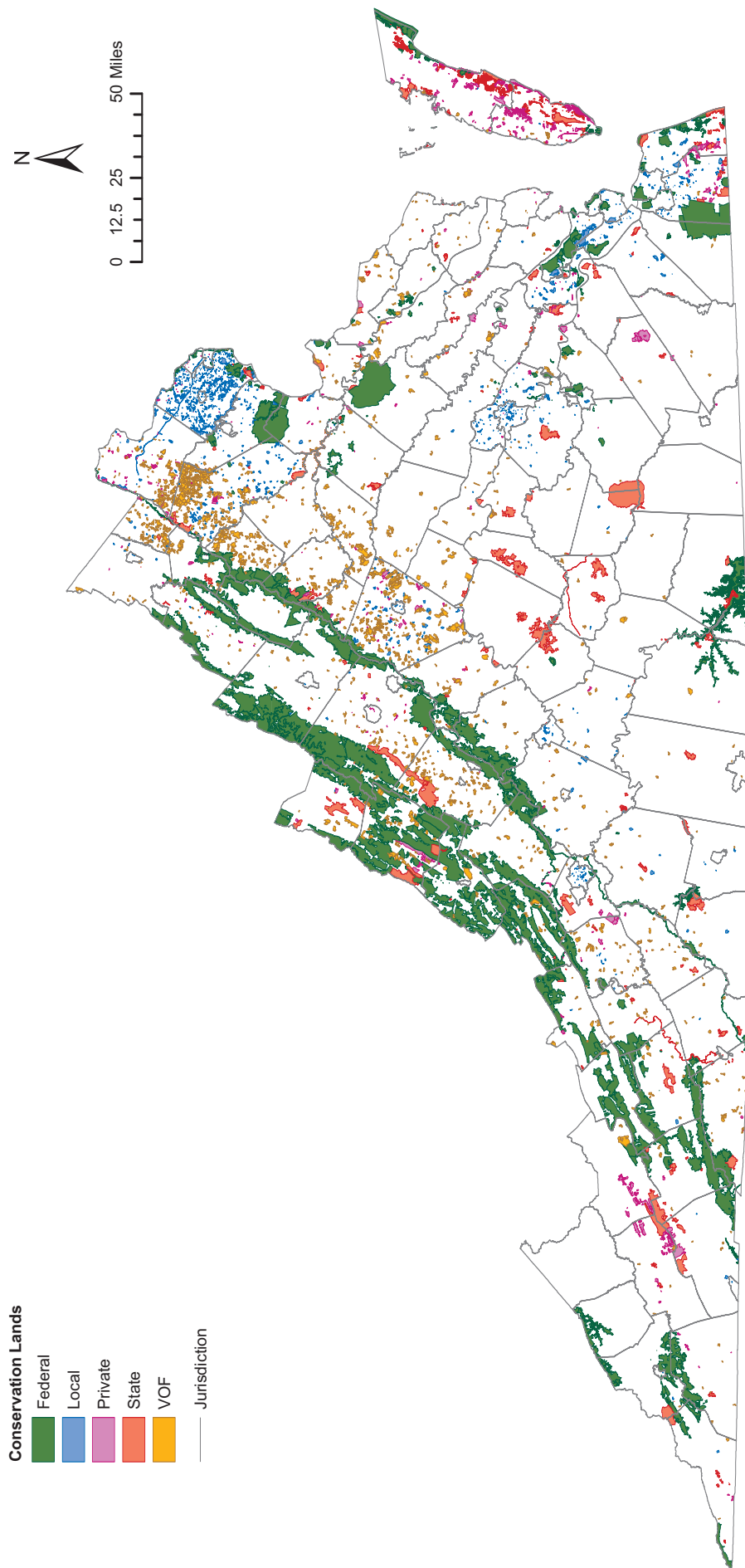
With more than 600 unprotected globally significant conservation sites, DCR has set a goal to add 30 new preserves that protect the highest priority conservation sites in Virginia by 2012, while continuing to expand existing preserves to more fully protect the areas encompassed by their designated conservation sites. This ambitious goal can be achieved through added outreach to inform landowners of current state and federal tax credit programs, full utilization of 2002 Bond funds, federal matching grants and funding through the Virginia Land Conservation Foundation.

Another tool for protecting natural heritage resources will be to incorporate greater protections in newly written conservation easements. Over the past year, DCR has made significant advances with the land trust community, but success in this area will require additional work with agencies and organizations that secure conservation easements.

Karst protection

Important natural heritage resources are supported by surface and subsurface communities in cave and karst habitats west of the Blue Ridge Mountains. Karst landscapes are characterized by sinkholes, sinking streams, springs and caves that have formed in areas where mildly acidic groundwater has dissolved solu-

Map IX-7. Conservation Lands



Data Source: VA-DCR - Virginia Conservation Lands Database

Natural Heritage Program

ble rocks, such as limestone, dolostone, marble or gypsum. Virginia is rich in karst resources and is known to have more than 4,300 caves. More than 150 cave organisms are considered rare, and many of them have distributions restricted to only one or two caves.

Because of the biological diversity importance of cave and karst communities, the unique hazards of development on karst, and ease of movement of contaminants into karst groundwater systems, DCR's Natural Heritage staff developed the Karst Groundwater Protection Program and Karst Education Program in Southwest Virginia. These programs benefit not only the myriad karst organisms, but also the thousands of Virginians who rely on karst aquifers for their drinking water. DCR karst program staff work very closely with the state and national cave conservation and education programs, the Virginia Cave Board, karst landowners and local governments to increase awareness and support for karst conservation. However, as areas west of the Blue Ridge continue to grow, there is an increasing need to expand karst protection efforts to keep pace with development.

Stewardship

Natural area stewardship involves maintaining and enhancing natural heritage resources on natural area preserves managed by DCR. A dedicated natural area is one where future uses have been limited through a legal deed of dedication. Dedicated natural areas become part of Virginia's Natural Area Preserve System, which, as of September 1, 2007, consists of 50 preserves totaling more than 42,296 acres (see Map IX-8). Stewardship staff members also provide expertise and assistance in natural areas management to federal, state and local agencies, as well as to private landowners and land managers. Key components of natural areas stewardship include development of site specific management plans, prescribed burning, invasive species control, habitat restoration,

research and monitoring, public access management and site security. A copy of Virginia's Natural Area Preserve Management Guidelines, can be obtained by contacting the Natural Heritage Program or by visiting the following web address: www.dcr.virginia.gov/natural_heritage/documents/napmgt.pdf.

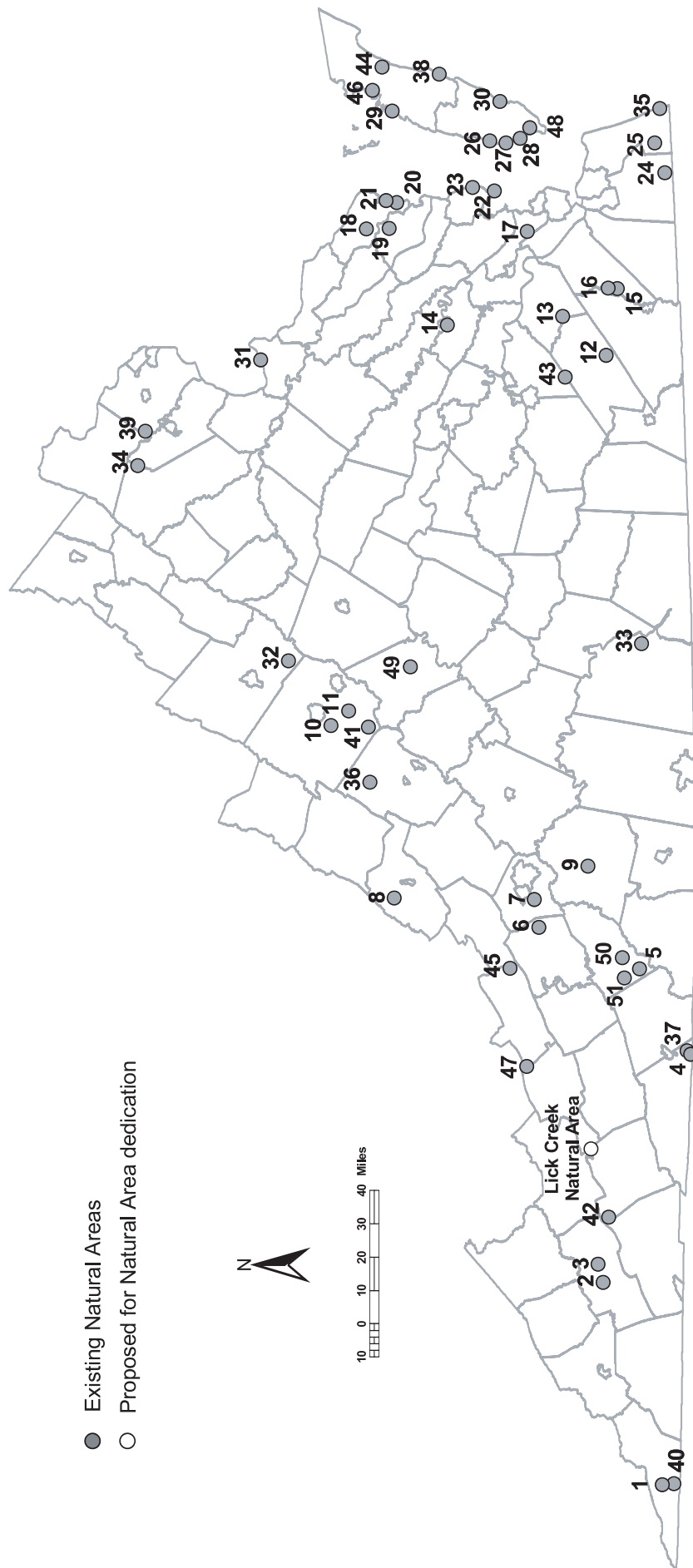
Unfortunately, the growth of DCR's natural area stewardship program has not kept pace with the growth of the Natural Area Preserve system. Currently, only 12 full-time staff manage the state's natural area preserves, as well as provide support to other public and private landowners with natural heritage resources on their lands. In order to meet these responsibilities, DCR needs to increase its stewardship capacity to appropriately manage the state's award winning natural area preserve system.

As the support agency for Virginia's Invasive Species Working Group, DCR plays an important role in helping the Commonwealth manage exotic invasive plant and animal species. More than 300 exotic species have been identified in Virginia, many of which are highly invasive and severely disrupt native plant and animal communities. Invasive species also have a very significant impact on Virginia's economy. Conservative estimates place the cost of invasive alien species to Virginians at \$1.4 billion to \$3 billion annually. DCR and other conservation agencies, local governments, organizations and private citizens need additional resources to meet this growing threat (Pimentel).

References

Cornell University economist/ecologist David Pimentel, derives these figures for Virginia from his widely cited national study: Pimentel, D. et al. 2000. Environmental and Economic Costs Associated with Non-indigenous Species in the United States. *Bioscience* 50(1) 53-65 (15 Dec. 2000).

Map IX-8. State Natural Area Preserve System



- Existing Natural Areas
- Proposed for Natural Area dedication

- | | | |
|-------------------------|----------------------------------|-----------------------------|
| 1. The Cedars | 27. Cape Charles Coastal Habitat | 40. Unthanks Cave |
| 2. Cleveland Barrens | 28. William B. Trower Bayshore | 41. Mount Joy Pond |
| 3. Pinnacle | 29. Parkers Marsh | 42. Red Rock Mountain |
| 4. Big Spring Bog | 30. Wreck Island | 43. Cherry Orchard Bog |
| 5. Buffalo Mountain | 31. Chotank Creek | 44. Mutton Hunk Fen |
| 6. Pedlar Hills | 32. Deep Run Ponds | 45. Clover Hollow |
| 7. Poor Mountain | 33. Difficult Creek | 46. Marks and Jacks Islands |
| 8. Johnsons Creek | 34. Bull Run Mountains | 47. Chestnut Ridge |
| 9. Grassy Hill | 35. False Cape State Park | 48. Magothy Bay |
| 10. Folly Mills Fen | 36. Goshen Pass | 49. Naked Mountain |
| 11. Cowbane Wet Prairie | 37. Grayson Glades | 50. Chestnut Creek Wetland |
| 12. Chub Sandhill | 38. Parramore Island | 51. Camp Branch Wetlands |
| 13. Dendron Swamp | 39. Elklick Woodlands | |

We wander for distraction, but we travel for fulfillment. —Hilaire Belloc

Virginia's transportation system plays a major role in defining the quality of life enjoyed by its citizens. Many people rely on the automobile as a primary mode of transportation, while others frequently use public transportation, rail commuter services, public transit, and cycling and walking to get from place to place. No matter which way people choose to travel in Virginia, a comprehensive, safe, efficient and effective transportation system is essential.

As Virginia's population grows, so do the number of vehicle trips on the road system—and Virginia is one of the fastest-growing states. In many areas of the state the road system has been overwhelmed by traf-

fic growth. As traffic congestion increases, the demand for rail, public transportation and commuter services also increases. In some cases, residential and commercial development is occurring in areas where the existing transportation systems are not capable of meeting greater demands. Local governments approve new development projects in their jurisdictions; however, in most counties, it is the state's responsibility to provide for the road system. Continued viability of the transportation system depends on good planning. State and local governments must continually balance development with existing and proposed transportation system capacity.



I-95 just south of the Springfield Interchange. Photo by VDOT.



8th Annual Virginia Bike Walk conference in downtown Lynchburg.
Photo by VDOT.

Transportation planning in Virginia

In Virginia, the Secretary of Transportation oversees five agencies – the Virginia Department of Transportation (VDOT), the Department of Rail and Public Transportation (DRPT), the Department of Aviation, the Department of Motor Vehicles and the Virginia Port Authority. *VTrans2025* is Virginia's statewide multimodal long-range transportation plan and serves as the guiding document for all the Commonwealth's transportation agencies.

VTrans2025 provides a comprehensive, integrated approach to meeting the transportation needs of our growing population and economy. *VTrans2025* is led by the Office of the Secretary of Transportation, and is coordinated through the five modal agencies. Representatives from the Virginia Association of Planning District Commissions, several metropolitan planning organizations and the Federal Highway Administration also participate in the *VTrans2025* planning effort.

One issue identified in *VTrans2025* is the need to improve coordination of land use and transportation decisions. Local land use decisions and transportation system enhancements are unavoidably related. In Virginia, land use management rests with local governments and transportation system management rests with the state. Issues arise when there are differences in state and local perspectives, as well as different timeframes for development activities. The state's role is to safeguard the Commonwealth's transportation network and represent the public's interests, while localities address transportation, economics and local land development. Also, land use decisions can be approved in a relatively short time frame (less than a year), while transportation projects can take a decade or more for planning, funding and construction.

Findings

- The U.S. Department of Transportation administers the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005. SAFETEA-LU, as this act is called, provides funding and direction for the development of multimodal transportation systems in the country. Funding is available for bicycle, pedestrian, safety, transportation enhancements and other projects that affect our lives and offer alternatives to vehicular travel.
- *VTrans2025* serves as the blueprint for transportation planning across all modes at the state level. The *VTrans2025* final report includes an analysis of issues, multimodal needs assessment, gap analysis, policy recommendations, and vision, goals and objectives.
- The *VTrans2025* final report identified numerous policy recommendations in the areas of funding and investment, land use, connectivity and priority setting. A *VTrans2025* action plan was prepared in April 2005 to identify specific steps necessary to implement the policy recommendations and otherwise further multimodal planning in the Commonwealth. The action plan identifies key initiatives of the Commonwealth's new Multimodal Transportation Planning Office, including the development of a progress report, performance report, multimodal freight study, identification of major statewide multimodal corridors, and coordination and outreach.
- Automobile-oriented communities make it difficult to integrate walking into daily routines. In a 2002 survey, the Bureau of Transportation Statistics reported that approximately one-quarter of all walking trips take place on roads without sidewalks or shoulders, and bike lanes are available for only 5 percent of bike trips.
- Wildlife crossings can help restore connectivity where roads have fragmented habitat, provide greenway connections for self-powered travelers, and improve the safety of motorists.

Recommendations

- Transportation planners and state and local entities should place greater emphasis on providing alternatives to the use of private automobiles for daily activities. Consider transit systems, bicycle and pedestrian accommodations, improved community design, and encourage a change in people's attitudes toward transportation alternatives to meet future capacity needs and energy constraints.

Transportation Programs

- As an alternative to building wider highways, transportation planners should consider moving truck traffic onto rail where the correct combination of commodities, distance, cost and delivery time permit. *VTrans2025* is conducting a Statewide Multimodal Freight Study to focus on critical freight transportation infrastructure across the state. This study will provide recommended improvements to the system, guidance on the appropriateness of diverting freight to rail and regulatory requirements.
- Transportation planners should facilitate the efficient movement of people and goods, expand choices and improve interconnectivity of all transportation modes.
- Transportation planners should eliminate potential transportation barriers for the public and improve the linkages of recreation areas across major transportation corridors.
- State and local entities should establish a formal multi-agency process for evaluating and developing public access sites for bridge crossings of recreational waterways and at the end of road rights-of-way.
- State and local entities should improve coordination of land use and transportation planning. VDOT is in the process of developing regulations in response to recent General Assembly legislation requiring localities to seek VDOT comment on all comprehensive plans, rezonings, subdivisions and site plan analyses.
- The Department of Conservation and Recreation (DCR) and DRPT should establish a process for working with railroads on rails-with-trails and crossings of railroads for multipurpose trails and for water access purposes.
- VDOT should work with local governments to encourage the development of a permanent process for integrating the recommendations of local public health agencies and active living into all phases of land use planning.
- VDOT should conduct habitat connectivity studies to determine where wildlife passageways are needed, increase the use of signage to make motorists aware of wildlife in the area, and reduce speed limits in wildlife areas for future transportation projects.
- VDOT should consider the needs of all bicyclists and pedestrians when making improvements to designated Virginia Byways.
- VDOT should provide route number signs on the sides of bridges to orient river users to their location. There is a particular need along existing water trails as mapped in the Water Access section of Chapter VII.

Virginia Department of Transportation

VDOT is responsible for building, maintaining and operating the state's roads, bridges and tunnels to facilitate the efficient and safe movement of people and goods. VDOT works closely with the other state transportation agencies on issues related to rail, transit, aviation and ports. Virginia has the third largest state-maintained highway system in the country, just behind Texas and North Carolina. VDOT has roughly 8,800 employees, making it one of the three largest state agencies in Virginia.

The Commonwealth Transportation Board guides the department's work, acting like a board of directors. The Secretary of Transportation serves as chairman, and the Commonwealth Transportation Commissioner serves as vice-chairman. The Governor appoints the 17 board members. The Director of the Department of Rail and Public Transportation also sits as a non-voting member. Board meetings are held monthly and are open to the public. The Commonwealth Transportation Board oversees both VDOT and DRPT.



Road Maintenance Crew. Photo by VDOT

State Bicycle and Pedestrian Program

VDOT's state bicycle and pedestrian program promotes bicycling and walking within the state. Since the late 1970s it has provided planning assistance to state and local transportation planners, activity coordination for various bicycle committees, and bicycle and pedestrian education and safety promotions.

The guiding policy document for bicycling and walking is the Commonwealth Transportation Board's *Policy for Integrating Bicycle and Pedestrian Accommodations*, adopted in March 2004. It can be



Bicyclists on the Colonial Parkway. Photo by VDOT.

found at: www.virginiadot.org/bikepedpolicy. This policy establishes cycling and walking as “fundamental travel modes.” In 2006, a goal was established of allocating two percent of annual repaving expenditures throughout the VDOT system for providing paved shoulders that would enhance the traveling environment for cyclists and pedestrians. This amounts to approximately \$4 million per year.

The Bicycle and Pedestrian Policy Committee is responsible for ensuring consistent implementation of bicycle and pedestrian policies within VDOT. The Committee periodically reviews, evaluates and recommends modifications to VDOT’s bicycle and pedestrian policies and practices. It is the primary forum in which information on bicycle and pedestrian issues is considered and developed. The team consists of the VDOT district bicycle and pedestrian coordinators and representatives from the following VDOT divisions: Asset Management, Location and Design, Local Assistance, Structure and Bridge, Traffic Engineering, Transportation and Mobility Planning, and Programming.

VDOT continues to improve technical assistance to local governments and nonprofits seeking to accommodate bicyclists and pedestrians. The creation of a balanced transportation system is fundamentally a local issue. VDOT helps guide local efforts and responds to priorities established at the local level. Citizens are encouraged to work with local planners and elected officials to make their needs known. VDOT points of contact include bicycle and pedestrian coordinators in each construction district and the statewide coordinator.

VDOT partners with other state agencies in the areas of healthy communities, safety education and encouragement of bicycling and walking opportunities. Program staff members also assist with bicycle and pedestrian related studies.

State bicycle routes

VDOT maintains 838 miles of the United States Numbered Bicycle Route (USBR) system, more than any other state. USBR 1 and USBR 76 are mainly located on rural secondary roads and offer a variety of riding experiences. Planned improvements include a statewide study to identify segments for re-routing to avoid concentrations of heavy traffic, sections that would benefit from paved shoulders and a major effort to improve route designation signage.

State bicycle map

VDOT developed the first Virginia statewide bicycle map in 2006. It illustrates the location of USBR 1 and 76 in Virginia, as well as trails and other facilities of statewide significance. The map document serves as a “gateway” to a wealth of bicycling opportunities and information available on the Internet. It provides safety information, detailed maps for travelers, a snapshot of the commuter network in northern Virginia, and tips for safe, enjoyable riding. The map also helps bicyclists plan rides suited to their skills. Elevation profiles on featured routes show whether the ride is on flat, hilly or mountainous terrain. Other symbols indicate rural or urban settings and three surface types. Additional icons indicate locations of rail-to-trail rides, family-friendly facilities and mountain biking trails, plus some suggested camping and food facilities.

Education

To support bicycle safety education programs, VDOT works with the Department of Education, the Department of Health’s Center for Injury Prevention and the Department of Motor Vehicles. These programs help educators, civic groups and parents teach children about traffic rules and safe riding, as well as help children gain bicycle-handling skills.

Scenic Highways and Virginia Byways Program

VDOT and DCR administer the scenic roads program. This program is discussed in more detail in Chapter VII-E. VDOT updates and publishes a scenic roads map on a periodic basis.

Highway Beautification Program

VDOT designs, installs and maintains attractively landscaped medians, shoulders, interchanges and rest

Transportation Programs

areas along the state's highways and byways. These attractive improvements contribute to everyone's enjoyment of driving. Additionally, VDOT has established standards for vegetation management that encourage correct pruning of trees, shrubs and ground covers.

Recreational Access Road Program

VDOT administers the Recreational Access Roads program under §33.1-223 of the *Code of Virginia*. Funds appropriated under this program can be used for the construction and maintenance of roads and bikeways providing access to public recreational areas and historical sites.

The Commonwealth Transportation Board allocates the sum of \$3 million for the construction, reconstruction, maintenance or improvement of access roads and bikeways within counties, cities and towns. Funds from this program can be used when the director of DCR designates a public recreational area as such. They can also be used when the director of the Department of Historic Resources determines a site or area to be historic and recommends that an access road or bikeway be provided or maintained. In addition, these funds may also be used when the governing body of the county, city or town in which the access road or bikeway is to be provided or maintained passes a resolution requesting the road and adopts an ordinance pursuant to the *Code of Virginia* § 15.2-2280 et seq.

Transportation Enhancement Grants

The federal Transportation Enhancement program was first established by the Intermodal Surface Transportation Efficiency Act (ISTEA) enacted by Congress in 1991. The legislation required each state to set aside 10 percent of its Surface Transportation Program (STP) funds for enhancement activities. The legislation established 12 eligible activities meant to improve non-motorized transportation, enhance the public's traveling experience, revitalize communities and improve the quality of life. These federal funds cannot be used for roadway improvements or traditional highway projects.

To qualify for federal Transportation Enhancement funds a project must have a relationship to surface transportation and must qualify under one or more of the 12 eligible activities. Projects may relate to transportation through function (trails or historic bridge restoration), impact (a rain garden to mitigate run-off), or proximity (removing billboards from a highway viewshed). Approximately 75 percent of funded projects involve some improvements for bicycling, walking, or both.

Scenic River crossings

The General Assembly has designated 20 scenic rivers in the Commonwealth. In most cases, these scenic rivers are crossed by state roads. VDOT has placed signage at these crossings so travelers know they are going over a scenic river. However, many



Crozet Elementary School participate in a "Walking Friday" event. Photo by Alliance for Community Choice in Transportation.

bridges have guardrails for safety reasons that do not afford a view of the river. In many other cases, VDOT has installed railing systems that afford views of the river. Where appropriate, all future scenic river bridge crossings should allow a view of the river.

Safe Routes to School

The purpose of the Federal Safe Routes to School (SRTS) Program is to address issues of traffic congestion and air quality around schools, as well as pedestrian and bicycle safety. In addition, a growing body of evidence has shown that children who lead sedentary lifestyles are at risk for a variety of health problems such as obesity, diabetes and cardiovascular disease. Safety issues are also a big concern for parents, who consistently cite traffic danger as a reason why their children are unable to bicycle or walk to school. At its heart, SRTS empowers communities to make walking and bicycling to school a safe and routine activity once again. The program makes funding available for a wide variety of programs and projects, such as building safer street crossings and establishing programs that encourage walking and bicycling safely to school. Between 1977 and 1995, the number of yearly pedestrian trips declined 21 percent among Americans. In 1969, approximately half of all school-children walked or bicycled to or from school; today, fewer than 15 percent of children and adolescents use their own power to get to school. Although there has been a significant decline in the number of children who walk and bicycle to school over the past 30 years, SRTS is working with communities to reverse this trend.

Healthy communities

VDOT participates in the Virginia Department of Health's Division of Chronic Disease's healthy communities project. This project, which is one of 11 projects nationwide supported by the Centers for Disease Control, focuses on making the places where people live, work and go to school healthier by introducing physical activity into the community environment.

VDOT and DCR are working together to encourage non-motorized access as part of park master planning and to emphasize non-traditional transportation corridors, such as greenways, in the transportation mix. Greenways contribute to a healthy community by providing alternative transportation modes, as well as places to exercise that are free of vehicles.

Public water access at bridge crossings

The need for access to the waters of the state for recreation has been identified as one of the highest needs by respondents to the 2006 *Virginia Outdoors*



Safe crosswalks improve connections and contribute to healthy communities. Photo by VDOT.

Survey. Many highway bridges span suitable recreational waterways where a boat ramp or hand carry launch and parking area would provide access to a river. VDOT must balance the scenic aspects of bridge crossing with the necessary safety precautions. Guardrails are installed to address existing or potential safety issues, and sometimes can obstruct scenic views. VDOT does not intentionally seek to block access. It is recommended that where popular river sections do not have a formal public access facility, efforts should be made to establish one in coordination with the locality and property owners. The best time to do this may be when a bridge is being replaced.

It is recommended that a protocol be established between DCR, VDOT and the Department of Game and Inland Fisheries (DGIF) to screen bridge replacement projects to determine whether the waterway being crossed is suitable for establishment of public access. If it is determined that public access is needed at the site, then a negotiation process between the state, locality and adjacent landowners should take place in conjunction with the bridge replacement project. A dedicated source of funding for water access should be tied to this effort. DGIF manages the state's public access program, but the use of their funds is limited to power boating access in most cases. VDOT also has limited funding capability for construction of

Transportation Programs

these types of access. Additional funds are needed to construct access sites for hand carry boats and fishing access.

Land use and transportation planning activities

In addition to the above programs, VDOT is in the process of developing regulatory guidance on the review of local comprehensive plans, site plans, rezonings and subdivisions as required by recent legislation (§ 15.2-2222.1). This review process will enable VDOT to better examine local land use decisions made on, or along, the state transportation network, providing an opportunity for VDOT to comment to local government officials during the land use decision making process.

Department of Rail and Public Transportation

As a state agency reporting to the Secretary of Transportation, DRPT works closely with VDOT, which is responsible for highways. Each of DRPT's three areas (rail, public transportation and commuter services) focus on the movement of people and goods throughout Virginia.

Rail transportation

Rail transportation involves the movement of people and goods on railways owned and operated by private railroad companies. There are more than a dozen railroad companies and services in Virginia, including Norfolk Southern, CSX, Amtrak, VRE and nine short line railroads. Freight rail programs help ensure the economic vitality of businesses and communities with a cost-effective, reliable way to bring goods to market, while passenger rail programs relieve congestion on highways and offer travelers more transportation choices.

A single intermodal train can take around 280 trucks off the road, while a carload train can take 500 trucks off the road. In 2001, the railroads hauled 189 million tons of freight to, from, through and within Virginia. At 15 tons per truckload, it would take 12.6 million annual truck trips (around 38,000 to 40,000 per day) to move this much freight.

Additional benefits of rail transportation include:

- Improved air quality and reduced use of fossil fuels. For every ton-mile of freight, rail produces around one-third the particulate matter and nitrogen oxide emissions of trucking.

- Improved safety. By reducing congestion on critical highway segments, rail contributes to lower accident rates and increased safety. Rail is the safest mode for hazardous materials shipments, with substantially fewer HAZMAT releases than trucking.
- Improved mobility and choice for Virginia's commuters. In comparison to driving and parking costs, passenger rail can be a more affordable alternative. Passenger rail also provides an alternative to traveling on congested roadways. Reliable passenger rail service is a "safety net," providing positive redundancy in the Commonwealth's transportation system.

Rails-with-Trails Program

Rail lines are in use across the Commonwealth, and there are many locations at which highways cross the railroad. Railroads are concerned about the safety of their personnel, their equipment and the public at any location where rail lines interface with the public. They are reluctant to have the public on their property for any public purpose due to these concerns. It is preferable that all crossings be grade separated to minimize the impact on roadway traffic flow and the risk of accidents. Where a crossing must be at the same level as the road, warning systems are used to indicate the presence of the railroad. These warning systems may be passive in low traffic areas, with just a sign indicating the presence of the railroad. In high traffic areas active warning systems are used, which include gates and flashing lights.

Many localities and citizen groups have designed trail systems that must cross or run parallel to active rail lines. Also, there are many locations in Virginia where rail lines that follow rivers limit public access to the waterway for launching or retrieving boats. Often the public can cross rail lines at locations where a public crossing already exists. However, at times there is no reasonable alternative to crossing the rail line at certain locations or placing a trail alongside a rail line, creating a rails-with-trails situation.

DCR, DRPT, Norfolk Southern Corporation and CSX have been discussing a procedure for evaluating crossing proposals and determining whether they have merit and address liability issues. The railroad companies have agreed to work with the Commonwealth to determine whether or not their concerns can be adequately addressed. DRPT has commissioned a study of existing rails-with-trails in other states to identify ways in which liability, safety and trespassing issues have been addressed.

I think the environment should be put in the category of our national security. Defense of our resources is just as important as defense abroad. Otherwise what is there to defend?

—Robert Redford

There are many agencies of the federal and state government that manage large acreages of land in Virginia for purposes other than outdoor recreation, but which have the potential to meet some public recreation needs (see Map IX-9).

Findings

- Military reservations have had to tighten security since Sept. 11, 2001, but still provide some recreational opportunities for the public.
- The Base Realignment and Closing Commission (BRAC) has made recommendations that will affect the gain or loss of personnel located at existing military facilities in Virginia. When a military facility closes, there may be opportunities for its conversion to parks and recreation uses or its function as open space. Historic military bases offer an added cultural attribute in evaluating future options for military lands closed through BRAC. On the other hand, when military facilities gain personnel, the surrounding communities need to assess the local and regional ability to provide adequate outdoor recreation beyond what is located at the military facility.
- Military bases help meet the need for hunting areas in eastern areas of the state.
- Many state colleges and universities own large acreages of lands not presently being used for educational or research purposes.
- The Department of Corrections manages lands throughout Virginia that may have utility for public recreational use where security is not an issue.
- Greater impetus should be given to Public Law 90-465, which authorizes the Secretary of Defense to carry out a program for the “development, enhancement, operation and maintenance of public outdoor recreation resources at military reservations.” This would not only help meet outdoor recreational needs of the general public, but also would ensure that military personnel and dependents are offered adequate opportunities. In this regard, the National Park Service should assume the lead coordinating role in developing agreements between the Department of Defense and the Commonwealth of Virginia which would increase the availability of military lands for public outdoor recreational use.
- The National Park Service should coordinate with the Department of Defense to develop a process to provide accurate site information. This should ensure that the state has usable property descriptions and location maps accompanying federal surplus property notifications. All involved state agencies should be notified of surplus property title transfers.
- The Tennessee Valley Authority should continue to assist with providing access to major streams within the Virginia portion of the Tennessee River watershed.
- Any foreclosed properties offered for public sale should be evaluated for their recreational and open space opportunities and included in local, regional and state programs for appropriate management.
- The Department of General Services (DGS) should consider compatible recreational activities as a potential use for surplus or underutilized public lands.
- Before public selling or auctioning real estate, DGS should check with the Department of Conservation and Recreation (DCR), the Department of Game and Inland Fisheries (DGIF), the Department of Forestry, and local parks and recreation departments to determine if the parcel(s) have potential for present or future recreational use.
- DCR should work with all state land managers who have underutilized lands to evaluate the recreational potential of these lands.

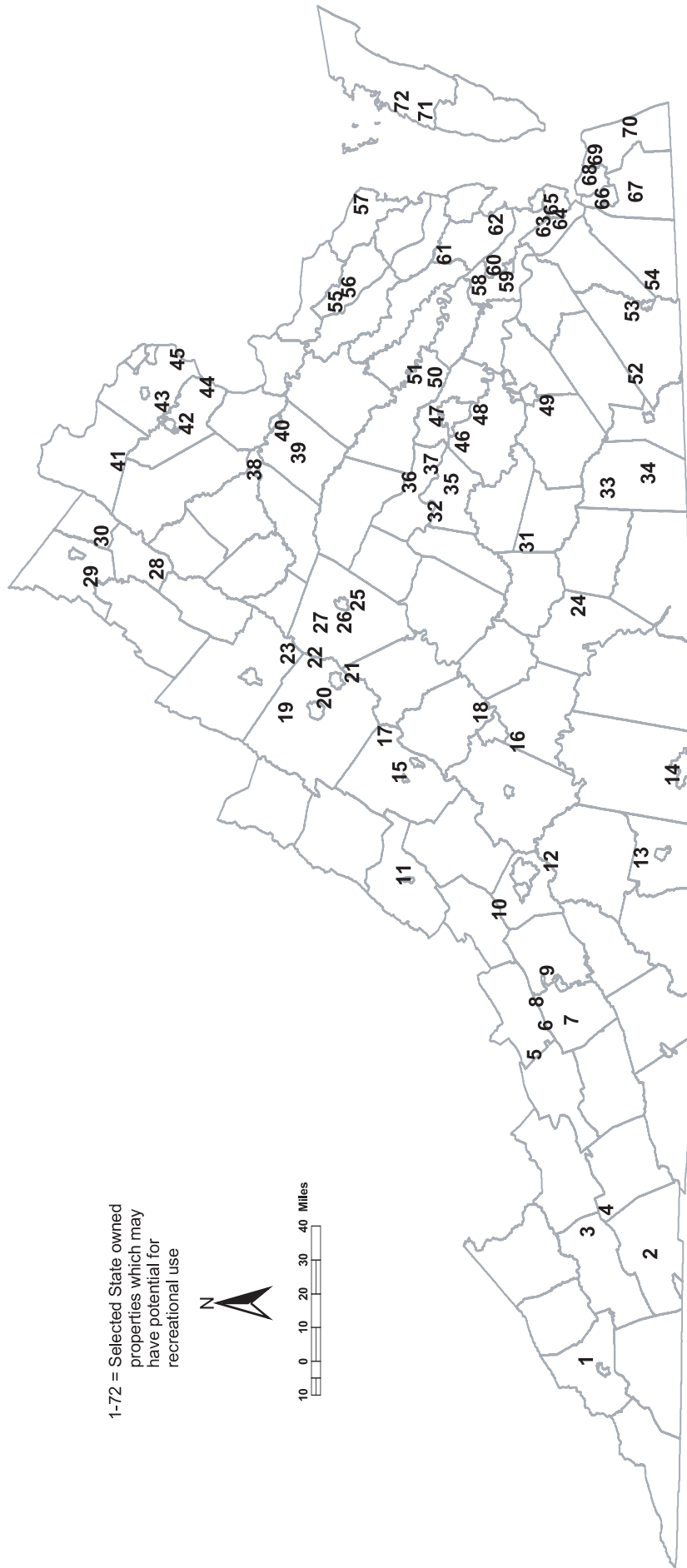
Recommendations

- All surplus land resulting from base closures or other government reductions needs careful evaluation to determine possible recreational or open space opportunities for the citizens of Virginia. Special consideration should be given to lands that afford access to the state's waters, such as Fort Monroe.

1-72 = Selected State owned properties which may have potential for recreational use



10 0 10 20 30 40 Miles



- | | | |
|--|--|---|
| 1. Mountain Empire Community College | 37. James River Correctional Center | 65. Forest Management System (VPI) |
| 2. Virginia Highlands Community College | 38. Germanna Community College | 56. Rappahannock Community College |
| 3. Southwest Virginia Community College | 39. Hamlet Tract (Mary Washington College) | 57. Virginia Outdoors Foundation (Knolls Tract) |
| 4. Geology Field Campus | 40. Old Brompton Tract (Mary Washington College) | 58. Eastern State Hospital |
| 5. Bland Correctional Farm | 41. Virginia Forest Research Station | 59. William and Mary/Eastern State Hospital |
| 6. Price's Fork (VPI/SU) | 42. Northern Virginia Comm. College (Manassas) | 60. William and Mary Airport Tract |
| 7. New River Community College | 43. George Mason University | 61. Rappahannock Comm. College (South Campus) |
| 8. White Thorne Plantation | 44. Quantico | 62. Virginia Institute of Marine Sciences |
| 9. Fishburn Tract | 45. Fort Belvoir | 63. Virginia Association Research Campus |
| 10. Catawba Hospital Property | 46. Bon Air Learning Center | 64. Christopher Newport University |
| 11. Dabney Lancaster Community College | 47. J. Sargent Reynolds Comm. College | 65. Thomas Nelson Community College |
| 12. Little River (Radford) | 48. John Tyler Community College | 66. Tidewater Comm. College (Frederick Campus) |
| 13. Patrick Henry Community College | 49. Richard Bland College | 67. St. Bridgiss Correction Center |
| 14. Danville Community College | 50. Barrett Learning Center | 68. Old Dominion University |
| 15. Lackey Farm | 51. Hanover Learning Center | 69. Norfolk State University |
| 16. Central Virginia Community College | 52. Southampton Correction Center | 70. Tidewater Community College |
| 17. McCormick Farm | 53. Paul D. Camp Community College | 71. Virginia Truck Research Station |
| 18. Lynchburg Training School & Hospital | 54. Tidewater Research Station | 72. Eastern Shore Community College |

- DCR should work with all state land managers to conduct natural resources inventories on state-owned lands for better management and sustainability.
- Community colleges have strong ties with the local communities within which they are located. Often, this is an excellent opportunity to create a partnership between the community college and the locality to develop unused lands for compatible recreational facilities to benefit both the college and the locality. Local parks and recreation directors should explore the feasibility of joint use of community college open space and undeveloped lands, and community colleges should prepare their master plans with shared use of outdoor facilities in mind.

Federal properties

In addition to national forests, parks and wildlife refuges, the federal government manages more than 426,000 acres of land and water in the Commonwealth. Although most of these areas are managed primarily for military purposes, they also provide important recreational opportunities for military personnel and the general public. While the events of September 11, 2001, changed the way military bases are managed for use for non-military purposes, most bases still offer a range of recreational opportunities that help to meet public outdoor recreation demand.

The U.S. Army Corps of Engineers operates Flannagan, Kerr, and Philpott reservoirs. These reser-

voirs comprise a total 99,000 acres of land and water. Traditionally, Corps projects such as these were designed solely for hydro-electric production, navigation or flood control. However, broadened legislative authority now requires full consideration of multiple-purpose developments like recreation, fish and wildlife conservation, hydroelectric power, water supply, and the preservation and enhancement of natural beauty. In 1982, the Corps gave operational responsibility for two of its reservoirs located in national forests to the USDA Forest Service. They were North Fork of the Pound Lake and Lake Moomaw.

The U.S. Army has nine installations in Virginia, encompassing more than 188,000 acres. Fort A.P. Hill and Fort Pickett, the two largest posts, have a combined acreage of 154,000. These two installations are primarily used for reserve training; however, recreational facilities could be available to surrounding communities when not being used for troop recreational activities or training. In addition, some of the land is open to public hunting by special permit. Both installations have small lakes and ponds that are open to the public when the military mission of the post does not require their closure. Other army installations in the Commonwealth encompass almost 34,000 acres, of which nearly 1,000 are designated for outdoor recreational use by military personnel, dependents and guests. In 1993, Fort Belvoir constructed a major recreational complex with campground, marina, lodge and other recreational facilities. This complex has become a hub for thousands of military families



Lake Philpott. Photo by USACOE.

Other Federal and State Lands



Fort Monroe in Hampton Roads.

and retirees visiting the Northern Virginia area and the nation's capital. With the re-alignment of military forces in Northern Virginia, another 2,400 military personnel and their families will be moving to Fort Belvoir. It is important that accommodations for the new arrivals include ample open space and recreational facilities.

Army installations in Tidewater include Forts Eustis, Monroe and Story. Each provides a variety of recreational facilities including beach use and boating access facilities to the ocean or tidal rivers. In particular, Fort Story provides a beach and lodging facilities for military families and makes a section of its beaches available to the general public. A large portion of Fort Story was acquired from the state prior to World War II and should be returned. Ft. Monroe is being closed as a military base, and its waterfront location makes it a great opportunity for the public to gain water access to the Chesapeake Bay.

The U.S. Navy also has nine installations in Virginia, totaling about 48,000 acres. Of this, more than 200 acres contain outdoor recreational facilities. Naval bases along the coast have significant quantities of high quality beach, some of which may be appropriate for public recreational use. Agreements with local governments would facilitate public use and increase the supply of public beach. Naval bases are continually upgrading their on-base recreational resources to meet the needs of base personnel and their families, retirees and visitors from other services or bases.

The U.S. Marine Corps operates the Quantico Marine Corps Base in Prince William County. Base policy offers a percentage of all hunting and fishing permits on the 54,000 acres to the general public. This site provides the closest available hunting lands to many residents of the heavily populated Northern Virginia area.

The remaining military installations in Virginia consist of an Air Force base, an Air Force station, a National Aeronautical and Space Administration (NASA) facility and eight Coast Guard stations. These installations together contain 5,700 acres, 150 of which are devoted to outdoor recreational facilities.

The Tennessee Valley Authority (TVA) administers 2,000 acres of water and about 40 acres of recreational land on the Virginia portion of the South Holston Reservoir. Additionally, TVA coordinates with DGIF to improve public access to rivers in Southwestern Virginia that are within the Tennessee Valley watershed.

State properties

Approximately 750,000 acres of land throughout the Commonwealth belongs to state agencies and institutions. The vast majority of these resources are committed to specific public functions. However, because some state lands are considered underutilized and possibly surplus, a significant opportunity exists to expand the use of these areas for their recreational and open space potential. Multiple use is an alternative that has been recommended to obtain additional public benefit from these properties.

As stated previously, the 2006 *Virginia Outdoors Survey* indicated that Virginians desire more recreational areas and facilities. There are many instances where existing state-owned lands currently used for other purposes might also provide some recreation. More efficient use could be made of these properties by encouraging compatible recreational developments. All previous *VOPs* have advocated the multiple use of public lands as a wise and beneficial use of the resources of the Commonwealth.

DGS has legislative responsibility to coordinate the review and disposition of state-owned properties. Over the past few years, DGS has developed maps and descriptions of the real property owned by 17 land managing agencies and institutions. The almost 350,000 acres of property inventoried, excluding highway department rights-of-way and state-owned subaqueous lands, host a range of functions including conservation, recreation, education, health and corrections. Of these, 15,000 acres were identified by the Joint Legislative Audit and Review Commission, the Department of Forestry and DGS, as resources with potential for future multiple use, including compatible recreation. It should be pointed out that not all land considered underutilized or potentially surplus is suitable for public recreation.

Concern for the environment and access to parks and open space is not frivolous or peripheral, rather, it is central to the welfare of people—body, mind, and spirit. —Laurance Rockefeller



Celebrating the James River Regional River Cleanup at Robious Landing Park in Chesterfield County. Photo by Gail Brown.

Top 10 reasons parks are important

Adapted from a report by Richard J. Dolesh, Monica Hobbs Vinluan and Michael Phillips, National Recreation and Park Society

The following “top 10” list of park and recreation values is in no particular order; rather, it encompasses the range of why we collectively believe that public parks and recreation is an essential part of our national heritage.

1. Public parks provide millions of Americans with the opportunity to be physically active. Physical activity is an essential part of an individual's efforts to stay healthy, fight obesity and prevent chronic conditions that lead to coronary disease, high blood pressure and diabetes. Having close-to-home access to places where one can recreate is one of the most important factors linking whether people will become active and stay that way.
2. Parks have true economic benefits. Private land adjacent or near protected public land leads to increased land value, a higher tax base and ultimately many economic benefits to a community. Benefits include increased local and regional revenue from heritage tourism, steady jobs and numerous small business benefits. Park and recreation areas improve local economics, improve the quality of life, and make communities livable and desirable for businesses and homeowners.
3. Parks provide vital green space in a fast-developing American landscape, and provide vegetative buffers to construction and development, thus reducing the effects of sprawl. More importantly, parks and public lands also provide groundwater recharge areas, floodplain protection, natural sound barriers, stormwater protection from wetlands, reductions in heat island effects, and carbon uptake from abundant trees and vegetation. Parks help maintain a healthy environment.
4. Parks preserve critical wildlife habitat. As our nation develops and our rural, agricultural and forest landscape is being lost, open space and wildlife habitats are disappearing at an alarming rate. The connected network of local, regional, state and national parks across our country provide permanently protected wildlife habitat corridors for thousands of indigenous and migratory wildlife species. In addition, greenways and community parks allow natural wildlife to co-exist with people while providing enjoyment and educational opportunity for children and families.
5. Parks and recreation facilitate social interactions that are critical to maintaining community cohesion and pride. Parks provide a meeting place where community members can develop social ties, and where healthy behavior is modeled and admired. People gather to share experiences, socialize and to build community bonds in common green spaces. These public commons are often the glue that holds the community together and the means to maintaining and improving future positive social interactions.



Parks provide habitat for wildlife. Photo by USFS.

6. Leisure activities in parks improve moods, reduce stress and enhance a sense of wellness. In an increasingly complex world, more people are placing a high value on achieving the feelings of relaxation and peacefulness that contact with nature, recreation and exposure to natural open spaces bring. People go to parks to get in a better mood, to reinvigorate and to decrease the anxieties of daily life.
7. Recreational programs provide organized, structured, enjoyable activities for all ages. The diverse range of recreational programs offered by public park and recreation agencies offers all Americans the opportunity to develop the skills necessary to successfully and confidently engage in sports, dance, crafts and other social activities. Public recreation leagues and classes offer seniors, adults and children the opportunity to interact with coaches and teachers who often turn into mentors and role models. Quality recreational programs facilitate safety, good sportsmanship and community participation.
8. Community recreation services provide a refuge of safety for at-risk youth. Many parents are rightfully concerned with the dangers of unstructured "hanging-out" or unsupervised after-school activities. Community recreation programs at public park and recreation facilities provide children with a safe refuge and a place to play, which are important in reducing at-risk behavior such as drug use and gang involvement. Recreational programs led by trained leaders offer children healthy role models and give valuable life lessons to help steer

youth to a future of promise and opportunity for success.

9. Therapeutic recreation is an outlet that individuals with disabilities have to be physically active, socially engaged and cognitively stimulated. A goal of all public recreation agencies is to provide access to all people. Public park and recreation agencies are the largest providers in America of high-quality, life-enhancing therapeutic recreation programs and interventions. Such programs prevent the on-set of secondary conditions due to inactivity, slow the onset of regressive conditions, and improve physical, social, emotional and cognitive functioning.
10. Public parks embody the American tradition of preserving public lands for the benefit and use of all. Since the creation of the first national park and the subsequent development and growth of state, regional and local park systems in virtually every part of our nation, Americans have had a special relationship with their parks and public lands. A love of parks is one of the defining characteristics of our national identity. Americans love their parks, historical sites, national monuments, recreation areas and public open spaces because they bring such joy and pleasure to all people. In addition, the American public has shown time after time that they are willing to care for their parks, protect them and pay for them.

Introduction

Local and regional parks and recreational facilities are the foundation of an effective outdoor recreation system for the Commonwealth. Citizens want recreational opportunities close to where they live. Although parks and recreation services are not a mandated service, providing close-to-home park and open space areas is generally considered a basic responsibility of local government. There is normally an opportunity for citizens to be involved in the process of providing these recreation services and park areas as volunteers or as members of a citizen board or commission.

The benefits of parks and recreation have been documented through various studies, including a national study conducted by Drs. Geoffrey Godbey and Alan Graefe. Their report, *The Benefits of Local Recreation & Parks Services: A Nationwide Study of the Perceptions of the American Public*, is available from the National Recreation and Park Association (NRPA). The major conclusions of this report are: recreation and park services are used by the vast majority of the public, use continues across the life-cycle, a commu-



Youth basketball. Photo by Chesterfield County Parks and Recreation.

nity benefits from local recreation and park services, the majority of respondents believe that recreation and park services are worth as much or more than they are currently paying in taxes, and recreation and parks services provide benefits to users and non-users. This is in harmony with the findings of the 2006 *Virginia Outdoors Survey* (VOS) in which nearly 92 percent of Virginians said outdoor recreational opportunities were important to them.

Findings

- There is a troubling trend in rural Virginia to disband local parks and recreation departments and instead provide public funding to private organizations to provide recreation services.
- In the Commonwealth of Virginia, parks and recreation is not a mandated service and no operational funding is provided to local governments to provide those services. The South Carolina Rural Recreation Project is a model program with the goal of aiding localities in the establishment of full- or part-time parks and recreation departments in rural areas of South Carolina.
- In the Commonwealth of Virginia Auditor of Public Account's *Comparative Report of Local Government Expenditures* (year ended June 30, 2005), it was reported that \$728 million was spent by local governments on parks, recreation and cultural activities in fiscal year 2005. This compares to \$691 million spent in fiscal year 2004 and \$432 million spent in fiscal year 1996.
- In the Commonwealth of Virginia Auditor of Public Account's *Comparative Report of Local Government Expenditures* (year ended June 30, 2005), it was reported that cities spent \$76.45 per capita on parks and recreation, while counties spent \$43.75, towns spent \$85.51, and statewide spending was \$55.31 per capita on parks and recreation for fiscal year 2005.
- NRPA held a forum in 2006 and established a national agenda for urban parks and recreation in America that included promoting health and wellness, stimulating community and economic development, protecting the urban environment, and educating, enriching and protecting America's youth.
- Americans use city or local community parks more than any other outdoor recreational areas.
- Seventy-five percent of all people use local parks and recreational services, and more than 40 percent visit local parks more than 10 times per year.
- Recent studies have indicated that people want more parks and recreation areas near large cities with more facilities for both organized sports and for unstructured free-play.
- According to the 2006 VOS, 92 percent of Virginians consider outdoor recreation important or very important. This emphasizes that there is a significant demand for recreation resources and programs in Virginia.
- Based on NRPA standards, a locality should provide a minimum of 10 acres of parkland per 1,000 citizens. The acreage should be divided between neighborhood, community, district and regional parks.
- Local parks and recreation departments are in need of additional funding sources.
- An interest in friends groups and park foundations is on the rise in Virginia.
- Each year, an estimated 200,000 children ages 14 and under are treated in hospital emergency rooms for playground related injuries. The United States Consumer Product Safety Commission estimates that 70 percent of injuries on public playground equipment resulted from falls, especially falls to the surface beneath the equipment.

Recommendations

- Because of social, health, environmental and economic benefits, each locality in Virginia should establish or maintain a publicly funded parks and recreation department. The department should oversee recreation programs, as well as the acquisition of parks and open space and the development of trails, athletic courts and fields, picnic areas, water access points and other recreation facilities.
- Virginia should support and provide incentives for local governments to maintain a parks and recreation department.
- In regions where regional parks are not prevalent, multi-jurisdictional management under a regional park authority should be considered. Start-up funding and technical support to encourage this regional approach to outdoor recreation and conservation should be explored by local and regional governments in concert with the Department of Conservation and Recreation (DCR).
- DCR, the Virginia Recreation and Park Society (VRPS) and Virginia universities should partner to enhance recreation and park services in rural Virginia. Using the South Carolina Rural Recreation Project as a model, Virginia should encourage and assist rural localities in providing recreation services to its citizens and help them establish a parks and recreation department.
- Local government departments should do a better job of coordinating planning efforts as it relates to recreation, parks and open space. Preparing and adopting an open space and recreation plan is a key element of the local planning process. Planning for green infrastructure and recreational programs are important to overall quality of life in a community. These plans should be incorporated into the locality's comprehensive plan and be consistent with the 2007 *Virginia Outdoors Plan* (2007 VOP).
- Localities should appoint a parks and recreation commission to provide citizen leadership with regard to parks and recreation issues and concerns. Commissions have been effective in many localities to enhance park areas and recreation programs. This is most important in localities where a parks and recreation department does not exist.
- Commitments to the maintenance, management and development of local parks and recreational systems are necessary. Localities should explore alternative methods of funding, such as set-aside ordinances, fees and charges, and public-private partnerships. The establishment of a "friends group," which could

possibly evolve into a "park foundation," should be considered for local parks and recreation departments. This citizens group could be a source of volunteers, as well as a source for community support and other resources.

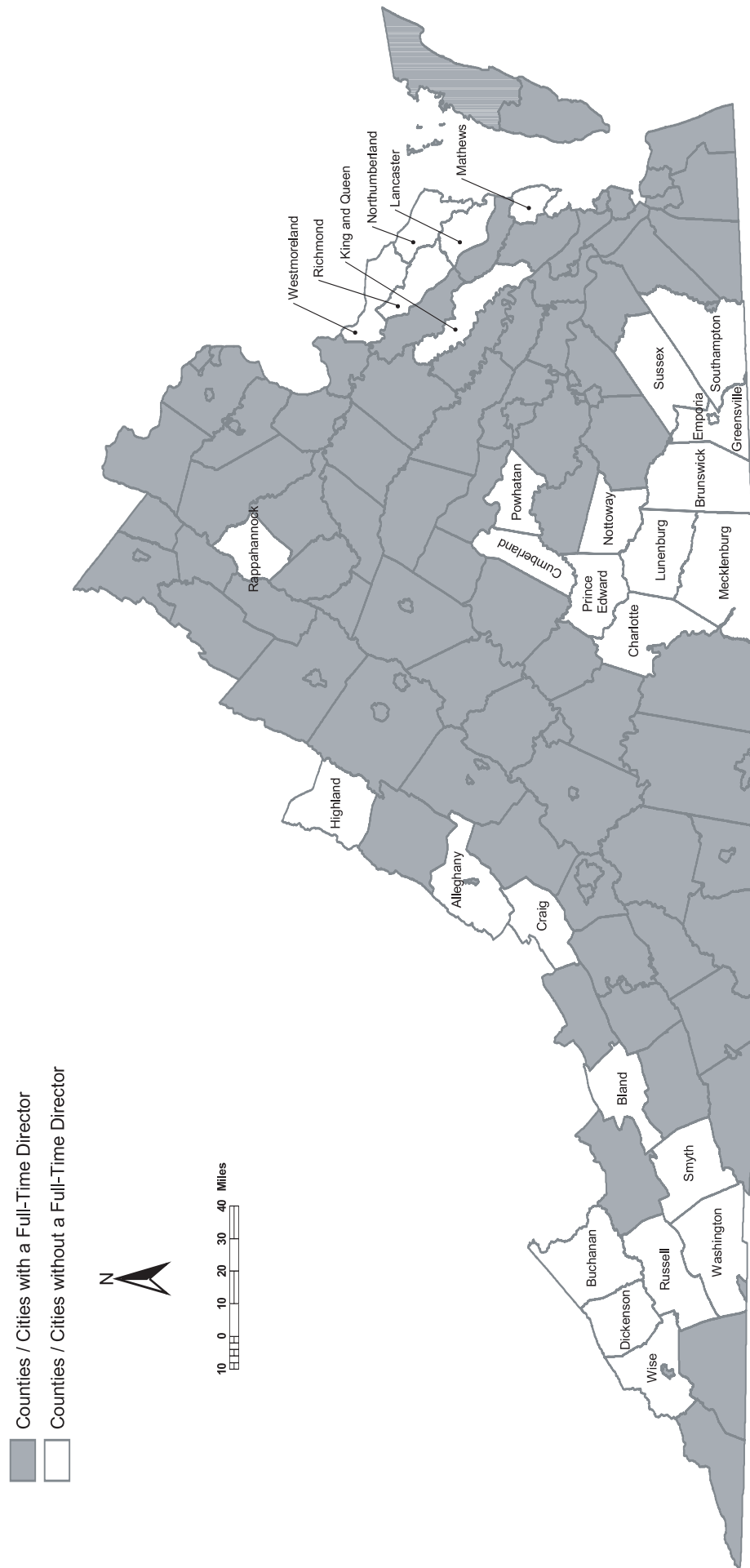
- Local parks and recreation departments should initiate a structured volunteer program that recruits, trains and retains volunteers and recognizes their contributions to parks, programs and the overall quality of life in communities.
- All localities should develop and implement hiking and bicycling plans that connect parks, schools and neighborhoods. Encouraging biking and walking within the community can enhance community health and spirit.
- Parks and programs need to be accessible to special populations, including senior adults and persons with disabilities.
- Consideration by localities of the benefit of a school-park cooperative agreement could enhance use of school and park facilities. School systems and local parks and recreation departments should cooperate in the design of new or renovated facilities. In order to increase local access, localities should consider cooperative management for the recreational use of private, corporate, state or federally owned lands.
- All public playgrounds, including school and park playgrounds, should meet or exceed the guidelines established by the United States Consumer Product Safety Commission (USCPSC) and published in the USCPSC Handbook for Public Playground Safety. All equipment should have a cushioned surface under and around it.

Local parks and recreation departments

Twenty-seven of the ninety-six Virginia counties do not have full time parks and recreation departments, meaning they do not employ a full-time parks and recreation director. These counties include: Alleghany, Brunswick, Buchanan, Charlotte, Craig, Cumberland, Dickenson, Greenville, Highland, King and Queen, Lancaster, Lunenburg, Mathews, Mecklenburg, Northumberland, Nottoway, Powhatan, Prince Edward, Rappahannock, Richmond, Russell, Smyth, Southampton, Sussex, Washington, Westmoreland and Wise (see map IX-10).

Sixty-nine Virginia counties have full-time parks and recreation departments, as do 21 incorporated towns and all cities, except Emporia. These departments serve a vast majority of citizens across the state. The

Map IX-10. Full-Time Parks and Recreation Departments



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largest void in service is in the northern neck, south-side and southwestern regions of the state. While new parks and recreation departments are formed occasionally across the state, it is a troubling trend that localities are dropping their parks and recreation departments and turning their programs over to private organizations such as the YMCA. A substantial reduction in public parks and recreation departments has been realized since the 2002 VOP was published. While private organizations may provide recreation programming in the short term, they are not charged with planning for the long term recreation, park and open space needs of a community.

Funding for parks and recreation

Spending on parks and recreation varies a great deal from locality to locality. Many localities do provide some funding for parks and recreation, but may not have taken the step of establishing a full-time department. Some towns help fund larger county departments or may assist private groups or nonprofits in providing specific programs. The Commonwealth of Virginia Auditor of Public Accounts provides information on parks and recreation spending by each locality in its *Comparative Report of Local Government Revenues and Expenditures*.

Recreation budgets are often limited when compared to other local services. Park land acquisition and development often depends upon state and federal funding and private donations. Local parks and recreation departments are in need of alternative funding sources. Interest in parks and recreation friends groups and park foundations is on the rise in Virginia. While a friends group is a less formal citizen group, a park foundation is a legal mechanism created by dedicated people to benefit the parks and recreation system. Citizens can form a foundation by creating a nonprofit corporation and applying for nonprofit status with the appropriate state office and the Internal Revenue Service. Park foundations are normally established due to the need for alternative funding, rising costs of land acquisition, the public's developing sense of stewardship toward land and cultural resources, and the public's willingness to give to charitable causes. Park foundations in Virginia raise money to build athletic fields, plant trees, purchase benches and other park amenities, provide scholarships to disadvantaged youth and provide funding for special events.

Groundwork Trusts

With pilot funding from the EPA Brownfields Program and technical assistance from the National Park Service Rivers and Trails program, Groundwork Trusts work to improve neighborhoods through reclaiming land for uses like parks and gardens, building community support for conservation and getting schools and youth involved in the process.

Location of local and regional parks

Although specific local park sites are not identified in the 2007 VOP, they are included in DCR's facility inventory. The 2007 VOP does identify several considerations for localities planning the development of a park and recreation system. These areas include stream valleys, landfills, flood plains and abandoned railroad right-of-way corridors. Because development is usually restricted, stream valleys often are excellent opportunities for trails. Utility corridors and abandoned railroad right-of-ways also should be considered for trail development. These linear corridors provide opportunities for communities to work together to provide greenways. Greenways can enhance the resource base by linking cultural, historical, recreational and natural areas into a unified open space system.

Each locality should develop strategies to meet the parks, recreation and open space needs in their community. The NRPA has guidelines for assessing the local resources and obtaining community input needed to establish a vibrant system of parks and open space.



Soccer is a popular team sport across the state. Photo by James City County Parks and Recreation.

Standards for providing community parks

National Recreation and Park Association (NRPA) standards suggest a locality should provide a minimum of 10 acres of parkland per 1,000 citizens. State standards advise that localities should distribute park acreage into a system of neighborhood parks, community parks and district parks. These parks, developed to complement existing private and public facilities, make for an effective system of meeting local recreation demand. Additionally, localities should work together to provide additional open space and recreational resources in the form of regional parks. The following describe state standards for appropriate park size and location.

Neighborhood parks should be provided at a ratio of three acres of parkland per thousand citizens, and not more than 15 minutes or one to two miles walking distance of those it is intended to serve. These parks may include playground equipment, game courts and play fields. Smaller parks may also best meet the needs of a specific population.

Community parks are designed to serve two or more neighborhoods and generally provide facilities requiring more space than can be accommodated in a neighborhood park. Facilities may include lighted game fields and court complexes, a swimming pool, a picnic area, and walking and jogging trails. Community parks should be within a 15-minute drive of the client population.

District parks are larger parks designed with a ratio of four acres per thousand citizens or a minimum of 50 acres. These should be a 15- to 20-minute drive from the target population. These parks should also be accessible by public transportation, pedestrians and bicyclists.

Regional parks are generally managed by several localities have a recommended service radius of 25 miles and a minimum size of 100 acres.

(Source: National Recreation and Parks Association)

Planning for parks and open space

Planning for a locality's green infrastructure and recreational programs is important to overall quality of life in a community. Open space and recreation plans should be incorporated into the overall comprehensive plans

for localities. It is very important to include a walking and bicycling trail component. Having an adopted bicycle-pedestrian trail plan is essential if the Virginia Department of Transportation (VDOT) is to include these components when improving or building roads.

Just as the 2007 *VOP* looks to the future of parks and open space for the Commonwealth, each locality should develop its own blueprint for future park spaces and recreation programs. The process of developing a local parks, recreation and open space plan may enlighten citizens to the need for proper planning, as well as to mobilize resources to enhance the quality of life in a community. With proper planning, a clear path can be established to develop a strong public parks and recreation system.

The best parks and recreation departments are those where the citizens feel a sense of ownership and are involved in the park system. Communicating the individual, community, economic and environmental benefits of a system of parks and recreation is critical to maintaining and building community support.

Citizen involvement

Citizen involvement is a key component to the development of a comprehensive parks and recreation program for a community. Parks and recreation commissions may be established to serve in either an advisory or policy-making capacity. Commissions offer localities a unique resource to help determine the direction that parks and recreation should take in the future and provide the leadership necessary for achieving this vision. Board and commission members should be provided with orientation and ongoing training to support their board activity. Boards can provide the parks and recreation department with strong ties to the local business community, which can result in private funding of recreation programs and facilities, as well as opportunities for beneficial partnerships.

Partnerships and cooperative agreements

Due to the heavy use of athletic facilities, it is vital that schools and parks develop cooperative agreements for facility use. While many parks and recreation departments already work cooperatively with school systems to provide community-level programs, more localities need to implement the school-park concept. The school-park concept promotes schools and surrounding land and facilities as community recreation centers during non-school hours. Close cooperation between school and recreation personnel is needed throughout facility planning, development and renovation.

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tion to ensure a balance of recreational and educational features. An operating agreement between the school board and the governing body should encourage full use of all available resources.

Park and recreation departments should initiate contact with agencies and organizations (i.e., colleges, universities, military bases, armories, churches) to determine the feasibility of creating partnerships with institutions to make recreational facilities and programs more accessible to local citizens. Further, local governments can and should enter into agreements to access or manage private facilities, where possible, for the public's use and enjoyment.

Park safety and accessibility

Individuals of varying abilities desire access to recreation programs and facilities. Attention must be given to assure that programs and facilities are accessible to people with disabilities. By making programs accessible to people with disabilities, access to programs improves for everyone.

Safety is an important consideration for managers of park and recreation facilities. Of particular concern is the safety of playground areas. The United States Consumer Product Safety Commission and the

American Society for Testing Materials provide guidelines on the design and installation of playground equipment. NRPS conducts the National Playground Safety Institute, which is the playground safety inspector course and exam. Individuals that take the course and pass the exam become Certified Playground Safety Inspectors.

Swimming pools also present particular safety challenges. Pool personnel must receive appropriate training in supervising participants, as well as lifesaving and first aid techniques. Staff must also be trained in the overall operation of the pool complex, including handling chemicals and recognizing potential health and safety hazards. NRPA is one of the leading organizations in providing training to pool operators. The American Red Cross is recognized as a leader in training lifeguards and swimming instructors.

While the safety of facilities is important, it also important that staff and volunteers be trained to supervise and teach children. Coaches should be provided with training on teaching athletic skills, as well as sportsmanship, first aid and safety. Appropriate sportsmanship standards should be set and enforced for coach, participant, parent and fan behavior. Staff and volunteers working with children should pass a criminal background check.



Safety is important at local swimming facilities. Photo by Richmond Parks, Recreation and Community Facilities.

Health and wellness benefits of outdoor recreation

Increasing concerns about children losing touch with nature

Prompted by the galvanizing book *The Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder*, by Richard Louv, NRPA members are asking how public parks and recreation can meaningfully participate in the response to concerns about children becoming increasingly disconnected from nature. The Conservation Fund (TCF), a national land conservation organization, is working to convene a “National Forum on Children and Nature.”

NRPA hopes to bring hundreds of local and regional park and recreation agencies into this national advocacy effort. It has begun pilot programs such as “Let’s Go Fishing,” in cooperation with the Recreational Boating and Fishing Foundation, and the soon-to-be launched “Teens Outside” adventure recreation program, in partnership with the Outdoor Industries Foundation.

Parks provide places for people to play and programmed recreational activities that encourage physical activity. The lack of parks and recreation close to home, hectic schedules, high-fat foods, automobile-oriented development and expanding forms of electronic leisure contribute to obesity, which results in significant health-care costs. The increase in the diagnosis and treatment of some forms of mental illness is a parallel trend that may be related to the lack of time spent in outdoor play.

Perhaps more time spent indoors results in lowered tolerance for the risks associated with unstructured play outdoors and in nature. In trying to protect children from predators, disease and exposure, parents often discourage unstructured play outdoors. Parents often do not compare these risks with the risks of chronic disease and lost opportunities for creative play that may result from too much time indoors.

People in our society today spend the majority of their time indoors, be it in an automobile, an office, a workplace or home. Even if they use the parks as we wish they would, the amount of time out-of-doors is minuscule compared to the amount of time spent indoors. The benefits of outdoor activity and exercise far outweigh the risks.

—Martha W. Moon, RN, PhD, MPH, VCU School of Nursing



Crosswalk in the City of Lynchburg. Photo by VDOT.

The decision to invest in open space, outdoor recreation and public play space improves the physical, social and psychological well-being of all citizens. Table IX-4 summarizes how parks and nature contribute to human health.

Research shows that when people have access to parks, they exercise more. In a study published by the Centers for Disease Control, creation of enhanced access to places for physical activity led to a 25.6 percent increase in the percentage of people exercising on three or more days per week. A group of studies reviewed in the American Journal of Preventive Medicine showed that “creation of or enhanced access to places for physical activity combined with informational outreach” produced a 48.4 percent increase in frequency of physical activity. The same group of studies showed that access to a place to exercise results in a 5.1 percent median increase in aerobic capacity, along with a reduction in body fat, weight loss, improvements in flexibility and an increase in perceived energy.

When people have nowhere to walk, they gain weight. Obesity is more likely in unwalkable neighborhoods, but goes down when measures of walkability go up. Dense housing, well-connected streets and mixed land uses reduce the probability that residents will be obese. (Trust for Public Land)

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Table IX-4. Parks Contribute to Health and Wellness

Health Component	Contribution of Parks
Physical	Parks provide a variety of settings and infrastructure for various levels of formal and informal sport and recreation for all skill levels and abilities, such as picnicking, walking, dog training, running, cycling, ball games, sailing, surfing, photography, birdwatching, rock climbing and camping.
Mental	Parks make nature available for restoration from mental fatigue, provide solitude and quiet, artistic inspiration and expression, and educational development, such as natural and cultural history.
Spiritual	Parks preserve the natural environment for contemplation, reflection and inspiration, and invoke a sense of place.
Social	Parks provide settings for people to enhance their social networks and personal relationships.
Environmental	Parks preserve ecosystems and biodiversity, provide clean air and water, maintain ecosystem function, and foster human involvement in the natural environment.

(Adapted from Parks Victoria, Australia. *Healthy Parks Healthy People: The Health Benefits of Contact with Nature in a Park Context*, November 2002.)

Positive effects of green space on health

The relationship between vegetative cover and air and water quality has been well established. Many studies also demonstrate that attractive natural settings, landscapes, open space and forests contribute to mental health. Recognizing this relationship, health practitioners use horticultural therapy in community-based programs, geriatrics programs, prisons, developmental disabilities programs and special education. In *The Benefits of Parks: Why America needs more City Parks and Open Space*, the Trust for Public Land showed that people report fewer health complaints and have better mental health in a greener environment (living near city parks, agricultural areas or forests). A review of 10 years of medical records in a Pennsylvania hospital showed that patients with tree views had shorter hospitalizations, less need for painkillers, and fewer negative comments compared with patients with brick-wall views.

Those who do not find time for exercise will have to find time for illness. —Old Proverb

As a group, women over age 65 are among the least physically active in the nation, contributing to increased risk of osteoporosis, arthritis, heart disease and other ailments. It appears, from a mounting body of evidence, that environmental factors like access to parks and trails might be associated with physical activity behavior. Walking and physical activity levels increased significantly when participants reported being able to walk to at least two destinations. Also, women who lived within walking distance of a biking or walking trail walked significantly more than those who did not. (King et al.)

Outdoor recreation policy related to health and wellness

At least 18 state legislatures across the country have recently considered bills designed to increase access to walking and bicycling, and many local governments are considering initiatives linking bicycling, walking, community design and health. The mental and physi-

cal health-care costs associated with the lack of physical activity and the loss of time spent outdoors have a negative fiscal impact on Virginia communities. The economic consequences of obesity call for policy interventions that promote physical activity and outdoor recreation. The 2007 VOP recommends establishing or maintaining publicly funded parks and recreation departments and providing financial support and incentives to local government for this purpose. Other policy initiatives should promote active living through appropriate community design, as well as target the increase of physical activity in schools.

Resources for getting active

Active Living by Design
www.activelivingbydesign.org

Active Living Network
www.activeliving.org

America on the Move
www.americaonthemove.org

Choose to Move
www.choosetomove.org

Department of Health and Human Services,
Centers for Disease Control and Prevention,
Physical Activity for Everyone
www.cdc.gov/nccdphp/dnpa/physical

Get Kids in Action
www.getkidsinaction.org

Hearts N' Parks
www.nhlbi.nih.gov/health/prof/heart/obesity/hrt_n_pk

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Red Wing Golf Course in Virginia Beach. Photo by City of Virginia Beach Parks and Recreation.

Americans spend more than \$400 billion annually on recreational goods and services. Recreation is a very important positive economic and social force in America today. Recreation is a part of all American lives – the old and the young, the fit and the disabled, the affluent and the poor. There is an amazing mosaic of for-profit and not-for profit organizations and government agencies, which are at work supporting recreation and protecting the shared legacy of America's public lands. —Dave Humphreys

The private sector plays a major role in the provision of recreation opportunities, as well as in the management and stewardship of the Commonwealth's open space and natural resources. Private sector involvement includes individual citizens, organizations, corporations and businesses. The *Virginia Outdoors Plan (VOP)* supports private investment in recreational endeavors, including the provision of quality recreational facilities and services, as well as the promotion of conservation and land stewardship. Without a diversity of private sector partnerships, the level of service and properties available to the public for outdoor recreation and conservation initiatives would be limited.



Hampton Park in Midlothian an East West Partners community.
Photo by East West Partners

Findings

- Public use of private lands and waters for fishing, hunting, hiking and other recreational pursuits is an important component of supply to meet recreation demand. However, private lands open for public recreation are declining due to ownership changes, property size reduction, more restrictive access policies, insurance issues and landowner opposition (USFS).

- The public sector actively encourages private investment in recreation sites, facilities and services on public lands (USFS).
- Corporations, nonprofit groups, churches, individuals and historic preservation organizations contribute significantly, through land use agreements and partnerships, to the provision of outdoor recreation opportunities and the preservation of open space and natural resources.
- There are opportunities to market Virginia-grown products and agri-tourism alongside outdoor recreation.
- There is a change in land holdings of forestlands from large timber companies to others not involved in forest management. This could result in the long-term loss of the renewable resource, forest habitat and lands open for traditional forest recreation.
- Increased public access to both public and private properties using exchanges, easements, acquisitions and partnerships will be necessary to meet recreation demand in the future.
- Children and adults spend less time outdoors in nature, which negatively affects their health and well-being.
- Nonprofits, churches and foundations with a mission other than outdoor recreation or conservation may use land as leverage or to turn a profit when the organization is financially stressed.

Recommendations

- Recreational use agreements or easements should be encouraged for private property owners to make more private lands available for recreation.
- Efforts should be made by the Department of Conservation and Recreation (DCR) to make existing and potential private sector providers of outdoor recreation knowledgeable about the Virginia Landowner Liability Law, especially where applicable to trails and greenways development.

Private Sector

- The private sector is encouraged to coordinate with state and local parks and recreation agencies to determine how to supplement outdoor recreation.
- Local, state and federal outdoor recreation providers should support corporate recognition programs and improve corporate recognition for small business willing to incorporate outdoor recreation needs in an environmentally friendly manner.
- Private sector health and outdoor recreation providers should partner to support further research and linkage of healthy lifestyles with outdoor recreation.
- Employers should identify ways to promote an active lifestyle both inside and outside the agencies.
- Develop publications listing the location of local farmers markets, craft centers, wineries and home based industries so that travelers may have opportunities to purchase Virginia products. This could be done with the assistance of the Department of Agriculture, Forestry, Virginia Farm Bureau, Local and State Chambers of Commerce
- Encourage federal, state and local outdoor recreation providers to partner with multiple private sector organizations.

Types of private recreation providers

Private recreation providers are important to all types of recreation. These providers help to meet the demand in communities across the Commonwealth for high quality, convenient recreation facilities. Active outdoor providers may include private facilities for all terrain vehicles, horseback riding, mountain biking, hang gliding, swimming, zip line courses, geocaching, rock climbing and canine training and tracking courses. Passive outdoor providers may include private hunting facilities, especially hunt clubs, hiking paths, fishing piers, picnicking, bird watching and nature photography. Private community centers such as the YMCA and community related organizations offer gyms, weightlifting and workout facilities, racquetball, tennis, bowling, swimming and fitness classes. Private commercial facilities may include indoor shooting ranges, paint ball ranges, miniature golf courses, amusement parks, exercise facilities, indoor swimming and skating rinks. Resorts and clubs including golf courses, skiing, snow boarding, tennis and racquet sports also help meet recreational needs within specific sectors of the population.



Skiing is most often provided at private resort locations. Photo by Ed LaDoux, Virginia Tourism Corporation.

Virginia Tourism promotes outdoor recreation

Virginia Tourism Corporation compiles both public and private outdoor recreation data related to tourism. Virginia's Outdoor Guide Search is a feature on the Virginia Tourism Corporation website that assists citizens in planning outdoor trips. The website sorts information by locality, region and types of recreation. www.virginia.org/site/main.asp?referrer=outdoors

2006 Virginia Outdoors Survey

The 2006 *Virginia Outdoors Survey* (VOS) showed that citizens use publicly-owned facilities approximately 73 percent of time and private facilities the remaining 27 percent of time for outdoor recreation activities. Some outdoor facilities lend themselves to the use of private lands or commercially developed outdoor recreation facilities. Activities involving large land areas most often incorporate more frequent use of private lands. The 2006 survey indicated that horseback riding,

Table IX-5. Recreation on Public and Private Lands

Activity	Percent Use of Public Lands	Percent Use of Private Lands	Unknown if lands are public or private
Horseback riding	26.2	69.3	4.5
Hunting	33.1	65.6	1.3
Snow skiing, snow boarding	41.8	55.4	2.8
Driving motorcycles off-road	41.1	48.4	10.4
Driving 4-wheel vehicles off-road	55.7	37.2	7
Tennis	64	33.7	2.3
Golf	63.2	32.5	4.3
Jet-ski, personal watercraft	64.8	31.4	3.8
Basketball	75.2	23.9	0.9
Football	73	23.4	3.6
Volleyball	73	23.4	3.6
Water skiing	71.9	23.3	4.8
Rafting	79.7	23.3	4.8
Sailing, sail boarding	73.7	21.7	4.6
Skateboarding	74.1	21.1	4.9
Tubing	74.4	20.2	5.5
Power boating	75.2	19.5	5.3
Inline skating	80.5	19.5	0
Visiting gardens, arboretums	75.6	18.2	6.2
Freshwater Fishing	79.7	16.9	3.4
Canoeing, kayaking, rowing	80.9	15.4	3.7
Sunbathing, relaxing on beach	82.9	14.7	2.4
Soccer	82.1	14	3.9
Nature study, program	85.8	12	2.2
Saltwater Fishing	86.5	11	2.5
Jogging	86.3	8.8	4.8
Walking	86.3	8.5	5.2
Baseball	88.4	8.2	3.3
Softball	87.9	8	4.1
Birdwatching (away from home)	82.7	6.9	10.4
Other bicycling	89.7	6.4	3.9
Camping	39.4	5.7	54.9
Playground	92	5.7	2.2
Picnicking	90.7	5.4	4
Off-road, mountain biking	94.6	4.7	0.7
Visiting natural areas, preserves, refuges	88.1	4.5	7.4
Fitness trail	93	4	2.8
Hike, backpack	91	3.6	5.4

hunting, snow skiing and snow boarding, and driving motorcycles off-road were more apt to use private lands for these activities. Table IX-1 summarizes the percentage of private vs. public lands for each outdoor activity surveyed.

Corporate support and partnerships

Corporate support and partnerships have grown over the past five to 10 years. Many corporations are able to donate funds to outdoor recreation and conservation. In some cases, it is advantageous for corporations to donate land or dedicate lands into conservation easements. There are a wealth of existing and potential partnerships for outdoor recreation, stewardship and conservation among corporations, nonprofits and governmental agencies. Many corporations are well respected within their communities as excellent land stewards and protectors of the environment. Larger corporations are particularly sensitive to community outreach, as well as incorporation of internal environmental programs like ISO 14000, which is a series of international standards on environmental management (www.iso14000-iso14001-environmental-management.com).

Traditionally, timber companies provided public access to recreation on their lands. Many of the large paper companies like WESTVACO, Bear Island, International Paper, Georgia Pacific, Grelf Brothers and others provide access to their properties for hiking, hunting and nature study. Partnership agreements have been made with state agencies like DCR for the use of their properties. The current trend for large timber companies to divest their land interests may affect the acreage of forestlands in Virginia. While many governmental agencies may be interested in purchasing these lands from the private sector, many acres are being sold to owners with land development interests. These landowners may not manage the forests as a renewable resource, which could jeopardize the longevity of Virginia land available for outdoor recreation and conservation.

In addition to outdoor recreation facility providers, a cooperative health and outdoor recreation initiative would be cost effective in meeting the needs for health and outdoor recreation. Such a partnership involving private, public and nonprofit organizations would further active-living initiatives and help decrease rising health care costs over time. Linking outdoor recreation opportunities to health and wellness makes economic sense and would result in better quality of life for all citizens of the Commonwealth.



Many private sector residential developments like River Watch in Gloucester offer opportunities for walking for pleasure. Photo by East West Partners.

Many small businesses and for-profit service providers also support outdoor recreation and athletic endeavors in communities across Virginia. Opportunities to link leading sports and athletic community concerns with environmentally-friendly practices may further strengthen partnerships with small businesses. There is a growing movement among small business, especially those that depend on natural resources, to “go green,” thereby gaining an economic advantage, improving marketing and helping the environment.

One such partnership developed with a small business using seed funds from a grant initiated by a local nonprofit organization. This small business is spearheading an effort to implement a greenway adjacent to their property by becoming proactively involved in negotiations with adjacent property owners and the county. The Richmond Outdoor Sports Experience (RISE), located in Chesterfield County, provides indoor playing fields and lessons for soccer, volleyball and baseball. The 2-acre RISE building sits in an industrial park adjacent to a stream. The project began in partnership with DCR, Chesterfield County and local nonprofit organizations. The owners of RISE first designed and installed a BayScape landscape along with educational signage to serve as a trailhead to a greenway surrounding the site. Long-term plans in working with Chesterfield County and nonprofit partners are to extend the greenway outside the RISE property boundaries along the stream, which would link the facility to a school and other recreational facilities.

Nonprofit contributions

Nonprofit organizations are often intimately familiar with the local community. Nonprofits target needs within their area of interest and identify stakeholder groups. The role of a nonprofit often depends on its mission and goals. Nonprofits involved in outdoor recreation, conservation and environmental stewardship often are the perfect liaison in forming partnerships with businesses and government. One of the advantages in working with nonprofit organizations are the resources the boards of directors bring to the organization.

There are 150 nonprofits operating in Virginia that work on conservation, land management stewardship and environmental education. The types of projects led by nonprofits may include the following.

- Conservation easements
- Land donations
- Greenways and trails additions
- Land management agreements
- Implementation of low impact design alternatives
- Promotion of land stewardship and conservation education
- River cleanups
- River corridor management
- Scenic vista management

Outdoor recreation facilities

Often the management and maintenance of locally-owned recreation facilities are greatly enhanced through public-private partnerships. Athletic associations in many communities will adopt facilities and help maintain the property or raise funds to provide improved facilities. In addition, locally initiated programs such as adopt-a-trail or statewide Adopt-A-Stream (www.dcr.virginia.gov/soil_&_water/adopt.shtml) programs will improve the condition and long-term sustainability of outdoor recreation properties.

Conservation

Nonprofit groups and individual activities contribute much to the total effort of preserving natural and historic resources. Among such groups are The Nature Conservancy, National Audubon Society, Izaak Walton League of America, the Boy Scouts and Girl Scouts of America, service clubs and many others. Historic preservation organizations, such as the Colonial Williamsburg Foundation, APVA Preservation Virginia

and the Civil War Trust, also contribute significantly to the preservation of open space and natural resources that have public value and help to maintain the resources that define the character of the Commonwealth. Unless easements are placed on these private lands for recreational and conservation uses, there is no guarantee that these facilities will be available for future generations. Often nonprofits and foundations with a mission other than outdoor recreation or conservation will use land as leverage or to turn a profit when the organization is financially stressed.

The evolution of private recreational lands: Sandy Point State Forest

Approximately 2,000 acres along the Mattaponi River in King William County has provided a myriad of recreational opportunities in the community. In the late 1940s, the property was purchased by the Chesapeake Corp. to manage as working forestland supporting Chesapeake's industrial needs. During that time, a small beach was leased to a private association that provided river access. Beginning in the 1980s, recreational uses of the property expanded to include pen-raised game bird hunting. The Nature Conservancy purchased the property in the 1990s and continued to allow public access for various recreational uses, including waterfowl hunting, upland game hunting and birdwatching. In 2002, the Virginia Department of Forestry (DOF), supported financially by the Forest Legacy program and the U.S. Forest Service, purchased the property. The DOF goal for the property, which has become known as Sandy Point State Forest, combined outdoor recreation with forest management practices. Over time, this property has become increasingly important in meeting community needs for recreation. At any point in the history of land ownership for Sandy Point State Forest, the property could have been sold to one or more land developers and recreational access eliminated. It is more common for properties that have served as long-term recreational lands managed by private organizations to be sold for greater profit and to be developed.

Corporate stewardship

Nonprofit organizations and governmental agencies often partner to administer recognition programs for private sector businesses and to encourage corporate stewardship.

Corporate stewardship recognition programs

Virginia Coastal Zone Management Program's Clean Marina Program

www.vims.edu/adv/vamarina

There are approximately 1,000 marinas and 230,000 boaters in the tidal waters of Virginia that share in the scenic beauty, economic benefits and general use of Virginia's waterways. The Virginia Clean Marinas Program is a voluntary program funded and initiated by the Virginia CZM Program to help reduce nonpoint pollution.

Businesses for the Bay

www.chesapeakebay.net/b4bay.htm

Businesses for the Bay is a voluntary team of forward-looking businesses, industries, government facilities and other organizations within the Chesapeake Bay watershed. The program is sponsored by the Chesapeake Bay Program for businesses that are committed to implementing pollution prevention in daily operations and reducing releases of chemical contaminants and other wastes to the Chesapeake Bay.

Builders for the Bay

www.cwp.org/builders_for_bay.htm

Builders for the Bay is aimed at reducing environmental impacts from residential and commercial construction within the Chesapeake Bay watershed. Under the leadership of the Alliance for the Chesapeake Bay, the Center for Watershed Protection and the National Association of Home Builders, Builders for the Bay encourages the voluntary adoption of better site design principles that reduce the environmental effects of residential and commercial development.

Governor's Environmental Excellence Awards for Manufacturers

www.vamanufacturers.com/geea/product_application.php

Virginia Manufacturer's Association sponsors the Governor's Environmental Excellence Awards for Manufacturers that are supported by Virginia's Governor, Secretary of Natural Resources and the Department of Environmental Quality. This awards program encourages Virginia's industries to develop new products that will enhance the state's pollution prevention policy and to help industry practice excellent environmental stewardship by recognizing outstanding efforts in this area each year.

The Nature Conservancy's Safe Harbor Program

www.nature.org/wherewework/northamerica/states/virginia/press/press135.html

The Nature Conservancy, the U.S. Fish and Wildlife Service, the Virginia Department of Game and Inland Fisheries, and Environmental Defense cooperatively developed Virginia's Safe Harbor program in 1995. In January 2001, International Paper became the first private landowner in Virginia to enroll in The Nature Conservancy's "Safe Harbor" program in Sussex County. Forest owners who voluntarily enroll in Safe Harbor agree, for a specified period, to restore or improve their land as woodpecker habitat. In exchange, they avoid future regulatory restrictions on the use of their land should red-cockaded woodpeckers, protected under the Endangered Species Act, become established on their property.

Community support for outdoor recreation and active living

The entire community is needed to promote physical activity. According to *Shaping America's Youth*, more than 80 percent of organizations that fund childhood obesity-related programs are either nonprofit or government, with for-profit businesses and corporations supporting less than 20 percent of ongoing programs.

Employers should promote active living through workplace-based programming. Workplace practices can play a key role in encouraging physical activity. Because an active workforce is an asset, workplace wellness is becoming increasingly important. Bon Secours Richmond Health System reports 81 percent of American businesses with more than 50 employees have workplace health promotion programs. In the Second Tri-Annual Buffet Taylor National Wellness Survey, the top four reasons why Canadian companies offer worksite wellness programs is because healthy employees are a valuable asset (27.3 percent), to promote a healthy lifestyle (25.6 percent), to reduce absenteeism (14.3 percent) and to contain the costs of benefit programs (10.1 percent).

Some churches in Virginia provide trails, gyms and active recreation leagues for adults and children. These faith-based initiatives often integrate healthy living into congregational messages. For example, the Faith Cardiovascular Health Project launched programs in 49 ministries within five regions of Virginia to initiate walking trails, nutritional awareness, blood pressure checks and specific interventions designed to promote public health.

Individual property owners providing recreation

Many private landowners allow the public to use their lands and waters for fishing, hunting, hiking and other similar types of recreational pursuits. This has been confirmed by the Department of Game and Inland Fisheries' assistance to private landowners for the management of 12,000 to 15,000 acres of land for hunting, fishing and other wildlife recreation related activities. Also, the Virginia General Assembly passed legislation in 1988 authorizing DCR to establish long-term contracts to develop privately owned recreational facilities on department lands. This legislation allows for increased public-private cooperation in the development of recreational opportunities in the Commonwealth.



All Terrain Vehicle (ATV) trails are often on private lands. Photo by Cynthia Turner.

Agri-entertainment and Agri-tourism are new, highly consumer-focused types of agriculture and may offer additional options for diversification and adding stability to farm incomes. Farmers have invented a wide variety of "entertainment farming" options. Types of entertainment farming are picking vegetables, Christmas tree farming and navigating corn mazes and have become popular recreation destinations. Also the significance of sustainable farms and local agricultural providers represented most frequently at farmer's markets highlights the benefits of farming from an ecological and economic perspective. Furthermore, the benefits of farms, agriculture and forests to scenic character and tourism must not be understated (See Chapter II-C: Scenic Resources). These local agricultural industries are also important for Virginia's local food security, encouraging linkages with local community markets and distributors,

enhancing the sustainability of local food systems, and connecting Virginia's farmers and farm products with Virginia's communities through recreation.

Garden Tours and Garden Club Week provide an outlet for recreation and increase awareness for protection of sites, as do horticultural events and visiting botanical gardens and nurseries. Many nurseries provide horticulture and gardening classes and seminars to further understanding and enjoyment of gardening experiences.

The American Community Gardening Association (ACGA) is a bi-national nonprofit membership organization of professionals, volunteers and supporters of community greening in urban and rural communities. The Association recognizes that community gardening improves the quality of life for people by providing a catalyst for neighborhood and community development, stimulating social interaction, encouraging self-reliance, beautifying neighborhoods, producing nutritious food, reducing family food budgets, conserving resources and creating opportunities for recreation, exercise, therapy and education. Community gardens also improve water quality by absorbing and recycling rainwater if properly sited.

There is a sense of growing reticence for property owners to allow recreation on private lands. High rates of insurance create a problem for some activities, such as equestrian concessions. Even though Virginia has an excellent land use liability law to protect private landowners who offer public access for recreation (see Chapter VIII), landowners wishing to offer fee-based recreation services must protect their liability by obtaining appropriate insurance coverage.

Selected resources and references:

American Community Garden Association.
www.communitygarden.org

Chesapeake Congregations.
www.toad.net/%7Ecassandra/cheshome.htm

National Governors Association. 2005. *Policy Paper: NR-14. Recreation Resources Policy.*

National Sustainable Agriculture Information System.
<http://attra.ncat.org/attra-pub/entertainment.html>

U.S. Forest Service. 2003. *An Analysis of the Outdoor Recreation and Wilderness Situation in the United States: 1989-2040.* U.S. Department of Agriculture. www.fs.fed.us/pl/rpa/rec89.htm

U.S. Forest Service. *Forests on the Edge.* U.S. Department of Agriculture. www.fs.fed.us/projects/fote



Hampton Park fun area in Midlothian. Photo by East West Partners.

Regional Analysis and Recommendations

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

—Margaret Mead



The regional chapters provide a closer look at specific recommendations. Photo by USFS.

Local and regional partners are the primary implementers of the *Virginia Outdoors Plan (VOP)*. Information received during two series of public meetings in the fall of 2005 and the fall of 2006 helped formulate recommendations. Local and regional input from planners, recreation professionals, nonprofit groups and planning district staff are also included in recommendations for each recreational planning region. This chapter examines the 21 recreational regions and evaluates outdoor recreation needs based on the 2006 *Virginia Outdoors Survey (VOS)* and 2005 *Outdoor Recreation Areas and Facilities Inventory*.

Each regional subsection includes an introductory description of the area. The regional resources are outlined within state program areas, such as trails and greenways, scenic resources, scenic rivers and scenic roads. The resources managed by federal agencies, state agencies and the private sector are identified, and recommendations are made to help meet conservation and outdoor recreation goals. The regional chapters also outline existing conservation lands and strategies to meet statewide conservation goals.



Walking and jogging are popular in all regions. A jogger at Pandapas pond near Blacksburg. Photo by USFS.

Planning Regions

The 2007 *VOP* divides the Commonwealth into 21 outdoor recreational planning regions. These regions coincide in name, area, number and boundaries with existing planning district commissions (PDCs) shown on the ensuing table and map. For the purposes of this plan, when a jurisdiction is a member of multiple planning district commissions, one planning region is selected to avoid duplication of inventory data and resource recommendations. To that regard, Chesterfield County and Colonial Heights participate with both the Richmond Regional PDC and the Crater PDC. For the purposes of this plan, Chesterfield is shown in Region 15 (Richmond) and Colonial Heights is shown in Region 19 (Crater). Likewise, Surry County is involved in both Crater and Hampton Roads, but is shown in Region 19 (Crater) of this plan. Gloucester County participates in both Middle Peninsula PDC and Hampton Roads PDC, but is shown in Region 18 (Middle Peninsula) in this plan. Franklin County participates in both West Piedmont PDC and Roanoke Valley-Alleghany Regional PDC and is shown in Region 12 (West Piedmont).

Outdoor Recreation

The foremost goal for outdoor recreation recommendations is for local, state and federal government to provide the appropriate number and venue of opportunities to enable the Commonwealth's population to enjoy Virginia's outdoors. Each recommendation is described and numbered in the regional narratives, with corresponding numbers located on the regional outdoor recreation maps. These maps show both existing and potential outdoor recreational facilities of regional, statewide or national significance.

Recommendations for local facilities are provided for each region based on percent participation of ranked outdoor recreation activities. The local government may expand upon these recommendations in local parks and recreation plans. Demand, supply and needs calculations for outdoor recreational activities and facilities are summarized by planning region. These findings are based on the 2006 *VOS* and the 2005 *Outdoor Recreation Areas and Facilities Inventory*. Detailed discussion of the development of the demand, supply and needs data can be found in Appendix D.

While a region may have a sufficient supply of recreation facilities, there may be deficiencies at the local level. The numbers of facilities is often not as important as the location of facilities in proximity to local populations. For many outdoor recreation activities, the 2006 VOS reported that participants are not willing to travel more than 10 to 15 minutes to participate (see Chapter II: Outdoor Recreation Issues Trends and Survey Findings).

For a comprehensive list of parks and recreation recommendations, see chapter IX-D: Local and Regional Parks and Open Spaces.

Land Conservation

Success in meeting conservation goals depends upon local and regional efforts. Many organizations work together with local and regional governments to provide an array of land conservation tools. The land trusts that operate in each planning region are listed in each regional section.

The acreage of existing protected conservation lands included are listed and mapped by agency in the following categories.

- State or federal conservation lands
- Local and regional open space lands
- Conservation easements
- Designated historic districts and eligible historic districts

For a comprehensive list of land conservation recommendations see Chapter III: Land Conservation.

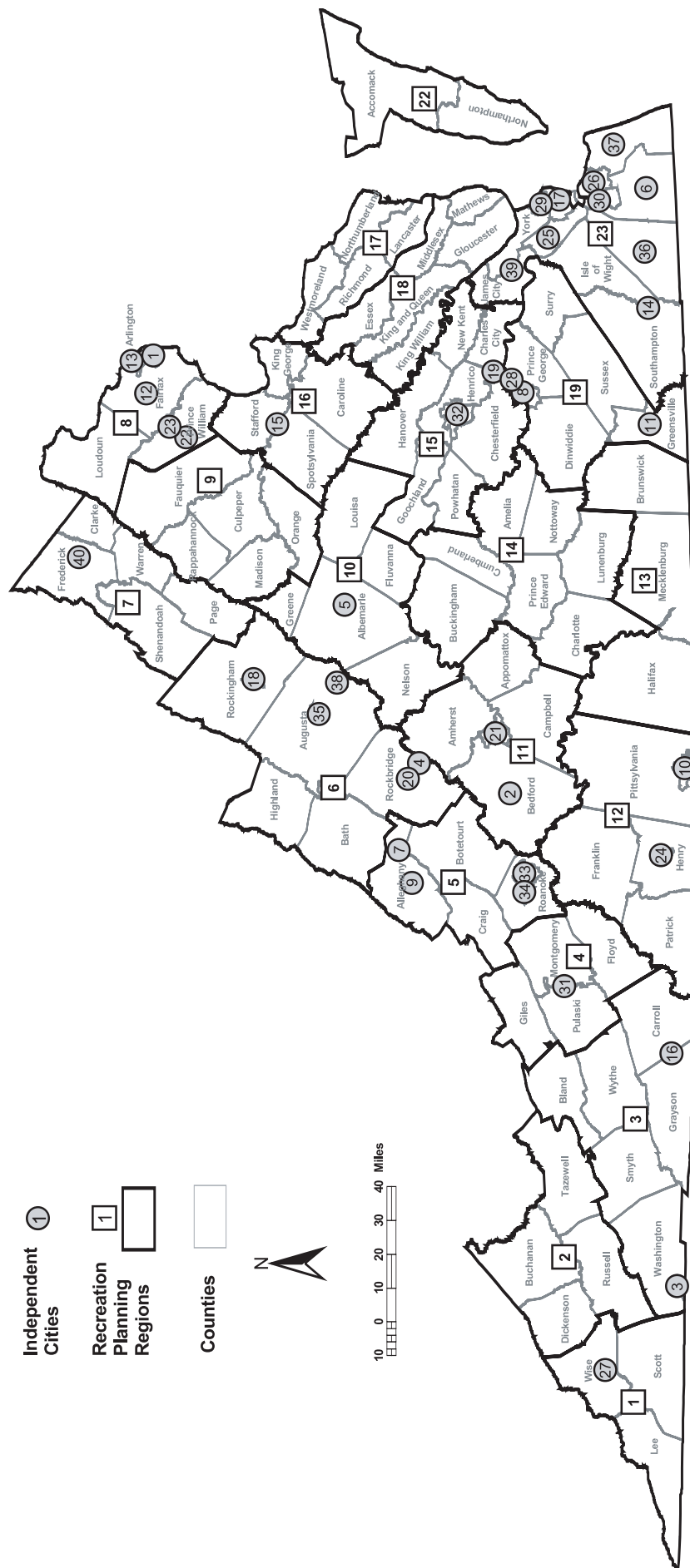
Green Infrastructure

Green infrastructure land planning strategically links linear corridors together to maximize environmental, ecological and human benefits. Preserving green infrastructure is cost effective and sustains natural resources, water quality and healthy communities. Green infrastructure planning at the local and regional levels is key to meeting the needs for outdoor recreation and land conservation. For a comprehensive list of green infrastructure recommendations see Chapter IV: Green Infrastructure.



Hikers enjoy the natural environment in Virginia's George Washington and Jefferson National Forests. Photo by USFS.

Map X-1. Recreational Planning Regions



Independent Cities

1. Alexandria
2. Bedford
3. Bristol
4. Buena Vista
5. Charlottesville
6. Chesapeake
7. Clifton Forge
8. Colonial Heights
9. Covington
10. Danville
11. Emporia
12. Fairfax
13. Falls Church
14. Franklin
15. Fredericksburg
16. Galax
17. Hampton
18. Harrisonburg
19. Hopewell
20. Lexington
21. Lynchburg
22. Manassas
23. Manassas Park
24. Martinsville
25. Newport News
26. Norfolk
27. Norton
28. Petersburg
29. Poquoson
30. Portsmouth
31. Radford
32. Richmond
33. Roanoke
34. Salem
35. Staunton
36. Suffolk
37. Virginia Beach
38. Waynesboro
39. Williamsburg
40. Winchester

Recreation Planning Regions

1. Lenawisco
2. Cumberland Plateau
3. Mount Rogers
4. New River Valley
5. Roanoke Valley-Allegheny
6. Central Shenandoah
7. Northern Shenandoah Valley
8. Northern Virginia
9. Rappahannock-Rapidan
10. Thomas Jefferson
11. Region 2000
12. West Piedmont
13. Southside
14. Commonwealth Regional Council
15. Richmond Regional
16. George Washington Regional Commission
17. Northern Neck
18. Middle Peninsula
19. Crater
22. Accomac-Norhampton
23. Hampton Roads

Introduction

The LENOWISCO Planning District includes Lee, Scott and Wise counties, the City of Norton, and the Town of Pennington Gap. Located in far southwestern Virginia, it is bordered by Tennessee to the south and Kentucky to the west. The mountainous land is a beautiful setting for living and recreation. Coal, natural gas, forestry and agriculture provide the economic base for this region's 94,500 residents.

Natural beauty is abundant here and can be enjoyed in many public recreational areas, parks and forests. For instance, the 1,700-acre Cumberland Gap National Historic Park in Lee County offers camping, picnicking, interpretive displays, hiking and nature study opportunities. There are 82,187 acres of USDA Forest Service land in the region that provide opportunities for developed, as well as dispersed, outdoor recreation. One lake, the North Fork of the Pound reservoir, provides for power boating and sailing. Rivers and streams in the region support fishing, canoeing and other water-based recreational activities. Horseback riding, hiking and bicycling trails crisscross the national forest lands offering visitors access to breathtaking scenic vistas and remote mountain hideaways. The Guest River, from the Route 72 bridge to its confluence with the Clinch River, is a state Scenic River. The Clinch River in Scott County provides high quality recreation and scenic value to the region.

Wilderness Road State Park provides visitors to the area with information on regional attractions and points of interest. The park also offers picnicking, trails and open play areas. A visitor center and a reproduction colonial-era fort, called Martin's Station, provide outstanding opportunities for visitors to learn about the early settlement of the region and the story of the migration of settlers through the Cumberland Gap on the Wilderness Road. The abandoned section of railroad right-of-way that runs through the park is being developed into a trail that will connect local communities with the park and with Cumberland Gap National Historic Park. The trail has been named the Wilderness Road Trail, and it is part of the Daniel Boone Wilderness Trail that passes through the Cumberland Gap on its way to Kentucky.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 1 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 *Virginia Outdoors Survey (VOS)*, the top 10 most popular outdoor activities in Region 1, in order, are walking for pleasure, swimming (all types), driving for pleasure, jogging and running, fishing, hunting, using a playground, visiting natural areas, sunbathing and bicycling.

The supply of facilities for picnicking, camping, swimming, hunting and fishing is adequate or exceeds local demand in this region. There is a considerable amount of imported demand for the campsites, picnic areas, and miles of horse and hiking trails provided in the national park and national forest recreational areas. The "Heart of Appalachia" marketing campaign is capitalizing on these surpluses to attract eco-tourism to the region. This effort includes the Heart of Appalachia Bicycle Trail that runs 128 miles through the region.

Although the supply of recreational areas and facilities is adequate for many activities, there are several areas where additional facilities are needed to meet measured demand. The 2006 VOS has indicated the need for additional playgrounds, tennis courts, soccer fields, basketball courts, softball fields, football fields, baseball fields and golf courses (see Table X-1).

Many of these facilities will be provided by Region 1 localities. According to the Commonwealth of Virginia Auditor of Public Accounts, Comparative Report on Local Government Revenues and Expenditures (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Lee County, \$2.77; Scott County, \$12.90; Wise County,

\$0.96; and the City of Norton, \$78.09. The budgetary and actual expenditures for the region indicate that the average spending for recreation was \$23.68 per capita. The average expenditure for the combined three counties was \$5.54 per capita, which is well below the statewide county average of \$43.75. With average expenditures statewide in cities at \$76.45 per capita, the City of Norton spends just above the statewide average.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

Land Trusts and Conservation Programs Operating in Region 1:

- Virginia Outdoors Fund
- The Nature Conservancy
- Trust for Public Land
- The Conservation Fund
- The Land Trust for Southwest Virginia
- Forest Legacy Program

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- The Southern Appalachian Greenway Alliance's plans for the region incorporate many of the principles of green infrastructure planning and should be expanded to include other major elements.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship educa-

tion, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

In region 1, communities are working together with trail enthusiasts in Tennessee and eastward in the Southern Appalachian Greenway Alliance's efforts to connect the communities and people along the bi-state region in a network of multi-purpose trails. A plan has been adopted that highlights existing trails and potential alignments. As each segment is developed and brought on line, the vision will come closer to reality.

Statewide trunkline trails

1 The **Trans-Virginia Southern Trail** is the name given to the major trunkline trail system that traverses the southern part of Virginia from the Cumberland Gap to the Chesapeake Bay. The trail corridor is designed to use existing trails where possible and new trail segments where needed to link existing trails together. In this region, the possible components include the Wilderness Road Trail, Daniel Boone, Cane's Gap, Mendota, Over Mountain Victory, Virginia Creeper, Iron Mountain, New River Trail, and so forth east to the Bay. This is a long-term planning objective with easily defined tasks for accomplishing the objective. Many of the planned components of the Southern Appalachian Greenway Alliance's plans will become components of this vision.

2 The **Great Eastern Trail** will link existing trails from central Alabama to central New York along the Allegheny Highlands. The Southeast Foot Trails Coalition and the Mid- Atlantic Foot Trail Coalition are undertaking this project, which is being sponsored by the American Hiking Society. This trail may use the Cumberland Mountain Trail, which comes out of Tennessee at the Cumberland Gap, proceeds west to join the Pine Mountain Trail on its way to Breaks Interstate Park, and then continues north.

Other trails

3 The **Town of Gate City** is developing a trail system that should be extended to join with the trails system in Kingsport, TN.

4 The abandoned railroad corridor between the **Town of Big Stone Gap** and the **Town of Appalachia**

should be considered for its potential as a trail to connect the two towns. Portions of this same railroad corridor extend to Norton and should be evaluated to see if they can be converted to a trail.

5 The **Wilderness Road Trail** has been developed between the Cumberland Gap National Historical Park and the Wilderness Road State Park using portions of an abandoned railroad. The greenway may be extended east from the state park and then looped back through the national park to rejoin the trail at Cumberland Gap. The abandoned railroad corridor continues east of the trail terminus. This should be extended, and other abandoned railroad segments in the region should be incorporated into this trail system where linkages are practical.

6 The **Daniel Boone Wilderness Trail** passes through Scott and Lee counties and exits the state at the Cumberland Gap National Historic Park. This trail has some overlap with the Wilderness Road Trail. The Daniel Boone Wilderness Trail route enters the state from Tennessee on Route 23 and joins Route 58 near Duffield. It then follows Route 58 west to the Cumberland Gap. Historically significant sites along the route should be identified with interpretive signage and informational material.

7 The **Cane's Gap Trail** in Scott County, a part of the Daniel Boone Heritage Trail, is being developed by the Daniel Boone Wilderness Trail Corridor Alliance.

8 **Motorized trails for All Terrain Vehicles (ATV's) and dirt bikes** are popular recreational resources. In West Virginia, proponents have developed the Hatfield and McCoy Trail by linking abandoned railroads, management roads on private timber and mineral lands, and other trails into a comprehensive system of ATV trails. Visitors from throughout the region are attracted to the hundreds of miles of the Hatfield and McCoy trails system, bringing much needed tourism to areas of the state that have few other revenue sources. Consideration should be given to identifying lands suitable for a similar trail system in Virginia.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.

- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas and along the proposed Powell and Clinch River blueways.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The rivers and lakes of far southwestern Virginia are popular recreational resources. Access to the developed lakes adequately meets demand. The major rivers are served by public access areas in some segments, but additional access is needed where existing sites are too far apart. To best meet current and projected demand, sites should be developed approximately every five miles and, where appropriate, portages should be created around dams and other river obstacles.
- Regional and local agencies should identify opportunities to develop water access to Virginia's rivers for bank fishing and boat launching.
- 9** The **Powell, Holston and Clinch rivers** support recreational flows throughout most of the recreational season and therefore should have priority for the development of access sites. Natural Tunnel State Park's staff members conduct interpretive trips on the Clinch River in Scott County. The shortage of public access sites limits the duration and types of trips that can be offered. Facilities for canoe-in camping and public rest stops are also needed at appropriate distances along each river. State and local officials should work with river user groups to develop a canoe trail for the Clinch and the Powell rivers. Also, a management plan should be developed for each canoe trail that addresses law enforcement, education, camping, sanitation, access management and maintenance.
- 10** The **Clinch, Holston and Powell rivers** need additional public boat launching and bank fishing opportunities.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and

Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.

- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

There is a tremendous interest in thematic trails. Within this region, the following thematic trails are regional assets: the Wilderness Road Trail from Cumberland Gap up the Route 11 corridor to the lower end of the Shenandoah Valley, the Daniel Boone National Historic Trail, the Wildlife and Birding Trail, and the Civil War Trail. The Crooked Road: Virginia's Heritage Music Trail also traverses this region. The Ralph Stanley Museum in Clintwood, the Country Cabin in Norton, and the Carter Family Fold and A.P. Carter Museum in Hiltons are stops located in this region.

Regional and local recommendations include:

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments have been recommended for consideration as Virginia Byways:

- 11 **Route 614** from Weber City in Scott County to the Washington County line.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia scenic rivers and should be evaluated to determine suitability for designation:

- 12 The **Clinch River** in Scott County.
- 13 The **Powell River** in Lee County.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Region 1 is in the Tennessee watershed that ultimately flows toward the Ohio and Tennessee basins into the Mississippi River. Karst topography, which covers much of the region, creates special issues and considerations for water quality and quantity in the region. Recommendations developed by the regional policy committee should be implemented, and they need to be considered in area planning efforts.

Watershed Groups in Region 1:

- Virginia Conservation Network
- Friends of the Rivers of Virginia

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.

- 14 **Cumberland Gap National Historic Park (NHP)** provides camping, trails, picnicking, and interpretive areas and programs. The park should work with federal, state and local trail planners to route the Great Eastern Trail through the park.

National forests

- 15 The George Washington and Jefferson National Forests should continue development of its support facilities for the **Guest River Gorge Trail**. When completed, visitors will be able to access the rail-to-trail conversion from several locations. The Guest River Gorge is a spectacular scenic area that should attract visitors from throughout the country.

- 16 A portion of the **Guest River** in Wise and Scott counties has been designated a state Scenic River. This beautiful river flows through a spectacular gorge on its way to join the Clinch River. The Forest Service should evaluate the Guest River's potential as a National Wild or Scenic River.

- 17 Horseback riding enthusiasts working with the Forest Service should continue to develop an equestrian trail on **Pine Mountain** to link recreational facilities at Pound Reservoir with those at Breaks Interstate Park.

The Tennessee Valley Authority (TVA)

The TVA has worked closely with the Department of Game and Inland Fisheries and local governments to provide access to the Clinch River and the other rivers of the Tennessee River system. Consideration should be given to the development of formal water trails on these rivers including the necessary provisions for rest stops, canoe-in campsites, publication of maps and organization of a management entity.

The TVA also operates and manages major reservoirs and recreational facilities in the region that help meet the demand for lake recreation, picnicking and camp-

ing. They are strong advocates of “smart growth” programs and work closely with local jurisdictions to implement these programs.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

18 Wilderness Road State Park (200 acres), located in Lee County, is six miles east of Cumberland Gap National Historic Park. The 1870s Karlan Mansion is available to rent. In addition to picnicking and group camping, the park is unique because of the reconstructed Martin's Station. This premier living history site consists of several 18th century frontier cabins, outbuildings and a stockade fort. Ongoing living history demonstrations, presented at various times throughout the year, feature blacksmithing, surveying, farming and militia musters. Trails in the park are the Indian Ridge Trail, which is a self-guided natural heritage trail, and Wilderness Road Trail, a 10-mile hiking, biking and equestrian trail. This abandoned section of railroad right-of-way that runs through the park has been developed into a trail, which connects local communities with the park and with Cumberland Gap National Historic Park. The trail has been named the Wilderness Road Trail and is part of the Daniel Boone National Historic Trail that passes through the Cumberland Gap into Kentucky.

Through the 2002 General Obligation Bond (GOB) funds, a visitor center has been constructed. The visitor center is a Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ certified building, which utilizes the latest technology in “green” building design. Other projects have included paving and additional parking lots and the renovation of the Karlan Mansion. Additional land acquisitions are being explored to protect more open space and to create opportunities to connect the Wilderness Road Trail with the northern end of the Cumberland Gap National Historic Park through the Hensley Settlement, then loops back to the Wilderness Road Trail at Cumberland Gap.

19 Natural Tunnel State Park (889 acres), located in Scott County, has been called the “Eighth Wonder of the World” and has been attracting sightseers to the mountains of southwestern Virginia for more than 100 years. In addition to the scenic wonders of the park,

other offerings include swimming, camping, picnicking, hiking, an amphitheater and interpretive programs. Unique in the state park system is the 536 foot long chairlift, which provides park guests with a different mode of transportation down to the tunnel. The Cove Ridge Center's primary focus is outdoor education and adventure activities, but it is designed so it can also be used for training workshops, meetings and retreats with an auditorium accommodating up to 100. Adjoining the center are two six-room dormitories that can accommodate up to 48 overnight guests. Restrooms and showers are centrally located within the dorms. Each dorm also has a self-contained kitchen.

The 2002 GOB has also provided funds for cabins, an additional full service campground and for trail improvements. Through a combination of funding sources, and coordinated by the Daniel Boone Wilderness Road Trail Association, the Wilderness Road Blockhouse was constructed. The two-story log cabin is a replica of the John Anderson Blockhouse, which was built in the late 1700s. For more than 25 years, the original blockhouse served as the starting point for parties crossing into Kentucky on the Wilderness Road Trail. A small educational and interpretive center, depicting the role of the blockhouse in westward expansion, will be built to resemble a pioneer-era structure.

The park's location along the Daniel Boone Wilderness Trail creates numerous opportunities to participate in regional programming. In addition, the park is a site along the Crooked Road Virginia Heritage Music Trail. The Cove Ridge Foundation, a 24 member citizen board, develops and supports educational, recreational and cultural programs for the region that are offered through the Cove Ridge Center. The community based Cove Ridge Center Cultural Arts Council provides support and coordination of the programming offered at the center.

20 Southwest Virginia Museum Historical State Park (1 acre) is located in Big Stone Gap in Wise County. The museum, listed in 2002 on the National Register of Historic Places, is steeped in history. The mansion, which houses the museum, was built in the 1880s by Rufus Ayers, a Virginia attorney general. The Commonwealth acquired the mansion in 1946 from the Slemp Foundation, which was established by C. Bascom Slemp, who was a private secretary to President Calvin Coolidge and a member of the U.S. Congress. The museum was officially dedicated in 1948. Museum collections number more than 20,000 pieces. Exhibits chronicle the exploration and

development of the town and surrounding area during the 1890s coal boom and the pioneer period. The museum offers activities for children, scout and school programs, workshops, an annual Festival of Trees program and a walking tour of the grounds. Also managed by the museum is Poplar Hill Cottage, which is a three-bedroom rental cottage that sleeps six people and is located adjacent to the museum.

The 2002 GOB provided funding to design and install a wheelchair-accessible lift. The museum is presently not wheelchair-accessible, and the lift will provide access to two floors.

The Slempp Foundation continues to support the programming offered at the museum. Partnerships have been established with the Heart of Appalachia Tourism Authority, the Crooked Road Virginia Heritage Music Trail and the Town of Big Stone Gap. The Friends of the Museum helps with programming, special events and provide funding for park improvements. The museum also participates on the Community Festival Committee, which is sponsored by Bridging the Gap, a community development group.

State natural area preserves

The Cedars Natural Area Preserve and Unthanks Cave Natural Area Preserve are located in Lee County.

As of November 2006, 1,146 occurrences of 248 rare species and natural communities have been documented in region 1 by the Department of Conservation and Recreation (DCR). One hundred twenty species are globally rare and 31 are federally threatened or endangered. One hundred thirty-five conservation sites have been identified in the district. Of these, 73 (54 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only 16 sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 1, DCR is particularly interested in protecting:

- Significant caves and karst areas.
- Water quality for globally rare aquatic communities.
- Terrestrial limestone communities.
- Additional lands around The Cedars and Unthanks Cave natural area preserves.

Information about the location of conservation sites and the natural heritage resources they contain, as well as management assistance, is available to local planners from DCR's Natural Heritage staff. For a discussion of the Natural Heritage Program, see chapter IX-B.

State fish and wildlife management areas

- The Virginia Department of Game and Inland Fisheries (DGIF) should continue to investigate opportunities to acquire in-holdings in their Wildlife Management Areas and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and other wildlife viewing recreation. In this region, DGIF manages Keokee Lake and Bark Lake as public fishing facilities.
- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.

- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

21 Mountain Empire Community College in Wise County has 100 acres of land, some of which is suitable for recreational use. Some facilities have been developed that help meet local demand.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.

- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.

22 The **Big Cherry Reservoir** property is a 3,200-acre watershed and lake that provides municipal drinking water to the Town of Big Stone Gap. Opportunities for fishing, boating, trails and wildlife viewing are currently offered. Big Stone Gap should implement the recommendations in the Big Cherry Resource Management Plan to enhance the range of recreational opportunities provided on the watershed property.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies.

Table X-1. Region 1 (LENOWISCO Planning District): Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	121,869	24	fields	19	5	4
Basketball	149,567	35	goals	14	21	20
Bicycling	131,563	9	miles	NI		
Mountain	21,696	2	miles	NI		
Other	109,867	8	miles	N		
Lake, river and bay use (combined)	109,867	1,969	water acres	491	1,478	1,413
Power boating	52,071	1,255	water acres	S		
Sailing	7,386	64	water acres	S		
Saltwater fishing	26,036	146	water acres	S		
Jet ski, personal watercraft	16,619	260	water acres	S		
Water skiing, towed on water	7,755	243	water acres	S		
Camping	149,382	881	sites	679	202	173
Tent camping	85,401	504	sites	365	139	122
Developed camping	63,981	377	sites	314	63	51
Fitness trail use	76,630	6	mile trails	4	2	2
Fields (combined)	156,953	33	fields	5	28	27
Football	59,088	12	fields	5	7	7
Soccer	97,865	21	fields	-	21	20
Stream use (combined)	346,126	220	stream miles	3	217	210
Fresh water fishing	300,980	212	stream miles	S		
Human-powered boating	16,249	4	stream miles	S		
Rafting	9,233	2	stream miles	S		
Tubing	19,665	3	stream miles	S		
Golfing	116,699	4	courses	63	0	0
Hiking, backpacking	145,412	75	trail miles	157	-82	-85
Horseback riding	41,546	18	miles	56	-38	-39
In-line skating	24,928	2	miles	NI		
Jogging, running	600,113	48	mile trails	NI		
Nature study, programs	25,389	4	sites	1	3	2

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-1. Region 1 (LENOWISCO Planning District): Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	126,024	327	tables	746	-419	-430
Skateboarding	70,167	22	sites	NI		
Snow skiing or snowboarding	15,788	0	ski lifts	-	0	0
Softball	131,102	23	fields	12	11	11
Sunbathing, relaxing on beach	171,171	12	beach acres	7	5	5
Swimming	923,250	62		NI		
Outdoor area	463,472	47	beach acres	7	40	39
Outdoor pools	301,903	13	pools	14	-1	-2
Indoor pools	157,876	2	pools	-	2	2
Tennis	72,014	45	courts	28	17	16
Used a playground	248,354	35	sites	22	13	12
Visiting gardens	24,558	3	sites	NI		
Visiting historic sites	135,441	11	sites	NI		
Visiting natural areas	172,463	29	sites	NI		
Volleyball	43,393	13	courts	4	9	8
Hunting	296,363	48,600	acres	51,687	-3,087	-4,679
Drive for pleasure	612,115	NA	NA	NI		
Driving motorcycle off road	24,928	11	miles	-	11	11
Driving 4-Wheel-Drive Off road	104,327	NA	NA	NS		
Walking for pleasure	1,985,911	NA	NA	NI		
Bird watching	24,374	NA		NI		
Other	53,549	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

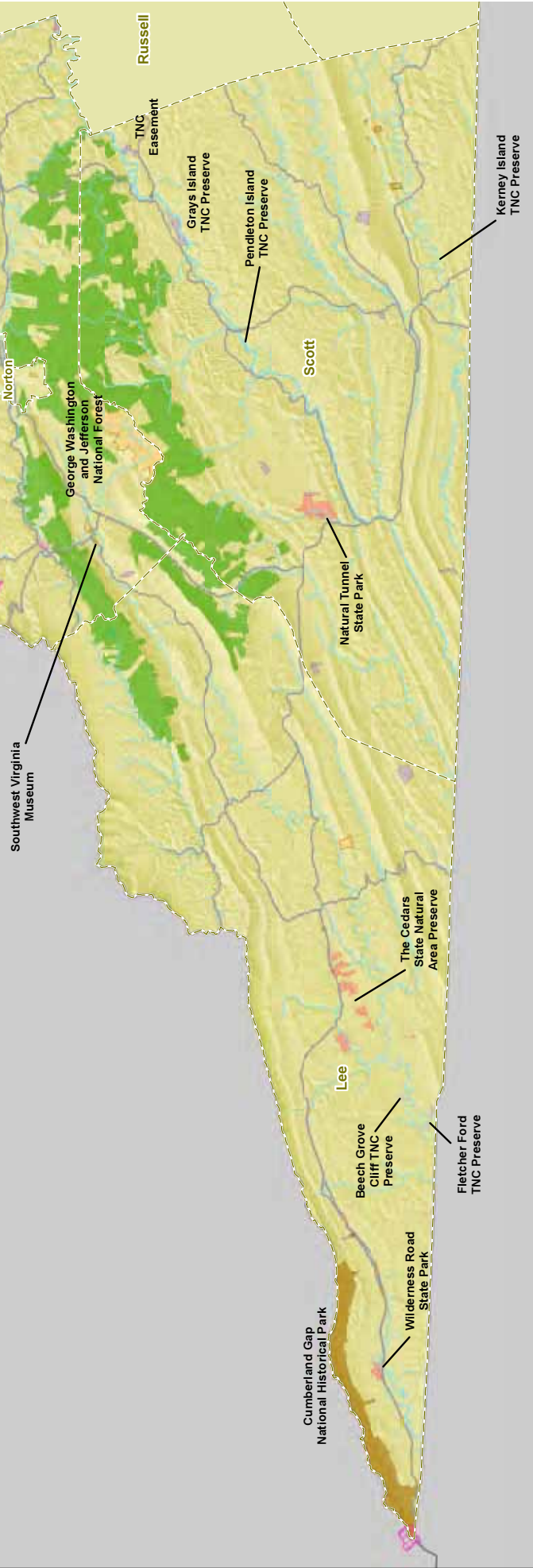
S: same as combined

NS: not inventoried separately

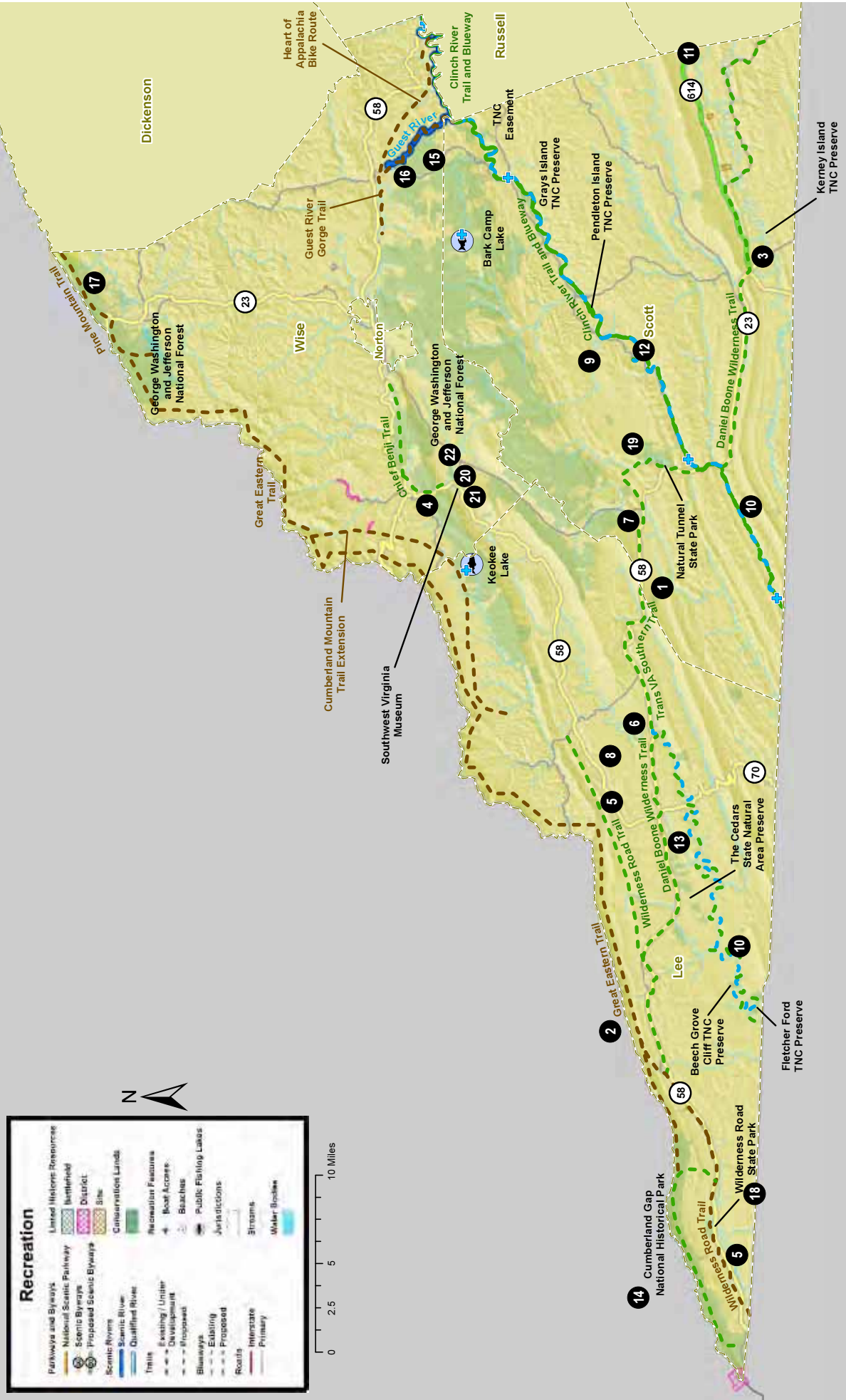
NI: not inventoried

(-) indicates surplus

Map X-2. Region 1 (LENOV/ISCO Planning District) Conservation Lands



Map X-3. Region 1(LENOWISCO Planning District) Outdoor Recreation



Introduction

The Cumberland Plateau Planning District in southwestern Virginia encompasses the counties of Russell, Dickenson, Buchanan and Tazewell. This rugged and beautiful mountainous area contains spectacular scenery and unique natural habitats of statewide significance. Inhabitants and visitors to the area enjoy a variety of natural resource-based recreational opportunities along with developed facilities at several parks and forest recreation areas.

Coal, natural gas, forestry, agriculture and tourism provide the economic base for the region's population of approximately 115,100. The region's population has declined by 2,100 since the 2000 census. The Cumberland Plateau Planning District Commission is very active in economic development in the area. In the last several years, road construction and industrial park development have led infrastructure enhancements. The attractiveness of the area for tourism has been enhanced through the establishment of the Pinnacle Natural Area Preserve and the designation of the Clinch River and Big Cedar Creek in Russell County as state Scenic Rivers. In addition, the establishment of the Ralph Stanley Museum in Clintwood, ending point for "The Crooked Road" musical heritage byway, helps tourism in the region.

Rivers and streams in the region offer excellent fishing and water sport opportunities, while large tracts of forest lands provide hunting, hiking and backcountry recreation. Camping, cabins and swimming are available to visitors to Breaks Interstate Park in Dickenson County. Camping and boating are available at the John W. Flanagan Dam and Reservoir Recreation Area. Interpretive and educational programs are offered at both areas. The Clinch Mountain Wildlife Management Area in Russell County provides primitive camping, hunting, fishing and hiking opportunities.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 2 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 *Virginia Outdoors Survey* (VOS), the top 10 most popular outdoor activities in Region 2 are walking for pleasure, swimming (all types), driving for pleasure, jogging and running, fishing, hunting, using a playground, visiting natural areas, sunbathing and bicycling, respectively.

The 2006 VOS indicates a regional shortage of campsites, playgrounds, football fields, soccer fields and baseball fields. In all other measured activities, the region appears to have an adequate supply to meet current locally generated demand (see Table X-2).

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Buchanan, \$19.06; Dickenson, \$5.89; Russell, \$2.11; and Tazewell, \$13.18. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 in towns, \$43.75 in counties, and \$76.45 per capita spending on parks and recreation in Virginia's cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

Land Trusts and Conservation Programs Operating in Region 2:

- The Nature Conservancy
- The Virginia Outdoors Foundation
- Trust for Public Lands
- The Conservation Fund
- The Land Trust for Southwest Virginia
- Department of Forestry (DOF) Forest Legacy Program
- DOF Working Forest Easement Program

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

❶ The **Great Eastern Trail** will link existing trails from central Alabama to central New York along the Allegheny Highlands. The Southeast Foot Trails Coalition and the Mid-Atlantic Foot Trail Coalition are undertaking this project, which is being sponsored by the American Hiking Society. A potential route for the trail could link **Breaks Interstate Park** with the **Appalachian Trail** in the vicinity of Burkes Garden in Tazewell County. Local hiking trail enthusiasts should try to identify a potential alignment for this connector.

❷ The **Trans-Virginia Southern Trail** will stretch from the Cumberland Gap to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. Trails in the Mount Rogers PDC are important components of this cross-state trail. These include the Wilderness Road, Daniel Boone, Over Mountain Victory, Mendota Trail, Virginia Creeper, Iron Mountain, Virginia Highlands and the New River Trail State Park. Each

locality should identify opportunities to connect their existing trails into the Trans-Virginia Southern Trail.

Other trails

❸ The **Southern Appalachian Greenway Alliance** is working on the development of a system of trails and greenways that link the communities along the Tennessee and Virginia line. Segments of these trails exist, while others are under consideration. Components of these trails can become the Trans-Virginia Southern Trail.

❹ When complete, the **Pine Mountain Horse Trail** will connect Breaks Interstate Park with The Pound Reservoir in Wise County.

❺ The **Appalachian National Scenic Trail** traverses the area through public and private land. Sections are in need of additional protection. Every effort should be made to avoid impacts to the trail in planning for public projects such as roads, pipelines and power lines.

❻ The **Russell Fork Greenway** is a non-motorized trail proposed to connect the Breaks Interstate Park with Flannigan Dam along the banks of the Russell Fork River.

❼ The **Cranes Nest River Trail** is being developed along the banks of the Cranes Nest River in the John W. Flannigan Reservoir property.

❽ **Interstate Bike Route 76** should be studied to determine if the trail is still located on the best roads. Recent development has changed traffic levels and some sections of the route carry too much vehicle traffic to be suitable for BR 76. After the preferred route is determined, it should be properly marked with signs.

❾ Local governments should look for opportunities to develop **motorized trails** in the region similar to West Virginia's Hatfield and McCoy Trail system.

❿ The Town of Grundy is developing a **Riverfront Trail** along the Levisa Fork River.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need

for public access to recreational waters.

- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.

11 The **Clinch River**, from the confluence with the Little River in Russell County to the Scott County line, should be developed and managed as a canoe trail. Access to the Clinch River is fairly good where the Tennessee Valley Authority and Virginia Department of Game and Inland Fisheries (DGIF) collaborated in the development of a series of access sites. Canoe-in camp sites and managed rest stops should also be added so visitors can enjoy the benefits of a managed canoe trail on these waterways.

12 Access sites are needed at appropriate distances along the **Clinch River, Russell Fork River** and along stretches of other major streams suitable for encouraging boating and other water sports. There is also a need to improve public access to stocked trout streams in the region. Inadequate parking and access trails create congestion, resource degradation and unsafe conditions during popular fishing days.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- There is a critical need for county-wide surveys of the historic and architectural resources of Dickenson and Buchanan counties.
- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.

- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways. Regional and local recommendations include:

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments have been recommended for consideration as a Virginia Byway:

- 13 Route 611 and Route 80** between Breaks Interstate Park and John W. Flanagan Dam and Reservoir.
- 14 Route 80** between Breaks Interstate Park and Route 19 in Russell County has been recommended for consideration as Virginia Byways.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and design

ation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

Portions of the Clinch River and Big Cedar Creek in Russell County have been designated as scenic rivers in this region. Other sections of the Clinch have been evaluated and found to qualify. The following river segment has been evaluated and found to qualify for designation as a Virginia Scenic River:

- 15** The **Russell Fork** in Breaks Interstate Park.
- 16** The **Clinch River** from Nash Ford to St. Paul in Russell County.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Region 2 is in the Big Sandy and Tennessee watersheds that ultimately flow toward the Ohio and Tennessee basins into the Mississippi River. Karst topography, which covers much of the region, creates special issues and considerations for water quality and quantity in the region. A regional policy committee is developing comprehensive policies for management of these water resources.

Watershed groups in Region 2:

- Virginia Conservation Network
- Friends of the Rivers of Virginia

The Lake Estonia project located in St. Paul is a success story for water quality protection and local school research. This project also highlights a trail along the lake.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service to revise policy that allows mountain bikes to use appropriate national park trails.

The Tennessee Valley Authority (TVA)

The TVA has worked closely with DGIF and local governments to provide access to the Clinch River and the other rivers of the Tennessee River system. Consideration should be given to the development of formal water trails on these rivers including the necessary provisions for rest stops, canoe-in campsites, publication of maps and organization of a management entity.

National forests

17 The **John W. Flannagan Dam and Reservoir** recreation area provides the only opportunities for power boating and sailing in the region. Because the demand for flat-water recreation in the region exceeds supply, plans for other activities involving the use of water from the reservoir, such as electric power generation and white water releases, should be considered for this resource.

18 The George Washington and Jefferson National Forests and horseback riding enthusiasts are working to develop the **Pine Mountain Horse Trail**. When completed, this trail will link Breaks Interstate Park with the Pound Reservoir in Wise County.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

19 **Breaks Interstate Park** (4,600 acres, approximately 946 acres in Virginia) is located in Dickenson and Buchanan counties, Virginia and in Pike County, Kentucky. The Breaks Interstate Park Compact was established in 1954 between the commonwealths of Kentucky and Virginia to create, develop and operate

an interstate park located on the Russell Fork of the Big Sandy River and on adjacent areas in Pike County, Kentucky. The compact also created the Breaks Interstate Park Commission, which is the governing and managing body of the park. Although not an official component of the Virginia State Park system, Breaks Interstate Park is often referenced in DCR publications and informational documents.

Known as the Grand Canyon of the South, the park has breath taking views of the 5-mile long, one-quarter-mile deep sandstone gorge carved by the Russell Fork over millions of years through Pine Mountain. The park has motor lodge, two-bedroom cottages and campground with electric, water and sewer hook ups. There is a convention center, restaurant, visitor center and gift shop. Other offerings include a swimming pool, picnicking, amphitheater, trails for hiking and mountain biking, boat dock and fishing on 12-acre Laurel Lake, white water rafting on Russell Fork and horseback riding.

Through the 2002 General Obligation Bond, Breaks received funding to renovate the restaurant and upgrade the campground. The Breaks Interstate Park Commission coordinated funding to construct additional cabins.

Future state park sites

The need exists for additional park land in this region of the state, potential acquisitions should be explored in Tazewell County in the vicinity of the Paint Lick Mountain, Knob Mountain and Thompson Valley.

State natural area preserves

Both Cleveland Barrens Natural Area Preserve and Pinnacle Natural Area Preserve are located in Russell County.

As of November 2006, 501 occurrences of 171 rare species and natural communities have been documented in the Cumberland Plateau Planning District by the Department of Conservation and Recreation. Eighty-one species are globally rare, and 20 species are federally threatened or endangered. Fifty conservation sites have been identified in the district; 35 (70 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only four sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protect-

ed sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 2, DCR is particularly interested in protecting:

- Significant caves and karst areas.
- Water quality for globally rare aquatic communities.
- Terrestrial limestone communities.
- Additional lands around Pinnacle Natural Area Preserve and Cleveland Barrens Natural Area Preserve.

Information about the location of conservation sites and the natural heritage resources they contain, as well as management assistance, is available to local planners from DCR's Natural Heritage staff. For a discussion of the Natural Heritage Program, see Chapter IX.

20 Consideration should be given to acquiring developable land in the vicinity of the **Pinnacle Natural Area Preserve** that can accommodate river access and the development of day-use and overnight facilities to augment the natural and scenic attributes of the preserve. Any recreation facility developed in the area could increase the supply of canoeing opportunities through canoe livery services on the Clinch River.

State fish and wildlife management areas

- DGIF should continue to investigate opportunities to acquire in-holdings in their wildlife management areas and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing, boating and other wildlife viewing recreation.
- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

21 The **Clinch Mountain Wildlife Management Area** is expanding its trails system and will be linking with trails on proposed DOF property on Brumley Mountain, which is currently owned by The Nature Conservancy.

State forests

- DOF should continue to coordinate with and seek assistance to purchase and acquire other lands along the Clinch River corridor as working forests to conserve forested land and provide lasting protection to this important watershed.
- Local and regional agencies should encourage the use of DOF Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

22 **Southwest Virginia Community College** in Tazewell County has a 100-acre tract suitable for some recreational development.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Interstate Bike Route 76 passes through this region. For recommendation information for this resource, please see recommendation #8 under "Regional trails."

Local and regional parks and recreation departments

In this region, Tazewell County is the only one with a full-time recreation department. Other counties address recreational program management with com-

missions, volunteers, athletic associations and service organizations. For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- A regional assessment of the potential benefits of parks and recreation interests to partner with tourism and economic development should be conducted for the counties in this region.
- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies. Local and regional recommendations include:

- Private landowners may consider fee-based hunting, fishing and boating access.
- Exciting rivers for canoeing, kayaking and rafting flow through large expanses of public lands where hiking, backcountry camping, trout fishing and hunting are outstanding. Support facilities, existing interconnected multi-use trail system, accessible rivers, blue ribbon trout fisheries and spectacular scenery may support outfitter and guide services.



Whites Mill in Washington County. Photo by DHR.

Table X-2. Region 2 (Cumberland Plateau Planning District): Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	151,830	30	fields	19	11	10
Basketball	186,337	44	goals	50	-6	-8
Bicycling	163,908	12	miles	NI		
Mountain	27,030	2	miles	NI		
Other	136,877	10	miles	NI		
Lake, river and bay use (combined)	136,877	2,453	water acres	1,335	1,118	1,021
Power boating	64,873	1,564	water acres	S		
Sailing	9,202	80	water acres	S		
Saltwater fishing	32,436	182	water acres	S		
Jet ski, personal watercraft	20,704	324	water acres	S		
Water skiing, towed on water	9,662	303	water acres	S		
Camping	186,107	1,098	sites	510	588	544
Tent camping	106,396	627	sites	69	558	534
Developed camping	79,711	470	sites	441	29	11
Fitness trail use	95,469	8	mile trails	14	-6	-7
Fields (combined)	195,539	41	fields	8	33	31
Football	73,615	15	fields	8	7	7
Soccer	121,924	26	fields	-	26	25
Stream use (combined)	431,221	274	stream miles	33	241	230
Freshwater fishing	374,975	264	stream miles	S		
Human-powered boating	20,244	5	stream miles	S		
Rafting	11,502	2	stream miles	S		
Tubing	24,500	3	stream miles	S		
Golfing	145,389	5	courses	72	1	1
Hiking, backpacking	181,161	93	trail miles	87	6	2
Horseback riding	51,760	22	miles	33	-11	-11
In-line skating	31,056	2	miles	NI		
Jogging, running	747,650	60	mile trails	NI		
Nature study, programs	31,631	5	sites	-	5	4

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-2. Region 2 (Cumberland Plateau Planning District): Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	157,006	408	tables	1,005	-597	-613
Skateboarding	87,417	27	sites	NI		
Snow skiing or snowboarding	19,669	1	ski lifts	-	1	0
Softball	163,333	29	fields	35	-6	-7
Sunbathing, relaxing on beach	213,253	15	beach acres	1	14	14
Swimming	1,150,230	77		NI		
Outdoor area	577,415	59	beach acres	1	58	56
Outdoor pools	376,125	16	pools	14	2	1
Indoor pools	196,689	2	pools	2	0	0
Tennis	89,718	56	courts	57	-1	-3
Used a playground	309,412	44	sites	32	12	10
Visiting gardens	30,596	3	sites	NI		
Visiting historic sites	168,739	14	sites	NI		
Visiting natural areas	214,863	36	sites	NI		
Volleyball	54,061	16	courts	1	15	14
Hunting	369,224	60,549	acres	27,553	32,996	30,615
Drive for pleasure	762,602	NA	NA	NI		
Driving motorcycle off road	31,056	14	miles	-	14	14
Driving 4-wheel-drive off road	129,976	NA	NA	NS		
Walking for pleasure	2,474,145	NA	NA	NI		
Bird watching	30,366	NA		NI		
Other	66,713	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

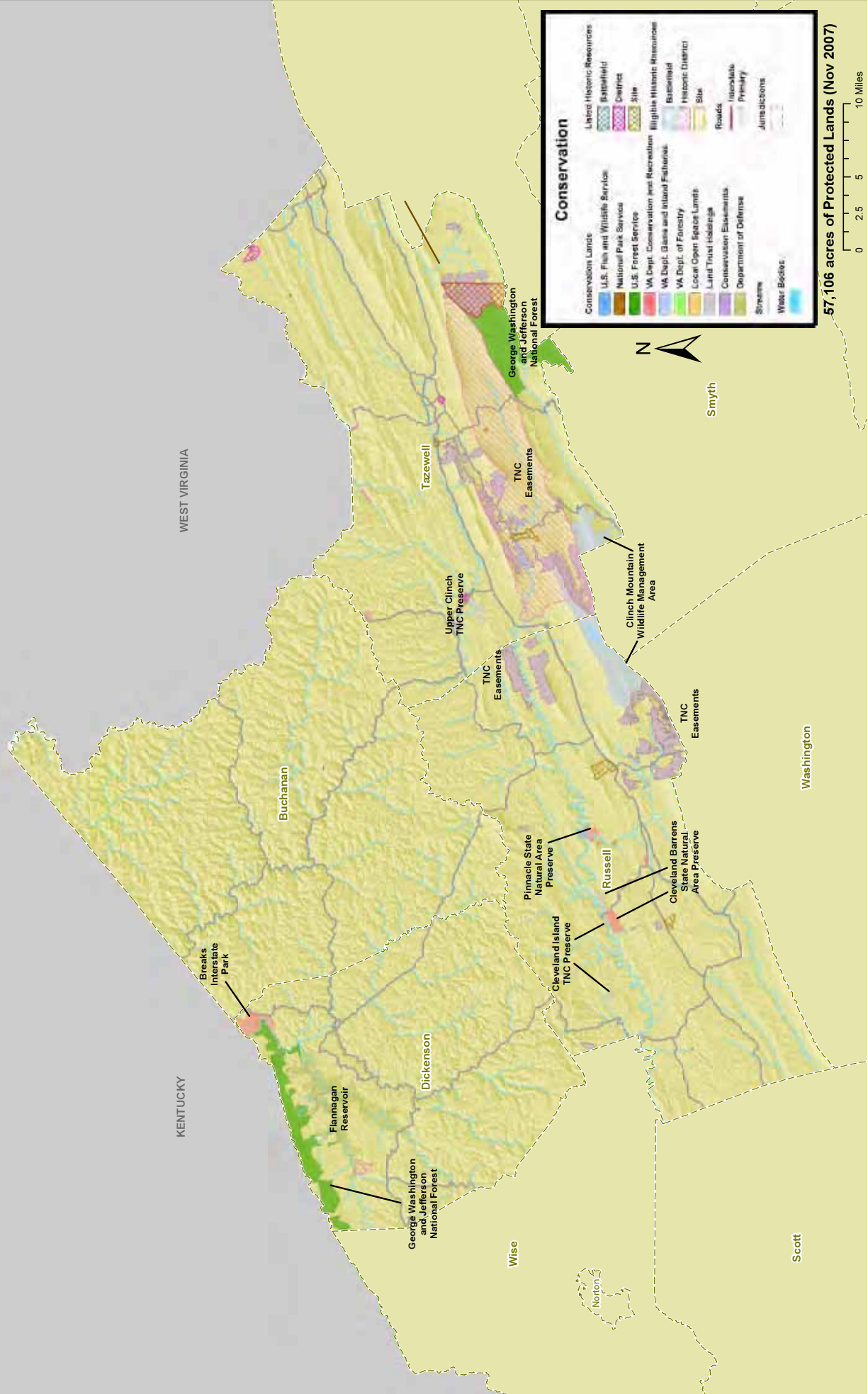
S: same as combined

NS: not inventoried separately

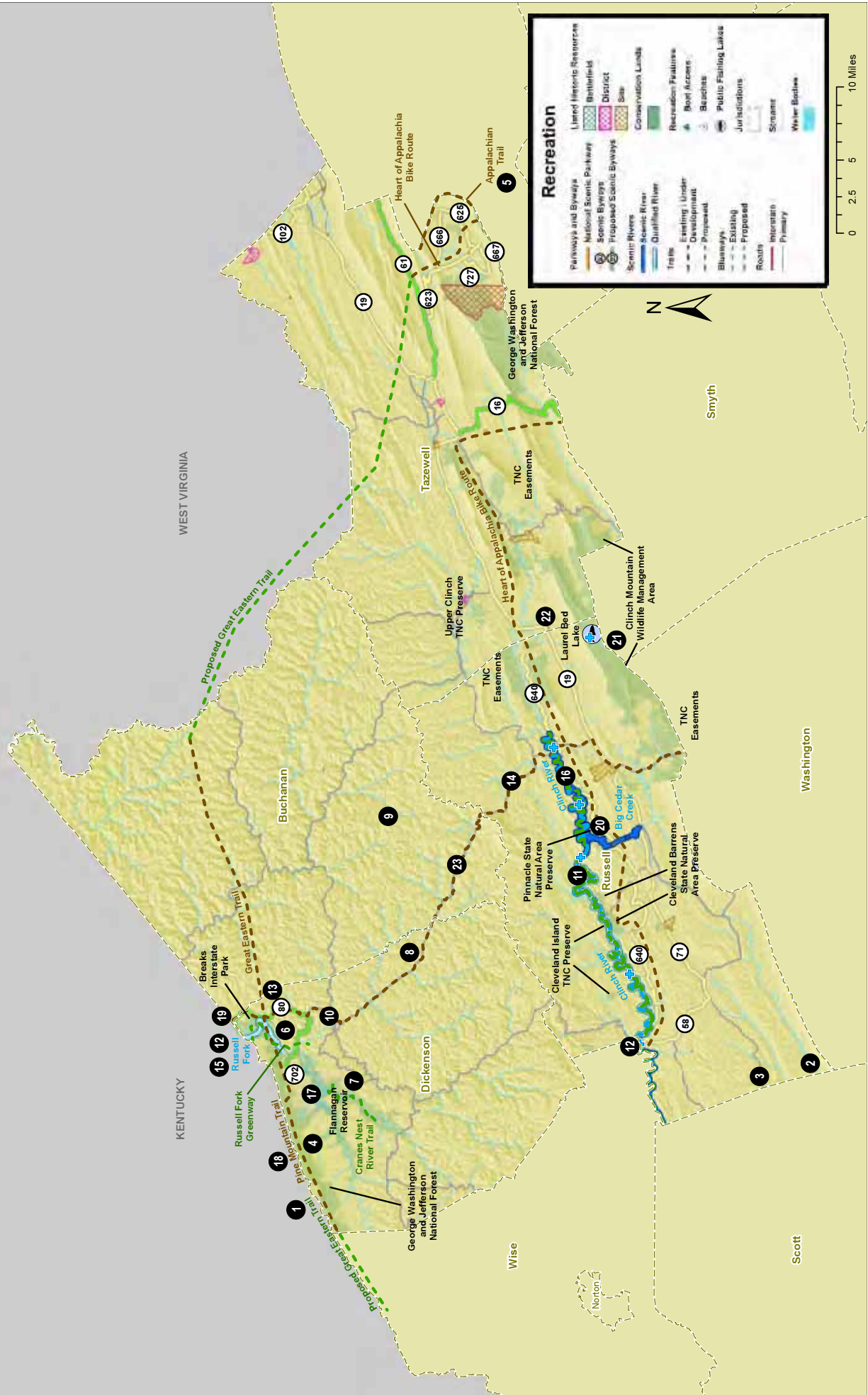
NI: not inventoried

(-) indicates surplus

Map X-4. Region 2 (Cumberland Plateau Planning District) Conservation Lands



Map X-5. Region 2 (Cumberland Plateau Planning District) Outdoor Recreation



Introduction

The Mount Rogers Planning District is comprised of the counties of Bland, Carroll, Grayson, Smyth, Washington and Wythe, and the cities of Bristol and Galax. The population of the District is 189,800 and growing slowly. Recreational delivery systems in this area are well developed, as the cities, towns and counties provide recreational facilities and leisure services through professionally staffed parks and recreation departments. The supply of parks and recreation areas and developed facilities meets much of the demand for recreational facilities in the district.

Large tracts of national forest lands provide close-to-home recreation for residents. The Mount Rogers National Recreation Area (NRA) offers developed campgrounds, picnic areas, miles of hiking, bicycling and horseback riding trails, fishing lakes, trout streams and wilderness. Mount Rogers and Whitetop Mountain are the highest peaks in Virginia, with terrain and habitat features uncommon to other parts of the state and the East Coast. Horseback riders, mountain bicyclists and hikers find Mount Rogers' high country attractive because of the terrain and unique, scenic features.

Efforts have been made to attract tourists to this part of the state. Local governments and area businesses have joined the USDA Forest Service and the Virginia Tourism Corp. staff in vacation planning efforts that highlight area attractions. Tourism plays an increasingly important role in the economics of southwestern Virginia.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 3 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

The supply of recreational areas and facilities in this region is adequate to meet demand in many activities. However, shortages of the following facilities were identified by the 2006 *Virginia Outdoors Survey*: basketball courts, baseball and softball fields, tennis courts, and football and soccer fields. There is a very large demand for water-based recreation, such as power boating, sailing, fishing and water skiing. Most of this demand is exported to the large lakes outside of this region. Demand for stream fishing is also high. Because the demand for water related activities exceeds the existing supply, improved access to rivers and streams is recommended throughout the region (see Table X-3).

Many of these facilities will be provided by Region 3 localities. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Bland County, \$5.87; Carroll County, \$12.59; Grayson County, \$9.57; Washington County, \$14.48; and Wythe County, \$10.03. Smyth County does not have a parks and recreation department. The counties' average expenditure is \$10.51 per capita, which is well below the statewide county average of \$43.75. Average expenditures statewide in cities is \$76.45 per capita. Bristol spends \$156.69 per capita and Galax spends \$85.89 per capita, which are both above the statewide average. Overall, the budgetary and actual expenditures for the region indicate that the average spending for recreation is \$42.16 per capita.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

Areas in the Mount Rogers region where conservation is being considered include:

- The Appalachian Trail Conservancy has identified the Burke's Garden area in Tazewell County as a high priority for conservation of its scenic views and its importance to the setting for the Appalachian Trail.
- The Trust for Public Land is trying to conserve Black Lick Farm in Wythe County. The 1,477-acre farm is nestled among mountains of the Jefferson National

Forest overlooking the New River Valley. This property is a high priority for acquisition by the U.S. Forest Service.

- The 4,700-acre tract on Brumley Mountain in Washington County is being acquired for a new state forest.

Land Trusts and Conservation Programs in Region 3:

- Appalachian Trail Conservancy
- APVA Preservation Virginia
- Civil War Preservation Trust
- Forest Legacy Program (Department of Forestry)
- Land Trust of Virginia
- National Committee for the New River
- New River Land Trust
- The Conservation Fund
- The Nature Conservancy
- Trust for Public Land
- The Land Trust for Southwest Virginia
- Virginia Outdoors Fund
- Western Virginia Land Trust
- 500-Year Forest Foundation
- Virginia Outdoors Fund

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Local organizations and citizens should continue partnering with Grayson LandCare.

Grayson LandCare

www.publicecology.org/graysonlandcare

Grayson LandCare is a locally organized group of farmers, landowners and residents concerned about economic and environmental problems in Grayson County and southwestern Virginia. Landcare is a conservation movement that brings local communities, private corporations and government agencies together to support hands-on

action to promote sustainable land and water management. Landcare combines the following:

- Personal responsibility for the environment.
- “Neighbors helping neighbors” via community-based volunteers.
- Integrated, scientific management of working lands.
- Good group process.
- Ecosystem maintenance and restoration.
- Corporate funding of conservation projects.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

1 The **Great Eastern Trail** will link existing trails from central Alabama to central New York along the Allegheny Highlands. The Southeast Foot Trails Coalition and the Mid-Atlantic Foot Trail Coalition are undertaking this project, which is being sponsored by the American Hiking Society. The Great Eastern trail may run through portions of Bland and Giles County and may connect to the Appalachian Trail.

2 The **Trans-Virginia Southern Trail** will stretch from the Cumberland Gap to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. Trails in the Mount Rogers PDC are important components of this cross-state trail. These include the New River Trail State Park, Virginia Highlands, Iron Mountain, Virginia Creeper, Over Mountain Victory and the Mendota Trail.

3 The **Appalachian Trail** is an existing National Scenic Trail. Because of this special designation, localities that host the Appalachian Trail should protect viewsheds along the corridor in their planning and zoning. For more than 75 years the Appalachian Trail Conservancy and its member clubs have worked voluntarily with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the trail.

Other trails

4 The **Salt Trail**, a 10-mile long rails-to-trails conversion is under development between the Towns of Saltville and Glade Spring.

5 The **Appalachian National Scenic Trail** traverses the area through public and private land. Some sections are in need of additional protection. Every effort should be made to avoid impacts to the trail in planning for public projects such as roads, pipelines and power lines. A crossing of Interstate 77 in Bland County needs to be constructed.

6 Connector trails joining **New River Trail State Park** to other parks and towns along the corridor should be developed.

7 The **Wilderness Road** should be identified in the region and properly signed and marketed.

8 The City of Bristol has purchased portions of the abandoned Southern Railroad corridor between Bristol and Moccasin Gap. This 29-mile corridor will be developed as a linear park and will be known as the **Mendota Trail**.

9 The Town of Marion plans to extend the **bicycle lane along Highway 16** to Hungry Mother State Park. A four-foot paved lane on either side of Highway 16 is stripe-separated from auto traffic and signed for the first mile from Route 11, North Main Street.

10 The **Wytheville Greenway** is under development and should be extended to Reed Creek.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish coop-

erative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.

- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.

11 The **New River Blueway** is being planned in Virginia, North Carolina and West Virginia as a full-service water trail with access sites, rest areas, campsites, re-supply areas and maps to assist users with trip planning. Localities should identify opportunities to increase access sites and use areas along the corridor. A management structure for the blueway needs to be developed in this region.

12 Access points at five-mile intervals are needed along the **New River** and other major rivers and canoeable, fishable streams in the region. In an innovative program, the Appalachian Power Company along with the Departments of Conservation and Recreation (DCR) and Game and Inland Fisheries (DGIF) have developed several access sites on the New River along New River Trail State Park. These sites will enhance the multi-purpose utility of the trail, while increasing the public's access to more miles of the New River. Where appropriate, portages have been created around dams and other river obstacles. A way needs to be established to get New River Blueway users around Fries Dam.

13 Access sites are needed at appropriate distances along the **New River, Big Reed Island Creek, North Fork Holston and South Fork Holston rivers** and along stretches of other major streams to encourage boating and other water sports. There is also a need to improve public access to stocked trout streams in the region. Inadequate parking and access trails create congestion, resource degradation and unsafe conditions during popular fishing days.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this

region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- There is a critical need for county-wide surveys of historic and architectural resources of Bland and Carroll counties.
- There is a critical need for an archaeological survey in Bland County.
- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Special attention should be given to protecting views from the Blue Ridge Parkway and the Appalachian Trail.
- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.

- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:

- Encourage development away from mountaintops to protect significant vistas.
- Consider timber harvesting impacts on key viewsheds.
- Protect viewsheds along river corridors and scenic byways.
- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways. Local and regional recommendations include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- The Blue Ridge Parkway is one of three roads designated as an All-American Road (see Chapter VII). The diverse history and culture of the southern Appalachian Mountains is showcased along the Blue Ridge Parkway. Split-rail fences, old farmsteads and historic structures complement views of distant mountains, parallel ranges and neighboring valleys. Built during the Depression, the Blue Ridge Parkway is the nation's longest rural parkway. The parkway connects Shenandoah National Park in northern Virginia with the Great Smoky Mountains National

Park in southern North Carolina. The Blue Ridge area is not just known for its scenic routes, but also its history of 19th Century Appalachian and Native Virginian cultures.

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.

The following road segments have been recommended for consideration as Virginia Byways:

- 14 Route 75** in Washington County from Abingdon to the Tennessee state line.
- 15 Route 58** in Washington and Grayson counties between Abingdon and Volney.
- 16 Route 42** in Smyth and Bland counties between Route 16 and the Giles County line.
- 17 Route 52** from Fort Chiswell to Poplar Camp in Wythe County including Route 608 to Foster Falls.
- 18 Route 61** in Tazewell and Bland counties from Tazewell to the Bland-Giles County line.
- 19 Route 619** from Route 52 to Route 749 to Route 680 and back to Route 52.
- 20 Route 21** from Wytheville to Speedwell.
- 21 Route 610** and **Route 121** from Wytheville through Max Meadows to Fort Chiswell.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia scenic rivers and should be evaluated to determine suitability for designation:

- 22 New River** from Buck Hydro Dam to Allisonia.
- 23 Big Reed Island Creek** from Route 753 to New River in Carroll and Pulaski counties.
- 24 Whitetop Laurel Creek** from Green Cove Creek junction in Grayson County to Damascus in Washington County.
- 25 The North Fork of the Holston** from the confluence with Big Brumley Creek to the Tennessee state line in Scott County.
- 26 The Middle Fork Holston River** from Seven Mile Ford to South Holston Lake in Washington County.
- 27 South Fork Holston River** from Sugar Grove to South Holston Lake.
- 28 Cripple Creek** from Speedwell to the New River in Wythe County.
- 29 Laurel Fork** from the headwaters to Big Reed Island Creek in Carroll County.
- 30 New River** from the North Carolina-Virginia line to Byllesby Hydro Dam.
- 31 Big Brumley Creek** from Hidden Valley Lake to its confluence with the North Fork of the Holston in Washington County.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Region 3 is in the New River, Tennessee and Big Sandy watersheds that ultimately flow toward the Ohio and Tennessee basins into the Mississippi River. Karst topography, which covers much of the region, creates special issues and considerations for water quality and quantity in the region. A regional policy committee is developing comprehensive policies for management of these water resources.

Watershed groups in Region 1:

- Virginia Conservation Network
- Friends of the Rivers of Virginia

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.

32 The **Blue Ridge Parkway** is one of the most successful linear parks in the nation. Annually, more than 10 million visitors use the parkway and associated facilities in Virginia. Protection of the parkway's viewshed and appropriate use of adjacent lands is crucial to its long-term viability. Local governments and planning district commissions should consider adoption of a scenic overlay zone adjacent to and within the viewshed of the Blue Ridge Parkway as part of a multi-regional parkway viewshed planning process.

33 **Fishers Peak Recreational Area** in Carroll County is being developed by the National Park Service as part of the Blue Ridge Parkway.

National forests

- The U.S. Forest Service should continue to place program emphasis on areas designated by Congress, such as the Appalachian National Scenic Trail, Mount Rogers National Recreation Area and designated wilderness areas.

34 The George Washington and Jefferson National Forests should continue to work with DCR to transfer management responsibilities for the **New River Recreation Area** in Carroll County adjacent to the New River Trail State Park.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B:

Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

35 **Grayson Highlands State Park** (4,822 acres) is located in Grayson County adjacent to Mount Rogers National Recreation Area. Nearly 10 miles of cold water streams lie within the park, which offer angling for native brook trout and wild rainbow trout. Known for its scenic vistas, such as Little Pinnacle (elevation 5,089 feet), and wild ponies residing in the High Country above Massie Gap, the park has more than 23 miles of trail, including segments of the Appalachian Trail and Virginia Highlands Horse Trail. The park has two full-service campgrounds, one specifically for equestrian users. It also has picnic facilities, a visitor center with a gift shop featuring local crafts; interpretive and educational programs, cultural demonstrations, nature programs and Junior Ranger Programs.

Through the 2002 General Obligation Bond (GOB), funds were allocated to renovate the visitor center, install water and electric hook ups in the equestrian campground and construct a group camp. In conjunction with the Wayne C. Henderson Foundation, a music stage and shelter will be constructed in the Homestead Area of the park. This will be used for the annual Wayne Henderson Festival held in June, as well as the annual fall festival and pony auction, held in cooperation with the Rugby Rescue Squad and Wilburn Ridge Pony Association in September. This new stage should create more opportunities for the park to be a participant on the Crooked Road: Virginia's Heritage Music Trail.

36 **Hungry Mother State Park** (2,368 acres) is located in Smyth County. One of the original six Civilian Conservation Corps state parks that opened in 1936, Hungry Mother is listed on the National Register of Historic Places. The park offers camping, cabins, picnicking, a swim beach and concession, rental boats, boat launch, fishing, handicap fishing piers, restaurant, and more than 12 miles of trails for hiking and biking. Nature and history interpretive programs are offered through the park's discovery center, such as canoe tours, hikes, Critter Crawl (aquatic sampling), guest evening programs, campfires, storytelling, music and Junior Ranger Programs. Fishing tournaments just for kids are offered monthly. Hemlock Haven Conference Center, located within the park, offers meeting rooms, cabins, a sports complex and a picnic area. Catering is provided through the park restaurant.

Through the 2002 GOB, funds were allocated to purchase the campground now referred to as Camp Burson. Funds were also allocated to renovate facilities and upgrade water and electric hook ups at Camp Burson. Other bond projects included construction of a new campground bathhouse, water line upgrades and dredging the lake. The Town of Marion is continuing plans to extend the bicycle lane along Route 16 to the park. The park has constructed and enhanced the Lake Trail to accommodate bikes along the segment paralleling Route 16. Opportunities have been explored by the park and U.S. Forest Service to develop trails linking the park and surrounding forest area.

37 Lick Creek Natural Area (863 acres) is located in Smyth and Bland Counties. The site was donated to the Commonwealth of Virginia by the Old Dominion Foundation acting through the Nature Conservancy in May 1961. Bounded by national forest to the north, east and northwest, the property is primarily mature hardwood forest. The site lies on the southern slope of Carter Mountain and the northern slope of Brushy Mountain. Between these two ridges are the valleys of Lick Creek and Lynn Camp Creek, with a range in elevation from 2,000 feet in the valleys to 3,200 feet at the ridge tops. Combined, there is approximately five miles of stream, including Lick and Lynn Camp creeks.

The property was acquired primarily to be maintained in its natural state and operated as a sanctuary for the maintenance of wildlife. However, development of the site for public use and enjoyment is acceptable in accordance with the deed. A limiting factor to enhanced public use is access to the property. If access were improved, opportunities to convert old forest roads into trails could be realized. The Appalachian Trail runs within one-quarter mile of the northeast boundary of the property near the confluence of Lynn Camp Creek and Knot Mole Branch. Once access has been improved, consideration should be given to creating a small parking area and a connector trail to the Appalachian Trail.

38 New River Trail State Park (765 acres) follows an abandoned railroad right-of-way from Galax to Pulaski (51.5 miles) and on to Fries Branch (5.5 miles) for a total length of 57 miles. The park meanders through Grayson, Carroll, Wythe and Pulaski counties and parallels the scenic and historic New River for 39 miles. Rapidly becoming a popular destination area for trail enthusiasts from across the mid-Atlantic region, the trail has been designated as a National Millennium Trail and a National Recreation Trail. Also located

along the trail overlooking the New River is Shot Tower Historical State Park. The shot tower was built more than 150 years ago to make ammunition for the firearms of the early settlers.

The park master plan calls for the provision of campsites along the trail for trail users and canoe campers. A new equestrian campground will be constructed at Jackson's Ferry, and canoe-in sites will be developed on Baker Island and Hiwassee Island. Foster Falls is being developed as the main park headquarters and will include a historic interpretive village, hotel, concessions, day use picnic area, new park office and a new maintenance yard. Through the 2002 GOB, funds were allocated to make trail improvements, expand the water distribution system and for acquisitions. Also funded are renovations to the historic Foster Falls complex, which includes renovations to the hotel and office area.

There are multiple access points along the New River Trail, which create numerous opportunities for connector trails to the surrounding towns and communities. The park also serves as a link to other outdoor recreational areas, including a town park in Fries, Mount Rogers National Recreational Area, and four Department of Game and Inland Fisheries boat launches. The New River Trail and Grayson Highlands state parks are connected by an extension of the Virginia Highlands Horse Trail. This combined trail system includes more than 300 miles of trails and creates a link between the New River Trail State Park and the Virginia Creeper Trail on the southern end of Mount Rogers NRA. The park is also involved in the New River Blueway, which offers several opportunities for canoe-in camping.

State natural area preserves

Big Spring Bog Natural Area Preserve and Grayson Glades Natural Area Preserve are located in Grayson County and Red Rock Mountain Natural Area Preserve is located in Smyth County.

As of November 2006, 838 occurrences of 238 rare species and natural communities have been documented in the Mount Rogers Planning District by DCR. One hundred one species are globally rare and 20 are federally threatened or endangered. One hundred twenty-eight conservation sites have been identified in the district; 67 (52 percent) have received any level of protection through ownership or management by state, federal and non-government organizations. However, only four sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 3, DCR is particularly interested in protecting:

- Significant caves and karst areas.
- Water quality for globally rare aquatic communities.
- Significant seepage wetlands in Grayson and Carroll counties.
- Additional lands around Grayson Glades Natural Area Preserve and Big Spring Bog Natural Area Preserve.

Information about the location of conservation sites and the natural heritage resources they contain, as well as management assistance, is available to local planners from DCR's Natural Heritage staff. For a discussion of the Natural Heritage Program, see Chapter IX-B.

State fish and wildlife management areas

DGIF manages several wildlife management areas in the region. Hidden Valley, Clinch Mountain, Big Survey, Crooked Creek and Stewarts Creek wildlife management areas (WMA) help meet a large amount of the outdoor recreation demand for fishing, hunting and nature study in the region.

Most public hunting lands in Virginia lie west of the Blue Ridge, and a surplus of hunting in this region is captured by those coming from outside the region to take advantage of public lands for hunting. In addition, most hunting takes place on private lands, and DCR does not inventory private lands available for hunting.

DGIF should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and other wildlife viewing recreation.

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

39 DGIF has acquired the 8,300-acre **Big Survey** property near Wytheville for a WMA. This property has great potential for a wide variety of dispersed recreation opportunities.

40 The **Clinch Mountain WMA** should be connected to the new state forest on Brumley Mountain with a trail system if a corridor can be created.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

41 DOF plans to acquire a **4,700-acre tract on Brumley Mountain** in Washington County. Portions of the property will be managed as a natural area preserve while the remainder will be managed as a state forest. A connector trail to the Clinch Mountain WMA should be developed if a corridor can be identified.

42 DOF has developed a management plan for the **Matthews State Forest** and has completed acquisition of an additional 410 acres for the state forest.

Plans call for the property to be managed as a conservation and education state forest with the development of additional self-guided nature trails, an education management road for self-guided driving tours, and examples of various forestry practices and different plantings. A new office and education conference facility has been built on the Matthews. Funding should be identified to provide needed staff for the state forest and to acquire easements or fee interests in adjacent properties that could enhance the forest.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

43 **Virginia Highlands Community College** in Washington County has a 100-acre tract with potential for the development of recreational facilities.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agen-

cies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.

- The Mount Rogers region localities should implement the regional bikeway and walking trails plan. This plan outlines the trails, bikeways and walkways needed to meet both recreational and alternative transportation objectives. Envisioned is a comprehensive network of shared roadways, bike lanes and independent trails. New facilities will be developed in coordination with road improvements, land development projects and through individual project initiatives.

44 **Interstate Bike Route 76** should be studied to determine if the trail is still located on the best roads. Recent development has changed traffic levels and some sections of the route carry too much vehicle traffic to be suitable for BR 76.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-C: Resource Agencies. Local and regional recommendations include:

- Evaluate the possibility for a private dry storage boat facility and marina at Claytor Lake.
- Evaluate opportunities for guide and outfitter services to accommodate canoeing, kayaking, rafting, hiking, backcountry camping, trout fishing and hunting.

The New River

There may be opportunities along the New River, a designated American Heritage River, for private investment to take advantage of existing resources, especially the New River Trail State Park. The river and the trail share the same valley for nearly 40 miles. Bicycling, horseback riding, hiking, canoeing, camping, nature study, fishing and scenic viewing are popular activities. Private facilities could include camping, bed and breakfasts, hotels and hostels, and canoe, bicycle or horse liveryes. Shuttle services and equipment

rental is very good at this time. The states of North Carolina, Virginia and West Virginia are cooperating with the National Park Service and the U.S. Army Corps of Engineers to develop a New River Blueway that will provide a series of access points and managed use areas along the entire river from the point of navigation in North Carolina to Thurmond and the Gauley Bridge in West Virginia. A map of the New River Blueway will be published to provide trip planning information.



Mount Rogers National Recreation Area. Photo by USFS.

Table X-3. Region 3 (Mount Rogers Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	250,226	49	fields	35	14	17
Basketball	307,095	73	goals	46	27	31
Bicycling	270,130	19	miles	NI		
Mountain	44,548	3	miles	NI		
Other	225,582	16	miles	NI		
Lake, river and bay use (combined)	225,582	4,042	water acres	250	3,792	4,002
Power boating	106,915	2,577	water acres	S		
Sailing	15,165	131	water acres	S		
Saltwater fishing	53,457	301	water acres	S		
Jet ski, personal watercraft	34,122	535	water acres	S		
Water skiing, towed on water	15,923	499	water acres	S		
Camping	306,716	1,809	sites	3,022	-1,213	-1,119
Tent camping	175,348	1,034	sites	399	635	689
Developed camping	131,369	775	sites	2,623	-1,848	-1,808
Fitness Trail use	157,339	13	mile trails	15	-2	-2
Fields (combined)	322,261	68	fields	32	36	39
Football	121,322	26	fields	32	-6	-5
Soccer	200,939	42	fields	-	42	44
Stream Use (combined)	710,679	452	stream miles	122	330	353
Freshwater fishing	617,982	435	stream miles	S		
Human-powered boating	33,363	8	stream miles	S		
Rafting	18,957	3	stream miles	S		
Tubing	40,377	5	stream miles	S		
Golfing	239,610	8	courses	252	-6	-5
Hiking, backpacking	298,565	153	trail miles	739	-586	-578
Horseback riding	85,304	37	miles	391	-354	-352
In-line skating	51,183	4	miles	NI		
Jogging, running	1,232,173	99	mile trails	NI		
Nature study, programs	52,130	7	sites	1	6	7

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-3. Region 3 (Mount Rogers Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	258,756	672	tables	2,157	-1,485	-1,450
Skateboarding	144,069	44	sites	NI		
Snow skiing or snowboarding	32,416	1	ski lifts	2	-1	-1
Softball	269,182	48	fields	38	10	12
Sunbathing, relaxing on beach	351,454	25	beach acres	87	-62	-61
Swimming	1,895,650	127		NI		
Outdoor area	951,616	97	beach acres	87	10	15
Outdoor pools	619,878	26	pools	27	-1	1
Indoor pools	324,156	4	pools	3	1	1
Tennis	147,861	92	courts	78	14	19
Used a playground	509,930	73	sites	84	-11	-8
Visiting gardens	50,424	6	sites	NI		
Visiting historic sites	278,092	24	sites	NI		
Visiting natural areas	354,107	60	sites	NI		
Volleyball	89,096	26	courts	14	12	14
Hunting	608,504	99,788	acres	250,332	-150,544	-145,367
Drive for pleasure	1,256,816	NA	NA	NI		
Driving motorcycle off road	51,183	23	miles	112	-89	-87
Driving 4-wheel-drive off road	214,208	NA	NA	NS		
Walking for pleasure	4,077,543	NA	NA	NI		
Bird watching	50,045	NA		NI		
Other	109,948	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

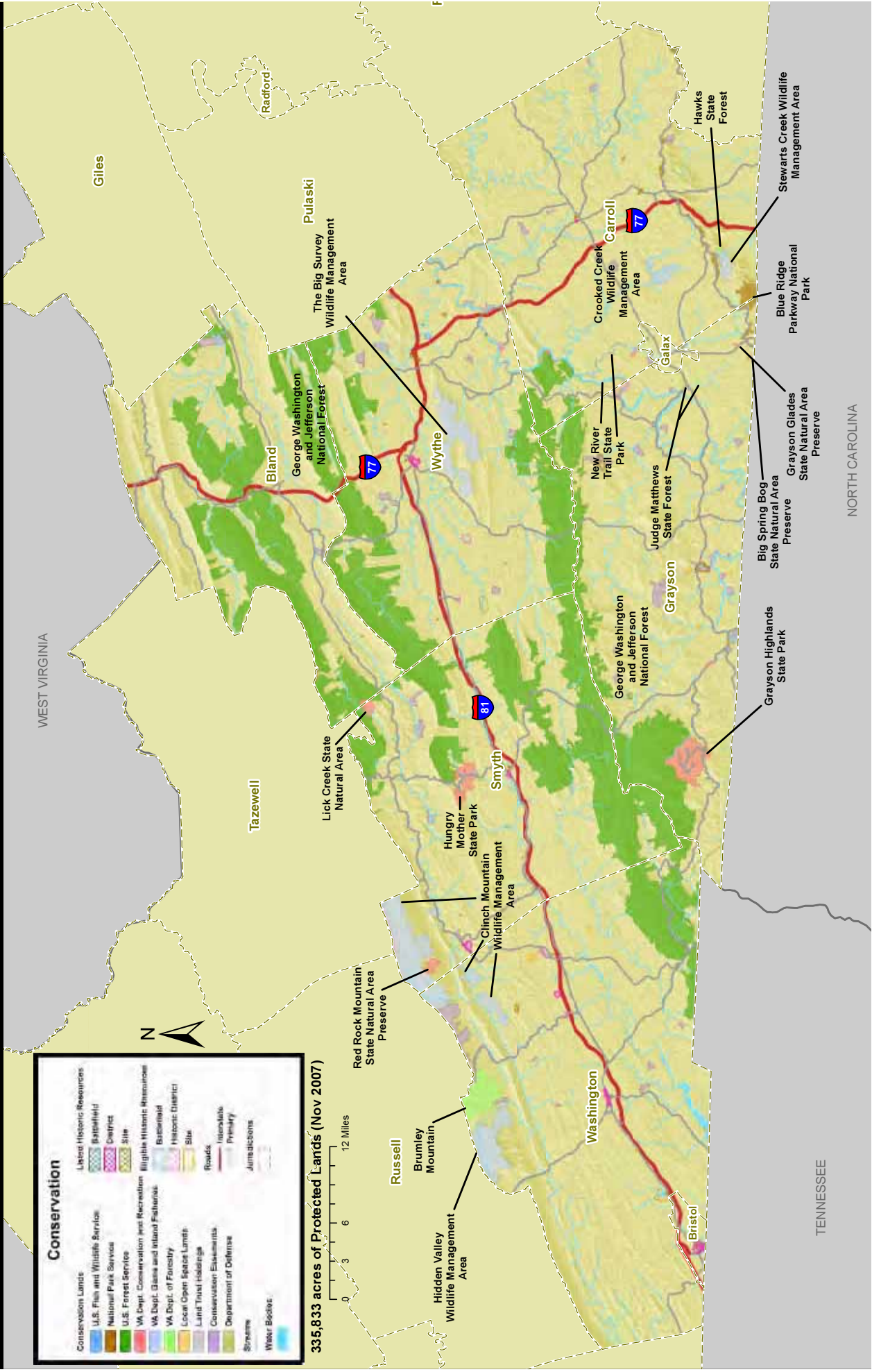
S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-6. Region 3 (Mount Rogers Planning District) Conservation Lands



Introduction

The New River Valley Planning District lies in the ridge and valley province of Virginia. It is comprised of Floyd, Giles, Montgomery and Pulaski counties, and the City of Radford. The 2000 Census recorded a population of 165,146 people. Approximately 35,000 of these are students at Radford University and Virginia Tech. The population in 2005 increased by 2.4 percent to 169,000.

The region's terrain is characterized by long, parallel ridges with intervening valleys. National forest lands blanket the ridges while picturesque farms and towns dot the valleys of the Allegheny Mountains in the west. To the east, the Blue Ridge Parkway follows the crest of the Blue Ridge Mountains. The New River, as it flows north through the center of this area, provides high quality fishing and boating opportunities.

The New River Valley region is home to the first phase of the Wilderness Road Trail and was the doorway to the westward expansion of the United States. The valley's historic heritage is a source of pride for residents and a growing impetus for tourist travel. To date, several historic districts and numerous historic register structures have been designated. The Blacksburg, Newbern and Pulaski historic districts contribute significantly to the valley's quality of life. The Dublin, Newport, Narrows, Eggleston, Prices Fork, Shawsville, Riner, Newbern, Floyd and Pearisburg historic districts are 10 more recent National Historic Register additions in the region. As indicated by the 2006 *Virginia Outdoors Survey* (VOS), visiting historic sites is a popular recreational activity for many Virginia residents. Thus, plans at all levels of government should strive to protect the integrity of these significant regional historic resources.

The character of the region is defined by the New River, an American Heritage River. This most ancient of American rivers is unique from a number of perspectives: geological, biological and historical. As a recreational resource, the river is invaluable, providing a wide range of experiences for fishermen, boaters of all kinds, swimmers and those who enjoy the scenic beauty of the river and the environment it creates. The river also is important from an industrial perspective. Claytor Lake, a hydroelectric power impoundment, is on the New River. This lake provides a 4,475 acre supply of flat water for power boating, sailing, water skiing, fishing and other water sports. Claytor Lake

State Park provides overnight and day use recreational facilities that enhance the public's enjoyment of the lake. Pulaski County's Harry DeHaven Park also is located on Claytor Lake and provides public access and a range of recreational activities.

Public access to the New River is insufficient to meet measured demand, but a joint effort of Appalachian Power Company and Virginia are improving access through the Partners in River Access Program. This innovative program has been used to acquire and construct public access sites on the New River, as well as on the James and Roanoke rivers. With the relicensing of Claytor Dam, there is the potential for identified improvements to be made to public access in the project area.

Four regional recreational sites serve the New River Valley. Mid-County Park in Montgomery County is a 90-acre park that has a variety of facilities, including a swimming pool, picnic areas, play fields and nature trails. The Ellett Nature Area is a 106-acre conservation area that offers a variety of trails and nature study opportunities. In Pulaski County, the Gatewood Reservoir site offers boating, fishing, camping, trail use and nature study opportunities, while Randolph Park offers a wide variety of active recreation facilities.

The George Washington and Jefferson National Forests contain 102,137 acres within this district. Developed recreation areas at the Cascades, Pandapas Pond, White Rocks, Walnut Flats and Interior provide day use and camping opportunities. A new initiative, the historic Glen Alton property, has been acquired by the U.S. Forest Service and is being developed as a major recreation attraction. Trout streams and warm water fisheries provide excellent angling and the diversity of habitats ensure productive hunting. Many miles of trails, including the Appalachian Trail, serve hikers and backpackers in the region. Mountain bicycle and horse trails are also provided in the national forest.

The New River Trail State Park is one of the region's greenway success stories. Linear parks and greenways have been an important part of the New River Valley's quality of life since the development of the Appalachian Trail and the Blue Ridge Parkway. Community based efforts are now underway to link these established greenways with smaller trail systems in the region's towns and with trails in the national for-

est. One example of the ongoing effort is the extension of the Blacksburg Trail System to the Town of Christiansburg via the Huckleberry Trail. This project has resulted in the creation of a significant new linear park through a strategic, public-private initiative organized by Montgomery County. Similar trail systems are being developed in Radford. A regional initiative is underway to connect New River Trail State Park in Pulaski to the Huckleberry Trail in Christiansburg. This effort will include components of the Wilderness Road Trail, Radford's extensive riverside trail system, and the identification and construction of new trail alignments.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 4 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 VOS, the top 10 most popular outdoor activities in Region 4 are walking for pleasure, swimming, driving for pleasure, jogging and running, fishing, hunting, using a playground, visiting natural areas, sunbathing and bicycling, respectively.

The supply of recreational areas and facilities is generally adequate to meet resident demand in developed areas of the region. However, college students and tourists place considerable demand on recreational resources and create shortages of trails, camping and water sport opportunities. In the more rural areas and small towns, there is a need for additional developed recreation facilities. The 2006 VOS indicates a need for additional campsites, playgrounds, football, soccer and softball fields. Also, there is a demand for golf and pool swimming in several area localities (see Table X-4).

The 2006 VOS does not capture imported or seasonal demand of college students or the impact of tourism on the region's recreational opportunities. More than 20 million visitors enjoy outdoor recreational opportuni-

ties in the New River Valley each year. Appropriate management and infrastructure development are critical to ensuring that the region's outdoor resources are not impaired by overuse. For example, the Cascades Trail is one of the most heavily visited hiking trails in the Commonwealth. The Blue Ridge Parkway also receives heavy use not generated by the region's inhabitants.

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Floyd County, \$2.70; Giles County, \$32.05; Montgomery County, \$6.57; Pulaski County, \$20.31; and the City of Radford, \$63.20. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 per capita spending on parks and recreation from cities in Virginia.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

Land Trusts and Conservation Programs in Region 4:

- Virginia Outdoors Foundation
 - New River Land Trust
 - Western Virginia Land Trust
 - The Nature Conservancy
 - Trust for Public Lands
 - The Conservation Fund
 - National Committee for the New River
- All localities in region 4 should continue to promote the conservation and preservation of open space through land acquisition, conservation easements, stewardship agreements, the development of agricultural and forestal districts, or any of the many open space protection strategies presented in Chapter III: Land Conservation.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure.

The New River Valley Green Infrastructure Partnership: Linking Lands and Communities in the New River Valley

www.nrvpdc.org/GreenInfrastructure/greeninfrastructure.html

The Linking Lands and Communities Project began in the fall of 2006 when a number of public and private groups came together to learn more about a proactive and holistic approach to addressing conservation and resource protection in concert with growth and development. The New River Valley Planning District Commission has defined a three-stage process to implement a green infrastructure planning approach for the region. Those stages include:

- Education, outreach, needs assessment and capacity building.
- Integration of existing natural resource and built infrastructure information for formal plan development and land prioritization by the localities and communities.
- Adoption of green infrastructure plan, priorities and implementation process.

Regional recommendations for green infrastructure in this region include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Continue ongoing education on green infrastructure with key interest groups.
- Continue building local, regional and state partnerships.
- Develop organizational structure and leadership group to maintain long-term green infrastructure planning and implementation efforts.
- Develop and adopt a regional green infrastructure plan among localities in the New River Valley.
- Develop long-term strategies to fund green infrastructure planning and implementation.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, water-sheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

1 The **Great Eastern Trail** will link existing trails from central Alabama to central New York along the Allegheny Highlands. The Southeast Foot Trails Coalition and the Mid-Atlantic Foot Trail Coalition are undertaking this project, which is being sponsored by the American Hiking Society. The Great Eastern trail may run through portions of Bland and Giles County and may connect to the Appalachian Trail.

2 The **Trans-Virginia Southern Trail** will stretch from the Cumberland Gap to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across southern Virginia. Trails in the New River Valley will connect with this trail via the New River Trail State Park and potentially up the Roanoke River Trail system.

3 The **Appalachian Trail** is an existing National Scenic Trail. Because of this special designation, localities that host the Appalachian Trail should protect viewsheds along the corridor in their planning and zoning. For more than 75 years the Appalachian Trail Conservancy and its member clubs have worked voluntarily with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the trail.

Sections of the Appalachian Trail (AT) need additional protection and improvement. The planned Appalachian National Scenic Trail crossing of the New

River in Giles County should be constructed. Special attention should be paid to protecting the setting of the AT corridor as it crosses the New River Valley.

Other trails

- 4 The **Huckleberry Trail** should be included in a comprehensive greenway plan to connect residential areas and regional park and recreational facilities within the Virginia Tech, Blacksburg, Christiansburg and Montgomery counties area. The Huckleberry Trail is being extended to the west to link with trails in the Pandapas Pond area in the George Washington and Jefferson National Forests.
- 5 Trail advocacy groups in Radford are expanding the trails already developed by the **Radford Pathways Project** into a comprehensive trails network anchored by trails in **Bisset** and **Wildwood parks**.
- 6 The extension of **New River Trail State Park** into the Town of Pulaski will enhance access to the trail, provide a good orientation to the area for visitors who take advantage of the museum in the Pulaski train station, and increase the local residents' opportunities for recreation.
- 7 A connector trail that will join the **New River Trail** with the **Huckleberry Trail** should be developed.
- 8 Initiatives that combine access to the **New River** with the region's historic heritage, which are used as sustainable economic development tools to enhance tourism in the region, are central to regional recreational objectives. Such efforts could include a series of public use areas and parks along the river to afford access opportunities while providing regional hiking and biking opportunities, principally along the route of Mary Ingles' journey from captivity in Kentucky.
- 9 Support should be given to the development of the **Ellett Valley Loop Trail** system linking Ellett Park and the Ellett Springs along Cedar Run with the Industrial Park and Smart Road in Montgomery County.
- 10 The **Floyd County Trails Plan** should be implemented. The Town of Floyd and the Rocky Knob Recreation Area development on the Blue Ridge Parkway should be connected with a multi-purpose trail.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor

Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
 - Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
 - Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
 - Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- 11 The **New River Blueway** is being planned in Virginia, North Carolina and West Virginia as a full-service water trail with access sites, rest areas, camp sites, re-supply areas and maps to assist users with trip planning. Localities should identify opportunities to increase access sites and use areas along the blueway. A management structure for the blueway needs to be developed in this district.
 - 12 Access sites are needed at appropriate distances along the **New River**, the **Little River**, **Big Reed Island**, **Wolf Creek**, **Craig Creek** and along stretches of major streams suitable for boating and other water sports. There is also a need to improve public access to stocked trout streams in the region. Inadequate parking and access trails create congestion, resource degradation and unsafe conditions during popular fishing days.
 - 13 **Gatewood Park** is a regional park operated by the Town of Pulaski's Parks and Recreation Department. It is a multi-use facility for fishing, boating, picnicking, camping and trail use. Because the reservoir serves as the Town of Pulaski's water supply, land-disturbing activities on lands around the reservoir should not impact water quality.
 - 14 **Hogan Reservoir** includes an extensive watershed around a beautiful lake in Pulaski County that has been declared surplus to county needs. An effort should be made to retain the lake and the watershed property for public use. Boating and fishing access to the lake could be improved and a system of trails could provide for other recreational uses of the property.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Regional and local recommendations include:

- Remnants of the Wilderness Road, the Ingle's Ferry site in Pulaski County, and the Ingle's family farm are extant components of the Mary Draper Ingles story. While portions of the historic properties have been protected with a conservation easement, major elements still need to be protected.
- There is a critical need for a county-wide survey of the historic, architectural and archaeological resources of Floyd County.
- In this region, special attention should be given to protecting views from the Blue Ridge Parkway and the Appalachian Trail. The Appalachian Trail corridor is especially impacted where it crosses the New River Valley.
- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed infor-

mation, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Regional and local recommendations include:

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to

develop corridor management plans to protect the scenic assets of byway corridors.

- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

All-American Roads

Blue Ridge Parkway - The diverse history and culture of the southern Appalachian Mountains is showcased along the Blue Ridge Parkway. Split-rail fences, old farmsteads and historic structures complement views of distant mountains, parallel ranges and neighboring valleys. Built during the Depression, the Blue Ridge Parkway is the nation's longest rural parkway. The parkway connects Shenandoah National Park in northern Virginia with the Great Smoky Mountains National Park in southern North Carolina. The Blue Ridge area is not just known for its scenic routes, but also its history of 19th Century Appalachian and Native American cultures.

The following road segments have been recommended for consideration as Virginia Byways:

- 15 **Route 8** from Town of Floyd to the Patrick County line in Floyd County.
- 16 **Route 693** and **Route 672** from Route 8 in Montgomery County to Interstate 81 near Pulaski.
- 17 **Route 635** in Giles County from the New River to White Rocks and the West Virginia line.
- 18 **Route 61** in Giles and Bland counties from Narrows to Rocky Gap.
- 19 **Route 730** in Giles and Bland counties from Staffordsville to Route 460.
- 20 **Route 601** in Giles County from Newport to Captain.
- 21 **Route 100** in Bland and Pulaski counties from Pearisburg to Dublin.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation

Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia scenic rivers and should be evaluated to determine suitability for designation:

- 22 The **Little River** from Route 8 to New River in Floyd and Montgomery counties.
- 23 **Craig Creek** from its headwaters to the Montgomery County line.
- 24 **New River** from Claytor Dam to the West Virginia line in Giles and Montgomery counties.
- 25 **Little Stony Creek** from its headwaters to the New River in Giles County.
- 26 **Big Reed Island Creek** from the Pulaski County line to New River.
- 27 **Walker Creek** from Point Pleasant to the New River.
- 28 **Sinking Creek** from Route 680 to the New River.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 4:

- New River Roundtable
- Friends of the New River
- Friends of the Rivers of Virginia
- National Committee for the New River
- New River Community Partnership

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National forests

29 The George Washington and Jefferson National Forests provide much of the public open space and dispersed recreational opportunities in the region. The forest plans include upgraded facilities at **Pandapas Pond** and at the **Cascades Recreation areas**.

30 The USDA Forest Service has acquired the **Glen Alton** property in Giles County. This property has potential for meeting a variety of developed recreation and environmental education needs for the region.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.

31 The **Blue Ridge Parkway** is one of the most successful linear parks in the nation. More than 10 million visitors annually use the parkway and associated facilities in Virginia. Protection of the parkway's viewshed and appropriate use of adjacent lands is crucial to its long-term viability.

- NPS is currently working with Patrick and Floyd counties and other supporting entities to expand and enhance the Rocky Knob Recreation Area. This expansion may require the acquisition of additional land in the vicinity of Rocky Knob.

U.S. Army Corps of Engineers

32 The Corps of Engineers administers the **Bluestone Dam** and reservoir system on the New River. Approximately 1,100 acres of this project's easement lands are in Virginia. Some of this property is leased to the Town of Glen Lyn, while the remainder is under Corps management. This land represents almost seven miles of public riverfront along both banks of this high quality recreational river that has been studied and found to be eligible for designation as a National Wild and Scenic River. The Corps should conduct an analysis of these lands to determine how best to make them available for public recreational use and assure their proper management.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

33 **New River Trail State Park** (765 acres) follows an abandoned railroad right-of-way from Galax to Pulaski for 51.5 miles and on to Fries Branch for 5.5 miles for a total length of 57 miles. The park meanders through Grayson, Carroll, Wythe and Pulaski counties and parallels the scenic and historic New River for 39 miles. The trail has been designated as a National Millennium Trail. Also, located along the trail overlooking the New River, is Shot Tower Historical State Park. The shot tower was built more than 150 years ago to make ammunition for the firearms of the early settlers.

The park master plan calls for the provision of campsites along the trail that can be used by both trail users and canoe campers. A new equestrian campground will be constructed at Jackson's Ferry, and canoe-in sites will be developed on Baker Island and Hiwassee Island. Foster Falls is being developed as the main park headquarters and will include a historic interpretive village, hotel, concessions, day use picnic area, new park office and a new maintenance yard. Through the 2002 General Obligation Bond, funds were allocated to make trail improvements, expand the water distribution system and for acquisitions. Also funded are renovations to the historic Foster Falls complex, which includes renovations to the hotel and office area.

There are multiple access points along the New River Trail, which create numerous opportunities for connector trails to surrounding towns and communities. The park also serves as a link to other outdoor recreational areas, including a town park in Fries, Mount Rogers National Recreational Area, and four Department of Game and Inland Fisheries boat launches. The New River Trail and Grayson Highlands state parks are connected by an extension of the Virginia Highlands Horse Trail. This combined trail system includes more than 300 miles of trails and creates a link between the New River Trail State Park and the Virginia Creeper Trail on the southern end of Mount Rogers NRA. The park is also involved in the New River Blueway, which offers several opportunities for canoe-in camping.

DCR should complete development of the master plan for New River Trail State Park to include the following actions:

- DCR should work closely with local governments to link **New River Trail State Park** with the Huckleberry Trail in Christiansburg.
- DCR should develop planned overnight facilities at the Horseshoe Bend recreation area.
- DCR should complete development of planned support facilities for the New River Blueway.
- DCR should continue to coordinate with Pulaski to connect New River Trail State Park to the former train station.

34 The revised **Claytor Lake State Park** Master Plan was adopted in 2005. The plan calls for improved campsites, renovation of the marina, construction of five family lodges, a 130-room lodge and overnight complex with restaurant, and an aquatic research center. The 2002 GOB for state parks provided funding for new cabins, the improvement of campsites, and the construction of a restaurant at the marina. The views from the park of Claytor Lake and the opposite shore are very scenic. Much of the far shoreline is owned by Appalachian Power Company and is in a natural vegetated condition. DCR should work with APCO to acquire conservation easements on those lakeshore properties to protect the shoreline from additional development. In addition to maintaining the scenic beauty of the lake, this will also improve water quality and wildlife habitat.

State natural area preserves

Natural area preserves within the district are Chestnut Ridge and Clover Hollow in Giles County, Buffalo Mountain in Floyd County and Pedlar Hills Glades in Montgomery County.

As of November 2006, 608 occurrences of 197 rare species and natural communities have been documented in the New River Valley Planning District by DCR. Seventy-four species are globally rare and eight occurrences are of federally threatened or endangered species. One hundred twenty-nine conservation sites have been identified in the district; only 60 (47 percent) have received any level of protection through ownership or management by state, federal and non-government organizations. However, only five sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 4, DCR is particularly interested in protecting:

- Water quality for globally rare aquatic communities.
- Significant caves and karst areas.
- Terrestrial limestone communities in Montgomery County.
- Significant wetlands in Floyd County.
- Additional lands around Pedlar Hills Natural Area Preserve and Buffalo Mountain Natural Area Preserve.

Montgomery County is willing to develop a trailhead parking area and to share the cost of a bridge over the South Fork Roanoke River to improve public access to the Pedlar Hills Glades Natural Area Preserve.

Information about the location of conservation sites and the natural heritage resources they contain, as well as management assistance, is available to local planners from DCR's Natural Heritage staff (see Chapter IX-B-5).

State fish and wildlife management areas

- The Virginia Department of Game and Inland Fisheries should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing, boating and other wildlife viewing recreation.
- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- The New River Valley localities have developed a regional bicycle-pedestrian plan. This plan outlines the trails, bikeways and walkways needed to meet both recreational and alternative transportation objectives. Envisioned is a comprehensive network of shared roadways, bike lanes and independent trails. New facilities will be developed in coordination with road improvements, land development projects and through individual project initiatives.

35 **Interstate Bike Route 76** should be studied to determine if the trail is still located on the best roads. Recent development has changed traffic levels and some sections of the route carry too much vehicle traffic to be suitable for BR 76.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

36 The **New River Community College** in Pulaski County has 100 acres of land that may be suitable for the development of additional recreational facilities.

37 The **Fishburn Tract**, a Virginia Tech property in Montgomery County, consists of 1,200 acres on Prices Mountain. The tract is suitable for a variety of activities including outdoor education and numerous university missions.

38 **Whitethorne Plantation**, a 900-acre Virginia Tech property located on the New River in Montgomery County, has considerable outdoor recreational potential. Nature study, hiking, fishing, river use and other dispersed recreation may be compatible with the property's primary function as an agricultural research station.

39 Virginia Tech owns a 120-acre site located east of Whitethorne Plantation near Price's Fork called **Kentland Farms**. This site should be evaluated for its recreational potential.

40 In addition to Radford University's primary campus properties and the numerous on-campus sports facilities in the City of Radford, the university has recently acquired the Saint Albans property containing approximately 75 acres. Portions of the property, called **RU-West**, front on the New River and should be evaluated for their recreational potential.

41 The Radford University Foundation owns **Selu**, a 200-acre parcel of undeveloped land along the Little River in Montgomery County. This property is currently used as an outdoor educational facility and has dispersed recreation potential. A trail should be developed that would connect Selu with the New River Heritage Museum and the Radford trail system.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.

- 42 Efforts should be made to ensure the protection of habitat in **Wildwood Park** in Radford including the acquisition of available buffer lands.
- 43 The Town of Pearisburg should continue the development of **Whitt River Bend Park** as a component of the **New River Blueway**.
- 44 It is recommended that the approximately 200 acres of the Montgomery County Landfill site be completed closed and made safe for use as additions to the **Montgomery County Mid-County Regional Park**.
- 45 It is recommended that the **Castle Rock Public Recreation Area** in Giles County be considered for facility development initiatives, including swimming pool improvements, land acquisition, access to the New River and expansion to the buildings and grounds.
- 46 A regional park should be developed at **Heritage Community Park and Natural Area** in Blacksburg. Development plans should be sensitive to the special biological areas on the property.
- 47 Pulaski County's **Randolph Park** in Dublin is a major, developed recreation area with facilities for a wide variety of recreational activities and sports.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-

based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies.

Developed campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities help meet the needs identified in the 2006 VOS. Entrepreneurial opportunities should be evaluated for the establishment of outfitter services for canoeing and kayaking, boat launches, canoe-in campgrounds, multi-field sports complexes and swimming pools. Public lands also offer opportunities for adventure sports, hiking and backcountry camping.

- 48 **Claytor Lake Dam**, operated by Appalachian Power Company, is being re-licensed by the Federal Energy Regulatory Commission. The Dam creates Claytor Lake, a 5,500-acre impoundment of the New River. This lake provides the only power boating, sailing, jet skiing, and water skiing opportunities in the region. During the re-licensing process, APCO will be working with the citizens and government agencies to identify opportunities to increase outdoor recreation facilities within the project area. Currently there are several local parks, Claytor Lake State Park, New River Trail State Park and several state maintained boat ramps helping to meet public access and use needs on the lake. APCO should work with DCR and the Virginia Outdoors Foundation or other conservation organizations to protect the remaining undeveloped shoreline of the lake from further development by placing conservation easements on the land.

Table X-4. Region 4 (New River Valley Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	218,241	43	fields	66	-23	-19
Basketball	267,841	64	goals	93	-29	-23
Bicycling	235,601	17	miles	NI		
Mountain	38,853	3	miles	NI		
Other	196,747	14	miles	NI		
Lake, river and bay use (combined)	196,747	3,526	water acres	4,712	-1,186	-833
Power boating	93,248	2,248	water acres	S		
Sailing	13,227	114	water acres	S		
Saltwater fishing	46,624	262	water acres	S		
Jet ski, personal watercraft	29,760	466	water acres	S		
Water skiing, towed on water	13,888	435	water acres	S		
Camping	267,510	1,578	sites	1,937	-359	-201
Tent camping	152,934	902	sites	397	505	595
Developed camping	114,576	676	sites	1,540	-864	-797
Fitness trail use	137,227	11	mile trails	39	-28	-27
Fields (combined)	281,068	59	fields	65	-6	0
Football	105,814	22	fields	65	-43	-41
Soccer	175,254	37	fields	-	37	41
Stream use (combined)	619,837	394	stream miles	18	376	415
Freshwater fishing	538,989	379	stream miles	S		
Human-powered boating	29,099	7	stream miles	S		
Rafting	16,533	3	stream miles	S		
Tubing	35,216	5	stream miles	S		
Golfing	208,982	7	courses	207	-4	-4
Hiking, backpacking	260,401	134	trail miles	194	-60	-47
Horseback riding	74,400	32	miles	46	-14	-11
In-line skating	44,640	3	miles	NI		
Jogging, running	1,074,671	86	mile trails	NI		
Nature study, programs	45,467	6	sites	1	5	6

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-4. Region 4 (New River Valley Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	225,681	586	tables	1,140	-554	-495
Skateboarding	125,654	39	sites	NI		
Snow skiing or snowboarding	28,272	1	ski lifts	-	1	1
Softball	234,774	42	fields	36	6	10
Sunbathing, relaxing on beach	306,529	22	beach acres	8	14	16
Swimming	1,653,340	111		NI		
Outdoor area	829,977	85	beach acres	8	77	85
Outdoor pools	540,642	23	pools	21	2	4
Indoor pools	282,721	3	pools	1	2	3
Tennis	128,961	81	courts	127	-46	-38
Used a playground	444,748	63	sites	57	6	13
Visiting gardens	43,979	5	sites	NI		
Visiting historic sites	242,545	21	sites	NI		
Visiting natural areas	308,844	52	sites	NI		
Volleyball	77,707	23	courts	6	17	19
Hunting	530,722	87,033	acres	116,749	-29,716	-20,996
Drive for pleasure	1,096,164	NA	NA	NI		
Driving motorcycle off road	44,640	20	miles	-	20	22
Driving 4-wheel-drive off road	186,827	NA	NA	NS		
Walking for pleasure	3,556,334	NA	NA	NI		
Bird watching	43,648	NA		NI		
Other	95,894	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

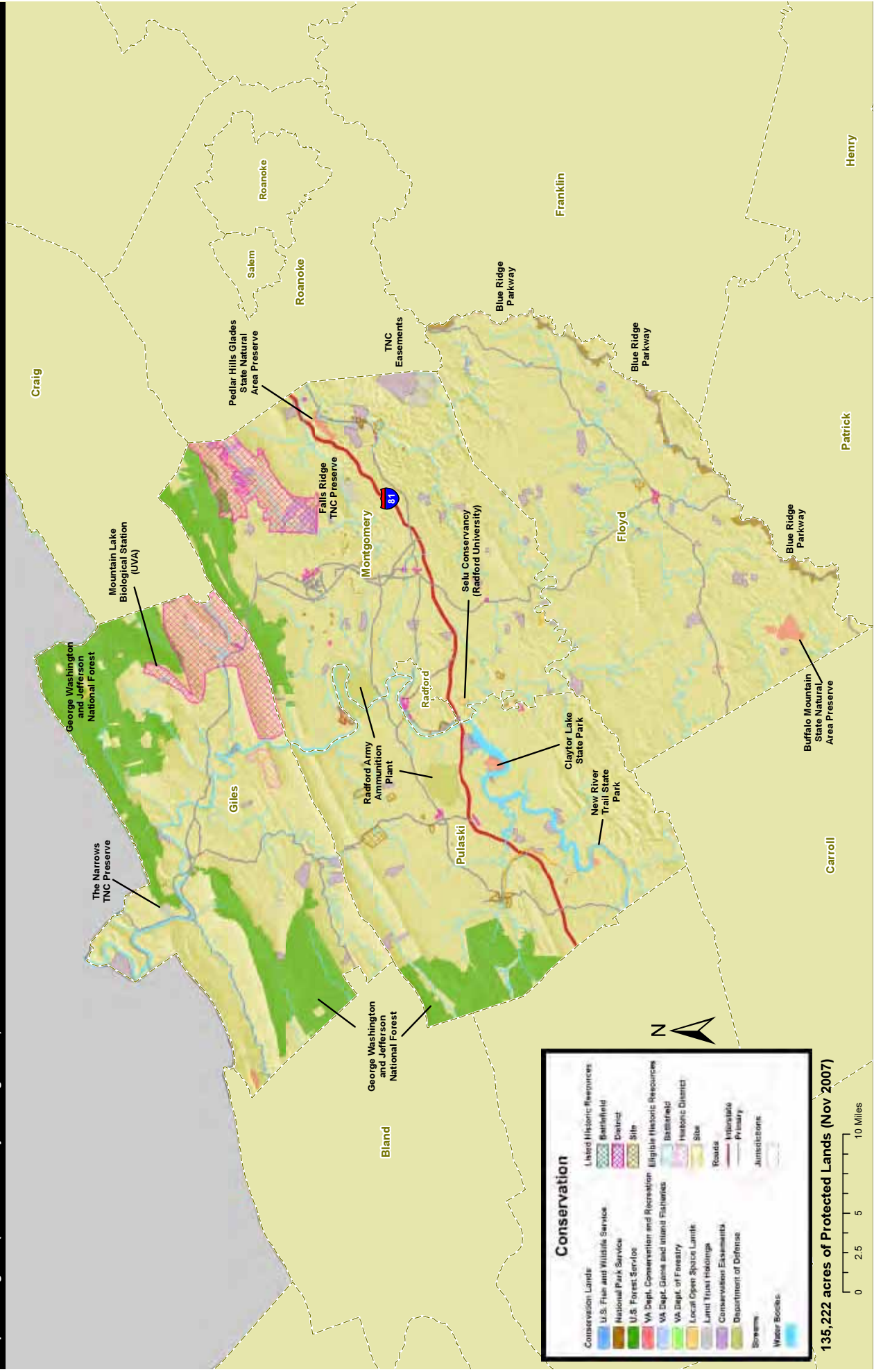
S: same as combined

NS: not inventoried separately

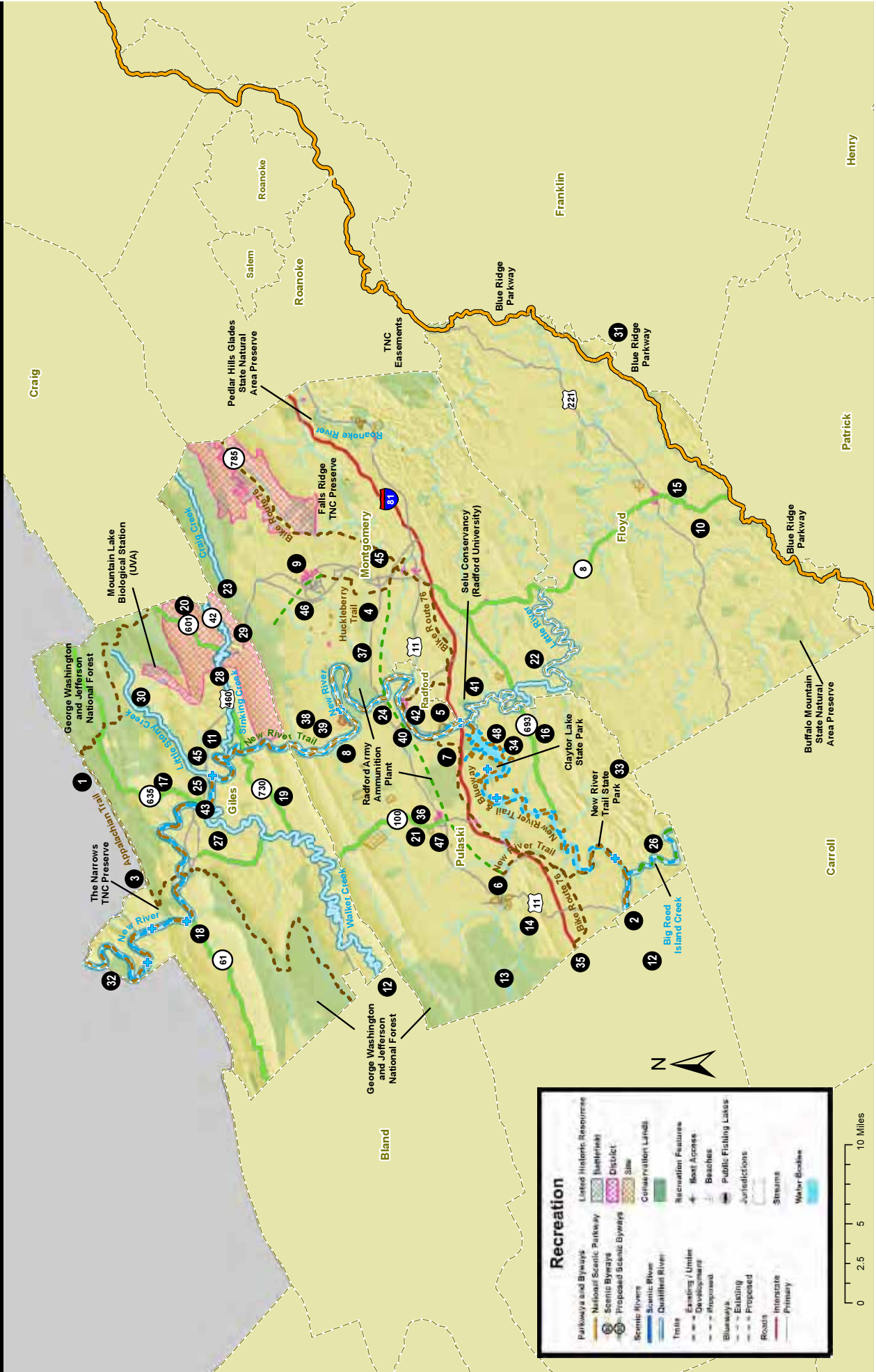
NI: not inventoried

(-) indicates surplus

Map X-8. Region 4 (New River Valley Planning District) Conservation Lands



Map X-9. Region 4 (New River Valley Planning District) Outdoor Recreation



Introduction

The Roanoke Valley-Alleghany Regional Commission provides planning and technical support to its members. Member jurisdictions include the counties of Alleghany, Botetourt, Craig, and Roanoke; the cities of Covington, Roanoke and Salem; and the towns of Iron Gate, Fincastle, Troutville, Buchanan, New Castle and Vinton. Since the publication of the 2002 *Virginia Outdoors Plan*, there have been changes to the membership of Region 5. Clifton Forge, which was previously a city, changed status and is included with Alleghany County for statistical information. The other change is that Franklin County has become a member of Region 5, while maintaining its membership with Region 12. For the purposes of this plan, all statistical information for Franklin County is included in the Region 12 chapter.

Stretching from the Blue Ridge Mountains across the Shenandoah Valley to the valley and ridge province of the Appalachian Mountains, Region 5 is a mixture of urban centers and rural farms and forests. Suburban sprawl in Region 5 is adding more pressure to public services, though its growth rate is relatively small. Marked by topographic variety, numerous rivers, streams, and many notable cultural and historic sites, the area offers a full range of historic and outdoor experiences. Whether hiking the Appalachian Trail or driving the Blue Ridge Parkway, exploring the George Washington and Jefferson (GW-Jeff) National Forests or paddling the James River, the outdoor enthusiast's choices of activities are many.

The Blue Ridge Parkway, with its millions of visitors annually, is a cornerstone for state and regional tourism and development of economic initiatives. In 2006, the Blue Ridge Parkway had a slight rise in attendance contributing to larger revenues from tourist dollars along its entire length. Regional and local open space, recreational and educational programs reflect and rely upon the quality of the Blue Ridge Parkway experience. There is a need to develop appropriate and acceptable protection techniques for property adjacent to the Blue Ridge Parkway and other recreational resources in the region. Roanoke County has worked with the Blue Ridge Parkway to develop a viewshed analysis and is pursuing new viewshed easements.

The region's growth rate has slowed in the last several years to a moderate rate. The projected growth rate

between 2000 and 2005 is 1.5 percent. Future growth is anticipated to be steady, with the population in Region 5 projected to increase 5.4 percent to 278,800 in 2020 from its 2000 population level of 264,541. All of the localities will be gaining in population, except for Alleghany County, which is expected to reduce its population by a rate of 7 percent. Region 5 has some diversity in its population. However, the projected increase in minorities is less than the state overall.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 5 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 *Virginia Outdoors Survey* (VOS), the top 10 most popular outdoor activities in Region 5 are walking for pleasure, driving for pleasure, swimming, visiting historic sites, visiting natural areas, fishing, sunbathing and beach use, camping, picnicking and using a playground. There is a need for trails close to home, including walking, jogging, running and hiking. Participation rates for hunting have increased in Region 5, while statewide, hunting participation has decreased. Two of the top outdoor recreation activities in Region 5 are water related; however there has been a decline in sailing and other lake and stream activities since 2002.

The Demand, Supply and Needs Analysis for Region 5 compares the existing supply of outdoor recreation facilities in the region with the demand measured by the 2006 VOS to assess the need for the region. The needs are then projected out to the year 2020 using population projections. Activity days for many of the activities have dropped since the 2002 VOS leaving an excess supply of facilities for many activities, especially hunting acres, hiking-backpacking trails and horseback riding trails. The surplus supply of

outdoor recreation facilities attracts users from other areas of the state, thereby enhancing the economic opportunities for the region (see Table X-5).

In Region 5, all of the localities, except for Craig County, are served by a parks and recreation department. Craig County does have a Youth and Recreation Association that is working hard to fill the needs for recreation there. According to the *Commonwealth of Virginia Auditor of Public Accounts, Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), the Region 5 departments serve its citizens with an average per capita spending of \$78.81. The per capita spending in 2006 on parks and recreation for each locality in Region 5 was: City of Covington, \$160.58; City of Salem, \$154.45; Alleghany County, \$51.86; Roanoke County, \$40.59; Roanoke City, \$35.43; and Botetourt County, \$29.93. Craig County was not listed in the report. This compares to a statewide per capita spending on parks and recreation of \$60.10, including \$76.51 from cities and \$43.75 from counties.

As mentioned above, Craig County does not have a parks and recreation department. The County Youth and Services, Inc., a private nonprofit partner with the Craig County Recreation and Conservation Association, provides guidance and leadership for enhancing the opportunities for county youth and families to recreate and preserve the natural resources. Their work includes acquiring and developing land for team sports and passive recreation activities. They also organize and manage youth and adult programs since there is no government entity in the county to serve this function.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Land conservation recommendations include:

- Localities that lie within the viewshed of the Blue Ridge Parkway and the Appalachian National Scenic Trail (AT) should work to protect scenic views and adjacent lands. The National Park Service has viewshed management and landscape design guidelines for viewshed protection.
- Large blocks of public lands provide much of the open space in Region 5. There are tracts of federal land holdings, including the GW-Jeff National Forests, the AT and the Blue Ridge Parkway. State resources also provide open space in Region 5,

including natural area preserves, state wildlife management areas and state forests. Protection of the scenic value of the lands adjacent to these public lands should be pursued by agencies managing the properties.

Land Trusts and Conservation Programs Operating in Region 5:

- Appalachian Trail Conservancy
- APVA Preservation Virginia
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Department of Historic Resources
- James River Association
- Piedmont Environmental Council
- The 500-Year Forest Foundation
- The Conservation Fund
- The Nature Conservancy
- Valley Conservation Council
- Virginia Outdoors Foundation
- Western Virginia Land Trust

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Regional and local organizations should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Regional and local organizations should continue to acquire and protect land along the Roanoke River corridor for development of a continuous greenway and to provide public access.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Many railroad corridors have been or will be abandoned, which provides valuable corridors for multi-use trails. Regional and local organizations should partner to use these corridors for trails and greenways.
- Region 5 localities have developed the *Roanoke Valley Greenway Plan*, a regional bicycle-pedestrian plan. All localities should participate in the implementation of this plan. This plan outlines and prioritizes biking and walking trails needed in the region and includes Franklin County. Envisioned as a comprehensive network of off-road trails, the plan will be developed in coordination with road improvements, land development projects, and other local and regional project initiatives. Appropriate lands along the Roanoke River should be considered as potential right-of-way for the Roanoke River Greenway. The plan contains secondary trails that connect the regional greenways to Carvins Cove Natural Reserve network, Mill Mountain network, Wolf Creek, Glade Creek, Murray Run, Explore Park, the AT and the Blue Ridge Parkway. These secondary trails should be considered local priorities in meeting the greenway network goals. Development of the Roanoke Greenway connection from Ellett Valley to Explore Park should also be a priority.
- Regional and local organizations should develop the Taylor Property as a passive park linking other public lands as part of the Roanoke Greenway.
- Regional and local organizations should develop the Perimeter Greenway Trail for equestrians and others to connect Spring Hollow Reservoir, Green Hill Park, Havens Wildlife Management Area, Carvins Cove, Greenfields, GW-Jeff National Forests, Explore Park, Blue Ridge Parkway and Bent Mountain. This trail would connect to the developing Greenfield Recreation Park in Botetourt County.
- Regional and local organizations should develop more trails that are multi-use, including horse trails where appropriate.
- Regional and local organizations should consider the conversion of abandoned railroad beds into trails.

- The Blue Ridge Parkway and GW-Jeff National Forests staff should continue working with horse enthusiasts and regional government units to complete the equestrian trail between Roanoke and Lexington. The trail will connect the equine center near Lexington with trail resources in the national forests. Completion of the trail will provide a venue for national events, as well as regional and state needs. An equestrian loop trail incorporated into it using the GW-Jeff National Forests, Fenwick Mines Recreation Area trailhead, the C&O right-of-way connecting to the Craig Creek Campground should be considered.

Statewide trunkline trails

- 1 The **Appalachian National Scenic Trail (AT)** was designated by Congress and is managed by the National Park Service. The AT traverses Region 5 from the crest of the Blue Ridge at the eastern most section of the region to its southwestern corner. The Appalachian Trail Conservancy (ATC) has member clubs that voluntarily work with federal, state and local governments, and numerous individual landowners to solve problems associated with the acquisition, development, administration, management and maintenance of the AT. Local and regional partnerships with the AT and ATC should continue to protect the setting and viewsheds along the AT preserving this outdoor recreational experience and reputation as a footpath in the wilderness.
- 2 Regional and local organizations should complete development of the **Great Eastern Trail** through the Allegheny Mountains. The Great Eastern Trail will link existing trails from central Alabama to central New York along the Allegheny Highlands. The proposed Allegheny Trail, a section of the Great Eastern Trail, traverses the Craig County-West Virginia line, cutting across the southwest corner of Allegheny County before entering West Virginia. Portions of the trail have been constructed, and it is nearly complete in West Virginia. At several points along its course, the trail will connect with the AT.
- 3 The **Trans-Virginia Southern Trail** will stretch from Cumberland Gap to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. Regional and local organizations should encourage this trail to be constructed in the Roanoke Valley by connecting Montgomery, Roanoke, Franklin and Floyd counties with the trail in Patrick County.

4 The **Blue Ridge Parkway** should continue working with Roanoke Valley Greenways Commission, the City of Roanoke and local partners to connect parkway trails with the regional greenway system and to continue development of parallel trails.

Other trails

5 Regional and local organizations should develop the **Hanging Rock-Masons Creek** trail to connect Catawba Valley with the Roanoke River.

6 Regional and local organizations should develop the **Tinker Creek- Carvin Creek** trail to connect Carvin Cove with the **Roanoke Valley Greenways** and eventually the Appalachian Trail.

7 Regional and local organizations should support plans for the **Jackson River Scenic Trail** from Covington to Lake Moomaw and on into Region 6. The Jackson River Trail would be located on an old rail corridor extending from Intervale to the confluence of the Jackson River and Cedar Creek. This corridor could be a greenway-blueway that would extend through Covington to Iron Gate, connecting downtown (Main Street), Fort Young Park and Jackson River Park in South Covington. This could then connect to the James River blueway.

8 Regional and local organizations should support development of equestrian trails in the region including the **Alleghany Highlands Horse Trail**. This is a 45-mile system that connects trails in George Washington National Forest in Alleghany and Bath counties with trails in Doughart State Park.

9 Regional and local organizations should continue efforts to secure easements for public access along the **Craig Valley Scenic Trail**, a C&O rails-to-trails project connecting New Castle in Craig County to Eagle Rock in Botetourt County.

10 Regional and local organizations should develop a greenway along the 48-mile long **Valley Rail-Trinkle Trail**, a part of the **Roanoke Lexington Horse Trail**, connecting the Hollins University area of Roanoke County to Lexington, Virginia. Portions of the property will be donated in fee simple to the Western Virginia Land Trust.

11 Regional and local organizations should develop the **Vinton Business Center Trail**, which will provide a link to the Blue Ridge Parkway and Explore Park.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.

12 Regional and local organizations should develop the **Roanoke River Greenway and Blueway** along the Roanoke River from Spring Hollow to Explore Park. Roanoke City plans to initiate a linear park planning process for the full length of the river in FY 2008-09. The linear park should enhance motorized and non-motorized boating access on the Roanoke River to include appropriate portages around dams and other river obstacles. The project will also expand recreational facilities and public access opportunities by integrating these into the design and construction of the proposed River Flood Reduction Project.

13 Local governments and recreational organizations should work with the Department of Conservation and Recreation (DCR) and the James River Association to develop an **Upper James River Blueway**, part of the **James River Heritage Trail**, beginning at Iron Gate to join the middle and lower James River blueways. As part of this effort, the U.S. Forest Service (USFS) and the Department of Game and Inland Fisheries (DGIF) should cooperate to finalize and implement plans to acquire and develop a series of boating and fishing access sites and canoe campsites along the upper James River. For a trail to be functional, additional public access is needed on the river between Eagle Rock and Snowden, and between Lynchburg and Bent Creek.

- 14 Regional and local organizations should implement development of the **Jackson River** blueway from Lake Moomaw in Alleghany County to the James River at Iron Gate. Where appropriate, portages should be created around dams and other river obstacles.
- 15 Regional and local organizations should provide public water access on **Johns Creek** above New Castle.
- 16 Regional and local organizations should provide public water access on **Craig Creek** between New Castle and Strom.
- 17 The USFS, working with localities, should provide water-based recreational facilities and expanded public access for **Lake Moomaw**.
- 18 Regional and local organizations should improve portage and access at the **Niagara Dam** on the Roanoke (Staunton) River, or remove the dam.
- 19 Regional and local organizations should develop a public boat landing at the **Craig County Youth and Recreation Association (CCR&CA) property** at Routes 615 and 614.

Historic and landscape resources

The history of the Roanoke Valley-Alleghany region is a long and proud one. The vestiges of it are evident in the downtowns and throughout the countryside. Once the hub of travel and commerce, Roanoke is re-establishing itself as a destination point based on its rich history. Whether one looks to the agrarian landscape, the industrial centers or developed historic places, the protection of these sites is critical to the economic vitality of the region.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include

the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.

- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- DCR and local governments should extend the Hunter's Raid Civil War Trail from the existing section in Botetourt County to Craig County.
- There is a critical need for a county-wide survey of the historic and architectural resources of Craig County and for a city-wide survey of the historic and architectural resources of the City of Salem.
- 20 State, regional and local organizations should designate appropriate areas within **Catawba Valley** as a historic district.
- 21 State, regional and local organizations should identify a continuous corridor for the historic **Valley Road**, Route 11 or alternative routes, and designate it as a Virginia Scenic Byway or historic road.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.

- Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
 - Consideration should be given by local governments to develop ridgeline ordinances that would preserve open space and protect recreational lands.
 - Regional and local agencies should implement protection of viewsheds of the Blue Ridge Parkway identified in the study by the National Park Service. Comprehensive plans and zoning ordinances should be developed to ensure that the intrinsic value of the Blue Ridge Parkway and its viewsheds are conserved.
 - The Roanoke AT Club should continue to work with localities to protect the viewsheds along the AT. ATC's focus is on the viewshed of Catawba Valley from the AT.
 - Regional and local organizations should protect the scenic aspects of Interstate 81, as it is recognized by the American Automobile Association and other groups as a scenic highway and acts as an attractive gateway to the state.
- 22** Regional and local organizations should protect the viewshed in Roanoke County from **Lynville Mountain** in Franklin County.
- 23** Localities should collaborate with USFS to protect the corridor and viewsheds of the USFS **Highland Scenic Road**.
- 24** Regional and local agencies should implement the protective resource management zone as outlined in the **Mill Mountain Plan**.
- 25** Regional and local agencies should protect the viewshed of **Purgatory Mountain** as seen from Buchanan.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through state and nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

On Sept. 22, 2005, national byway designations were given to four Virginia roads. The Blue Ridge Parkway,

a portion of which is located in the eastern part of Region 5, was given the highest designation as an All-American Road. The designation allows localities along the routes to access federal dollars for byway corridor projects (see Chapter VI: Grant Opportunities for Outdoor Recreation, Open Space and Conservation). These major scenic highways attract tourists from throughout the nation, as well as international visitors. The character of the Blue Ridge Parkway has been altered from that of a pastoral scene, to landscapes that are sometimes marked by incompatible development. Overlooks that once featured breathtaking vistas of farmsteads or forest, now reveal factories and exploding suburban residential development. In some cases, subdivisions are within a few hundred feet of the magnificent corridor, and as development continues, there will be additional impacts on the quality of the visitor experience.

Scenic roads recommendations for the region include:

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- Federal, state, regional and local agencies should preserve the inherent qualities of scenic road corridors as attractive and welcoming communities,

especially gateway communities to the Blue Ridge Parkway.

- A James River Byway should be developed consisting of roads that closely parallel the James River Bateau Festival route.

The following road segments have been recommended for consideration as Virginia Byways:

26 Route 220 in Alleghany County from Covington to the Bath County-Alleghany County line, and in Botetourt County from Clifton Forge to Route 615.

27 Route 269 from Clifton Forge, to and including Route 770, to its intersection with Route 251 in Rockbridge County.

28 Route 606 in Botetourt and Craig counties, from Fincastle in Botetourt County to the intersection with Route 615 at Given in Craig County.

29 Designate the historic **Valley Road**, Route 11 or alternative routes, as a Virginia Scenic Byway.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia scenic rivers and should be evaluated to determine suitability for designation:

In Region 5, a section of the James River from Eagle Rock to Springwood is the only designated scenic river segment.

30 The **Roanoke River** beginning in Montgomery County from the Camp Altamons area to Smith Mountain Lake.

31 Additional sections of the **James River** from Springwood to the Botetourt County-Rockbridge County line.

32 Johns Creek in Craig County from Craig Springs to New Castle.

33 Craig Creek in Craig County from the Montgomery County-Craig County line to the Town of New Castle and Botetourt County.

In order to more successfully protect river resources, the following recommendations are given:

- The Forest Service has undertaken an assessment of the rivers in the GW-Jeff National Forests to determine whether any are eligible for national recognition as Wild, Scenic or Recreation rivers. Eligible rivers should be nominated for designation.

Watershed resources

Region 5 is on the continental divide between the New River watershed, which flows to the Mississippi River, and the James River watershed, which flows to the Chesapeake Bay. Karst topography, which covers much of the region, creates special issues and considerations for water quality and quantity in the region. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 5

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Friends of the Roanoke
- James River Association
- Roanoke River Basin Association
- Upper James River Roundtable (UJRR) aka the Mountain Waters Resource Conservation and Development Program (RC&D)
- Upper Roanoke River Roundtable
- Valley Conservation Council
- Virginia Conservation Network
- Woods Creek

Watershed recommendations for this region include:

- Regional and local governments should protect the management of watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans.
- 34** Regional and local agencies should protect the headwaters of the **Roanoke River**.
- 35** Regional and local agencies should develop and implement the resource management plan for **Carvins Cove Resource Management Area**.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local organizations should continue to support and develop the outdoor education program of the Roanoke City Parks and Recreation Department.
- State, regional and local agencies should support development of the vision for a Roanoke River Center. The center will provide environmental education programs focusing on conservation, the Roanoke River and related topics and activities.

36 State, regional and local agencies should continue to support and develop the **Mill Mountain Discovery Center** and its programs. The center offers programs and events that focus on outdoor education and cultural awareness, Mill Mountain's geology, wild flora and fauna, cultural history, and past and present recreational opportunities.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.

37 The National Park Service should work with local governments to support efforts along the **Blue Ridge Parkway** encouraging adjacent landowners, localities and planning district commissions to develop a scenic overlay zone adjacent to and within the viewshed of the parkway as part of a multi-regional parkway viewshed planning process.

National forests

USFS should:

- Continue to develop new partnerships to market recreational opportunities and rural economic development through tourism. USFS could work with DCR, Blue Ridge Travel Association of Virginia, Shenandoah Valley Tourism Association and the Virginia Tourism Corporation to develop regional and international

marketing strategies to showcase Virginia's outdoor recreation opportunities.

- The GW-Jeff National Forests should continue to partner with the Roanoke Valley Convention and Visitors Bureau and other area chambers of commerce to encourage tourism in this area.
- Continue to place program emphasis on areas designated by Congress such as the AT, Mount Pleasant Scenic Area and wilderness areas.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

38 **Douthat State Park** (4,552 acres) is located in Allegheny and Bath counties and bordered by national forest lands. Listed on the National Register of Historic Places, Douthat is one of the original six Virginia state parks opened in June 1936. The park offers picnicking and three shelters, three campgrounds, a group camp, cabins, two family lodges, restaurant, camp store, and more than 40 miles of hiking and biking trails. The 50-acre lake supports swimming, fishing and non-motorized boating. The lake and Wilson Creek are stocked seasonally with trout in cooperation with DGIF. Natural and cultural programs are offered each day through the summer season and on weekends in the spring and fall. Educational programs are offered at the park during the school year and are available to local youth and civic groups. Staff members also take outreach programs to schools in the surrounding six-county area. The Douthat State Park Environmental Education Group has been working with the park to generate funds for an environmental education center collocated with the visitor center.

Through the 2002 General Obligation Bond (GOB), funds were allocated for the acquisition of additional land in Allegheny County, the construction of an equestrian campground and additional cabins. The park is an integral component of the Allegheny Highlands Horse Trail. Additional opportunities exist for cooperative trail projects between the park and national forest.

39 **Fallings Springs Wayside** (28 acres), located in western Allegheny County, was acquired in part through donation to DCR. The property is managed through an agreement with the Izaak Walton League

and maintained by the Department of Transportation. DCR should improve the public recreation offerings at this site.

State natural area preserves

Natural area preserves within the Region 5 are Johnson Creek in Alleghany County and Poor Mountain in Roanoke County. DCR has, as of November 2006, documented 415 occurrences of 125 rare species and natural communities in the Roanoke Valley-Alleghany Region. Sixty-one species are globally rare and six are federally threatened or endangered. One hundred twenty-seven conservation sites have been identified in the district; 90 (71 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only 25 sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 5, DCR is particularly interested in protecting:

- Water quality for globally rare aquatic communities.
- Significant caves and karst areas.
- Significant shale barren communities.
- Significant wetlands in Floyd County.
- Significant terrestrial communities within the city of Roanoke's municipal watershed areas.

40 DCR should protect additional lands around **Poor Mountain Natural Area Preserve** and complete implementation of access and trails, including one to Happy Hollow Park.

41 DCR should protect additional lands around **Johnson Creek Natural Area Preserve** and complete implementation of access and trails.

42 DCR should continue the cooperative riparian restoration program at **Garst Mill Park**.

State fish and wildlife management areas (WMA)

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.
- DGIF should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and other wildlife viewing recreation.

43 DGIF should provide appropriate access to the natural communities within **Havens WMA**.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activ-

ities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.

- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Regional and local organizations should support and implement the Roanoke Valley Area Metropolitan Planning Organization's adopted *Urban Area Bikeway Plan* and the *Rural Bikeway Plan*.

44 VDOT, working with the localities, should enhance and properly identify the Interstate **Bike Route 76**, the Trans-American Bike Route.

45 VDOT, working with regional and local agencies, should ensure that the widening of **Interstate 81** includes appropriate and adequate AT crossings as necessary.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

46 **Catawba State Hospital** in Roanoke County should be assessed to determine its potential for providing recreational opportunities.

47 **Dabney Lancaster Community College** in Alleghany County near Clifton Forge has some acres

of undeveloped land that may have potential for recreational use. The site should be assessed and cooperative use agreements developed if appropriate.

Local and regional parks and recreation departments

The value of local parks as a part of the regional recreation offered in the region is extremely important, as many local parks in the Roanoke Valley region are used for family vacations, sports and athletic tournaments, special events and festivals by visitors from outside the area. Federal, state and local park and recreation facilities all work in tandem to offer a varied and multidimensional outdoor recreation experience.

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Within Region 5, regional agencies should place a high priority on providing recreation opportunities to the Commonwealth's urban population in "close-to home" settings to allow for better access and to avoid overuse of facilities planned for rural populations.
- Craig County should continue to support the continued success of the CCR&CA to provide the necessary conservation and recreation needs for Craig County. A master plan should be developed for parks and recreation in Craig County to prioritize facility and program needs.
- Regional and local organizations should develop additional greenway initiatives through acquisition of additional lands to meet trails, greenways and passive recreation needs.
- Regional and local agencies should implement management and master plans for sites that can be connected to the Roanoke River Greenway and Blueway; including *Carvins Cove Natural Resource Management Plan*, *Mill Mountain Management Plan*, *Roanoke River Natural Resource Management Plan* and Spring Hollow Reservoir. These plans should address public access, including fishing, motorized and non-motorized boating, hiking, picnicking and environmental education.

- Regional and local agencies should consider establishing a new regional park in the vicinity of Poor Mountain and Bent Mountain, southwest of the Roanoke-Salem area.
- Local agencies should establish new parks in the Town of Buchanan and the community of Eagle Rock.
- 48 State, regional and local organizations should explore creation of a **“Headwaters of the James”** park and interpretive center at the confluence of the Jackson and Cowpasture.
- 49 Regional and local organizations should develop and implement a plan for the **Read Mountain** parkland to be managed to promote conservation, provide recreation and protect the top of the mountain, open space resources and critical viewsheds.
- 50 Craig County should develop the **CCR&CA** property at Routes 615 and 614 for active fields, picnicking, playground and courts.
- 51 Local agencies should enhance and supply public facilities at **Mowles Spring Park** in Salem.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies.

- An initiative should be developed by regional and local organizations that would support bed and breakfast that preserve their setting by protecting scenic and agricultural land and would promote small business enterprises.
- 52 The potential 50-year lease of Virginia's Explore Park to a private developer creates a need to determine the best management of recreation facilities, interpretive facilities and natural resources, to insure the future viability and availability for public use of this significant property. Partnerships could be developed to protect the resources. Regional and local organization should continue the development and enhancement of Virginia's Explore Park facilities that complement the Blue Ridge Settlement and associated trails.



Falling Springs Wayside in Alleghany County. Photo by Jennifer Wampler.

Table X-5. Region 5 (Roanoke Valley/Allegheny Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	348,859	69	fields	119	-50	-46
Basketball	428,145	102	goals	123	-21	-16
Bicycling	376,609	27	miles	NI		
Mountain	62,107	4	miles	NI		
Other	314,502	22	miles	NI		
Lake, river and bay use (combined)	314,502	5,636	water acres	3,846	1,790	2,099
Power boating	149,058	3,593	water acres	S		
Sailing	21,143	183	water acres	S		
Saltwater fishing	74,529	419	water acres	S		
Jet ski, personal watercraft	47,572	745	water acres	S		
Water skiing, towed on water	22,200	696	water acres	S		
Camping	427,616	2,522	sites	749	1,773	1,911
Tent camping	244,465	1,442	sites	296	1,146	1,225
Developed camping	183,151	1,080	sites	453	627	686
Fitness trail use	219,358	18	mile trails	5	13	14
Fields (combined)	449,288	94	fields	127	-33	-27
Football	169,144	36	fields	124	-88	-86
Soccer	280,144	59	fields	3	56	59
Stream use (combined)	990,812	630	stream miles	236	394	428
Freshwater fishing	861,576	606	stream miles	S		
Human-powered boating	46,515	12	stream miles	S		
Rafting	26,429	5	stream miles	S		
Tubing	56,293	7	stream miles	S		
Golfing	334,059	11	courses	252	-3	-2
Hiking, backpacking	416,252	213	trail miles	468	-255	-243
Horseback riding	118,929	51	miles	168	-117	-114
In-line skating	71,357	5	miles	NI		
Jogging, running	1,717,866	138	mile trails	NI		
Nature study, programs	72,679	10	sites	-	10	11

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-5. Region 5 (Roanoke Valley/Allegheny Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	360,752	937	tables	1,095	-158	-107
Skateboarding	200,858	62	sites	NI		
Snow skiing or snowboarding	45,193	1	ski lifts	-	1	1
Softball	375,288	67	fields	79	-12	-9
Sunbathing, relaxing on beach	489,988	35	beach acres	9	26	28
Swimming	2,642,870	178		NI		
Outdoor area	1,326,721	136	beach acres	9	127	134
Outdoor pools	864,218	37	pools	30	7	9
Indoor pools	451,931	5	pools	3	2	2
Tennis	206,144	129	courts	203	-74	-67
Used a playground	710,932	101	sites	146	-45	-39
Visiting gardens	70,300	8	sites	NI		
Visiting historic sites	387,709	33	sites	NI		
Visiting natural areas	493,688	84	sites	NI		
Volleyball	124,215	37	courts	2	35	37
Hunting	848,361	139,122	acres	338,252	-199,130	-191,490
Drive for pleasure	1,752,223	NA	NA	NI		
Driving motorcycle off road	71,357	33	miles	-	33	34
Driving 4-wheel-drive off road	298,644	NA	NA	NS		
Walking for pleasure	5,684,813	NA	NA	NI		
Bird watching	69,772	NA		NI		
Other	153,286	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

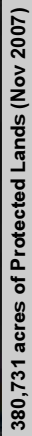
NA: not applicable, no standard needed

S: same as combined

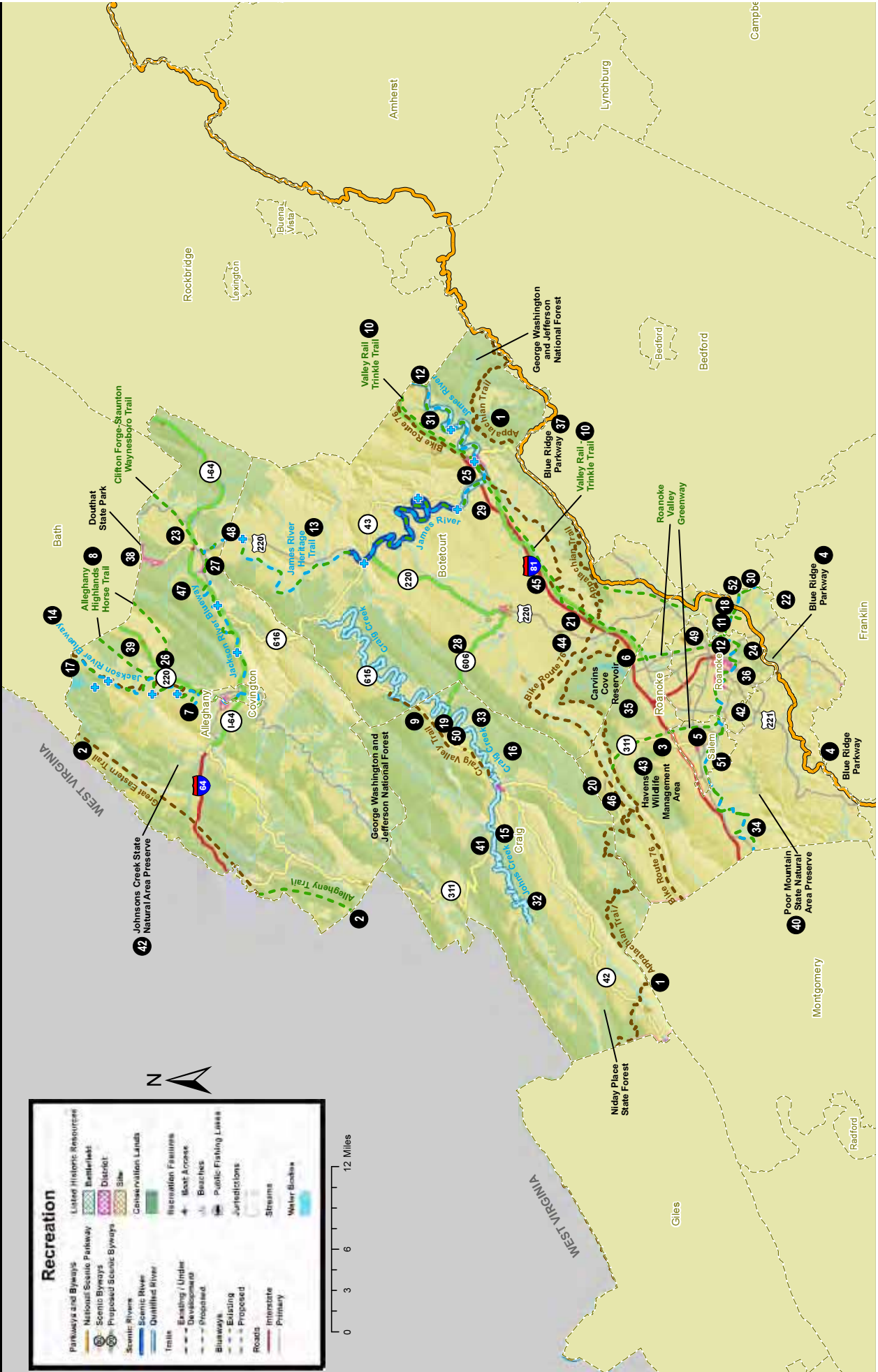
NS: not inventoried separately

NI: not inventoried

(-) indicates surplus



Map X-11. Region 5 (Roanoke Valley/Allegheny Regional Commission) Outdoor Recreation



Introduction

The Central Shenandoah Planning District was named for its geographic location in the heart of Virginia's famous Shenandoah Valley. The district comprises Augusta, Bath, Highland, Rockbridge and Rockingham counties; the cities of Buena Vista, Harrisonburg, Lexington, Staunton and Waynesboro; and the towns of Bridgewater, Broadway, Craigsville, Dayton, Elkton, Glasgow, Goshen, Grottoes, Monterey, Mount Crawford and Timberville.

Region 6 has a total area of approximately 3,437 square miles. The Blue Ridge Mountains form the eastern boundary and the Allegheny range lies along the western part of the region. Nestled between these mountains, Virginia's Shenandoah Valley contains beautiful and diverse landscapes of fertile farmland, rolling fields and forests. The North Fork and South Fork of the Shenandoah River flow through the valley, and create opportunities for fishing, swimming, canoeing and camping. Many of the headwater streams that form the Shenandoah River originate in Augusta and Highland counties. Streams in Augusta, Highland and Bath counties form the headwater sections of the James River system, with the river itself cutting through the southern corner of Rockbridge County.

Agriculture, forestry and tourism are the primary industries for Region 6. Some of the highest proceeds in the state from agriculture and forestry are received in this region. The George Washington and Jefferson (GW-Jeff) National Forests to the west and Shenandoah National Park and the Blue Ridge Parkway to the east frame the region and provide additional opportunities for economic development. Shenandoah National Park generates more than \$44 million in revenue for central and northern Shenandoah Regions annually. In 2006, the Blue Ridge Parkway had its first attendance increase in five years. This increase contributes greatly towards revenues from tourist dollars.

According to the 2000 Census, more than 258,750 people live in this region. This represents an approximate 15 percent increase from the 1990 census numbers. The population projections for 2010 project growth since 2000 up to about 6.8 percent. This region is filled with contrasts of significant population growth in some counties to population loss in others. The population of the region is estimated to grow from

276,798 in 2010 to 292,595 in 2020, approximately at a 5.7 percent growth rate.

With the increase in population, mega-agriculture and industry, the landscape and demographic composition of region 6 is changing. While the region has below the state average of minorities, the Hispanic population has grown significantly in Harrisonburg and is approaching the state average in Rockingham County and Waynesboro. Recreational planners need to address growing cultural diversity and its influences on the resources and programs in the region.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 6 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 *Virginia Outdoors Survey (VOS)*, the top 10 most popular outdoor activities in the mountain region of the state, which includes Region 6, are walking for pleasure, driving for pleasure, swimming (all types), visiting historic sites, visiting natural areas, fishing, sunbathing, camping, picnicking, and using a playground, respectively. Bicycling is included in the top ten activities for the region, while it is ranked 13th statewide. Though the demand for hunting has dropped dramatically across the state, in Region 6 participation has increased. Most public hunting lands in Virginia lie west of the Blue Ridge, and the surplus of hunting acres in this region attracts hunters from other regions.

The results of the 2006 Demand, Supply and Needs Analysis for Region 6 indicate a surplus of park and open space lands, developed campsites and hiking-backpacking trails. This abundance is due mainly to vast natural resources and outdoor recreational facilities on state and federal lands. Many of the activities

showing a surplus of facilities in the region are actually at capacity due to visitors and tourists from outside the region that increase recreational demands. Walking and jogging trails are needed throughout this region in locations close to home. Access to recreational waters is in demand in Region 6. Tent camping facilities is the third highest shortfall in facilities (see Table X-6).

Many of these facilities will be provided by Region 6 localities. Urbanized areas within the region have a better supply of recreational facilities, both in terms of quality and quantity. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Augusta County, \$16.78; Bath County, \$86.19; Highland County, \$13.27; Rockbridge County, \$28.31; Rockingham County, \$18.55; Lexington, \$52.91; Staunton, \$154.45; Waynesboro, \$72.84; Buena Vista, \$193.69; and Harrisonburg, \$89.21. The budgetary and actual expenditures for the region indicate that the average spending for recreation is \$72.62 per capita. The counties' average expenditure is \$36.00 per capita, which is well below the statewide county average of \$43.75. However, two jurisdictions with the highest per capita statewide spending include Buena Vista and Staunton, which distorts the overall average for Region 6. With average expenditures statewide in cities at \$76.45 per capita, Region 6 cities spend above the statewide average at \$118.47 per capita.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

Large blocks of public lands provide much of the open space in Region 6. Federal land holdings include the Shenandoah National Park, GW-Jeff National Forests, the Appalachian National Scenic Trail (AT) with its land holdings and the Blue Ridge Parkway. Douthat State Park, natural area preserves, state wildlife management areas, state forests, and other state resources also provide open space in the region. With Rockingham and Augusta counties having large agriculture receipts, protection of working lands is key to preserving the viability of the agricultural economy of the region.

Land Trusts and Conservation Programs Operating in Region 6:

- APVA Preservation Virginia
- Appalachian Trail Conservancy
- Central Virginia Land Conservancy
- Chesapeake Bay Foundation
- Department of Historic Resources
- James River Association
- Potomac Conservancy
- Rockbridge Area Conservation Council
- Shenandoah Valley Battlefields Foundation
- The Conservation Fund
- The Nature Conservancy
- Valley Conservation Council
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Localities that lie within the viewshed of the Blue Ridge Parkway, Skyline Drive and the AT should work to protect scenic views and adjacent lands. The National Park Service has viewshed management and landscape design guidelines for viewshed protection.
- Local and regional organizations should preserve and protect roadless areas, including the North River Roadless Area,
- Local and regional organizations should encourage development away from mountaintops to protect significant scenic views.
- Using conservation easements and other conservation instruments, local and regional organizations should continue to maintain and protect the more than 125,000 acres of rural and agrarian working landscapes and viewsheds, such as existing farmlands and forestal lands, including lands along the Dry River and the North Fork of the Shenandoah.
- The City of Harrisonburg needs to develop a plan for identifying and acquiring open space to meet citizen demands.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local

zoning initiatives for changing community design and transportation systems.

- Local and regional organizations should support Rockingham County's Comprehensive Plan for designating greenways along 100-year flood plains.
- Local and regional organizations should continue investigation of using green infrastructure as a tool for managing stormwater issues.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Regional and local organizations should develop a system of equestrian trails in the region.
- Regional and local organizations should utilize old logging roads for mountain biking and equestrian trails.
- Regional and local organizations should encourage partnerships with private landowners for multi-use trails open to the public.
- Regional and local agencies should implement, adopt, review and update local and regional trail and greenway plans to ensure applicability and expand multi-use opportunities. Links should be included to Liberty Park, the Blacks Run Greenway, the *Waynesboro Greenway Plan*, the *Central Shenandoah Valley Greenways Plan* and a trail-greenway-blueway system along the Maury River that connects Glen Maury Park with downtown Buena Vista and existing riverwalk trails.
- Regional and local organizations should connect the region's Civil War battlefields with other protected public lands, including the GW-Jeff National Forests and the Shenandoah National Park, as well as with

existing and future state parks in the valley, by proposing a comprehensive walking and bicycling trail system. These linkages should include a greenway or trail connecting the Cross Keys and Port Republic battlefields in Rockingham County to the Piedmont Battlefield in Augusta County with Shenandoah National Park. Likewise, connect the McDowell Battlefield in Highland County to the Staunton to Parkersburg Turnpike, Camp Allegheny on the Monongahela National Forest, and Fort Johnston on Shenandoah Mountain in the GW-Jeff National Forests.

Statewide trunkline trails

- 1 The **AT** was designated by Congress and is managed by the National Park Service (NPS). The AT runs through the eastern portion of Region 6 along the Blue Ridge. The Appalachian Trail Conservancy (ATC) has member clubs that voluntarily work with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the AT. Regional and local efforts within Region 6 should continue to protect the setting and viewsheds along the AT to preserve the experience of a footpath in the wilderness.
- 2 Regional and local organizations should complete the development of the **Great Eastern Trail** through the Allegheny Mountains to link existing trails from central Alabama to central New York along the Allegheny Highlands. The proposed Allegheny Trail, a section of the Great Eastern Trail, traverses a portion of the region in Alleghany County. Portions of the trail have been constructed, and it is nearly complete in West Virginia. The trail will connect to the AT.
- 3 Regional and local organizations should develop the **James River Heritage Trail** in recognition of the 2007 commemoration of Jamestown and the James River. The trail along America's Founding River will ultimately stretch from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail would parallel the old Kanawha Canal towpath and connect park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia, including Glasgow Landing. Additional public water access sites along the James may be included along this trail.

Regional trails

- 4 Regional and local organizations should connect a regional network of trails from the City of Waynesboro and Augusta County to the **Crozet Tunnel** at Afton Mountain. Once completed, the tunnel will be the

longest bicycle-pedestrian tunnel providing safe off-road access across the Blue Ridge, and it will connect to the proposed Three-Notched trail that will link Charlottesville with Richmond.

5 Regional and local organizations should support development of the **Allegheny Highlands Horse Trail**, a 45-mile system of connecting trails in Allegheny and Bath counties of the GW-Jeff National Forests, to connect with trails in Douthat State Park.

6 Consideration should be given by local and regional organizations to the development of the **North River Trail**, a linear rails-to-trails park utilizing the abandoned Chesapeake and Western railway corridor along the North River and Mossy Creek, from North River Gorge to Bridgewater in Augusta and Rockingham counties. This greenway trail will connect the Shenandoah National Park to the GW-Jeff National Forests.

7 A **Staunton to Harrisonburg Rail-with-Trail** could be developed by regional and local organizations along the former Norfolk Southern railroad corridor now owned by the Shenandoah Valley Railroad, a short line operator. The lower traffic volumes may offer opportunities for various user groups to accept a shared corridor.

8 Regional and local organizations should implement the **Brushy Blue Greenway**, which links the Blue Ridge Parkway to Brushy Hill Preserve, to provide a connection to Boxerwood Nature Center and Garden. Consideration should be given to the development of a western connector to the GW-Jeff National Forests with accommodations for horses and bicycles. The Chessie Nature Trail is also a part of the Brushy Blue Greenway. Pedestrian bridges and continuous pedestrian passage should be re-established along this trail from the end of Woods Creek trail at Jordan's Point to Buena Vista.

9 The **Clifton Forge to Staunton to Waynesboro** (Charlottesville) segment of the CSX Railroad was proposed for abandonment several years ago. The line is still active and the corridor could now be considered for rail-with-trail usage, to be converted to a rail-trail should the line be abandoned.

10 Implement development of the **Jackson River Scenic Trail** as a greenway from Lake Moomaw to Hot Springs.

11 Regional and local organizations should develop trails connecting GW-Jeff National Forests through the **Lexington Reservoir site to the City of Lexington**.

12 Regional and local organizations should develop the **Staunton Frontier Trail system** linking the Frontier Culture Museum of Virginia to Betsy Bell and Gypsy Hill parks. This could also link other state facilities, including, but not limited to, Western State Hospital and Blue Ridge Community Center.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
 - Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
 - Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
 - Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
 - Regional and local organizations should provide additional public access on the larger headwater streams in Highland and Bath counties.
- 13** Consider a controlled water release from the Staunton Dam on the **North River** to attract white water enthusiasts, boost the local economy and provide local recreation.

14 Regional and local organizations should continue promotion and development of the **Upper South Fork Shenandoah River Blueway**.

15 Rockbridge County organizations should consider additional public water access opportunities on the **Maury River**.

16 Regional and local organizations should provide additional water access on the **South Fork of the Shenandoah River**.

17 Regional and local organizations should develop a **Jackson River** blueway from Route 220 in Highland County to Lake Moomaw.

18 Regional and local organizations should develop and implement a trail and blueway plan that would connect Broadway, Timberville and New Market along the **North Fork of the Shenandoah River**.

Historic and landscape resources

The Central Shenandoah Valley is a major tourist destination for visitors from throughout the country because of the region's many natural and historic resources. Nationally known resorts, such as historic Homestead, are popular destinations that offer year-round opportunities, such as snow skiing and championship golf courses. The Frontier Culture Museum of Virginia near Staunton has also become a popular attraction.

All the localities in this region have resources on the National Register of Historic Places, including a number of historic districts that date back to the first settlement in the area. The entire region is dotted with historic villages, farms and inns. Since the area has remained largely rural, most of these historic sites have retained a high degree of integrity.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.

- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Regional and local organizations should protect the historic integrity and visual and rural character of the important Civil War battlefields by implementing the *2000 Shenandoah Valley Battlefields National Historic District Management Plan*. The plan promotes the protection, preservation and continued appreciation of the historic, cultural and natural resources that are associated with the battlefields. This is important since it is one of the most "characteristically American" regions in the country. According to the management plan, about 70 percent of the core areas identified retain their original integrity, while only a portion of those areas are in some way protected. Focus should be put on the McDowell Battlefield in Highland County, the Piedmont Battlefield in Augusta County, and the Port Republic and Cross Keys battlefields in Rockingham County.
- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of historic and architectural resources in the City of Buena Vista.
- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of archaeological resources in Highland County.

19 Local government and local and regional organizations should develop a plan for promoting the **Staunton to Parkersburg Pike** as a valuable historic, cultural and economic asset for the region.

20 Establish a historic district in the **Middlebrook-Brownsburg Corridor**, which has been studied for connections to local historic districts and its landscape value.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned prop-

erties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:

- Encourage development away from mountaintops to protect significant vistas.
- Consider timber harvesting impacts on key viewsheds.
- Protect viewsheds along river corridors and scenic byways.
- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Local government and local and regional organizations should continue efforts to protect the natural and scenic resources of Skyline Drive, Blue Ridge Parkway, AT and the GW-Jeff National Forests. Local governments should support efforts to encourage adjacent landowners, localities and planning district commissions to develop a scenic overlay zone adjacent to and within the viewsheds as part of a multi-regional viewshed planning process. Federal and state agencies should coordinate with localities to help protect these resources.
- Local government and local and regional organizations should protect the scenic aspects of I-81, as the American Automobile Association and other groups recognize it as a scenic highway acting as an attractive gateway to the state.
- Local government and local and regional organizations should create a natural buffer between the AT and adjacent development.

21 High priorities have been set by the ATC to protect and conserve the **Humpback Rocks** area.

22 **Hightop Mountain** is a high priority for protection by the ATC.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

On Sept. 22, 2005, national byway designations were given to four Virginia roads. The Blue Ridge Parkway was given the highest designation as an All-American Road. The Skyline Drive received National Scenic Byway status. These designations allow localities

along the routes to access federal dollars for byway corridor projects (see Chapter VI). These major scenic highways attract tourists from throughout the nation, as well as international visitors. The character of the Blue Ridge Parkway, as well as some sections of Skyline Drive, has been altered from that of a pastoral scene, to landscapes that are sometimes marked by incompatible development. Overlooks that once featured breathtaking vistas of farmsteads or forest now reveal factories and exploding suburban residential development. In some cases, subdivisions are within a few hundred feet of these magnificent corridors, and as development continues, there will be additional impacts on the quality of the visitor experience.

Regional and local recommendations include:

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- Communities along the national byways should consider strengthening local comprehensive plans and creating special zoning regulations to protect the unique scenic and economic benefits associated with the scenic values of the Blue Ridge Parkway and Skyline Drive and their viewsheds.

- Local agencies should develop comprehensive plans and zoning ordinances to ensure that the intrinsic value of the Blue Ridge remains intact.

23 Regional and local organizations should designate the historic **Valley Road**, Route 11, as a Virginia Scenic Byway. A corridor management plan should be developed, and a historic district for the protection of the scenic corridor should be created. A plan to make it eligible for National Scenic Byway designation needs to be developed. Improvements should be made for bicycle and pedestrian access along Route 11 to serve residents and visitors to the region.

24 Regional and local organizations should support plans for the development of the **Mountain Waters Byway** promoting scenic Route 39 from Lexington to the West Virginia Line.

The following road segments have been recommended for consideration as a Virginia Byway:

25 **Route 250** in Highland and Augusta counties from the West Virginia state line to Route 42 at Churchville.

26 **Route 220** in Highland and Bath counties. Create a designated bike route along Route 220 between Monterey and Warm Springs.

27 **Route 42** in Augusta and Rockbridge counties from Route 39 to Rockingham County near Harrisonburg (in Region 7). Consideration should also be given to the section from Rockingham County to Shenandoah County. Develop a horse-drawn buggy-bikeway along Rt. 42 from Dayton to Harrisonburg and add shoulders that can accommodate bikes.

28 **Route 84** in Highland County.

29 **Route 657** in Augusta County.

30 **Route 256** in Augusta County.

31 **Route 780** in Rockbridge County.

32 **Route 252**, from near Staunton to the intersection with Route 39 in Rockbridge County.

33 **Route 608** in Rockbridge and Augusta counties, from near Buena Vista to the intersection with Route 340 at Stuarts Draft.

34 **Route 60** in Rockbridge County between Buena Vista and the Blue Ridge Parkway.

35 **Route 251** from Lexington to Collierstown.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. In Region 6, the St. Marys River is the only designated scenic river. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.
- Segments of the Bullpasture, Cowpasture, Jackson, North and St. Marys rivers, as well as Back Creek, have been identified in the Forest Service's *Revised Land and Resource Management Plan* as eligible for consideration for potential federal Wild and Scenic River designation. The Virginia Department of Conservation and Recreation and the Forest Service will work together to determine suitability for inclusion in the program.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

36 The **Calfpasture River** from Marble Valley to the Maury River.

37 The **Jackson River** from its headwaters to Lake Moomaw.

38 The **James River** from Springwood to Glasgow in Rockbridge County.

39 **Back Creek** from Sunrise to Blowing Springs.

40 The **Cowpasture River** from Patma to Route 39.

41 The **Calfpasture River** from Route 250 to Marble Valley.

42 The **north and south forks of the Shenandoah River** in Rockingham County.

43 **Laurel Fork** within Highland County.

44 The entire **Maury River**. The Maury River from Limekiln to Lexington has been studied and was found to qualify for designation.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Region 6 is split between the James River and Potomac watersheds, which both ultimately flow into the Chesapeake Bay. Currently, the Chesapeake Bay Act does not cover Region 6; therefore, there are no Bay related development controls. Karst topography, which covers much of the region, creates special issues and considerations for water quality and quantity in the region. A regional policy committee is developing comprehensive policies for management of these water resources.

Watershed groups in Region 6

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Friends of the Shenandoah River
- Friends of the North Fork of the Shenandoah River
- James River Association
- Moores Creek Watershed Committee of Rockbridge Area Conservation Council (RACC)
- Pure Water Forum
- Rockbridge Area Conservation Council
- Shenandoah Pure Water Forum
- Shenandoah Basin Water Resources Supply Commission
- Waynesboro Riverfest
- Valley Conservation Council
- Virginia Conservation Network

Watershed recommendations for this region include:

- 45 Efforts should be made by regional and local agencies to maintain the open space within the **Moores Creek Watershed** for public recreation and sustained water quality, especially the 2,500 acres proposed for sale by the City of Lexington.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- 46 The uses of **James Madison University farm** should be expanded as an environmental education center for more research and public outreach.
- 47 Regional and local organizations should support the continued development of **Boxerwood Nature Center and Woodland Gardens** as an environmental

education facility. This resource could promote environmental stewardship, meaningful watershed education experiences and other outdoor education opportunities. An educational nature trail should be developed for ages ranging from preschool to adult. The implementation of the master plan of the Boxerwood Education Association, Inc. should be supported. This would include the purchase and protection of various land parcels that incorporate five natural habitats and an impressively mature woodland garden within the original Boxerwood Gardens.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.
- The National Park Service should explore opportunities to provide additional bike trails within the national parks.
- The resource management plan for Shenandoah National Park should be implemented by NPS to deal with user conflicts and threats to the park's environment. Outbreaks of diseases or infestation by insects, along with poor air quality have jeopardized the quality of the experience and the health of the forestlands. Additional pressures exist along the perimeter of the park due to land use conflicts at the park boundaries.
- 48 The NPS should explore the use of the historic road through **Brown's Gap** in the Shenandoah National Park as a bicycle-pedestrian trail to link the Shenandoah Valley with the Rivanna River Valley.
- 49 The NPS should develop a **Blue Ridge visitor information and services center** in the vicinity of Interstate 64 near the intersection with Skyline Drive and the Blue Ridge Parkway to serve the millions of Shenandoah National Park and parkway visitors. A partnership among the National Park Service, the U.S. Forest Service (USFS), the Commonwealth of Virginia and surrounding localities could be created. This partnership would plan, build and operate a complex near Rockfish Gap or Afton Mountain that would complement the visitor center envisioned in the Shenandoah Battlefield National Historic District. The Blue Ridge

Parkway and adjacent localities should continue to collaborate on enhancing heritage tourism and guiding community gateway development and growth.

National forests

- New partnerships should be developed to market recreational opportunities and rural economic development through tourism. The USFS should work with DCR, Shenandoah Valley Travel Association and the Virginia Tourism Corporation to develop regional and international marketing strategies to showcase Virginia's outdoor recreation opportunities.
- USFS should develop a trail plan for the GW-Jeff National Forests that addresses the needs of all trail users through additional loop trails, and improved maintenance and management, while including all potential user groups in the planning process.
- The GW-Jeff National Forests goals and objectives state that the forest will operate using a balanced approach for resource based programs, recreation and conservation. There will be additional facilities provided during the life of the plan, including trails, camping, water access, natural resource interpretation and environmental education. Implementation of these recommendations could provide new and improved recreational opportunities for visitors. Regional and local organizations should support the aspects of the *Land and Resources Management Plan*, and call for additional facilities within the national forest, including trails, camping, water access, natural resource interpretation and environmental education.
- There is a demand for major trail improvements on the multi-user trail system in the North River Ranger District of the GW-Jeff National Forests. This 200-mile plus system of trails is a mix of purpose built trails, service roads, fire breaks and trails created by users. As trail use has increased, the unsustainable nature of existing trail alignments has resulted in erosion and tread damage. These trail conditions and a lack of loop opportunities are discouraging new users, degrading the recreation experience and causing resource damage.

50 USFS should enhance public access via the management plan to the **Rough Mountain Wilderness Area**.

51 **Lake Moomaw** and the surrounding lands are administered under a cooperative arrangement between the USFS, the U.S. Army Corps of Engineers and the Virginia Department of Game and Inland Fisheries (DGIF). Because of the lake's enormous

popularity and the variety of available recreational facilities, some areas are overcrowded. Additional developments are being considered and should be provided, including a visitor center, expanded campground, a new group camp and additional trails. A plan for a multi-use trail around Lake Moomaw should also be developed.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

52 **Douthat State Park** (4,552 acres) is located in Bath and Alleghany counties and bordered by national forest lands. Listed on the National Register of Historic Places, Douthat is one of the original six Virginia state parks opened in June 1936. The park offers picnicking and three shelters, three campgrounds, a group camp, cabins, two family lodges, restaurant, camp store, and more than 40 miles of hiking and biking trails. The 50-acre lake supports swimming, fishing and non-motorized boating. The lake and Wilson Creek are stocked seasonally with trout in cooperation with DGIF. Nature and cultural programs are offered each day through the summer season and on weekends in the spring and fall. Educational programs are offered at the park during the school year and are available to local youth and civic groups. Staff members also take outreach programs to schools in the surrounding six-county area. The Douthat State Park Environmental Education Group has been working with the park to generate funds for an environmental education center collocated with the visitor center.

Through the 2002 General Obligation Bonds, funds were allocated for the acquisition of additional land, the construction of an equestrian campground and additional cabins. The park is an integral component of the Allegheny Highlands Horse Trail. Additional opportunities exist for cooperative trail projects between the park and national forest.

53 The acquisition of **Grand Caverns** Regional Park located in Augusta County should be finalized. Additional acreage will be needed to meet the recommended size for a state park. An approved master plan will be required to develop the park. Adequate funding will also be needed to staff, operate and maintain the facilities to state park standards, as well as implement the use of Grand Caverns as a resource

for local schools on issues of water quality, habitat studies and karst education.

The need exists for additional park land in this region of the state. Potential acquisitions should be explored in western Rockingham County or north central Highland County.

State natural area preserves

Natural area preserves within this planning district are Cowbane Prairie, Mount Joy Pond and Folly Mills Fen in Augusta County, Goshen Pass in Rockbridge County, and Deep Run Ponds in Rockingham County. DCR has, as of November 2006, documented 1,128 occurrences of 342 rare species and natural communities in the Central Shenandoah Planning District. One hundred and five of these species are globally rare and twelve are federally threatened or endangered. One hundred eighty-four conservation sites have been identified in the district; 130 (71 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only 42 sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site, but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 6, DCR is particularly interested in protecting:

- Protection of significant caves and karst areas.
- Protection of Shenandoah Valley sinkhole pond communities and other biologically significant wetlands, including habitat for Virginia sneezeweed.
- Protection of additional lands around the existing natural area preserves within the planning district.

State fish and wildlife management areas (WMA)

- DGIF should continue to investigate opportunities at **Gathright WMA, Highland WMA and Goshen-Little North Mountain WMA** to acquire in-holdings and to

improve the area with trails and other structures for wildlife viewing and other outdoor recreation.

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

54 Localities should work with the Virginia Department of Forestry (DOF) to provide bike trails to connect **Paul State Forest** to other community facilities. DOF will continue to develop environmental education programs using Paul State Forest as a research site, including the promotion and development of the birding trail.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the

transportation system of the future to meet capacity needs and energy constraints.

- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
 - Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
 - Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include “active living” opportunities into all phases of transportation planning, land use planning and project design.
 - Local and regional agencies should implement the *Central Shenandoah Valley Bicycle Plan* and incorporate recommendations in local plans.
 - Local and regional organizations should implement the *Staunton Frontier Trail Plan: Creating Connections*.
 - Local and regional agencies should continue development, adoption and implementation of the bicycle plan for the City of Harrisonburg, Staunton, Rockingham County and other localities.
- 55 Local and state agencies should refine and clearly sign the location of the **Trans-American Bike Trail** (U.S. Bike Route 76). The corridor should be protected.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- 56 The Virginia Military Institute and local and regional organizations should assess the potential to extend trails to and within the 60 acres of undeveloped open space known as **Lackey Farm** behind Rockbridge High School for greenways or recreational purposes.
- 57 **Western State Hospital** in Augusta County contains nearly 400 acres. Because the site appears to

be less than 50 percent developed, the potential exists for some type of joint use agreement. The hospital staff began development of an internal trail system in 1994. These facilities may offer some additional opportunities for use by the surrounding community.

58 The opportunity exists to develop or expand outdoor recreation opportunities at **Woodrow Wilson Rehabilitation Center** in Augusta County. Greater use of this resource could benefit the center and area residents.

59 The opportunity exists for expanded recreational facilities at **Blue Ridge Community College**.

60 Protection of the night skies from light pollution in the area of **Stokesville Observatory** is important to maintain the research and community educational opportunities this facility offers.

61 Harrisonburg should continue to work with **James Madison University** to enhance recreational opportunities for students and the community within and outside of the campus.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Local and regional organizations should continue development, adoption and implementation of Rockbridge County and Augusta County recreational plans, which incorporate local greenway and park plans. Community recreation facilities, pocket parks and trail connections should be developed, including Berry Farm property in Augusta County.
- Local and regional organizations should support and develop Sunset Park in Waynesboro.
- The City of Harrisonburg needs to develop a plan for identifying and acquiring open space to meet recreational demands of its citizens.

62 Local and regional agencies should expand facilities at **Highland Park** to meet the demand of outdoor recreation participants, including a recreational center, pool and trails.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies.

The private sector has numerous opportunities to become involved in recreation and tourism economic activities that result from the region's unique natural, cultural and historic resources. Demands for eco-

tourism in Region 6 are steadily increasing. This is causing an increased demand for facilities to house, feed and provide services for the millions of visitors to this region.

- Many of the significant battlefields from the Civil War remain in private ownership. The Shenandoah Valley Battlefield Foundation will rely heavily on public-private partnerships to implement the many recommendations found in the management plan for protecting these historic areas and helping to meet the needs of Civil War enthusiasts.
- Private companies provide canoes and other recreational watercraft to visitors seeking to explore the legendary South Fork of the Shenandoah, the James and Maury Rivers. Additional opportunities may exist to provide access points and visitor accommodations along these river corridors.



The Crozet Tunnel. Photo by Suzanne Gandy.

Table X-6. Region 6 (Central Shenandoah Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	351,573	69	fields	66	3	10
Basketball	431,476	102	goals	51	51	61
Bicycling	379,539	27	miles	NI		
Mountain	62,591	4	miles	NI		
Other	316,948	23	miles	NI		
Lake, river and bay use (combined)	316,948	5,680	water acres	4,038	1,642	2,202
Power boating	150,217	3,621	water acres	S		
Sailing	21,307	184	water acres	S		
Salt water fishing	75,109	422	water acres	S		
Jet ski, personal watercraft	47,942	751	water acres	S		
Water skiing, towed on water	22,373	701	water acres	S		
Camping	430,943	2,541	sites	2,286	255	506
Tent camping	246,367	1,453	sites	556	897	1,040
Developed camping	184,576	1,089	sites	1,730	-641	-534
Fitness trail use	221,065	18	mile trails	7	11	12
Fields (combined)	452,783	95	fields	47	48	58
Football	170,460	36	fields	47	-11	-8
Soccer	282,324	59	fields	-	59	65
Stream use (combined)	998,520	635	stream miles	467	168	230
Freshwater fishing	868,278	611	stream miles	S		
Human-powered boating	46,876	12	stream miles	S		
Rafting	26,634	5	stream miles	S		
Tubing	56,731	7	stream miles	S		
Golfing	336,658	11	courses	229	-1	0
Hiking, backpacking	419,490	215	trail miles	790	-575	-554
Horseback riding	119,854	52	miles	329	-277	-272
In-line skating	71,913	5	miles	NI		
Jogging, running	1,731,230	139	mile trails	NI		
Nature study, programs	73,244	10	sites	1	9	10

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-6. Region 6 (Central Shenandoah Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	363,558	944	tables	2,843	-1,899	-1,806
Skateboarding	202,421	62	sites	NI		
Snow skiing or snowboarding	45,545	1	ski lifts	4	-3	-3
Softball	378,207	67	fields	49	18	25
Sunbathing, relaxing on beach	493,800	35	beach acres	31	4	8
Swimming	2,663,430	179		NI		
Outdoor area	1,337,042	137	beach acres	31	106	119
Outdoor pools	870,942	37	pools	26	11	14
Indoor pools	455,447	5	pools	6	-1	0
Tennis	207,748	130	courts	109	21	34
Used a playground	716,463	102	sites	75	27	37
Visiting gardens	70,847	8	sites	NI		
Visiting historic sites	390,725	33	sites	NI		
Visiting natural areas	497,529	84	sites	NI		
Volleyball	125,181	37	courts	4	33	37
Hunting	854,961	140,204	acres	513,551	-373,347	-359,525
Drive for pleasure	1,765,854	NA	NA	NI		
Driving motorcycle off road	71,913	33	miles	19	14	17
Driving 4-wheel-drive off road	300,968	NA	NA	NS		
Walking for pleasure	5,729,038	NA	NA	NI		
Bird watching	70,315	NA		NI		
Other	154,479	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

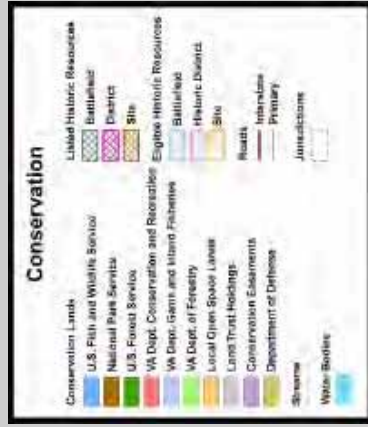
S: same as combined

NS: not inventoried separately

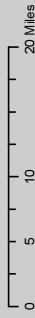
NI: not inventoried

(-) indicates surplus

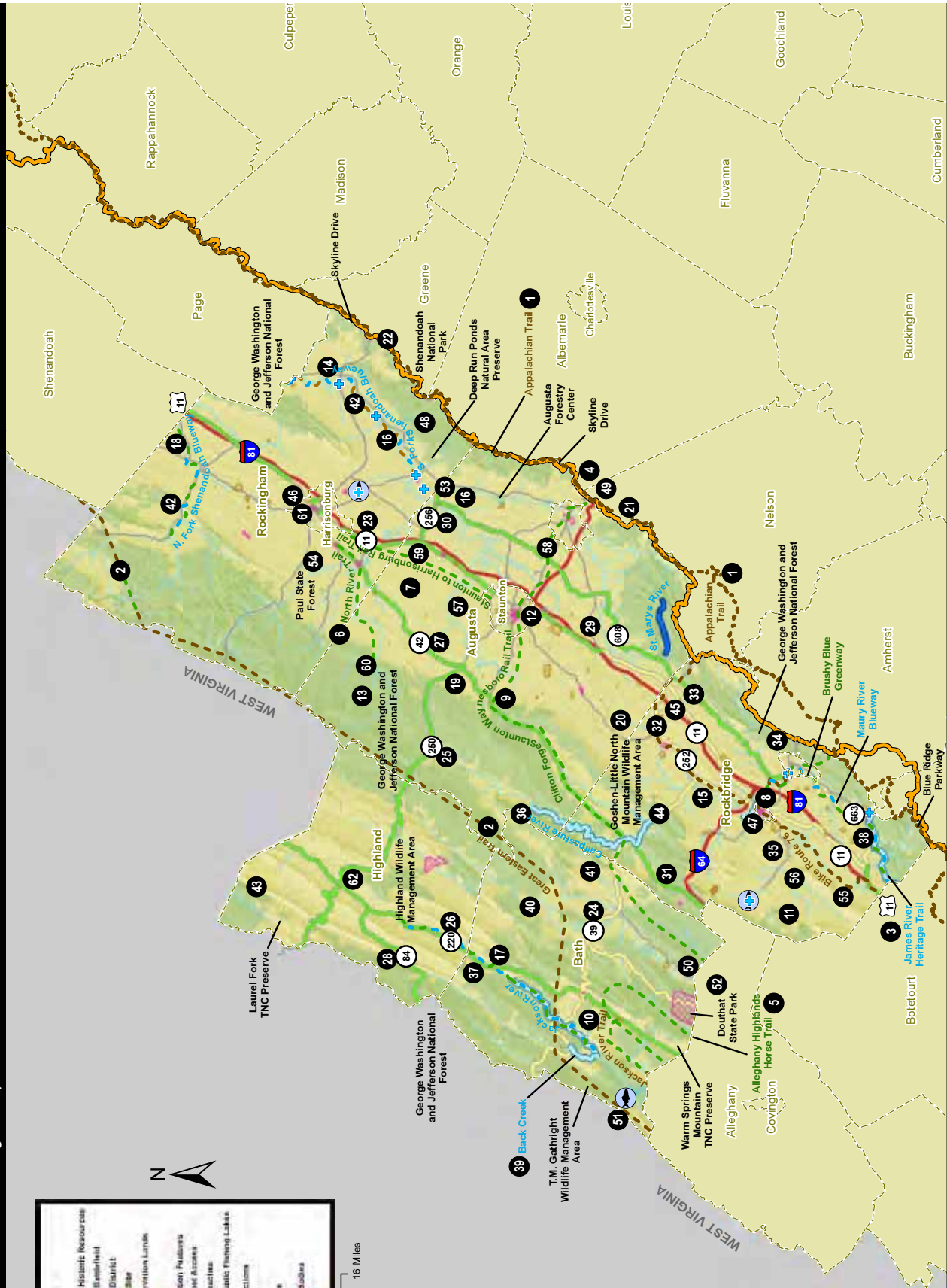
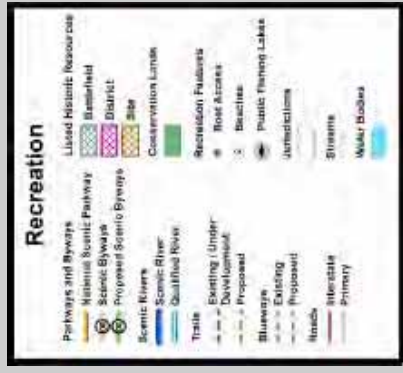
Map X-12. Region 6 (Central Shenandoah Planning District) Conservation Lands



844,852 acres of Protected Lands (Nov 2007)



Map X-13. Region 6 (Central Shenandoah Planning District) Outdoor Recreation



Introduction

The Northern Shenandoah Valley Region is comprised of approximately 1,650 square miles encompassing the northwest corner of Virginia between the Blue Ridge Mountains and the eastern slopes of the Appalachian Mountains. Massanutten Mountain is located in the heart of the region. The north and south forks of the legendary Shenandoah River wind downstream and northward through the landscape and converge at the Town of Front Royal as the main stem of the Shenandoah River. The river continues northward in the lower valley to meet the Potomac River at Harpers Ferry, West Virginia, which then flows to the Chesapeake Bay.

The Northern Shenandoah Valley Region includes five counties, one city and 14 town governments: the counties of Clarke, Frederick, Page, Shenandoah and Warren; the City of Winchester; and the towns of Berryville, Boyce, Middletown, Stephens City, Luray, Shenandoah, Stanley, Edinburg, Mount Jackson, New Market, Strasburg, Toms Brook, Woodstock and Front Royal.

The region's economy is driven by a diverse blend of industry, agriculture and tourism. Since the area was first settled, agriculture has been a mainstay of the Shenandoah Valley. During the Civil War, the valley was described as the breadbasket of the Confederacy. More than 300 armed conflicts were waged in the region. With the planning and construction of Interstates 66 and 81 beginning in the 1950s, manufacturing in the valley became more diverse. Second home developments and an extended tourist season led to increased use of the Shenandoah Valley, generating economic benefits and attracting new local residents based on a rural quality of life with access to the Northern Virginia-Washington, D.C. metropolitan area. The large tracts of forests, national parks, numerous water resources, Skyline Drive, historic battlefields and other recreational and historic interests draw visitors from across the state, the nation and around the world.

The region's 2000 population was 185,282 people. The region's population grew by almost 16.4 percent during the past decade—a rate that exceeds the 14.4 percent statewide growth rate. Frederick County has had the most significant change in population, followed by Warren, Clarke, Shenandoah and Page. Most of the growth in Region 7 is due to in-migration.

The population for the region is anticipated to grow to 235,900 by 2020, representing a 16 percent increase in growth from 2005. Although much of the region is considered rural, Clarke and Warren counties are part of the Washington Metropolitan Statistical Area (MSA), and the Frederick County-Winchester City area grew large enough by 2002 to be considered its own MSA, separate from Washington D.C.

All of the counties rank agriculture as a primary land use, but economically, agriculture is not the primary income source. Many of the region's residents are employed outside their home jurisdiction in the Washington MSA. Increasingly, the Northern Shenandoah Valley's mountain and valley open spaces are giving way to development that is cluttering historic landscapes and causing a loss of the distinctive qualities of the valley. Commitment to an open space-based quality of life, the economic benefits of related recreational and historic tourism, and access to public lands and waters will enable citizens and local governments to maintain the Northern Shenandoah Valley's unique character and ensure economic viability in the long term.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 7 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

As indicated in the 2006 *Virginia Outdoors Survey (VOS)*, the three most popular outdoor activities in the region are walking for pleasure, driving for pleasure and swimming, respectively. Water related activities ranked high statewide. In Region 7, three water related activities are ranked in the top ten; swimming outdoors, sunbathing and fresh water fishing. There was a significant drop in participation rates in many recreational activities since the 2002 VOS. It was also found that the mean number of days of participation in many

activities declined, resulting in significantly fewer activity days of demand generated in each region. Statewide, the most dramatic drop was in bicycling, and the second largest drop was in lake, river and bay use. In Region 7, the largest drops were in walking, bicycling, driving for pleasure and golfing. Regional outdoor recreational activities that saw increases in activity days of demand were hunting, swimming, visiting historic sites and natural areas, fitness trail use, soccer and volleyball.

Despite the apparent abundance of certain types of recreational resources, shortages exist for close-to-home facilities that are important to local residents. Existing and projected facility needs for the region are summarized in Table X-7. For example, there is a need for additional active recreation facilities, especially basketball courts, baseball fields, and multipurpose fields for soccer and football. Many of the surpluses noted in the report are absorbed by imported demand from other areas of the state and the region. This is particularly true for hunting acres and other dispersed recreation activities that the national park and forest provide. Implementation of the region's *Walking and Wheeling Plan* could increase the number of miles of trails and roadways suitable for walking and bicycling. In addition, the continued promotion and linking of historical, scenic and cultural resources will attract tourism from those who enjoy visiting historic sites, natural areas, driving for pleasure and walking for pleasure.

All of the localities in the Northern Shenandoah Region are served by a parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Clarke, \$44.92; Frederick, \$53.02; Page, \$4.54; Shenandoah, \$16.80; Warren, \$30.31; and Winchester, \$78.68. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities in Virginia.

Although not all the jurisdictions in Region 7 have high populations of minorities, Shenandoah and Winchester City have high growth rates of Hispanic populations. With this as a consideration, and with the expectation that Hispanic and other minorities will increase, the following are recommended.

- Regional and local agencies should continue to better serve Hispanic and Spanish-speaking cultural groups by establishing trust relationships, hiring bilingual staff, advertising in the Spanish media, hosting Latino-themed events and creating programs

with input from the Hispanic community. Similar strategies are effective for other cultural groups.

- Due to the increase in cultural and ethnic diversity in the Commonwealth, local and regional agencies should consider making signs, literature and audio displays available in languages other than English based on the local population and user groups.
- State and regional agencies should place a high priority on providing recreation opportunities to the Commonwealth's urban and suburban population in close-to-home settings to allow for better access and to avoid overuse of facilities planned for rural populations.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map 14.

Large acreages of public land protect open space in Region 7. Federal holdings include the Shenandoah National Park and George Washington-Jefferson National Forests (GW-Jeff National Forests) in the central and western portions of the region. The Appalachian National Scenic Trail (AT), located within Shenandoah National Park, is located along the eastern boundary of the region. Raymond R. "Andy" Guest Jr. Shenandoah River and Seven Bends state parks, state owned wildlife management areas, forests and other state resources contribute additional open space to the region.

Land Trusts and Conservation Programs Operating in Region 7

- Appalachian Trail Conservancy
- APVA Preservation Virginia
- Burwell-Van Lennep Foundation [Clarke County only]
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Department of Historic Resources
- Kernstown Battlefield Association, Inc
- Potomac Conservancy
- Shenandoah Valley Battlefields Foundation
- The 500-Year Forest Foundation
- The Nature Conservancy
- Valley Conservation Council
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Regional and local organizations and agencies should support land protection efforts on priority lands, as identified by conservation partners in the region. Lands for protection may include those located adjacent to the Shenandoah River and its tributaries, national and state park and forest lands, other parks and natural areas, core battlefield areas, properties on the state and national historic registers, and state scenic byways.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Regional and local governments should protect the management of watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- National, state, regional and local organizations should recognize and respond to the growing demand for horse trails in the region. Various groups are developing trails and events to promote this activity.

- Regional and local agencies should implement the *Walking and Wheeling Plan* for the Northern Shenandoah Valley, which was adopted in 2004.

Statewide trunkline trails

1 The **AT** was designated by Congress and is managed by the National Park Service (NPS). The AT runs through the eastern portion of Region 7 along the Blue Ridge. The Appalachian Trail Conservancy (ATC) has member clubs that voluntarily work with federal, state and local governments and numerous individual landowners to solve problems associated with the acquisition, development, administration, management and maintenance of the AT. Local and regional partnerships with NPS and ATC should continue to protect the setting and viewsheds along the AT to preserve this outdoor recreational experience and reputation as a footpath in the wilderness. Consideration should be given to finding ways to disperse the users, balance conflicting uses and providing for visitor needs.

2 Regional and local organizations should complete the development of the **Great Eastern Trail** through the Allegheny Mountains to link existing trails from central Alabama to central New York along the Allegheny Highlands. This includes parts of the Tuscarora Trail (formerly the Big Blue) as it crosses Shenandoah and Frederick counties. Efforts should be continued to relocate the Tuscarora Trail off public roads and provide additional protection for the relocated sections.

Other trails

3 The NPS Rivers and Trails Conservation Assistance Program (RTCA) should continue assistance with development of a regional green infrastructure strategy. RTCA should also work with the Shenandoah Valley Battlefields Foundation, Civil War Preservation Trust and Virginia Department of Game and Inland Fisheries (DGIF) to develop and protect the **Redbud Run Greenway** near Winchester. Opportunities should be pursued to link the Redbud Run Greenway with the **Green Circle Greenway** and protect land on the Second and Third Winchester battlefields in the Stephenson's Depot-Milburn Road corridor. Regional and local organizations should continue development of the Green Circle in Winchester that connects Abrams Creek Wetlands Preserve to Apple Blossom Mall and Old Town Winchester.

4 State, regional and local organizations and agencies should develop and construct a horse trail between **Blandy Farm** and **Long Branch Plantation**.

5 State, regional and local partners should develop the abandoned **Norfolk Southern Railway** between Edinburgh and Mount Jackson as a rail-to-trail and extend it along the rail corridor if additional rail sections become available.

6 NPS, state, regional and local organizations should develop a greenway along the **Shenandoah River** to connect the state and national park sites with other public resources.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas and the Jackson River Blueway.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- Regional and local organizations should implement the *Shenandoah River Use-Floating and Fishing Plan* for the Shenandoah Valley. This is a comprehensive plan for showcasing opportunities for river protection and use, while coordinating efforts of the Walking and Wheeling Plan for Region 7.
- 7 Regional and local organizations should develop a managed blueway system of public access and recreational use areas along both the **North Fork of the Shenandoah and the main stem of the Shenandoah River**.
- 8 Regional and local organizations should continue promotion, development and extension of the **upper South Fork of the Shenandoah River Blueway**.
- 9 State, regional and local agencies should provide additional and improved public access to all the major recreational streams of the region, including **Passage**

Creek and Opequon Creek. Where appropriate, portages should be created and maintained around dams and other river obstacles.

10 Regional and local organizations should develop a water trail along **Cedar Creek** highlighting its unusual natural features (limestone cliffs, endangered turtle habitat, eagle and other raptor habitat) and historic (battlefield) areas.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Regional and local organizations should continue implementation of the Shenandoah Valley Battlefields National Historic District Management Plan. This plan promotes the protection and continued appreciation of the historic, cultural and natural resources that are associated with the battlefields and are important to the people of the region, the Shenandoah Valley and the nation. Private land trusts and local, state and federal governments

should continue land conservation efforts that focus on the Second and Third Winchester, Kernstown and Cedar Creek battlefields in Frederick County; the Cedar Creek, Fisher's Hill, Tom's Brook and New Market battlefields in Shenandoah County; Cool Springs Battlefield in Clarke County; Cedar Creek Battlefield in Warren County; and the Overall Battlefield in Page County. Implement the *Fisher's Hill and Tom's Brook Battlefields Preservation Plan* completed by Shenandoah County and the Shenandoah Valley Battlefields Foundation in 2004.

- Regional and local organizations should support and develop awareness of the Mosby Heritage area through in-school education, brochures and marketing.
- Regional and local organizations should support creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Regional and local organizations should continue to support designation and protection of rural historical districts, including the one that connects Millburn Road and Red Bud Run.

11 Regional and local organizations should designate the historic **Valley Road**, Route 11, as a Virginia Scenic Byway. A corridor management plan should be developed, and a historic district for the protection of the scenic corridor should be created. A plan to make it eligible for National Scenic Byway designation needs to be developed. Consider its evolution from a Native American hunting path, to the Great Wagon Road, to Valley Turnpike, and finally to modern Route 11. Agricultural land along Route 11 corridor throughout the region should be protected.

12 Regional and local organizations should protect the historic and open space context of **Belle Grove** and **Harmony Hall plantations**, two valley icons within the Cedar Creek and Belle Grove National Historical Park. Each helps tell the story of the Valley Pike growth, along which it is located. Restore and develop the historic road that connected these two plantations as part of a historic road network in the region.

13 Regional and local organizations should maintain the historical integrity of **Long Branch**, a 19th century plantation. The site and its landscape needs to be protected.

14 Regional and local organizations should support protection of **Long Marsh Run Rural Historic District** in Clarke County and the lands within and adjacent to the district.

15 Regional and local organizations should support protection of **Greenway Rural Historic District** in Clarke County and the lands within and adjacent to the district.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Lands adjacent to federal, local and state properties, scenic resources and working agricultural and forestal lands for maintenance of visual resources should be protected.
- Scenic overlays for the Shenandoah Valley National Battlefield Historic District, the Shenandoah National Park, the AT and GW-Jeff National Forests should be considered as part of a multi-regional viewshed planning process, creating a trail buffer for viewsheds and environmental resources. The National Park Service has developed viewshed management and landscape design guidelines that may be useful in this endeavor.
- Regional and local organizations should make the protection of mountain ridges a priority.

16 High priorities have been set by the ATC to protect and conserve the viewshed of the **Snickers Gap** area.

17 Ashby Gap and Manassas Gap are high priorities for protection by the ATC.

18 Regional and local organizations should protect agricultural land, especially along the **Route 340** corridor in Warren and Page counties.

19 Regional and local organizations should protect and preserve the scenic areas along **the north and south forks of the Shenandoah River**.

20 Interstate 81 is a recognized scenic corridor by the American Automobile Association. It is a major gateway and travel corridor through the state. Care should be given to protect this great resource and showcase of Virginia.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

On September 22, 2005, four Virginia roads were given national byway designation. The Skyline Drive, within Regions 6 and 7, received National Scenic Byway status. This designation allows localities along the route to access federal dollars for byway corridor projects (see Chapter VI: Grant Opportunities for Outdoor Recreation, Open Space and Conservation). These major scenic highways attract tourists from throughout the nation, as well as international visitors. Protection of the viewsheds and natural, historical and cultural resources is critical to the continued beauty and unique character of these corridors and their environs, as well as their economic benefits.

- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources in the Commonwealth. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources such as caves, springs and sinkholes. The trail will focus on above ground features and tourist caves throughout the state's valley and ridge physiographic province. The Virginia Karst Trail, endorsed by the Virginia Region of the National Speleological Society and the Virginia Cave Board, will benefit the state through increased educational, commercial and tourism opportunities.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.

- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- Protection of Skyline Drive, a recently designated National Byway and one of the major scenic and economic resources of Region 7, is an integral element of Shenandoah National Park. The vistas and natural and cultural resources of the park create a peaceful and convenient refuge for visitors. Skyline Drive has recently seen several of its sections altered. Once breathtaking vistas of farmsteads or forests are now obscured by haze that originates from distant sources and reveals industrial and commercial developments and expanding suburban residential development. As development continues to expand in these sensitive areas near the park, there will be major impacts on the quality of the visitor experience. Those communities that benefit most from the presence of the park with its scenic highway should strengthen local comprehensive plans and create special zoning regulations to protect the unique scenic and economic benefits associated with the Skyline Drive and its viewshed.

The following road segments have been recommended for consideration as Virginia Byways:

- 21 Route 55** heading west from Front Royal and Route 340 crossing the peninsula near Riverton at the entrance to Front Royal.
- 22 Route 42** from near Forestville in Shenandoah County to near Harrisonburg in Rockingham County, as well as the section south of Harrisonburg to the Augusta County line.
- 23 Route 678** in Shenandoah County between Route 675 and Route 55 near Strasburg.
- 24 Route 11**, the historic Valley Road, or alternate routes as appropriate.
- 25 Routes 340 and 211** in Page and Shenandoah counties.

26 **Route 211** in Shenandoah County.

27 **Routes 628, 622, 600, 690 and 681** in Frederick County.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. In Region 7, the Shenandoah River from the Warren-Clarke County line to the state line is the only designated scenic river.

Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.
- The North Fork of the Shenandoah, the South Fork of the Shenandoah, Cedar Creek and two segments of Passage Creek were identified in the *U.S. Forest Service (USFS) Revised Land and Resource Management Plan* as eligible for study for National Wild and Scenic River System designation. DCR should work with NPS or USFS to designate qualified rivers as part of the National Wild and Scenic River System.

The following river segments have been evaluated and found to qualify for designation as Virginia Scenic Rivers:

28 The **North Fork of the Shenandoah River** from Burnshire Bridge to Cedar Creek at Strasburg.

29 The **South Fork of the Shenandoah River** from Goodes Mill to Overall.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

30 The **South Fork of the Shenandoah River** in Rockingham, Page and Warren counties from Port Republic to Route 684, and from Overall to the confluence of the north and south forks of the Shenandoah in the historic Riverton section of Front Royal.

31 The **North Fork of the Shenandoah River** in Shenandoah and Warren counties from Cedar Creek to Front Royal and from New Market to Burnshire Bridge.

32 **Cedar Creek** in Shenandoah, Frederick and Warren counties in its entirety.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Region 7 is in the Shenandoah and Opequon watershed, which flows into the Potomac and then into the Chesapeake Bay. The water quality of this watershed is critical to the health of the Potomac and the Bay. With the recent challenges from diminished water quality and fish kills, attention to the health of the watershed has increased due to its influence on the recreational and economic vitality of the region.

Watershed groups in Region 7

- Alliance for the Chesapeake Bay
- Burwell-Van Lennep Foundation
- Chesapeake Bay Foundation
- Friends of the North Fork of the Shenandoah River
- Friends of the Shenandoah River
- Page County Water Quality Advisory Committee
- Piedmont Environmental Council
- Pure Water Forum
- Shenandoah County Water Resources Advisory Committee
- Shenandoah Pure Water Forum
- Shenandoah Valley Regional Water Resources Policy Committee
- Virginia Conservation Network

Watershed recommendations for this region include:

33 Regional and local organizations should protect the **Overall Run** watershed and wildlife corridor.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

- Local and regional environmental education organizations should assess the outdoor environmental education facilities existing in this region.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.
- The RTCA Program should complete and implement the *Bicycle and Pedestrian Mobility Plan* in conjunction with partners, the City of Winchester and Frederick County. The plan will be coordinated with the region's *Walking and Wheeling Plan*.
- The landscapes of the valley, its natural beauty, farm, small towns and tradition makes it one of the most "characteristically American" regions in the country. More than 325 armed conflicts took place in the eight northwestern Virginia counties (including Highland, Rockingham and Augusta counties plus the cities and towns in Region 7 that comprise the Shenandoah Valley Battlefield National Historic District (SVBNHD)). According to the battlefield's general management plan, approximately 70 percent of the core areas identified in the management plan retain their original integrity, while only a portion of those areas are in some way protected. The partners should continue to protect the critical resources of the district, before the key resources are compromised by development pressures. Further, the plan includes recommendations that need to be implemented in order to protect fragile resources, provide visitor information services, interpret sites and identify battlefield tour routes that enable visitors to travel among the visitor service centers.

34 **Shenandoah National Park and Skyline Drive** have high visitation, which taxes some of the park's prime recreational resources during peak periods. This is leading to over-utilized resources and user conflicts. The staff is considering several infrastructure improvements to existing areas within the park. The park is also dealing with a number of significant threats to the health of the park's environment such as outbreaks of diseases and insect infestations that are decimating large tracts of valuable forestland. Problems associated with the overpopulation of certain wildlife species, including the white tail deer, and the loss of scenic vistas due to declining air quality, need to be addressed by NPS. U.S. Congress fixed the park at its present size, precluding adjustments to the park boundary and preventing the resolution of

some land use conflicts at the park boundaries. All of these factors are impacting the availability and quality of recreational resources for future park visitors. Strategies in the park's revised resource management plan should be implemented to address these issues.

35 The NPS should consider bicycle and pedestrian access across the Blue Ridge mountains along **Route 611** or along **Skyland Road**.

36 **Cedar Creek and Belle Grove National Historical Park** should continue to work with state and local partners to update and develop a general management plan to guide park management for the next 20 years. The plan is scheduled for completion in 2008. As infill for the park progresses, NPS should partner with localities to seek out opportunities for additional land to protect from development and to provide adjacent lands to meet local recreational needs.

National Forests

- The USFS should continue to develop new partnerships to market recreational opportunities and rural economic development through tourism. USFS should work with DCR, Shenandoah Valley Tourism Association, and the Virginia Tourism Corporation to develop regional and international marketing strategies to showcase Virginia's outdoor recreation opportunities.
- The USFS should continue implementation of the *GW-Jeff National Forests Revised Land and Resource Management Plan*, which identifies additional resources necessary to support the existing demand for dispersed recreational opportunities in the forest. The revised goals and objectives call for the forest to operate with a more balanced approach, with open space, conservation and recreation to have equal weight with other forest activities. Additional facilities called for by the forest plan include trails, camping, water access, natural resource interpretation and environmental education.

Other federal lands

37 The **Conservation and Research Center**, near Front Royal, contains several thousand acres and is operated by the Smithsonian Institution's National Zoological Park. Activities at the center focus on biodiversity conservation through programs in research, national and international training, and captive breeding of endangered species. The Conservation and Research Center is closed to the public, however, conference facilities are available for use by outside groups on a fee basis. Localities should take advantage of the unique meeting facilities available at the center.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

- The need exists for additional state parkland in this region of the state. Potential acquisitions should be explored in Frederick or Clarke counties.

38 Raymond R. “Andy” Guest Jr. Shenandoah River State Park (1,605 acres), located in Warren County, has 5.6 miles of frontage along the South Fork of the Shenandoah River. The rolling terrain, steep slopes and wide floodplains provide scenic vistas of Massanutten Mountain to the west and Shenandoah National Park to the east. The park was acquired with funds from the 1992 General Obligation Bond (GOB), which also included funds for minimal development. The park offers primitive camping, picnicking with 4 large shelters, fishing, car top boat launch, and more than 13 miles of hiking and multiuse trails. Environmental education and interpretive programs are available seasonally and for school groups in the spring and fall. Through the 2002 GOB, funds have been allocated to construct a road, full service campground and cabins in accordance with the park master plan. Funds were also allocated to construct an office-visitor center complex. The park has established a visitor center advisory committee comprised of community, education and government representatives to help develop an interpretive theme and generate support for designing and installing displays in the proposed visitor center.

39 Seven Bends State Park (1,066 acres), located in Shenandoah County, is located on the North Fork of the Shenandoah River. This park was acquired through donation and with funds from the 2002 GOB. The master plan is under development and should be completed in early 2008. The park has approximately four miles of river frontage and is bounded by the national forest to the west. This provides numerous cooperative opportunities for trail linkages with the national forest. Master plan recommendations should be implemented as soon as possible.

State fish and wildlife management areas (WMA)

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

- 40** DGIF should continue to investigate opportunities at the **Red Bud Run WMA** to acquire in-holdings and to improve the area with trails and other structures for wildlife viewing and other outdoor recreation.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

State natural area preserves

As of November 2006, there are no natural area preserves in Region 7. However, DCR is working closely with conservation partners to establish a preserve around Ogdens Cave in Frederick County.

DCR has, as of November 2006, documented 408 occurrences of 166 rare species and natural communities in the Northern Shenandoah Planning District. Thirty-six species are globally rare and five are federally threatened or endangered. Eighty conservation sites have been identified in the district; 60 (75 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only 24 sites are protected

well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 7, DCR is particularly interested in protecting:

- Protecting significant caves and karst areas.
- Protecting habitat for the state-threatened wood turtle.

41 Continuing land conservation and water quality protection efforts along **Buffalo Marsh Run** and around **Ogdens Cave** in Frederick County.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

42 **Blandy Farm and State Arboretum** in Clarke County houses the State Arboretum of Virginia on more than 150 acres. Local visitors and tourists hail Blandy Farm for quality experiences and memorable visits. The Blandy Farm and State Arboretum should continue implementation of plans for an information and visitors center, an amphitheater, picnic facilities, gardens and garden walks accessible for people with disabilities.

43 The **Northern Virginia 4-H Center**, located in Warren County, has numerous trails and other facilities that are used by others, including hikers on the nearby AT. There may be an opportunity for the 4-H Center to develop a cooperative agreement with other groups to further expand offerings at the site.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Local and regional organizations should maintain and pursue coordinated implementation of *Walking and Wheeling the Northern Shenandoah Valley - The Plan for Improving Local-Regional Pedestrian and Bicycle Access and Linkages for Recreation and Civil War Heritage Tourism*.
- Local and regional organizations should complete and implement the *Bicycle and Pedestrian Mobility Plan*.
- Local and regional organizations should implement the Main Street bike plan for Berryville and Clarke County.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally

owned lands in order to increase local access and meet outdoor recreation needs.

- Local government should implement the Front Royal Parks and Recreation Plan for Front Royal, *Where the Mountains Meet the River*.

44 Shenandoah County should implement the Keister Tract Master Plan for county's recently purchased 150-acre parcel **near the confluence of the North Fork of the Shenandoah River and Cedar Creek**. The critical location on the river, in close proximity to the national forest and adjacent to Belle Grove-Cedar Creek National Park, will give the park a regional significance that can support a variety of recreational opportunities for the people of the area.

45 The superfund **Avtex Fibers Plant** site on the Shenandoah River at Front Royal is being redeveloped into a "green" industrial park. A recreational park, Conservancy Park, is part of the site rehabilitation and consists of almost 350 acres fronting the river. Park developments will include access to the river, restroom facilities, picnic areas, natural areas and open space, a trails network and a variety of other day-use activities, including soccer fields. Conservancy Park could help address issues identified in the recreational use management plan. Funding should be made available as part of the mitigation plan, and the site should be developed as an early phase of the rehabilitation, which currently has some soccer fields on it.

46 Front Royal should establish a park area **along the South Fork of the Shenandoah River** to provide public river access and to preserve the mountain and river vistas looking west from the South Fork bridge.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of private sector role, see Chapter IX-E: Resource Agencies.

Within Region 7, entrepreneurial opportunities exist for the establishment of outfitter services for canoeing and kayaking, boat launches, canoe-in campgrounds, multi-field sports complexes and swimming pools. Private landowners might consider fee-based hunting, fishing and boating access.

The private sector has played a major role in the establishment of the Northern Shenandoah Valley as a tourist destination. Resorts, such as Bryce, provide golf courses, pools, campgrounds, lodging and other amenities for the recreating public. Increased interest in the numerous Civil War battlefield sites, many of which are privately owned, has created new opportunities for the heritage-tourism industry. Private-public arrangements and partnerships are evolving to protect, promote and interpret the significant recreational, cultural and historic resources that are synonymous with the northern valley.

The increasing demand for camping, fishing and other water activities could prompt private investors to establish recreation and tourism-driven businesses. There is a need for additional all terrain vehicle (ATV) trails in the region, which may present opportunities for the private sector to create additional off-road trails. Bed and breakfast establishments may consider an initiative to protect scenic and agricultural land while promoting small business enterprises.



Working agricultural lands in Northern Shenandoah Valley. Photo by Nancy Sorrells.

Table X-7. Region 7 (Northern Shenandoah Valley Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	265,823	53	fields	39	14	23
Basketball	326,237	77	goals	61	16	30
Bicycling	286,968	20	miles	NI		
Mountain	47,325	3	miles	NI		
Other	239,643	17	miles	NI		
Lake, river and bay use (combined)	239,643	4,294	water acres	218	4,076	4,812
Power boating	113,579	2,738	water acres	S		
Sailing	16,110	139	water acres	S		
Saltwater fishing	56,789	319	water acres	S		
Jet ski, personal watercraft	36,249	568	water acres	S		
Water skiing, towed on water	16,916	530	water acres	S		
Camping	325,834	1,922	sites	3,210	-1,288	-959
Tent camping	186,277	1,099	sites	416	683	871
Developed camping	139,557	823	sites	2,794	-1,971	-1,830
Fitness trail use	167,146	13	mile trails	10	3	6
Fields (combined)	342,348	72	fields	47	25	37
Football	128,884	27	fields	47	-20	-15
Soccer	213,464	45	fields	-	45	53
Stream use (combined)	754,977	480	stream miles	348	132	214
Freshwater fishing	656,502	462	stream miles	S		
Human-powered boating	35,443	9	stream miles	S		
Rafting	20,138	4	stream miles	S		
Tubing	42,894	6	stream miles	S		
Golfing	254,546	9	courses	207	-3	-1
Hiking, backpacking	317,175	163	trail miles	474	-311	-283
Horseback riding	90,621	39	miles	211	-172	-165
In-line skating	54,373	4	miles	NI		
Jogging, running	1,308,977	105	mile trails	NI		
Nature study, programs	55,380	8	sites	2	6	7

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-7. Region 7 (Northern Shenandoah Valley Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	274,885	714	tables	2,657	-1,943	-1,821
Skateboarding	153,050	47	sites	NI		
Snow skiing or snowboarding	34,436	1	ski lifts	3	-2	-2
Softball	285,961	51	fields	63	-12	-3
Sunbathing, relaxing on beach	373,360	27	beach acres	17	10	14
Swimming	2,013,810	135		NI		
Outdoor area	1,010,933	104	beach acres	17	87	104
Outdoor pools	658,516	28	pools	33	-5	0
Indoor pools	344,362	4	pools	2	2	3
Tennis	157,077	98	courts	96	2	19
Used a playground	541,715	77	sites	83	-6	7
Visiting gardens	53,567	6	sites	NI		
Visiting historic sites	295,426	25	sites	NI		
Visiting natural areas	376,180	64	sites	NI		
Volleyball	94,649	28	courts	13	15	20
Hunting	646,433	106,008	acres	106,513	-505	17,666
Drive for pleasure	1,335,156	NA	NA	NI		
Driving motorcycle off road	54,373	25	miles	19	6	10
Driving 4-wheel-drive off road	227,561	NA	NA	NS		
Walking for pleasure	4,331,705	NA	NA	NI		
Bird watching	53,165	NA		NI		
Other	116,801	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

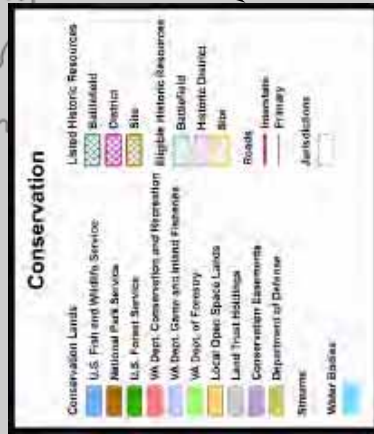
S: same as combined

NS: not inventoried separately

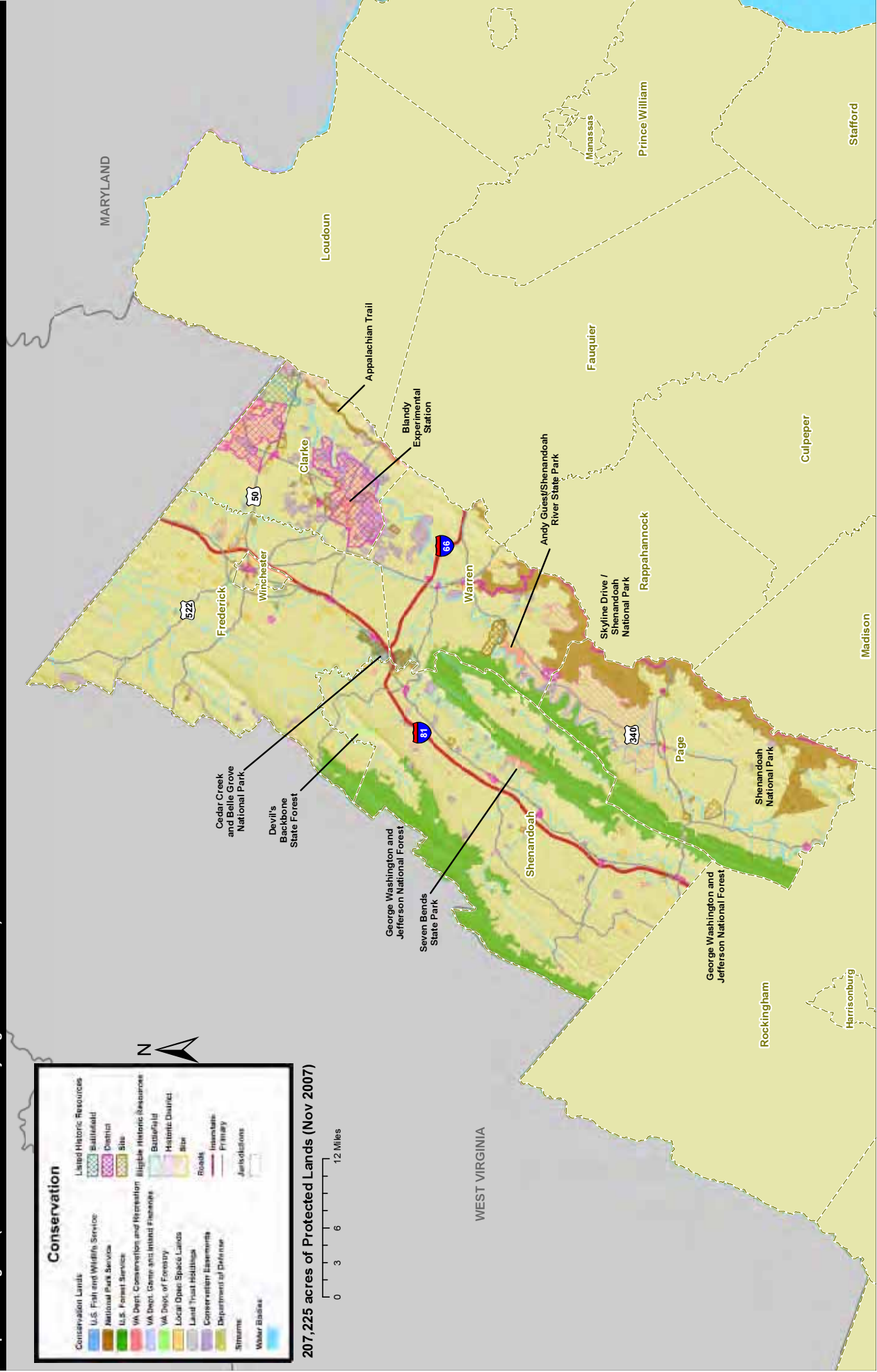
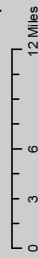
NI: not inventoried

(-) indicates surplus

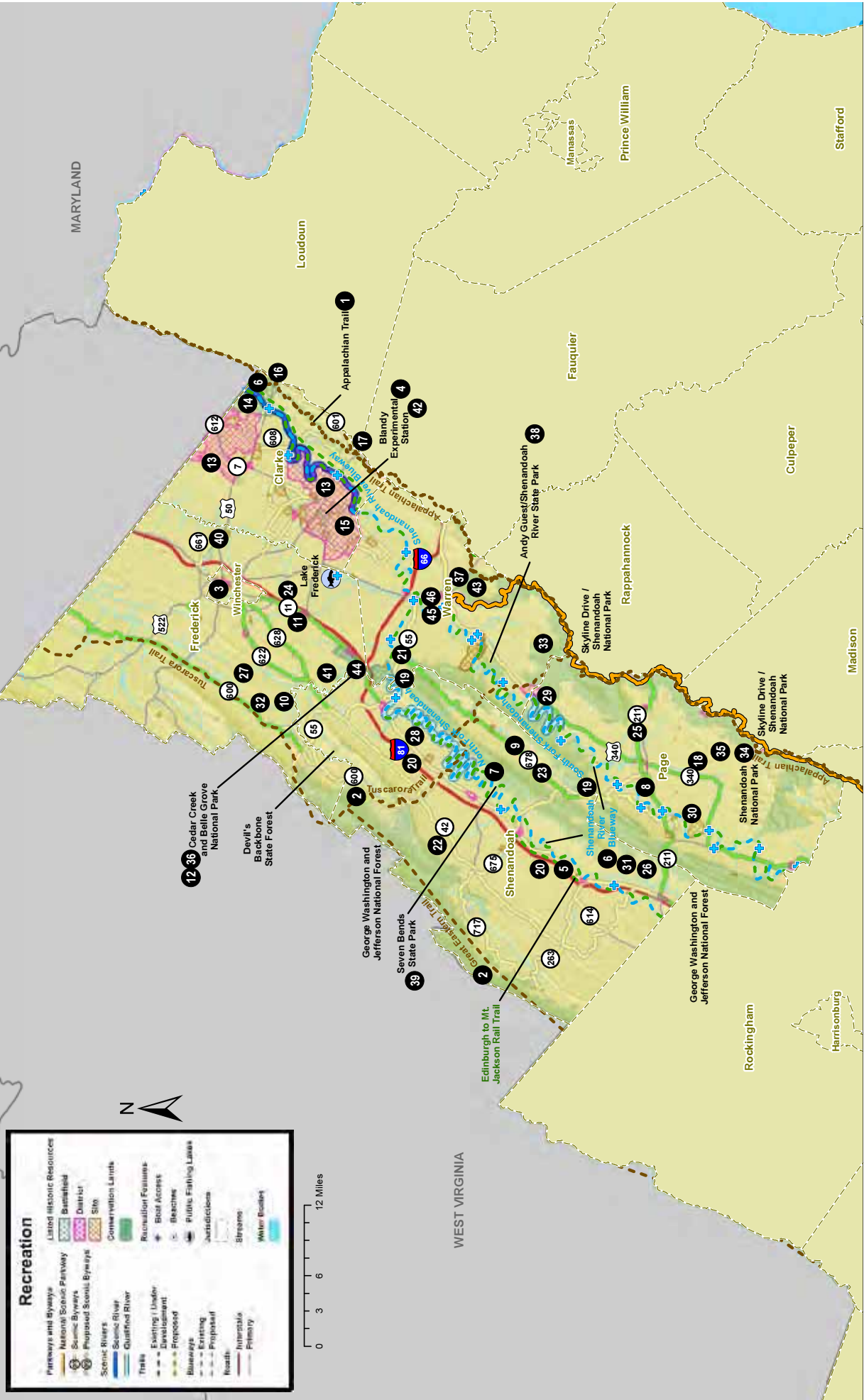
Map X-14. Region 7 (Northern Shenandoah Valley Regional Commission) Conservation Lands



207,225 acres of Protected Lands (Nov 2007)



Map X-15. Region 7 (Northern Shenandoah Valley Regional Commission) Outdoor Recreation



Introduction

The Northern Virginia Region is the northern most portion of the urban crescent. The urban crescent extends from Virginia Beach through Richmond to the Washington, D.C. border and is comprised of approximately 1,300 square miles. Region 8 is characterized by a variety of landscapes and land uses from the rugged Blue Ridge Mountains in the west, moving eastward across the rolling Piedmont to the gently sloping Coastal Plain. Framed by the Potomac River to the north and east, this region is primarily made up of farms in the western areas, then sprawling subdivisions before the densely populated urban areas along the northern and eastern parts of the region. The region is feeling the pressures of development from the nation's capital and its proximity to the industrial northeast section of the United States. Steeped in history, the modern effects of intense development and a diverse population have greatly influenced its growth and the built environment.

Region 8 includes the counties of Arlington, Fairfax, Loudoun and Prince William; the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park; and the incorporated towns of Herndon, Leesburg, Vienna and Dumfries. A major economic influence of the state, Region 8 is an area of contrasts. The vibrant eastern urban areas of Arlington, Alexandria and Falls Church contrast with the predominantly rural character of rolling farmland, winding country roads and small historic towns in the western part of the region. These areas are feeling development pressures, and large open spaces are often interrupted by subdivisions with few public lands. Picturesque villages such as Aldie, Waterford and Middleburg, once agricultural market towns that serve as small commercial centers for rural areas, are also experiencing the intense pressures of nearby urbanization. Suburban sprawl is the interface of these two divergent development patterns. With government services as the primary industry and the guiding force for area development, the desire for cheaper land and the draw of a vigorous job market put transportation corridors over capacity.

Throughout Region 8, in response to the intense development pressures, more and more landholders are looking for protection of agricultural open lands and the rural heritage. Several land trusts have been working for years to protect lands for scenic and agricultural purposes. Recognizing the value of the area's open space, residents of the region have dedicated

thousands of acres to conservation easements. Marked by topographic variety, numerous rivers and streams, and many notable cultural and historic sites, the area offers a full range of outdoor experiences. Whether hiking, biking or horseback riding, exploring the forests or paddling the rivers, the outdoor enthusiast has many choices. The preservation of remaining open space in urban areas, and the effective management and protection of undeveloped land in regions of rapid growth, are among the greatest challenges facing Region 8.

As the region continues to struggle with one of the fastest growing populations in the state, the accompanying demands for services and facilities strain the municipalities throughout the region. As limited land becomes more precious, it will be even more difficult to provide opportunities for nearby recreation and open space. In 2000, the region had a population of 1,815,197. By 2005, the population had grown to 2,021,100, which is an increase of approximately 13 percent and is approximately 27 percent of Virginia's population. Region 8 also accounts for about 60 percent of the state's population growth. With all the localities in the region experiencing growth, it is anticipated the regional population will increase at the high rate of 13.6 percent to 2,479,500 in 2020. Loudoun, Prince William and Manassas Park are among the fastest growing localities in the state, with growth rates of 49 percent, 32 percent and 35 percent, respectively, from 2000 to 2005.

Region 8 is also experiencing the largest change in population composition of all the planning districts due to the large increases in minority groups. Overall, Region 8 has the largest concentration of Hispanics and foreign-born residents, with numbers ranging from 16 percent to 45 percent of the population. Due to this growth rate, it is critical for recreation planning organizations to consider how to meet the ever-increasing needs of these unique populations.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 8 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Although participation in recreational activities fell over the past five years, the 2006 *Virginia Outdoors Survey* (VOS) recorded the top 10 most popular activities for the urban crescent, of which Region 8 is a part. They are, in order of participation rates, driving for pleasure, walking for pleasure, visiting historic sites, swimming, visiting natural areas, sunbathing, fishing, picnicking, mountain biking or bicycling, and running or jogging. Participation rates close to the top 10 were play-ground use and boating. Respondents to the survey indicated that access to water and trails for walking, cycling, jogging, hiking, fitness and horseback riding were not being adequately met. Demand for horseback riding trails in Region 8 is one of the highest in the state, and provisions are inadequate to meet that demand.

As localities plan for the future to meet outdoor recreational needs of residents, they are encouraged to include small neighborhood parks, larger regional facilities, and trails linking people and community resources (see Table X-8). These, along with horseback riding, require a large amount of land and may need to be met by adjacent regions that have excess facilities. Significant drops in activity days were observed in bicycling, camping, basketball, recreational sport field and tennis.

The linking of existing recreational, historic, cultural and natural resources with trails, blueways and greenways could increase the number of miles of trails suitable for walking, bicycling and boating. Other activities of note that need to be addressed in planning for future recreational activities were ones with the greatest amount of change in demand. The top four activities that experienced an increase in activity days were: exercise trails (up 138 percent), volleyball (up 87 percent), off road motorcycling (up 84 percent) and visiting natural areas (up 76 percent).

All of the municipalities in Region 8 have local park and recreation departments or authorities. These departments and authorities serve their citizens with an average per capita spending of \$90.90. Arlington and Alexandria have some of the highest per capita spending rates in Virginia, at \$158.68 and \$136.05 respectively. This compares to a statewide per capita

spending on parks and recreation of \$55.31; including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

The following are recommendations for meeting outdoor recreation needs in Region 8:

- Regional and local agencies should continue to better serve Hispanic cultural groups by establishing trust relationships, hiring bilingual staff, advertising in the Spanish media, hosting Hispanic-themed events and creating programs with input from the Hispanic community. Similar strategies are effective for other cultural groups.
- Due to the increase in cultural and ethnic diversity in the Commonwealth, local and regional agencies should consider making signs, literature and audio displays available in languages other than English based on the local population and user groups.
- Based on existing local support, the Fairfax County Park Authority should continue to use alternative land acquisition techniques to add acreage to the region's parkland that protects open space and provides recreational facilities.
- Regional and local organizations should recognize the strong citizen desire to balance the limited outdoor recreation resources between active and passive recreation activities. The growing numbers of people participating in passive activities, like birding, photography and nature study, have increased the demand for open space to accommodate these activities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation.

In Region 8 there are a limited number of public, private or semi-public sites that have conservation easements on their lands to protect necessary natural resources and provide outdoor recreational opportunities.

Land conservation recommendations include:

- Federal agencies should strengthen protection and management of conservation sites on federal lands.
- Federal, regional and local organizations should consider the protection of passive natural areas for habitat conservation. It is recognized that habitat conservation will enhance the quality of life in this highly developed and urbanized area.

- With intensified pressures for growth and development in Region 8, regional and local organizations and agencies must protect water quality, natural resources and recreational opportunities.

Land Trusts and Conservation Programs Operating in Region 8:

- Accokeek Foundation
- Appalachian Trail Conservancy
- APVA Preservation Virginia
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Department of Historic Resources
- Land Trust of Virginia
- McLean Land Conservancy
- Northern Virginia Conservation Trust
- Piedmont Environmental Council
- Potomac Conservancy
- The 500-Year Forest Foundation
- The Conservation Fund
- The Nature Conservancy
- Virginia Outdoors Foundation
- Waterford Foundation

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- State, regional and local agencies should identify opportunities for open space preservation and for park development connecting Quantico and Leesylvania State Park with Washington, D.C. using greenway corridors along the Potomac River and its tributaries.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local

priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Regional and local organizations should develop theme trails to link vineyards, historic districts and birding sites.
- The Department of Game and Inland Fisheries (DGIF) should continue to develop trail systems within wildlife management areas to facilitate access for activities other than hunting and fishing.
- Regional and local agencies should continue to develop the Council of Government Green Space Project that supports greenways as a priority issue.
- Regional and local organizations should create more multi-use natural surface trails throughout the region.
- Regional and local organizations should develop a trail network linking adjacent counties throughout the region.
- Regional and local organizations should continue to develop greenway trail systems along the Difficult Run, Sugarland Run, Limit Run, Pohick-South Run, Turkeycock-Holmes Run, Cameron Run, Folly Lick, Rocky-Cub Run and Four-mile Run stream valleys.
- Regional and local organizations should develop Potomac River greenways.

Statewide trunkline trails

1 The **Appalachian National Scenic Trail (AT)** was designated by Congress and is managed by the National Park Service. The Appalachian Trail Conservancy (ATC) has member clubs that voluntarily work with federal, state and local governments, and numerous individual landowners to solve problems associated with the acquisition, development, administration, management and maintenance of the AT. Local and regional partnerships with the AT and ATC should continue to protect the setting and viewsheds along the AT to preserve this outdoor recreational experience and reputation as a footpath in the wilderness.

2 The **East Coast Greenway**, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestri-

ans and people with disabilities as it connects urban, suburban and rural America. National, state, regional and local organizations should partner to identify and secure the best corridor for the East Coast Greenway as it traverses the Northern Virginia region.

3 The **Potomac Heritage National Scenic Trail (PHNST)** connects the outstanding natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands. The National Park Service (NPS) manages this partnership project and should work to complete development of the PHNST to include a parallel water trail with an adequate public access. NPS should implement management strategies to protect the setting with buffers, setbacks, vegetative screening and similar viewshed preservation tools.

Other trails

4 The **Bull Run–Occoquan Trail** is an 18-mile National Recreation Trail for hiking and equestrian use that passes through 5,000 acres of Occoquan shoreline parklands, which is owned by the Northern Virginia Regional Park Authority. Regional and local agencies should work to connect this trail to the PHNST and Bull Run Mountain.

5 State, regional and local agencies should partner to develop and complete the **Leesylvania State Park to Prince William Forest Park connector** and identify other regional trail connectors.

6 State, regional and local agencies and organizations should provide a trail connection between **Prince William Forest Park** and **Conway Robinson State Forest**.

7 Regional and local agencies should coordinate with NPS to implement the proposed hiking and bicycle access to **Prince William Forest Park** from Route 234.

8 Regional and local organizations should continue to improve and upgrade the **Fairfax Cross County Trail** to link existing local and stream valley parks between Occoquan River at Laurel Hill Park and Great Falls National Park.

9 Regional and local organizations should develop the proposed **Broad Run Stream Valley Greenway and Linear Park** from Lake Manassas to Lake Jackson to include multi-use trails with pocket parks.

10 Regional and local organizations should continue the **Accotink Greenway Trail** from Lake Accotink Park to Accotink Bay.

11 National, state, regional and local organizations should complete the **Mount Vernon Trail** from Roosevelt Island to the American Legion Bridge (Interstate 495).

12 National, state, regional and local organizations should complete the connection between the **W&OD Trail** and the **Appalachian Trail** and the connection between the W&OD Trail and **White's Ferry**. Upon completion, the connection and the W&OD Trail will be an effective east-west axis, linking the Chesapeake Bay with the Appalachian Mountains and serving as an inter-county collector for existing and developing trails throughout the region.

13 Regional and local organizations should complete the **NoVi Trail**, which connects various public sites in the Vienna area of Fairfax County.

14 Regional and local organizations should develop a **Mill-to-Mill Trail** between Aldie Mill Historic Park in Loudoun County through the Bull Run Mountains to Beverley Mill in Prince William County.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways.

Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- Regional and local agencies should increase public access opportunities for boating, fishing and beach access on the Potomac and Occoquan rivers.
- Regional and local organizations should consider enhancing water access facilities for rowing as the

sport increases in popularity. Specific locations should be identified, studied and developed similar to rowing sites on the Occoquan River.

- 15 National, regional, state and local organizations should work in partnership to complete the **Potomac River Water Trail** upstream to Great Falls.
- 16 County commissioners, mayors, businesses, tourism agencies and nonprofit organizations should continue to promote the **Captain John Smith Water Trail** along the Potomac River.
- 17 Regional and local organizations should continue to develop the **Occoquan Water Trail** with more amenities and interpretation for the boating public.
- 18 Local agencies, businesses and organizations should implement the **Potomac River Waterfront Plan** in Alexandria.
- 19 Local agencies and organizations should address the need for a boathouse on the **Potomac River** in Arlington. Citizen groups interested in promoting youth rowing programs indicate a demand for this facility. In addition to offering water access for non-motorized boating, the facility could offer water access for outdoor educational programs.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources.

The VOS identified visiting historic and natural areas as the second and fifth most popular activities, respectively. With its close proximity to the nation's capital and its long influence on our nation's history, protecting and enhancing the historical, cultural and natural sites of Region 8 becomes paramount. Significant historical sites include George Washington's home and grist mill, Manassas Battlefield, the Patowmack Canal and Arlington Cemetery. Connecting these sites through alternative transportation facilities will go far in continuing to make them a draw to the region and protecting the inherent qualities of each special site.

Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and

decision-making processes to promote preservation and protection.

- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- State, regional and local agencies should consider the expansion of historic districts to preserve resources and promote economic development.
- Regional and local agencies and organizations should partner to preserve historic battlefield sites, including Aldie, Middleburg and Upperville battlefields and their environs.
- 20 DCR and local governments should support designation of the nationally significant historic corridor along the **Journey Through Hallowed Ground (JTHG)** route to increase civic engagement and foster heritage tourism. The Journey Through Hallowed Ground Partnership is a four-state, nonprofit organization dedicated to raising regional, national and international awareness of the historic, cultural and natural resources along a corridor generally following the Old Carolina Road (routes 15, 20, 33 and 231) from Gettysburg, Pennsylvania to Monticello in Virginia. A corridor management plan is being created for the JTHG Corridor.
- 21 **Manassas National Battlefield Park**, a 5,000-acre NPS property dedicated to the preservation of the scene of two major Civil War battles, should be protected to preserve its integrity. Local government should coordinate with NPS to implement the *Manassas Battlefield General Management Plan* and consider the impacts of future development on and near this property.

- 22 Regional and local agencies and organizations should support the designation and development of the **Washington-Rochambeau Trail** as a National Historic Trail, which follows the revolutionary trip of George Washington and the comte de Rochambeau after the victory at Yorktown.
- 23 State, regional and local organizations and agencies should designate the **Catoctin Rural Historic District** in Loudoun County and continue to protect the properties within and adjacent to the district.
- 24 State, regional and local organizations and agencies should designate the **Centerville Historic District** in Fairfax County and continue to protect the properties within and adjacent to the district.
- 25 State, regional and local organizations and agencies should create the **Vienna Trail of History** on public parkland between Lahey Lost Valley Park and Meadowlark Botanical Gardens Regional Park with a link to the W&OD Trail to highlight Virginia Revolutionary War history and the architectural styles of the 18th and 19th centuries.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

- 26 **Goose Creek** from its headwaters to the Loudoun County line was designated a state Scenic River by the General Assembly in 2007.

- 27 The ATC, partnering with regional and state agencies and organizations, should protect and conserve **Snickers Gap**.

- 28 The ATC, partnering with regional and state agencies and organizations, should protect and conserve **Ashby Gap** and **Manassas Gap**.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. On September 22, 2005, four Virginia roads were given national byway designations: The George Washington Parkway (GW Parkway), located in Region 8, was one that was given the highest designation as an All-American Road. This designation allows localities along the route to access federal dollars for byway corridor projects (see Chapter VI). These major scenic highways attract tourists from throughout the nation, as well as international visitors.

There has also been a tremendous interest in thematic driving trails including, the African-American Heritage Trail system, Civil Rights in America Heritage Trail, Civil War trails, Birding and Wildlife trails, George Washington Parkway, the Journey Through Hallowed Ground and other driving tour routes.

For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to

increase civic engagement and foster heritage tourism.

- While the overall character of the GW Parkway remains intact, subdivisions exist and are being developed within a few hundred feet from the corridor potentially affecting future visitor experiences. Communities along the GW Parkway should strengthen local comprehensive plans and change zoning ordinances to create special zoning regulations that protect its national status as an All-American Road, and its intrinsic value, unique scenic resources and economic benefits associated with the parkway's viewsheds.

The following road segment has been recommended for consideration as Virginia Byways:

29 Route 15 from Gilberts Corner to Orange as part of the JTHG.

Scenic rivers

In Region 8, Goose Creek and Catoctin Creek are designated scenic rivers. For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.
- 30** Continue protection of **Goose Creek** through creation of a 300-foot setback for development along its entire length.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- 31 Bull Run** in Prince William County.
- 32 Occoquan River** in Fairfax City and Prince William County.

The Goose Creek Scenic River Committee has been in existence since the 1970s when Goose Creek was designated a scenic river. This committee has created partnerships with Loudoun County, business, industry and developers to ensure protection of Goose Creek. In 2007, the Goose Creek Scenic River Committee, along with the Fauquier County Goose Creek Task Force, received the Best Preservation of a Scenic Water Corridor award from Scenic Virginia.

Watershed resources

Region 8 is in the Shenandoah-Potomac rivers watershed, a sub-basin of the Chesapeake Bay. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 8

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Piedmont Environmental Council
- Prince William Conservation Alliance
- Virginia Conservation Network

Watershed recommendations for this region include:

- Regional and local governments should protect the management of watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans through DCR's Chesapeake Bay Preservation Act land use management initiative. All localities in Region 8 but Loudoun County, the cities of Manassas and Manassas Park, and the town of Leesburg fall under the Bay Act regulations.
- The Northern Virginia Regional Park Authority (NVRPA) should continue to encourage cooperation between local jurisdictions, water and sewer agencies and authorities, and the state to target parkland and riparian lands that protect drinking water supplies while addressing outdoor recreation and park needs of the region.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Fairfax County should implement the Fairfax County Natural Resource Management Plan to guide natural resource conservation efforts.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.
- NPS and state, regional and local agencies and organizations should continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program and Potomac Heritage National Scenic Trail to connect people to heritage, outdoor recreation, and educational opportunities and resources.

33 NPS should coordinate with local government, and regional and state agencies to implement the **Prince William Forest Park** General Management Plan. Prince William Forest Park is an outstanding resource in a rapidly developing area. Work should continue to protect the boundaries and connect the park resources with other county facilities. The proposed hiking-bicycle access to the park from Route 234 should be implemented. All lands within the legislative boundary of Prince William Forest Park should be acquired. A trail should be provided between Leesylvania State Park and Prince William Forest Park as a segment of the PHNST.

34 NPS should coordinate with regional and local agencies to implement the **Manassas Battlefield** General Management Plan. A plan should be developed for a trail connection between Manassas Battlefield and Sully Woodlands, including the trail connection between the park and Conway Robinson State Forest.

35 NPS should coordinate with regional and local agencies to implement the **Great Falls National Park** General Management Plan.

36 NPS should coordinate with regional and local agencies to implement the **Wolf Trap Farm National Park for the Performing Arts** General Management Plan, including construction of a pedestrian walkway across the Dulles Toll Road connecting to other projects in the region.

37 NPS should coordinate with regional and local agencies to implement the **Theodore Roosevelt Island National Park** General Management Plan.

38 NPS should coordinate with regional and local agencies to implement the **Arlington House National Park** General Management Plan.

39 The much-needed improvements at **Belle Haven Marina** should be maintained and managed by its concessionaire and NPS in harmony with appropriate resource management, taking into account the close proximity of Dyke Marsh. A cooperative agreement should be developed that will result in the continued public operation of the facility and its proper maintenance. The affordable and convenient access to the Potomac River that Belle Haven Marina offers makes it a popular and valuable amenity in an area lacking in water access sites.

40 NPS should actively pursue protection of additional land around **Harpers Ferry** to preserve the integrity of the site.

Bureau of Land Management (BLM)

41 The BLM, state, regional and local agencies should work to conserve **Meadowood Farm**, which is adjacent to Mason Neck State Park and a BLM property. If conserved, this land will increase wildlife habitat and open space in Region 8 and provide outdoor recreation opportunities including horseback riding, hiking and mountain biking.

National wildlife refuges (NWR) and fish hatcheries

42 **Occoquan Bay NWR** is made up of the former Woodbridge Research Facility and the area known as the Marumsco NWR. This refuge is part of the Potomac River National Wildlife Refuge, as are Mason Neck and Featherstone NWRs. The U.S. Fish and Wildlife Service (USFWS) should consider enhancing passive recreational public access to these sites to include nature study, fishing, bird watching and trail use. In addition, buffer protection for water features should be sought within the refuge.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

- The need exists for additional parkland and water access in this region of the state. Potential acquisitions should be explored in northwestern Loudoun County along the Potomac River corridor east of Short Hill Mountain.

43 Mason Neck State Park (1,825 acres) is located in Fairfax County. This day use park focuses on interpretive and environmental education programs, in addition to providing hiking trails, picnicking, fishing and a car top canoe launch. In accordance with the park master plan, and funded by the 2002 General Obligation Bond (GOB), the park will be expanding the Elizabeth Hartwell Environmental Education Center into a more functional visitor center-office complex. An additional residence has also been funded. The master plan also recommends the renovation of the Jammes Complex into an overnight environmental education center.

In addition to the unique natural resources of the park, it also has numerous cultural sites. The Taft Archaeological Site is on the National Register of Historic Places. Archaeological research is being conducted at the Lexington Plantation site. The natural and cultural resources of the park create numerous opportunities for cooperative programming with Gunston Hall, Potomac River National Wildlife Refuge, Pohick Bay Regional Park and BLM's Meadow Farm site. The park serves as an access point to the bike-walk trail along Gunston Road. The park could also serve as an access point to the Potomac River Water Trail and newly completed Occoquan Water Trail. The park's location on the Mason Neck peninsula, along with the other publicly owned and managed lands make the area suitable for links with the East Coast Greenway and PHNST. The region offers the opportunity for other expanded trail opportunities.

44 Leesylvania State Park (542 acres) is located in Prince William County on a peninsula bordered by the Potomac River, Neabsco Creek and Powells Creek. The recreational offerings of the park include picnic shelters, boating, bank and pier fishing, and hiking trails. The park has boat launching ramps, sailboat hoists and a car top launch area for smaller boats. Through the 2002 GOB, the park obtained funds for an additional large picnic shelter with restrooms. The boat ramps, docks, gas and mooring piers were damaged during Hurricane Isabel and have since been repaired and improved with supplemental funds from the 2002 GOB. Along with the recreational facilities, the park offers an ideal setting for environmental education programming based out of its visitor-environmental education center. The park also contains culturally significant sites, the Leesylvania Archaeological site and the Civil War Gun Battery at Freestone Point, which are listed on the National Register of Historic Places. It is also the site of what was then Leesylvania Plantation in Colonial America, the birthplace of Henry Lee III (Light Horse Harry), a

Revolutionary War hero and father of the Confederate General Robert E. Lee. Efforts are underway to create a connector trail between Leesylvania and Prince William Forest Park. The park's location on the Potomac River should create access opportunities for the Potomac River Water Trail, as well as the East Coast Greenway and PHNST.

45 George Washington's Grist Mill Historical State Park will be transferred to the Mount Vernon Ladies' Association upon completion of the restoration projects.

State forests

46 The Department of Forestry (DOF) should continue to develop educational opportunities at **Conway Robinson Memorial State Forest**. The DOF should coordinate with local governments to develop a trail linking to Sully Woodlands and other regional park resources.

State natural area preserves

Natural area preserves within this planning district are Ellick Woodlands in Fairfax County and Bull Run Mountains (in part) in Prince William County. Department of Conservation and Recreation (DCR) has documented 341 occurrences of 153 rare species and natural communities in Region 8. Thirty-three of these species are globally rare, and two are federally listed as threatened or endangered. As of November 2006, there are 88 conservation sites identified within Region 8. Sixty-one sites (69 percent) are protected to some degree through ownership and management by state, federal and non-government organizations. However, only four sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 8, DCR is particularly interested in protecting:

- Wood turtle habitat.
- Diabase woodlands.

47 State and local agencies should secure additional conservation easements and other permanent protection of critical lands along the **Potomac Gorge**. Fairfax County currently protects some portions of the Gorge.

48 DCR should continue efforts to protect the natural and scenic resources of the **Bull Run Mountains**.

State fish and wildlife management areas

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the trans-

portation system of the future to meet capacity needs and energy constraints.

- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- State, regional and local agencies should give priority to improving the linkages of recreation areas across major transportation corridors.
- State, regional and local agencies should provide lighting for commuter trails.

49 **U.S. Bicycle Route 1** is a federally designated route recognized by the American Association of State Highways (AASHTO). This route is shown on VDOT's official county maps with state signage along its route. State, regional and local agencies should identify and develop the best corridor for U.S. Bicycle Route 1, to include an alternative corridor that crosses the state north-south from Arlington to the North Carolina border, onto safer road corridors. The bicycle corridor should be enhanced and properly identified with signage.

50 Localities should work with Adventure Cycling Association and other biking groups to develop a corridor for the **Atlantic Coast Route** through Virginia.

51 The Northern Virginia Regional Park Authority (NVRPA) should upgrade the **W&OD Trail** to accommodate increased commuter bicycle traffic where possible.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies. The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- Community colleges may have land that could be evaluated for its recreational potential.

52 With the relocation of more than 22,000 Department of Defense jobs to **Fort Belvoir**, the Army should design any additional facilities with a minimum footprint and provide necessary recreational opportunities on site. The Army should promote non-motorized access to the facility by incorporating an extensive network of trails for use on-site and connecting off-site. The Department of Defense should maintain public access to the Accotink wildlife viewing area at Fort Belvoir. Additionally, any surplus land on or adjacent to Fort Belvoir should be identified as potential open space and recreational land. Should portions of Fort Belvoir be considered surplus, a local or regional recreation agency should be contacted for evaluation of the land.

53 Marine Corps Base **Quantico** should provide on-site recreation for new employees. Consideration should be given to allowing portions of the base for non-motorized trail use. In the future, should Quantico lands be designated for surplus, the local government should have the option to evaluate the property for outdoor recreation and open space potential.

54 Fairfax City and Fairfax County should continue to work with **George Mason University** to enhance recreational opportunities for students and the community within and outside of the campus.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The NVRPA is encouraged to add more member jurisdictions to the authority to expand its work in conservation and recreation throughout Region 8. The NVRPA should continue to provide regional leadership for the conservation of natural, historic and recreational resources. NVRPA should continue to maintain a leadership role along with the National Park Service, community groups and other public agencies for the development of the PNHST.

In Region 8, the NVRPA provides a significant amount of the recreational land and open space for its citizens. The NVRPA represents three counties and three cities: Arlington, Fairfax, and Loudoun counties and the cities of Alexandria, Falls Church and Fairfax. NVRPA's mission is to enhance the communities of Northern Virginia and enrich the lives of their citizens through the conservation of regional natural and cultural resources. It provides diverse regional recreational and educational opportunities and fosters an understanding of the relationships between people and their environment. NVRPA achieves this mission at the same time it demonstrates one of the highest rates of self-funding of any park agency in the nation at nearly 80 percent.

The NVRPA provides almost two million citizens with some of the finest managed recreational facilities in the country. From wave pools to golf courses, boating facilities to quiet nature trails, the NVRPA sites offer visitors a full range of outdoor recreational opportunities. More than 10,000 acres of woodlands, streams and rolling Virginia countryside are preserved in the 21 parks within the system. There are more than 25 miles of shoreline parks on the Bull Run-Occoquan rivers and 13 miles of shoreline parks along the Potomac River. For more information, visit www.nvrpa.org.

- All localities should develop and implement hiking and bicycling plans to connect parks, schools and neighborhoods. Encouraging biking and walking within the community can enhance community health and spirit.
- Regional and local organizations and agencies should continue to connect lands and open space for wildlife and water quality.
- The City of Alexandria should implement *Alexandria's Open Space Plan*, including the completion of the Green Crescent.
- 55** Fairfax County Park Authority should complete and implement the comprehensive master plan for **Sully Woodlands Regional Park**, a 4,400-acre site in western Fairfax County.
- 56** The Fairfax County Park Authority should develop **Laurel Hill Park** in accordance with the master plan for this old prison site.

57 Local and regional agencies should evaluate a multi-use trail-bridge connection between **Ben Lomand** and **Bull Run Regional Parks**.

58 The City of Arlington should complete **North Tract Park**.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Planning to meet the recreational and open space needs of the Region 8 will require cooperation among local governments, the development of inter-jurisdictional partnerships, private sector support, and a dedicated source of funding for land acquisition and facility improvements. For a discussion of private sector role, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- The private sector should evaluate the opportunities for campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities. Possible

entrepreneurial opportunities may exist for outfitter services for canoeing and kayaking, boat launches and canoe-in campgrounds.

- Evaluation for fee-based hunting, fishing and boating access should be conducted by the private sector.
- Private sector businesses should consider the adaptive re-use of existing properties in urban areas to provide for recreational needs. Abandoned, unused available sites, including rail yards and empty “big box” buildings may be potential recreational assets.
- The mutual benefits enjoyed by a public-private recreational partnership are apparent in the ongoing implementation of the PHNST plan. Continued partnerships should be formed to support private enterprises such as bed and breakfasts, museums, historic sites and recreational facilities for trail users throughout the corridor.
- The Northern Virginia Visitors' Consortium is encouraged to continue its role in promoting partnerships to support the heritage and recreational opportunities in Region 8.



Boating is one of the most popular activities at Leesylvania State Park. Photo by DCR.

Table X-8. Region 8 (Northern Virginia Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	2,617,139	517	fields	501	16	148
Basketball	5,096,013	1,209	goals	475	734	1,042
Bicycling	6,379,893	454	miles	NI		
Mountain	821,683	58	miles	NI		
Other	5,558,210	395	miles	NI		
Lake, river and bay use (combined)	5,714,251	92,479	water acres	13,724	78,755	102,366
Power boating	2,310,983	55,701	water acres	S		
Sailing	355,536	3,077	water acres	S		
Saltwater fishing	2,156,917	12,133	water acres	S		
Jet ski, personal watercraft	404,916	6,344	water acres	S		
Water skiing, towed on water	485,899	15,225	water acres	S		
Camping	1,509,052	8,900	sites	1,775	7,125	9,397
Tent camping	963,897	5,685	sites	377	5,308	6,759
Developed camping	545,155	3,215	sites	1,398	1,817	2,638
Fitness trail use	3,982,001	319	mile trails	34	285	367
Fields (combined)	6,889,494	1,448	fields	661	787	1,157
Football	2,291,231	482	fields	661	-179	-56
Soccer	4,598,263	967	fields	-	967	1,213
Stream use (combined)	3,875,340	2,255	stream miles	157	2,098	2,674
Freshwater fishing	2,891,691	2,033	stream miles	S		
Human-powered boating	726,873	185	stream miles	S		
Rafting	75,058	13	stream miles	S		
Tubing	181,718	24	stream miles	S		
Golfing	4,355,314	147	courses	972	93	131
Hiking, backpacking	1,836,935	942	trail miles	671	271	512
Horseback riding	543,180	235	miles	136	99	159
In-line skating	1,511,027	108	miles	NI		
Jogging, running	25,183,787	2,018	mile trails	NI		
Nature study, programs	560,957	80	sites	35	45	65

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-8. Region 8 (Northern Virginia Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	2,557,883	6,641	tables	5,436	1,205	2,900
Skateboarding	1,457,697	449	sites	NI		
Snow skiing or snowboarding	742,675	19	ski lifts	-	19	24
Softball	2,962,799	527	fields	409	118	253
Sunbathing, relaxing on beach	7,288,484	522	beach acres	7	515	649
Swimming	19,751,990	1,270		NI		
Outdoor area	9,382,195	961	beach acres	7	954	1,199
Outdoor pools	6,182,373	262	pools	194	68	135
Indoor pools	4,187,422	48	pools	9	39	51
Tennis	2,544,056	1,590	courts	915	675	1,081
Used a playground	9,955,003	1,417	sites	638	779	1,140
Visiting gardens	1,333,259	147	sites	NI		
Visiting historic sites	4,479,751	379	sites	NI		
Visiting natural areas	3,484,251	590	sites	NI		
Volleyball	1,303,631	386	courts	23	363	462
Hunting	1,686,820	276,620	acres	28,510	248,110	318,736
Drive for pleasure	15,544,816	NA	NA	NI		
Driving motorcycle off road	266,652	122	miles	3	119	150
Driving 4-wheel-drive off road	718,972	NA	NA	NS		
Walking for pleasure	57,043,747	NA	NA	NI		
Bird watching	543,180	NA		NI		
Other	553,056	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

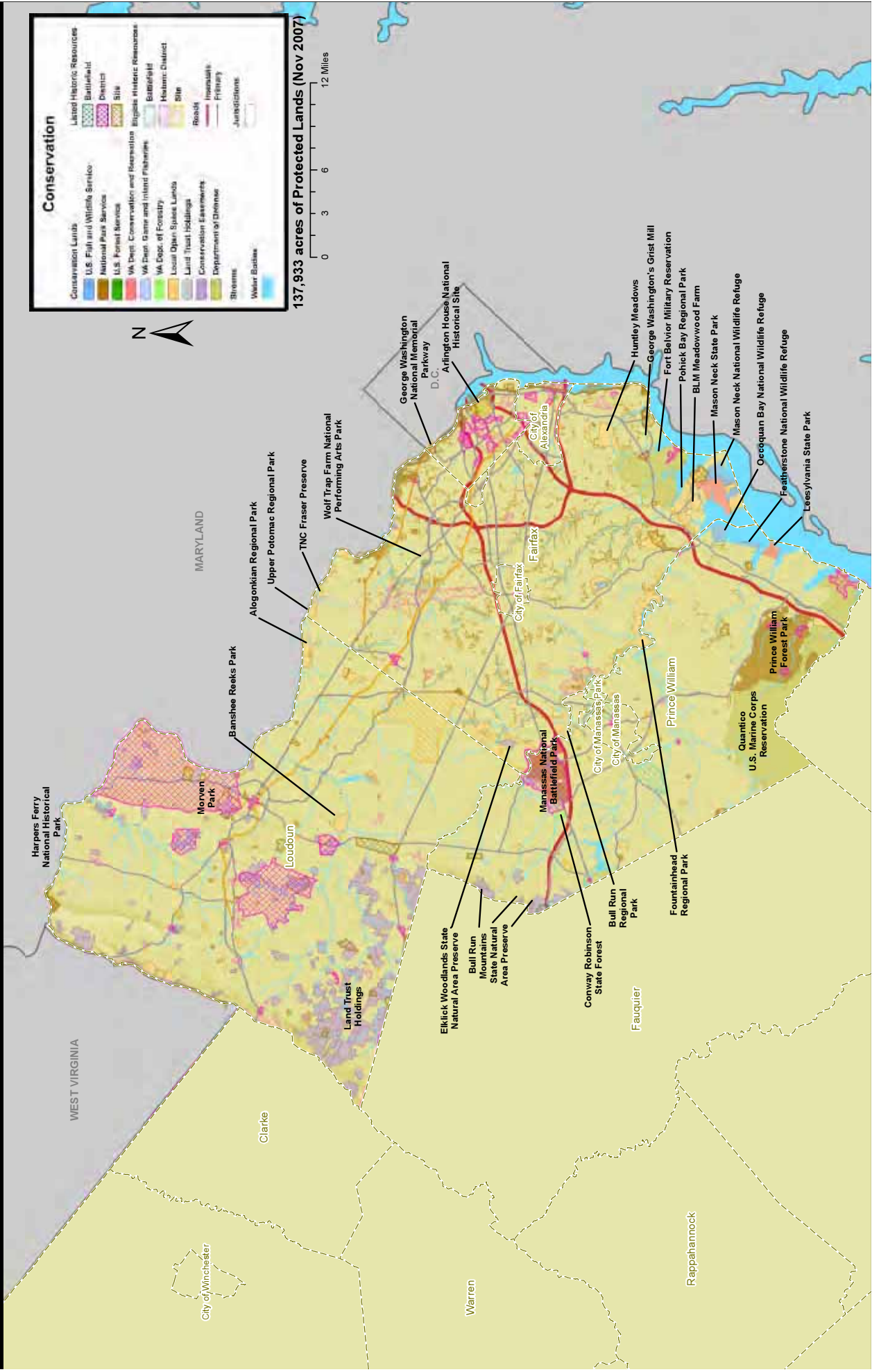
S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-16. Region 8 (Northern Virginia Regional Commission) Conservation Lands



[illegible]

Introduction

From the rugged Blue Ridge Mountains in the west to the rolling Piedmont in the east, this area is characterized by memorable scenic vistas; horse, cattle and dairy operations; and row crop farms that provide feed for area livestock and produce for local and regional markets. Commonly known as hunt country, the region is host to many traditional horse-centered activities, including point-to-point events, fox hunts and polo matches. Orchards, wineries, forests, and rural and suburban residential developments complete the land use types that make up this district.

Although essentially rural with an agrarian economy, the Rappahannock-Rapidan Region has begun to experience many of the pressures typical of areas adjacent to the urban crescent. Surrounded by high growth rate areas to the north, south and east, the region's potential for development is the subject of scrutiny by builders and entrepreneurs. Telecommuters and people who are willing to commute to employment opportunities in Northern Virginia, Charlottesville and the Richmond area add to development pressure.

As local governments evaluate both the positive and negative aspects of development, they must identify and implement effective strategies that will allow management of inevitable growth while protecting regional resources. Some landowners, interested in maintaining the pastoral quality of the region, have voluntarily committed all or part of their property to conservation and open space easements. Approximately 126,406 acres in this area are in conservation easements held, for the most part, by the Virginia Outdoors Foundation. Fauquier County landowners have protected more than 70,991 acres through conservation easements, with another 20,366 acres in Orange and 23,009 in Rappahannock counties. Easements in both Madison and Culpeper counties cover 12,040 acres. In addition, many properties are owned and managed by land preservation trusts or foundations.

Most federal and state-owned open space is located in the western part of the district. Federal properties, specifically Shenandoah National Park and the section of the Appalachian Trail that passes through the area, make up about 66,000 acres of open space. State-owned properties include Sky Meadows State Park, Whitney State Forest, and Thompson, Rapidan, Weston and Chester Phelps wildlife management

areas. These combine to add another 21,500 acres to the public open space in this region.

The Rappahannock-Rapidan Region covers an area of about 1,993 square miles and is home to more than 158,442 people. The population is estimated to grow to 183,900 by 2020. The region is made up of Culpeper, Fauquier, Rappahannock, Madison and Orange counties and the towns of Orange, Remington, Warrenton, Culpeper, Madison and Gordonsville.

The area experienced an increase in population of 17.6 percent between 2000 and 2005, following a 15.6 percent increase from 1990 to 2000. Orange and Culpeper counties absorbed the greater part of that earlier increase with growth rates of 20.8 percent and 23.3 percent, respectively, until 2000. More recently, Culpeper and Fauquier counties have taken the lead with 24.1 percent and 17.9 percent respective growth rates from 2000 to 2005—among the fastest growing counties in the state. Orange County is not far behind, with a growth rate of 16.9 percent over the same period. The largest towns in the region based on 2005 estimates are Culpeper (12,047), Warrenton (8,635) and Orange (4,429).

Major growth areas have developed along the Route 29 corridor — from the Town of Culpeper to Route 17 at Remington, northward along Route 17 in Warrenton, and where Route 17 approaches Interstate 66. Routes 29 and 15 in Fauquier and Route 3 in Orange are also being impacted by development pressure from Northern Virginia and Fredericksburg.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 9 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on input from public meetings, there is more need for transportation alternatives, specifically trails for walking, hiking, bicycling and horseback riding. If developed with multiple uses in mind, a comprehensive trail system could link small communities and specific destinations, thus providing exercise options and transportation alternatives. Limited safe cycling opportunities might be expanded through accommodation within a well-developed trail system.

Citizens also expressed interest in more canoeing and kayaking opportunities, more water sports and more public access to water in general.

More park space is needed to provide competitive facilities such as ballfields, courts of all types and swimming pools. Also needed are parks with open space for passive activities like nature study, reading and picnicking. Increased opportunities for active seniors are needed at all parks and facilities (see Table X-9).

Each county except for Rappahannock County in Region 9 is served by a parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Culpeper, \$8.45; Fauquier, \$34.29; Madison, \$20.70; Orange, \$40.70; and Rappahannock, \$1.61. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 per capita spending on parks and recreation from cities.

Land conservation

Some of the protected lands in Region 9 include the Bull Run Mountains Natural Area Preserve which straddles Fauquier and Prince William counties. The Virginia Outdoors Foundation owns the 2,486-acre preserve. The Bull Run Mountain Conservancy maintains parking space and hiking trails at the southern end of the preserve and provides interpretive and environmental education programs. In Fauquier County, The Nature Conservancy owns the 665-acre Wildcat Mountain Natural Area Preserve. Great Meadow, located in The Plains, is owned by the Meadow Outdoors Foundation and is dedicated to the preservation of open space for horse and field events. Great Meadow provides a unique setting for horse shows, polo matches, wine festivals, cross-country field trials and soccer matches. Drawing more than one million people annually to its 175-acre site, Great

Meadow is a popular destination preserved for outdoor events in perpetuity for generations to come. A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown Map X-18.

Land Trusts and Conservation Programs Operating in Region 9:

- APVA Preservation Virginia
- Blue Ridge Foothills Conservancy
- Capital Region Land Conservancy
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Land Trust of Virginia
- National Park Trust
- Piedmont Environmental Council
- Potomac Conservancy
- Scenic Virginia
- The Conservation Fund
- The 500-Year Forest Foundation
- The Nature Conservancy
- Trust for Public Land
- Virginia Department of Historic Resources
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Obtain additional easements to buffer existing natural areas such as Shenandoah National Park and the Bull Run Mountains.
- Implement agricultural conservation measures in southern Fauquier, especially along Route 28.
- Protect farms adjacent to the Rapidan River in Madison and Orange counties.
- Protect riparian lands along the Rappahannock River.
- Protect scenic views along trails and acquire trail right-of-way to create a corridor that links Manassas Gap, Crooked Run Valley, Gap Run Valley, Fleetwood and Avoka state forests, and Sky Meadows State Park.
- Protect the travel corridors of Routes 15 and 230 for their scenic value.
- Protect the Ashby Gap and Manassas Gap areas — priority conservation areas for the Appalachian Trail Conservancy.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Regional and local agencies and organization should develop a regional green infrastructure plan and promote the value of this planning model.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section.

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Local and regional agencies should evaluate the transportation network to see what paved and unpaved roadways are currently used as trails and protect these trail corridors in land use and transportation plans.

Statewide trunkline trails

1 The **Appalachian National Scenic Trail** is an existing National Scenic Trail. Because of this special designation, localities that host the Appalachian Trail should protect viewsheds at existing overlooks and along the corridor. Changes in land uses in areas adjacent to the Appalachian Trail must be carefully considered to assure protection of this valuable resource.

Other trails

2 Local and regional organizations should consider the development of a non-motorized, multi-use

Rappahannock River Heritage Trail, which would link the Tidewater area to the mountains. This greenway, hiking and water trail system along the Rappahannock River could provide a connection from the Chesapeake Bay through the rapidly urbanizing Fredericksburg area to the Appalachian Trail (AT).

3 The **Virginia Central Rail-Trail** linking Fredericksburg to Spotsylvania, Culpeper and Orange counties should be developed by local and regional agencies and organizations. Two small sections of the trail are already complete — one in Alum Spring Park that is maintained by the City of Fredericksburg, and a second in Spotsylvania County that links a school and playing fields. This proposed trail would provide access to Civil War battlefields, historic properties, schools, playgrounds and commercial sites.

4 Trails linking the **Rapidan Wildlife Management Area** and **Shenandoah National Park**, to include a non-motorized, multi-use trail along the **Conway River**, should be developed by the local, regional and state agencies and organizations working in partnership with the National Park Service (NPS).

5 The Bull Run Mountains Conservancy manages 800 acres of forest on the southern end of Bull Run Mountains. Because of the proximity to the Washington D.C. metro area, the **Bull Run Mountain Trail** is heavily used and some rehabilitation work is needed. Development pressure is threatening the area around the mountain, and more work is needed to buffer this important natural resource. Connecting the Bull Run Mountain Trail to the Potomac Heritage National Scenic Trail (PHNST) network may provide more opportunities to protect the resource and should be pursued in partnership with local, regional, state and federal agencies and organizations.

6 Development of trails at the **Laurel Valley Landfill Mountain Bike Park** in Culpeper County should be continued.

7 Local and regional agencies and organizations should work with Virginia Department of Transportation (VDOT) to designate and develop the **Culpeper Historical Horse Trail**, a loop trail connecting Brandy Station to Kelly's Ford and Stevensburg that utilizes existing roadways.

8 Local and regional agencies and organizations should develop the **Culpeper Rappahannock Bike, Pedestrian and Horse Trail**, roughly 25 miles from Mountain Run in the town of Culpeper to the Rappahannock River. Develop the segment called the

Mountain Run Trail from Davis Street at the Culpeper Train Depot to Germanna College. At Braggs Corner, the trail would connect to Stevensburg.

9 Local and regional agencies and organizations should develop a **Culpeper Community Trail** connecting the community complex to the high school and routes identified in the *Culpeper County Bike/Ped Plan* that is part of the 2005 adopted comprehensive plan.

10 Local and regional agencies and organizations should develop the **Historic Culpeper Trail**, a paved, 25-mile multi-use corridor from historic Waterloo Bridge through historic Culpeper to Cedar Mountain Battlefield.

11 **Fauquier County** should **connect all county parks** using a countywide trail system. The north, south and central sports complexes should be connected to the swimming complex in Southern Fauquier.

12 The Town of Warrenton should extend the **Warrenton Branch Greenway**, both a path and historic area that has become a focal point for downtown.

Water access and blueways

Significant public-owned lakes and reservoirs in the region include Lake Orange in Orange County and Lake Pelham and Mountain Run Lake in Culpeper County. Lake Orange is a 124-acre public fishing lake in Orange County that was impounded in 1964 and opened to fishing in 1967. The lake is located a few miles east of Orange and has a boat ramp, concession, fishing pier, parking lot, picnic facilities and shoreline access. Other fishing is available at Lake Thompson, Lake Brittle and Phelps Pond. C.M. Crockett Park in Fauquier County has a boat launch and boat rentals, along with fishing areas and a pier.

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as

restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.

- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- Regional and local agencies and organizations should continue development of a new access site near the Town of Remington on the Rappahannock River at Rappahannock Station Park. To provide other needed access points, work with private landowners to develop access sites with limited facilities for canoes and kayaks. Canoe-in camping, picnicking and shuttle services would be desired amenities during the warmer seasons.
- Regional and local agencies and organizations should provide an access site for paddlers at the confluence of the Thornton and Hazel Rivers.
- Regional and local agencies and organizations should improve access to the Rappahannock along Fauquier County's entire western boundary.

The following river segments are used by paddlers and would benefit from established access points with appropriate visitor services and interpretation:

- 13 **Rappahannock River** from the confluence with the Jordan River to Fredericksburg.
- 14 **Hazel River** from the confluence with the Hughes River to Remington.
- 15 **Rapidan River** from the Madison County - Orange County line to its confluence with the Rappahannock.
- 16 **Thornton River** from Sperryville to its confluence with the Hazel River.

Historic and landscape resources

The John Singleton Mosby Heritage Area, designated in 1995, was formed to increase awareness of the historic, cultural and natural qualities of this unique area in Northern Virginia. This area, managed by the Mosby Heritage Area Association, encompasses all, or a portion of, the counties of Loudoun, Fauquier, Prince William, Warren, Clarke and Rappahannock in Virginia, as well as a part of Jefferson County, West Virginia. This area, the first heritage area in the Commonwealth, has proven to be of significant value to the regional economy and its success should encourage the designation of similar sites throughout the region. According to data from the Virginia Main

Street Program – between July 1996 and July 2002, 12 historic rehabilitation projects were completed in this heritage area. Total valuation was \$7.2 million, and the projects generated 112 construction jobs, 102 jobs in other sectors and \$5.61 million in household earnings.

Montpelier, home to three generations of the James Madison family, is owned by the National Trust for Historic Preservation. With more than 2,700 acres of rolling pasturelands, formal gardens and The James Madison Landmark Forest, the site attracts local and regional visitors.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should partner with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- There is a critical need for county-wide surveys of the historic and architectural resources of Culpeper and Madison counties.
- There is a critical need for archaeological survey in Rappahannock County and for an assessment of the archaeological resources of the County.

17 The **Journey Through Hallowed Ground**

Partnership is a four-state, nonprofit organization dedicated to raising regional, national and international awareness of the historic, cultural and natural resources along a corridor generally following the Old Carolina Road (Routes 15 and 231) from Gettysburg, Pennsylvania, to Monticello in Charlottesville, Virginia. DCR and local governments should support designation of a nationally recognized historic corridor along this route to increase civic engagement and foster heritage tourism.

18 The Brandy Station Foundation is working to develop **Kelly's Ford Battlefield Overlook Park** following the fee simple acquisition of Kelly's Ford, an important crossing on the Rappahannock River throughout history, and particularly significant for its role in the Battle of Brandy Station. The Brandy Station Foundation plans to develop appropriate recreational use of the eight-acre property with signage, interpretive displays and walking paths in accordance with the carrying capacity of the site. More law enforcement may be needed initially to establish a zero-tolerance policy for behaviors that damage the resource.

19 The Piedmont Environmental Council and Fauquier County Parks and Recreation received Virginia Land Conservation Foundation funds in 2005 to help preserve a Civil War Battlefield as part of **Rappahannock Station Park**. This new 26-acre riverfront park will provide public access to the Rappahannock River in Fauquier County, and development should be implemented in accordance with the adopted master plan. Planned park activities include historic exploration, boating, fishing and wildlife viewing; facilities supporting these activities are needed.

20 Both **Fodderstack Road and Ben Venue Road** (Route 729) should be nominated for inclusion in a Rural Historic District.

21 The **Friends of Cedar Mountain Battlefield** are working to preserve the cropland and grazing land, wildlife habitat, stream corridor and open space where 3,000 men were injured or killed in an 1862 Civil War battle. Plans should be implemented to develop a wildlife-viewing trail on the property.

22 Historic **interpretation of the canals and locks** is needed along the Rappahannock River in Fauquier County.

23 **Scrabble School** in Rappahannock County should be renovated.

Scenic resources

The Rappahannock-Rapidan Planning District contains some of the most beautiful areas of the state. The unique scenic quality and sense of place is derived from the rolling hills, farms and forests of the Piedmont framed by the Blue Ridge Mountains. This pastoral character, graced with significant cultural and historic resources, maintains the region's economic vitality as a tourist attraction and an attractive place to live and work. These qualities have been recognized in the designation of hundreds of miles of roads as Virginia Byways. Each locality should conduct a visual-resource assessment as part of their green infrastructure inventory and mapping process to help protect these resources. Universities and other institutions could be used to supplement and support this effort.

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

24 Regional and local agencies and organizations should protect the scenic quality of **Montpelier**.

25 Regional and local agencies and organizations should protect the scenic quality of the **John Singleton Mosby Heritage Area**.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural

landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways. Regional and local recommendations include:

- The following scenic corridors are recognized in Virginia and should receive consideration by local and regional plans for viewshed management.
 - Journey Through Hallowed Ground Corridor
 - Appalachian Trail
 - Shenandoah National Park (Skyline Drive)
- Management of scenic resources is linked to the economic prosperity of the state as it relates to tourism and the overall aesthetic character of the Commonwealth for business, industry and residents. Local governments should encourage landowners, localities and planning district commissions to develop a scenic overlay zone adjacent to and within the viewshed of these corridors as part of a multi-regional viewshed planning process.
- The Skyline Drive (Shenandoah National Park) was recently designated a National Scenic Byway. The National Scenic Byway designation allows the locality to apply for funding through the National Scenic Byways Grant Program. Localities should focus on enhancing the traveling and visitor experience and managing, restoring and preserving scenic or historic roads.
- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments are potential and should be evaluated for consideration as Virginia Byways:

26 **Route 3** south from the Rapidan River to the Spotsylvania County line.

27 **Route 522** south from the Town of Culpeper to the Spotsylvania County line.

28 **Route 230** in Madison and Orange counties.

29 **Route 15** in Madison, Fauquier and Culpeper counties.

30 **Route 729** in Rappahannock County.

31 **Route 29** south of Culpeper into Madison.

32 **Route 229** from Route 211 to Route 522.

33 **Route 724** in Fauquier County.

34 **Route 702** in Fauquier County from Route 709 to Route 626.

Scenic rivers

An ever-increasing awareness of Virginia's Scenic Rivers is a direct result of concerns for water quality, bio-diversity, scenic landscapes and water quantity. River resources are a critical component for natural resource planning. In this region, there are two designated scenic river segments: the Rappahannock River from its headwaters to the bridge on Route 3, and Goose Creek from its headwaters to the Potomac River.

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments qualify for designation as Virginia Scenic Rivers:

35 The **Rapidan River** from Germanna Ford to its confluence with the Rappahannock River has been evaluated and found to qualify for scenic river status.

36 The entire **Thornton River**.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

37 **Hughes River** in Madison, Rappahannock and Culpeper counties.

38 **Hazel River** from its headwaters in Rappahannock County to its confluence with the Rappahannock River in Culpeper County.

39 **Robinson River** from its headwaters to its confluence with the Rapidan River.

40 **Rapidan River** from its headwaters to Germanna Ford.

41 **Rush River** in Rappahannock County.

42 **Jordan River** in Rappahannock County.

43 **Covington River** in Rappahannock County.

44 **Piney River** in Rappahannock County.

Watershed resources

This region is within the Chesapeake Bay Watershed with most of the area draining to the Rappahannock River. However, part of Orange and Greene counties drains to the James River, part of Orange County drains to the York River, and part of Fauquier County drains to the Potomac River. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 9

- Alliance for the Chesapeake Bay
- Friends of the Rappahannock
- Friends of the Rush River
- Hazel River Task Force
- Piedmont Environmental Council
- Rappahannock Friends and Lovers of Our Watershed (RappFLOW)
- Rappahannock County Conservation Alliance
- Rappahannock League for Environmental Protection
- The Chesapeake Bay Foundation
- Virginia Conservation Network

Watershed recommendations for this region include:

45 Local and regional agencies should continue work on the **Upper Thornton River Watershed Project** as a model for watershed protection in the region.

46 Local and regional agencies should develop a watershed management project for the **Hughes River Watershed** similar to the Upper Thornton project.

- 47** Local and regional agencies should develop a watershed management project for the **Rapidan River Wildlife Corridor** similar to the Upper Thornton project.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education.

- The Bull Run Mountain Conservancy provides educational programs on the ecological, historical and cultural features of the Bull Run Mountains. The conservancy should continue to work in partnership with local schools to provide experiential learning through field trips, internships and research opportunities for students.
- Environmental Studies at Airlie (a division of the 501(c)(3) nonprofit International Academy for Preventive Medicine, Inc.) was established in 1989 as a research, conservation and education organization. Internationally recognized research with swans and other waterfowl is conducted there. The organization also promotes wildlife conservation in the Piedmont region through model conservation and research projects at Clifton Farm. The farm's classroom facilities should continue to be used for field trips and presentations for schools and special interest groups.
- Local foresters should continue to provide education workshops for small woodlot landowners and participate in Project Learning Tree, an international environmental education curriculum.
- In Fauquier County, outdoor interpretive areas connected to a nature center for environmental education and training are available and should continue at C.M. Crockett Park, Lake Brittle Recreation Area and the Northern Sports Complex.

- 48** Expand facilities at **Lake Brittle** to increase fishing opportunities, angling education, and environmental and water-related education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy, which would allow mountain bikes to use appropriate national park trails.
- The Fredericksburg and Spotsylvania National Military Park, the second largest military park in the world, is partially located in Orange County. Of the park's currently owned 7,600 acres, there are 23 miles of trails, 1,100 acres of open fields and 6,500 acres of forest. This park should continue to provide cultural resource programs, recreational facilities and open space to the region.

- 49** Cyclists have identified the need for suitable bicycle access connecting the valley to the piedmont across the northern half of the Blue Ridge Mountains in **Shenandoah National Park**. Routes 33 and 211, which are open to traffic, are not safe for cyclists, equestrians, or horse-drawn carriages. Suitable roads include Route 670 to Fishers Gap and Skyland Road to Old Rag Road among others. Once opened to trail users, these roads would link the greater areas surrounding Luray and Warrenton-Culpeper. Federal transportation monies could be utilized to assist with carriage road maintenance if they were to accommodate non-motorized transportation.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State Parks

- 50** **Sky Meadows State Park** (1,862 acres) is located in Fauquier and Clarke counties and is situated on the eastern slope of the Blue Ridge. Rich in history, the park has rolling pastures, woodlands and scenic vistas, as well as providing a look into a bygone era. Listed on the National Register of Historic Places in May 2004, the Mount Bleak House serves as the park's visitor center. The park has a primitive hike-in campground, as well as opportunities for picnicking. Natural and historic interpretive and educational programs are also provided. There are more than 15 miles of hiking and horseback riding trails. The park also has access to the Appalachian Trail. Efforts should be made to develop creative solutions to solicit interest in operating the horse rental facilities.

Through the 2002 General Obligation Bond (GOB) funds, the park will be getting a picnic area with shelters and restroom, and an expansion of the primitive campground. Improvements and enhancements to the trail system will, in part, also be funded by bond funds.

Opportunities exist to develop trail connections to the adjacent Ovoka Farm, which is owned by the Piedmont Environmental Council. The park is also adjacent to a section of the Thompson Wildlife Management Area (WMA), which provides more opportunities to develop connecting trails. Since the Appalachian Trail crosses all three properties, options should be explored for developing additional loops — thus creating a more extensive trail system throughout this area.

Future state park sites - The need exists for additional park land and water access in this region of the state; potential acquisitions should be explored along the Rappahannock and Rapidan river corridors east of their confluence within Culpeper County.

State natural area preserves

Bull Run Mountains Natural Area Preserve is located, in part, within the Rappahannock-Rapidan Planning District in eastern Fauquier County. The Department of Conservation and Recreation has documented 248 occurrences of 117 rare species and natural communities in the Rappahannock-Rapidan Planning District. Sixteen of these species are globally rare, and four are listed as threatened or endangered. As of November 2006, there are fifty conservation sites identified within the planning district. Forty sites (80 percent) are protected to some degree through ownership and management by state, federal and non-government organizations. However, only 19 sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 9, DCR is particularly interested in:

- Strengthening protection and management of conservation sites on federal lands.
- Protecting rare natural communities such as diabase woodlands, basic oak-hickory forests and low elevation basic outcrop barrens.

State Fish and Wildlife Management Areas (WMA)

- There are a number of wildlife management areas in the region: G. Richard Thompson, Chester F. Phelps, Rapidan, and Weston. The Department of Game and Inland Fisheries (DGIF) should continue to investigate opportunities to acquire in-holdings in their wildlife management areas and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. Additional lands should be acquired to provide additional access for public hunting, fishing and wildlife viewing recreation.

51 The **Rapidan WMA** consists of 10,326 acres broken into eight separate tracts that are distributed along the east slope of the Blue Ridge Mountains in Madison and Greene counties. Four of these tracts adjoin Shenandoah National Park and share nearly 25 miles of boundary with the park. An additional 550 acres in Madison County were given to DGIF by the Wildlife Foundation of Virginia. Additional consolidation of this management area in Madison County should be pursued through land exchanges with the Shenandoah National Park and the acquisition of private in-holdings as available. While hunting, fishing and wildlife viewing are primary uses, other outdoor activities compatible with the wildlife management area include hiking, primitive camping and nature photography. Additional trails are needed to provide linkage into Shenandoah National Park.

52 Increase the range of recreational opportunities at **Chester Phelps WMA** by accommodating such activities as horseback riding and primitive canoe-in camping with improved river access.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.

- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.
- Whitney State Forest should implement the management plan that is being developed. Based on the number of existing trails, no new trails are planned. The new management plan will address issues related to a state forest in an urban setting, including increased use for conservation education and exotic species control.
- Adopt and implement the 2006 Rappahannock-Rapidan Regional Bicycle and Pedestrian Plan.
- Implement local plans for trails, greenways and bicycle/pedestrian infrastructure, including the Culpeper County Bike/Ped Plan, part of the 2005 Comprehensive Plan (Section 8A), the Fauquier County Connections Plan, the Town of Warrenton Greenway and Trails Plan included in the 2002 Comprehensive Plan, and the 1999 Town of Culpeper Bikeway Plan.
- VDOT, the Rappahannock-Rapidan Planning District Commission and the Metropolitan Planning Organization should work to improve coordination between jurisdictions in the region to assure trail connections at county boundaries. Potential opportunities are identified at Routes 29 and 211 in Culpeper, connections to Prince William County at Route 28, Route 29 (Lake Manassas/Broad Run Valley Trail) and Bull Run Mountain, Route 55 to Warren County and Quantico to Stafford County.
- VDOT should implement Context-sensitive design when planning road projects in corridors shared with equestrians.

53 VDOT should enhance and maintain signage along **U. S. Bicycle Route 1** in Fauquier County. When road improvements are made, a bike lane should be added, and facilities for bicyclists should be available along the route.

54 VDOT should consider creation of a **scenic overlook at Brightwood** in Madison County.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the VDOT to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and "active living" opportunities into all phases of transportation planning, land use planning and project design.

Other State Lands

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

55 The Locust Grove campus of **Germanna Community College** is located on Route 3 along the Rapidan River midway between Culpeper and Fredericksburg in Orange County. This wooded 100-acre property has trails, tennis courts, playing fields and picnic areas. This site is linked to other points of interest in Culpeper's bike plan and should remain a part of the region's recreational assets.

56 **The Germanna Center for Advanced Technology** is midway between Route 29 and Route 799 and

accessible from Route 3 beside the Town of Culpeper. This 34-acre site should be evaluated for potential open field space and as a location on the Culpeper Rappahannock Bike, Pedestrian and Horse Trail.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Consideration should be given to forming a regional park authority to facilitate management and the expansion of resources needed to best address the parks and natural areas along or in close proximity to the Rappahannock River. Partners could include the City of Fredericksburg and the Counties of Stafford, Spotsylvania, Culpeper, Fauquier and Rappahannock. Technical assistance for initiating a regional park authority may be requested from DCR. A source of seed funding is needed to generate interest among multi-jurisdictional partners.

57 Develop **Hoover Ridge Park** in Madison County in accordance with an adopted park master plan.

Private sector

Much of the demand for outdoor recreation is met by the private sector. Because of the abundance of water resources in the region, there are a number of water-based recreational opportunities that could be explored. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies.

The following recommendations pertain to this region:

- The private sector should evaluate fee-based hunting, fishing and boating access opportunities to meet regional demands.
- Wineries and farms could consider inclusion of recreational amenities to further enhance tourism.
- Both residential and commercial developers should consider how they could help meet the recreational needs of the area. For example, a proposed commercial development at Gyory Farm in Culpeper has a conceptual plan that includes a water park, playing fields and an equestrian center with trails.
- Bed and breakfast establishments may consider an initiative to protect scenic and agricultural land while promoting small business enterprises.
- Canoe-in campsites should be evaluated and developed to meet recreational demand for more access to the region's waterways for paddlers. These campsites are particularly needed along the Rappahannock River Trail.

58 **Thoroughfare Gap** (between Bull Run and Pond Mountains near Interstate 66) should be evaluated as a location for a hostel.



Re-enactors at Sky Meadows State Park. Photo by DCR.

Table X-9. Region 9 Rappahannock-Rapidan Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	366,533	72	fields	41	31	46
Basketball	326,825	78	goals	42	36	51
Bicycling	255,046	18	miles	NI		
Mountain	36,653	3	miles	NI		
Other	218,392	16	miles	NI		
Lake, river and bay use (combined)	485,045	9,298	water acres	508	8,790	10,688
Power boating	241,606	5,823	water acres	S		
Sailing	34,210	296	water acres	S		
Saltwater fishing	109,960	619	water acres	S		
Jet ski, personal watercraft	35,126	550	water acres	S		
Water skiing, towed on water	64,143	2,010	water acres	S		
Camping	167,689	989	sites	496	493	695
Tent camping	71,474	422	sites	116	306	392
Developed camping	96,215	567	sites	380	187	303
Fitness trail use	75,903	6	mile trails	12	-6	-5
Fields (combined)	363,326	76	fields	49	27	43
Football	206,175	43	fields	49	-6	3
Soccer	157,151	33	fields	-	33	40
Stream use (combined)	583,245	372	stream miles	365	7	83
Freshwater fishing	507,037	357	stream miles	S		
Human-powered boating	42,609	11	stream miles	S		
Rafting	6,109	1	stream miles	S		
Tubing	27,490	4	stream miles	S		
Golfing	160,053	5	courses	81	1	2
Hiking, backpacking	255,046	131	trail miles	275	-144	-118
Horseback riding	42,762	19	miles	180	-161	-158
In-line skating	35,126	2	miles	NI		
Jogging, running	2,048,002	164	mile trails	NI		
Nature study, programs	48,871	7	sites	-	7	8

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-9. Region 9 Rappahannock-Rapidan Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	169,827	441	tables	593	-152	-62
Skateboarding	59,562	18	sites	NI		
Snow skiing or snowboarding	32,072	1	ski lifts	-	1	1
Softball	241,301	43	fields	52	-9	0
Sunbathing, relaxing on beach	362,409	26	beach acres	1	25	30
Swimming	1,527,220	106		NI		
Outdoor Area	821,644	84	beach acres	1	83	100
Outdoor pools	455,112	19	pools	19	0	4
Indoor pools	250,464	3	pools	-	3	3
Tennis	96,062	60	courts	58	2	14
Used a playground	386,692	55	sites	42	13	24
Visiting gardens	75,597	8	sites	NI		
Visiting historic sites	237,788	20	sites	NI		
Visiting natural areas	270,623	46	sites	NI		
Volleyball	16,952	5	courts	12	-7	-6
Hunting	350,650	57,503	acres	19,902	37,601	49,340
Drive for pleasure	933,131	NA	NA	NI		
Driving motorcycle off road	58,034	27	miles	-	27	32
Driving 4-wheel-drive off road	84,303	NA	NA	NS		
Walking for pleasure	4,864,196	NA	NA	NI		
Bird watching	38,486	NA	NA	NI		
Other	6,720	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

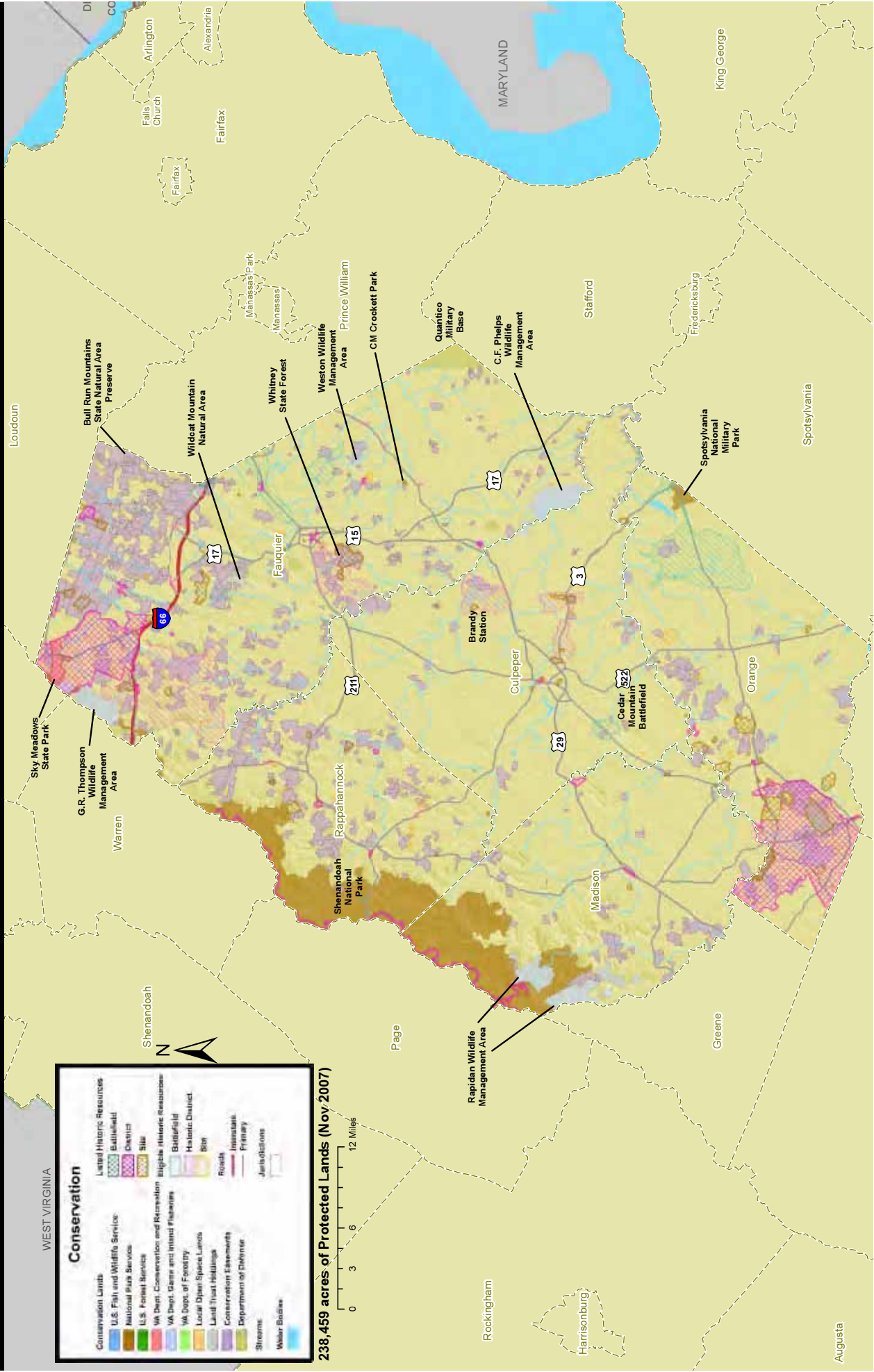
S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-18. Region 9 (Rappahannock-Rapian Regional Commission) Conservation Lands



Map X-19. Region 9 (Rappahannock-Rapidan Regional Commission) Outdoor Recreation

This map illustrates the outdoor recreation resources within Region 9, which encompasses the Rappahannock River and its tributaries. The map includes a legend, a scale bar (0 to 12 miles), and a north arrow.

Legend:

- Highways and Byways:**
 - National Scenic Parkway
 - Scenic Byway
 - Proposed Scenic Byway
- Scenic Rivers:**
 - Scenic River
 - Qualified River
- Trails:**
 - Existing / Under Development
 - Proposed
- Landmarks:**
 - Beaches
 - Public Fishing Lakes
 - Jurisdictions
 - Streams
 - Water Bodies
- Conservation Lands:**
 - Conservation Lands
- Recreation Features:**
 - Boat Access
 - Beaches
 - Public Fishing Lakes
 - Jurisdictions
 - Streams
 - Water Bodies

The map shows the Rappahannock River flowing through the region, with major tributaries including the Skyline Drive, Sky Meadows State Park, and various trails and parks. The map is bordered by Loudoun, Fairfax, Manassas, Prince William, Stafford, Fredericksburg, King George, Spotsylvania, Orange, Lake Orange, Greene, Rockingham, Harrisonburg, and Augusta.

Introduction

The Thomas Jefferson Planning District is comprised of Albemarle, Fluvanna, Greene, Louisa and Nelson counties and the City of Charlottesville. The region's western edge is in the mountainous Blue Ridge physiographic province. The majority of the region is in the Piedmont physiographic province's rolling landscape.

Varied terrain, habitats and vegetation types characterize this region. Most of the region is rural except in the vicinity of Charlottesville, along Interstate 64 and in the Route 29 corridor north of Charlottesville. The presence of Lake Anna has been a catalyst for the development of a large retirement community. Adding to the scenic beauty of the area are viewsheds of mountainsides, ridges and pastoral valleys.

The region abounds with scenic, natural, open space and historic resources — a legacy that Virginians have worked together to protect. More than 73,003 acres in the region are under open space easements held primarily by the Virginia Outdoors Foundation. A number of rivers add to the scenic and environmental qualities of the area. Segments of the Rockfish, Rivanna and Moormans rivers have been designated as Virginia Scenic Rivers. The Rivanna River, designated in 2000 as an official project of the Save America's Treasures campaign by the National Trust of Historic Preservation, has been the focus of increased attention due to concern over the future of its capacity to supply water to the region. Other important rivers in the area include the James, Tye, Mechums, North Anna, South Anna, Hardware and Piney. There is a need for greater public access to the rivers.

The region continues to experience rapid growth, due in part to expanding development pressure from the urban crescent and shifting work habits that allow for increased telecommuting. Fluvanna County is ranked one of the 100 fastest growing counties in the United States. In 2000, the region had a population of 199,648. By 2005, the population had grown to 215,800, which is an increase of 8.1 percent. All the localities in the region experienced growth in that five-year period. Future growth is anticipated to be rapid, with the population in the region projected to increase 21.3 percent from its population level of 199,648 in 2000 to 253,800 in 2020.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 10 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

In public meetings conducted in November 2005, connectivity for alternative transportation emerged as the major issue in Region 10. More bike paths (on and off-road), rail-trail projects, equestrian trails, mountain bike trails and managed trails for off-highway vehicles are needed. Local parks should be connected to trunkline trail systems to enable citizens to walk or bicycle to points of interest. Trails on existing federal lands should be improved and extended to connect to communities.

Citizens expressed a desire for a dedicated funding source for land conservation. Initiatives are needed to increase the tree canopy in urban areas and to preserve large blocks of native forests in rural areas. More public lands, state parks and natural areas are needed to both conserve large tracts of land and meet future outdoor recreation demand. Regional outdoor recreation needs are found in Table X-10.

A 2005 *Community Attitude and Interest Survey* conducted by the City of Charlottesville found that citizens wanted walking and biking trails (70 percent), large community parks (61 percent), picnic shelters and picnic areas (61 percent), small neighborhood parks (60 percent), nature trails and nature centers (59 percent), and natural areas and wildlife habitats (57 percent). Walking and biking trails had the highest percentage of respondents select it as one of the four most important facilities. This option also had the highest percentage of respondents select it as their first choice for the most important facility.

All localities in Region 10 are served by a parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Charlottesville, \$183.15; Albemarle, \$21.94; Fluvanna, \$21.35; Greene, \$6.40; Louisa, \$29.80; and Nelson \$11.69. This compares to a statewide average per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 per capita from cities in Virginia.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map X-20.

Land Trusts and Conservation Programs Operating in Region 10

- APVA Preservation Virginia
- Appalachian Trail Conservancy
- Blue Ridge Foothills Conservancy
- Central Virginia Land Conservancy
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Department of Historic Resources
- Friends of the Rappahannock
- Historic Green Springs
- James River Association
- National Park Trust
- Piedmont Environmental Council
- Rivanna Conservation Society
- Scenic Virginia
- The Conservation Fund
- The 500-Year Forest Foundation
- The Nature Conservancy
- Trevilian Station Battlefield Foundation
- Trust for Public Land
- Valley Conservation Council
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Localities that lie within the viewshed of the Blue Ridge Parkway, Skyline Drive, the Appalachian Trail (AT) and selected areas of Route 29 should work to protect the scenic views and adjacent lands. The National Park Service (NPS) has viewshed manage-

ment and landscape design guidelines for viewshed protection.

- Development should be discouraged on mountaintops to protect significant scenic views.
- Large undeveloped tracts of natural lands should be protected to retain the biological diversity and character of the region.
- The watershed of the Southwest Mountains in Albemarle County should be protected.
- Large farms adjacent to the Rapidan River in Greene County should be protected.
- Water quality and adjacent riparian lands in the James River corridor, the Rockfish River Valley, the South Fork of the Rivanna River and the main stem of the Rivanna River should be protected.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- The Thomas Jefferson Planning District Commission should continue to develop partnerships to work on a green infrastructure plan.
- Albemarle County should take a leadership role for the region by developing a biodiversity action plan and subsequent implementation measures that provide means for sustaining the landscape and ecological integrity required for important ecological services and healthy populations of native plants and animals. This action was recommended in the 2004 Albemarle County Biodiversity Workgroup.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are

site specific to the regional map at the end of this section (see Map 21).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Local and regional agencies should evaluate the transportation network to see what paved and unpaved roadways are currently used as trails and protect these trail corridors in their land use and transportation plans.

Statewide Trunkline Trails

1 The **James River Heritage Trail** is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail parallels the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia.

- The Albemarle County Greenway Plan includes a trail along the James River from Nelson County to Fluvanna County. This trail will also serve to connect Scottsville to Totter Park as well as provide bicycle access to Hatton's Ferry crossing.

2 The **Appalachian Trail** is an existing National Scenic Trail. Because of this special designation, localities that host the Appalachian Trail should be cognizant of protecting viewsheds from existing overlooks and other scenic values of the corridor. The National Park Service and the Appalachian Trail Conservancy are working to turn the trail into a "mega-transect," an outdoor lab where scientists will gather data on human impacts to the trail.

Other Trails

3 A **Rivanna River Greenway** system through Fluvanna and Albemarle counties should be developed to connect the Town of Columbia to the City of Charlottesville. Trail rehabilitation is needed to address problems related to stream crossings, private land issues and erosion control. Permanent protection of the trail should be pursued through land acquisition or easements.

4 The **Three-Notched Trail** should be developed to connect the City of Charlottesville to Mechums River. This trail could be extended west to the Blue Ridge Parkway and east to Richmond along Route 250 to follow part of the route of an old Indian trail.

5 Development of the **Virginia Blue Ridge Railway Trail**, a joint effort between Nelson and Amherst counties, should be continued.

6 Development of the **Rockfish Valley Loop** Trail in Nelson County should be continued. Trailheads should be improved with toilets, kiosks, signage and interpretive markers.

7 The five-mile **Fluvanna Heritage Trail** at Pleasant Grove is operated by the Fluvanna Heritage Trail Foundation. The foundation is also developing an equestrian trail and is working to acquire an abandoned CSX railroad right-of-way for conversion to trail use. The foundation is also working in collaboration with the historical society to renovate and provide additional trail connections from Palmyra Mills and Lock to Village Park. Future development should provide river access for recreation and education, recreational interpretive pathways, alternative modes of transportation to link the Palmyra area and Pleasant Grove, and development of universally accessible outdoor experiences (ADA) for all users.

8 The **Saunders-Monticello Trail**, which winds its way along Route 53 for two miles to the entrance of Monticello, receives nearly 85,000 visitors each year. Efforts should continue to extend this popular Virginia Birding and Wildlife Trail.

9 Potential development of a trunkline **trail along the Route 29 corridor** should be studied.

10 The **Blue Ridge Tunnel** should be developed as a trail connection to the west, which may tie in to a network of other proposed trails throughout the Shenandoah Valley.

11 The **Predgy Creek** property, a 571-acre tract located in Albemarle, Orange and Greene counties, should be developed for hiking, running, mountain biking and equestrian trail use.

12 The trail network at the 600-acre **Patricia Ann Byrom Forest Preserve Park** should be enhanced.

13 **Ash-Lawn Highland and Monticello** should be connected by a carriage or hiking trail.

14 Captain Jack Jouett, Jr., made a historic 40-mile ride by horseback overnight on June 3-4, 1776, from the town of Louisa to Monticello on what was probably an old Indian trail. **Jack Jouett's historic ride**, more dangerous and difficult than that of Paul Revere, saved Governor Thomas Jefferson and members of

the Virginia Legislature from the approaching British army. The anniversary of this ride could be celebrated as part of National Trails Day held in early June. A brochure, map and road signs of the trail would facilitate year-round use.

Water Access

Blueways and water access are critical in a water rich state such as Virginia. Public beaches in Region 10 are available at Chris Greene Lake, Walnut Creek and Mint Springs Valley Park in Albemarle County and along Lake Anna in Louisa County. Significant publicly owned lakes and reservoirs in the region include Lake Anna and Northeast Creek Reservoir in Louisa County, and Beaver Creek, Ragged Mountain, Rivanna, Sugar Hollow and Totter Creek Reservoirs in Albemarle County. Public fishing is available at Lake Albemarle, Lake Nelson and Fluvanna Ruritan Lake.

A discussion of water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- In 2005, the Louisa County Board of Supervisors adopted a shoreline management ordinance to address water quality, public safety and quality of life issues and to encourage development of non-structural stabilization techniques. Similar ordinances should be considered by localities throughout the region.

15 Service facilities for the public should be developed along the **South Fork of the Rockfish River**. The Rockfish Valley Loop Trail provides public access at Reid's Creek for water viewing. Parking is available at both Spruce Creek Park and Rockfish River trailhead.

16 The Rivanna Conservation Society's **Rivanna River Water Trail**, a designated Chesapeake Bay Gateway, should be extended from Darden Towe Park up the North and South Forks of the Rivanna River. The Fluvanna County Historical Society and the Virginia Canals and Navigations Society are attempting to have all the locks on the Rivanna Canal added to the Virginia Landmarks Register and the National Register of Historic Places. The existing water trail map and guide marks a water trail from Darden Towe Park to Columbia.

17 The feasibility of providing picnicking and primitive and canoe-in camping within the **James River Wildlife Management Area**, as well as on other large tracts of land located along major rivers in the region, should be investigated to improve access to the existing Middle James River Trail. Where appropriate, portages should be created around dams and other river obstacles.

18 A launch site at the **Dickerson Road Bridge as it crosses the North Fork of the Rivanna River** should be considered.

19 A launch site below the **South Fork Reservoir dam where Route 29 crosses the South Fork of the Rivanna River** should be considered. Albemarle County's greenways and blueways system includes two launch sites along the Rivanna River (Darden Towe, Milton) and planning should continue for additional sites. Albemarle County also maintains two launch sites along the James River at Warren and Howardsville.

20 **Boat, canoe and inner tube access to the Rivanna River** at either Pen or Riverview Parks within the City of Charlottesville should be considered.

21 Additional boating access points on the **Rivanna River at Carysbrook** near the Route 15 bridge in Fluvanna County should be provided.

22 Additional boating access points on the **Rivanna River at Pleasant Grove** in Fluvanna County should be provided.

23 Additional boating access points on the **Rivanna River around Columbia** near the Route 6 bridge in Fluvanna County should be provided.

24 Additional boating access points on the **Hardware River near the Route 637 bridge** in Fluvanna County should be provided.

25 Additional boating access points on the **Hardware River off Route 611** in the Hardware Wildlife Management Area should be provided.

26 Seasonal visitor services along the **Mechums and the Moormans rivers**, which are currently used by paddlers during high-water flows, should be provided.

Historic and landscape resources

The Thomas Jefferson Region is a major tourist destination for visitors from throughout the country because of the region's many natural and historic resources. All the localities in this region have resources on the National Register of Historic Places, including a number of historic districts that date back to the first settlement in the area.

Every year, nearly 500,000 visitors are drawn to Monticello, a World Heritage Site owned and operated by the Thomas Jefferson Foundation. The foundation has endeavored to preserve not only the house, but also the thousands of acres of scenic lands that surround the plantation — the 40-mile viewshed that defines the setting. To expand the protection of Jefferson's home and environs, the foundation has taken a leading role in protecting the cultural landscape along the Journey Through Hallowed Ground (see recommendation number 27 below). The preservation methods employed by the foundation are models for the protection of scenic, historic and cultural resources across the state (see Chapter III. Land Conservation).

Monticello is part of the proposed 87,000-acre Southern Albemarle Rural Historic District. This district will connect to the Madison-Barbour and Southwest Mountains rural historic districts to create a 143,000-acre area of important historic and scenic resources.

Located in the Southern Albemarle Historic District and participating in the Journey Through Hallowed Ground program, Ash-Lawn Highland, the hilltop home of President James Monroe and his wife Elizabeth, provides views of Carter Mountain and Monticello. Owned by Monroe's alma mater, the College of William and Mary, the estate preserves over 500 acres of rolling foothills and mountain slopes. Ash Lawn Highland receives visitors year round for tours, educational programs and music events.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and

Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should partner with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

27 The **Journey Through Hallowed Ground Partnership** is a four-state, nonprofit organization dedicated to raising regional, national and international awareness of the historic, cultural and natural resources along a corridor generally following the Old Carolina Road (Routes 15 and 231) from Gettysburg, Pennsylvania, to Monticello in Virginia. DCR and local governments should support designation of a nationally recognized historic corridor along this route to increase civic engagement and foster heritage tourism.

28 The **Holland-Page House**, owned by the Historical Society in Fluvanna County, is being developed as a museum of rural life from 1865-1900. Plans for a nature trail from the log cabin to Long Island Creek should be implemented and evaluated for linkage to the Rivanna River Trail.

29 The Trevilian Station Battlefield Foundation is dedicated to the preservation of the **Battlefield of Trevilian Station**. This Civil War battle raged for two days on 7,000 acres approximately six miles west of Louisa. Efforts should continue to protect battlefield land, preserve artifacts and educate the public.

30 In 1988, the General Assembly officially designated the **James River Batteau Festival Trail** from Lynchburg to the City of Richmond. Localities along the route should support conservation and rehabilitation of remaining navigational structures from the days of the batteau.

31 The Nelson County Historical Society is working with the county to develop **Oakland**, the Nelson County Museum of History.

32 The Fluvanna County Historical Society plans to develop **Palmyra Mill Park** and link it to other points of interest along the Fluvanna Heritage Trail.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Efforts to protect the natural and scenic resources of Skyline Drive, Blue Ridge Parkway, Appalachian Trail (AT), the Journey Through Hallowed Ground corridor, Crozet Tunnel and sections of Route 29 should be continued. Federal and state agencies should coordinate with localities to help protect these resources.
- A natural buffer should be created between the AT and adjacent development. Many privately owned ridge tops adjacent to Shenandoah National Park are prime targets for development, which could have

major impacts on the scenic quality of the park and the Central Virginia region.

33 High priorities have been set by the Appalachian Trail Conservancy (ATC) to protect and conserve the **Humpback Rocks** area in Nelson County.

34 **Hightop Mountain** in Greene County is a high priority for protection by the ATC.

35 The scenic quality of **Monticello** should be protected.

36 The scenic quality of **Ash Lawn-Highland** should be protected.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- The following scenic corridors are recognized in Virginia and should receive consideration by local and regional plans for viewshed management.
 - Journey Through Hallowed Ground Corridor
 - Appalachian National Scenic Trail
 - Shenandoah National Park (Skyline Drive)

Management of scenic resources is linked to the economic prosperity of the state as it relates to tourism and the overall aesthetic character of the Commonwealth for business, industry and residents. Local governments should encourage landowners,

localities and planning district commissions to develop a scenic overlay zone adjacent to and within the viewshed of these corridors as part of a multi-regional viewshed planning process.

- The Skyline Drive (Shenandoah National Park) was recently designated a National Scenic Byway. The National Scenic Byway designation allows the locality to apply for funding through the National Scenic Byways Grant Program. Localities should focus on enhancing the traveling and visitor experience and managing, restoring and preserving scenic or historic roads.
- Communities along the national byways should consider strengthening local comprehensive plans and creating special zoning regulations to protect the unique scenic and economic benefits associated with the scenic values of the Skyline Drive and the Blue Ridge Parkway and their viewsheds.

The following road segments are potential and should be evaluated for consideration as Virginia Byways:

- 37** **Route 29** in Nelson and Albemarle counties.
- 38** **Route 53** in Albemarle and Fluvanna counties.
- 39** **Route 692** in Albemarle County.
- 40** **Route 230** in Greene County.
- 41** The designation of a **James River Byway** consisting of roads in Fluvanna, Albemarle and Nelson counties that closely parallel the James River Batteau Festival trail should be considered. The corridor would include **Route 626**.
- 42** **Route 810** from Standardsville in Greene County to Crozet in Albemarle County.

Scenic rivers

In this region there are currently three designated scenic river segments: Moormans River (Charlottesville Reservoir to confluence with the Mechums River), Rivanna River (Woolen Mills to confluence with the James River), and Rockfish River (Route 693 at Schuyler to confluence with James River). For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers.

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments qualify for designation as Virginia Scenic Rivers:

- 43** The **James River** from Wingina to Maidens has been evaluated and was found to be worthy of designation.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- 44** **Rapidan River headwaters** in Greene County.
- 45** **Mechums River** for its entire length.
- 46** The **South Anna River** from Lake Gordonsville to Route 673.
- 47** The **North Anna** from Lake Anna to Route 738.
- 48** The **James River** from Bent Creek to Wingina.
- 49** The **South River** in Greene County.
- 50** The **Hardware River** in Fluvanna County.
- 51** The **South Fork of the Rockfish River** from its headwaters within Wintergreen Resort to its confluence with the north fork along Route 6.
- 52** The **Conway (Middle) River** between Greene and Madison counties.
- 53** The **Tye River** in Nelson County.
- 54** **Upper Rockfish River** from the headwaters to Route 693.
- 55** North Fork of the **Rivanna River** from the headwaters to its confluence with the south fork, South Fork of the Rivanna River from South Fork Reservoir Dam to its confluence with the main stem, and the Rivanna River from the South Fork confluence to Woolen Mills Dam.

Watershed resources

This region is within the Chesapeake Bay Watershed. Much of the area drains to the James River, although most of Louisa County drains to the York River. Small parts of the northeast section of Albemarle County drain to both the York and the Rappahannock. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

In June of 1991, Albemarle County became the first non-Tidewater locality in Virginia to voluntarily adopt a local Chesapeake Bay protection ordinance that requires buffers and limits activities along waterways. The county relies on reservoirs for a significant portion of its water supply and places a priority on maintaining the quality of this water supply. As such, for lands that drain to a public water supply reservoir, 100-foot buffers are required on both sides of all streams, regardless of whether they are intermittent or perennial. On lands immediately adjacent to a water supply reservoir, the buffer must extend 200 feet from the 100-year floodplain of the reservoir. In the remainder of the county, 100-foot buffers are required on both sides of perennial streams. The 100-year floodplain also factors into the required width of the buffer in most areas of the county.

Watershed groups in Region 10

- James River Association
- Middle James Roundtable
- Piedmont Environmental Council
- Rivanna Conservation Society
- Lake Anna Advisory Committee
- Lake Anna Civic Association
- Friends of Lake Anna State Park
- Virginia Conservation Network
- Alliance for the Chesapeake Bay
- The Chesapeake Bay Foundation

Watershed recommendations for this region include

- The Thomas Jefferson Soil and Water Conservation District should continue its active easement program that protects small and large properties on which there are significant water resource areas—streams, springs, wetlands, ground water recharge areas and steep slopes.
- The Greene County Stream Alert should continue conducting macroinvertebrate stream monitoring on the Rivanna River and reporting the data to StreamWatch.
- StreamWatch, a community-based stream-monitoring program, should continue to provide high-quality data and information about stream conditions throughout the Rivanna watershed. The pursuit of this objective entails three program components: field investigations, data consolidation, and information distribution.
- The Nature Conservancy's Piedmont Program should continue to work with a variety of partners to protect the forests, rivers and streams, wetlands, and

unique habitats of the Piedmont. Land acquisition, community and science-based conservation, land management, conservation easements, education and outreach, and policy oversight have been used to protect more than 6,000 acres in the Piedmont.

- Virginia's General Assembly passed legislation in early 2004 to establish the Rivanna River Basin Commission. The commission should continue to assist localities in making decisions that are both well informed and consistent with a unified plan to preserve the river's health. The localities of Albemarle, Fluvanna, Greene and Charlottesville all voted to join the Rivanna River Basin Commission in 2006, with meetings beginning in 2007.
- The Thomas Jefferson Planning District Commission was awarded a contract to begin studies for the Total Maximum Daily Load (TMDL) for the north fork and main stem of the Hardware River, and for the Rivanna River and several of its tributaries. The study should determine sources of pollution and how much contribution from each source would need to be reduced in order for the waterway to meet healthy water quality standards.
- Local and regional agencies and organizations should create a goal-based watershed initiative to develop a comprehensive watershed framework for addressing the needs outlined in the 2002 Rivanna Watershed Needs Assessment.
- The recommendations from the 1998 Rivanna River Basin Project: State of the Basin report by the Rivanna River Basin Roundtable should continue to be implemented.
- Albemarle County should continue to move forward with green infrastructure planning and riparian buffer acquisition as part of the greenway plan implementation.

56 **Swift Run** in Greene County, which hosts the endangered James Spiny Mussel, should be protected.

57 **Moore's Creek** should be brought into compliance with water quality standards as outlined in the *2005 Moore's Creek Fecal Coliform TMDL Implementation Plan*.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- The Ivy Creek Foundation is a nonprofit organization in Charlottesville whose mission is to preserve and manage the Ivy Creek and Ragged Mountain Natural Areas for education and appreciation. The Ivy Creek Foundation Education Building is a green building. The facility, which seats 65 people, is available without charge to community organizations for environmental meetings and workshops. The education building should remain a venue for outdoor environmental education.
 - The Culpeper Soil and Water Conservation District should continue to provide field trips based on the curriculum *Blueprint for Regional Soil and Water Conservation* in order to teach middle school students about the relationship between land use and water quality.
 - The Albemarle County Natural Heritage Committee should continue to build partnerships with organizations that currently offer outdoor educational opportunities to raise awareness about biodiversity.
 - The Rivanna Conservation Society should continue to offer the 100-acre Scheier Natural Area, with its eight ponds and more than three miles of beautiful trails, for hiking, the enjoyment of nature and environmental education.
 - The Rivanna Chapter of the Virginia Master Naturalists Program should continue to train volunteers to offer nature-based outdoor education experiences.
 - In the summer of 2006, Charlottesville became a Sierra Club Cool City along with 240 other cities that have agreed to follow the Kyoto Protocol International Global Warming Treaty and strive to reduce carbon dioxide (CO₂) pollution to 7.0 percent below 1990 levels by 2012. As a part of this initiative, the city should create open spaces, plant trees and expand efforts to educate citizens about conservation and alternative energy sources.
 - The Wintergreen Resort Outdoor Wilderness Leadership School should continue to offer nationally certified training to develop leadership in the outdoor education industry.
 - Camp Friendship in Fluvanna County should continue to provide outdoor educational experiences as a private residential camp. Partnerships with local schools and organizations should be explored.
 - Local and regional agencies and organizations should develop an ecotourism map highlighting the scenic, historic and recreational amenities of the region.
- 58 The **Rockfish Valley Farm** should continue to be developed for environmental education and agri-tourism. Plans include an outdoor laboratory classroom, a geology trail, interpretation of VDOT's stream restoration, horticultural demonstration and visitor services.
 - 59 Continue development of an outdoor amphitheater and programs at **Pleasant Grove** site. The Manor House should be renovated for use as office space, gatherings and as a visitor center. Develop outdoor recreation and primitive camping on site.
 - 60 The City of Charlottesville and stakeholders should develop an **environmental education center**.
 - 61 The proposed **Lewis and Clark Exploratory Center** at Darden Towe Park in Charlottesville should provide outdoor educational experiences that focus on the expedition's legacy in Virginia and tell fundamental cultural and natural stories.
 - 62 Opportunities for outdoor environmental education at **Camp Albemarle**, a 4-H facility located on the Moorman's River, should be enhanced.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy, which would allow mountain bikes to use appropriate national park trails.
- An effort should be made to reduce air pollution that comprises viewsheds from Shenandoah National Park. Changing land use adjacent to the park should be evaluated for its potential impacts. Local governments need to support efforts to encourage adjacent landowners, localities, and planning district commissions to develop a scenic overlay zone adjacent to and within the viewshed of the Shenandoah National Park as part of a multi-regional park viewshed planning process.
- Increased emergency vehicle access to Shenandoah National Park should be established.

63 There is a need to **develop a Blue Ridge Visitor Information Center** and Services Center in the vicinity of I-64 near the intersection with Skyline Drive and the Blue Ridge Parkway. Shenandoah National Park received more than 1.3 million visitors in 1999 and the Blue Ridge Parkway in Virginia receives an estimated 10 million visitors annually. A partnership among the National Park Service, the U.S. Forest Service, the state of Virginia and surrounding localities could be created to plan, build and operate a complex near Rockfish Gap or Afton Mountain that would complement the visitor centers envisioned in the Shenandoah Battlefield National Historic District.

64 A trail has been proposed by local jurisdictions along the **existing fire road between Jarman's Gap and Sugar Hollow**. This trail could help meet expanding demand from recreational users in Western Albemarle.

65 Cyclists have identified the need for suitable **bicycle access across the northern half of the Blue Ridge** connecting the valley to the piedmont. Route 33 and 211 are not safe for cyclists. Suitable carriage roads would include Brown's Gap, one of the oldest turnpikes across the region. This would link the greater areas around Harrisonburg and Charlottesville together. Federal transportation monies could be utilized to assist with carriage road maintenance if they were to accommodate non-motorized transportation.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

- There is no state park in Region 10. The recreational need exists for a state park to be located in the vicinity of Charlottesville. Potential sites should be considered along the Mechums, Rivanna or Tye Rivers.

State natural area preserves

Naked Mountain, in Nelson County, is the only state natural area preserve located within the Thomas Jefferson Planning District. As of November 2006, DCR has documented 122 occurrences of 64 rare species and natural communities in Region 10.

Sixteen species are globally rare and four are federally threatened or endangered. Forty-six conservation

sites have been identified in the district, of which 33 (72 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only nine sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 10, DCR is particularly interested in protecting:

- Large blocks of native forests.
- High quality stream corridors.
- Rare wetland and rock outcrop communities.

State Fish and Wildlife Management Areas (WMA)

The Rapidan, James River, and Hardware River wildlife management areas are located in this region. The Department of Game and Inland Fisheries (DGIF) should continue to investigate opportunities to acquire in-holdings in their wildlife management areas and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and wildlife viewing recreation.

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

66 The Hardware and James River wildlife management areas should be evaluated for their potential to become segments of the **James River Heritage Trail**.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.

- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

67 DOF should expand demonstration and research opportunities, as well as facilities for hiking and outdoor study, at **Lesesne State Forest**. An updated management plan is being prepared. The emphasis on the forest will continue to be research on restoration of the American Chestnut.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating

the recommendations of local public health agencies and "active living" opportunities into all phases of transportation planning, land use planning and project design.

- Stakeholders should implement the Jefferson Area Bicycle, Pedestrian and Greenways Plan adopted by the Metropolitan Planning Organization and the Planning District Commission in 2004.
- Stakeholders should implement bicycle, pedestrian and greenways items in local plans, e.g., the 2002 Nelson County Comprehensive Plan, the 2003 Bicycle and Pedestrian Facilities Master Plan for the City of Charlottesville, the Scottsville Bicycle and Pedestrian Integrated Plan, the 1999 Albemarle County Comprehensive Plan and recommendations from Albemarle County's Places29 Master Plan.
- Stakeholders should support the Alliance for Community Choice in Transportation and their efforts to increase pedestrian and bicycle commuting in the greater Charlottesville area.

68 U. S. Bicycle Route 76 (the Trans-America Bicycle Trail) should be enhanced and signage maintained. When road improvements are made, a bike lane should be added, and facilities for bicyclists should be available along the route.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- The University of Virginia is working on a strategy for sustainability in an effort to demonstrate national leadership in how an institution with an operating budget of \$1.88 billion can invest in the future of the planet. As part of the overall strategy, a grounds plan will optimize options for multi-modal traffic on campus and allow for higher density developed areas and conservation zones. The university plan should serve as a model to other institutions.

69 The **Birdwood** property in Albemarle County, a 148-acre tract of land owned by the University of Virginia, should be evaluated to determine open space and outdoor recreation potential.

- 70 Undeveloped portions of the **Piedmont Community College** campus in Albemarle County should be evaluated to determine recreational and open space potential.
- 71 Undeveloped portions of the **Blue Ridge Hospital** property in Albemarle County should be evaluated to determine recreational and open space potential.
- 72 The **Milton Airport property** is surplus state property maintained for the University of Virginia's storage needs. It is located in eastern Albemarle County on the Rivanna River. The relatively flat, 172-acre property has tremendous potential to serve as a riverside park and help meet demand for open field space. A cooperative venture between the university, the city and county should be developed to meet the region's recreational needs. This effort would complement the county's greenway and blueway planning efforts near the site.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- DeFosse Winery should continue to partner with Nelson County Parks and Recreation to provide five miles of hiking and mountain biking trails that are also available for All Terrain Vehicle (ATV) use during special events.

- Walnut Creek Park is a popular park that features a disc golf course and more than 15 miles of mountain bike trail. More development of park facilities for non-traditional recreational activities are needed in the region to encourage younger generations to participate in outdoor recreation.

Ragged Mountain Natural Area is a beautiful 980-acre forest of mature oak, hickory, poplar, pine and maple trees with two lakes and more than four miles of shoreline. It is owned by the City of Charlottesville and Albemarle County and managed by the Ivy Creek Foundation. It has seven miles of trail, which are a part of the Virginia Birding and Wildlife Trail.

- 73 Development at Fluvanna County's publicly owned, 960-acre **Pleasant Grove** site includes an accessible trailhead, access road, ballfields, playground, dog park, restrooms, decorative gardens, Heritage Trailhead Museum, an outdoor classroom and connecting trails. The county should evaluate renovation of the historic home and potential future uses.
- 74 The City of Charlottesville and stakeholders should evaluate options for a **pedestrian bridge or ferry across the Rivanna River** to link Darden Towe Park to Pin Park.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of private sector role, see Chapter IX-E: Resource Agencies. The following recommendation pertains to this region:

- 75 A **hostel convenient to the I-64 and I-81 corridors**, the Skyline Drive, the Appalachian Trail and Shenandoah National Park should be considered.

Table X-10. Region 10 (Thomas Jefferson Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	503,287	99	fields	64	35	56
Basketball	448,764	106	goals	104	2	25
Bicycling	350,204	25	miles	NI		
Mountain	50,329	4	miles	NI		
Other	299,875	21	miles	NI		
Lake, river and bay use (combined)	666,017	12,767	water acres	14,617	-1,850	835
Power boating	331,750	7,996	water acres	S		
Sailing	46,973	407	water acres	S		
Saltwater fishing	150,986	849	water acres	S		
Jet ski, personal watercraft	48,232	756	water acres	S		
Water skiing, towed on water	88,075	2,760	water acres	S		
Camping	230,254	1,358	sites	1,531	-173	112
Tent camping	98,141	579	sites	471	108	229
Developed camping	132,113	779	sites	1,060	-281	-117
Fitness trail use	104,222	8	mile trails	18	-10	-8
Fields (combined)	498,883	105	fields	84	21	43
Football	283,099	60	fields	84	-24	-12
Soccer	215,784	45	fields	-	45	55
Stream use (combined)	800,856	511	stream miles	272	239	346
Freshwater fishing	696,214	490	stream miles	S		
Human-powered boating	58,507	15	stream miles	S		
Rafting	8,388	1	stream miles	S		
Tubing	37,747	5	stream miles	S		
Golfing	219,769	7	courses	217	-5	-3
Hiking, backpacking	350,204	180	trail miles	190	-10	27
Horseback riding	58,717	25	miles	43	-18	-12
In-line skating	48,232	3	miles	NI		
Jogging, running	2,812,117	225	mile trails	NI		
Nature study, programs	67,105	10	sites	3	7	9

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-10. Region 10 (Thomas Jefferson Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	233,190	605	tables	633	-28	100
Skateboarding	81,784	25	sites	NI		
Snow skiing or snowboarding	44,038	1	ski lifts	8	-7	-7
Softball	331,331	59	fields	51	8	20
Sunbathing, relaxing on beach	497,625	36	beach acres	9	27	34
Swimming	2,097,030	146		NI		
Outdoor area	1,128,202	116	beach acres	9	107	131
Outdoor pools	624,915	26	pools	44	-18	-12
Indoor pools	343,913	4	pools	6	-2	-1
Tennis	131,903	82	courts	170	-88	-70
Used a playground	530,968	76	sites	113	-37	-22
Visiting gardens	103,803	11	sites	NI		
Visiting historic sites	326,508	28	sites	NI		
Visiting natural areas	371,594	63	sites	NI		
Volleyball	23,277	7	courts	4	3	4
Hunting	481,478	78,957	acres	34,984	43,973	60,577
Drive for pleasure	1,281,285	NA	NA	NI		
Driving motorcycle off road	79,687	36	miles	-	36	44
Driving 4-wheel-drive off road	115,756	NA	NA	NS		
Walking for pleasure	6,679,041	NA	NA	NI		
Bird watching	52,845	NA	NA	NI		
Other	9,227	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

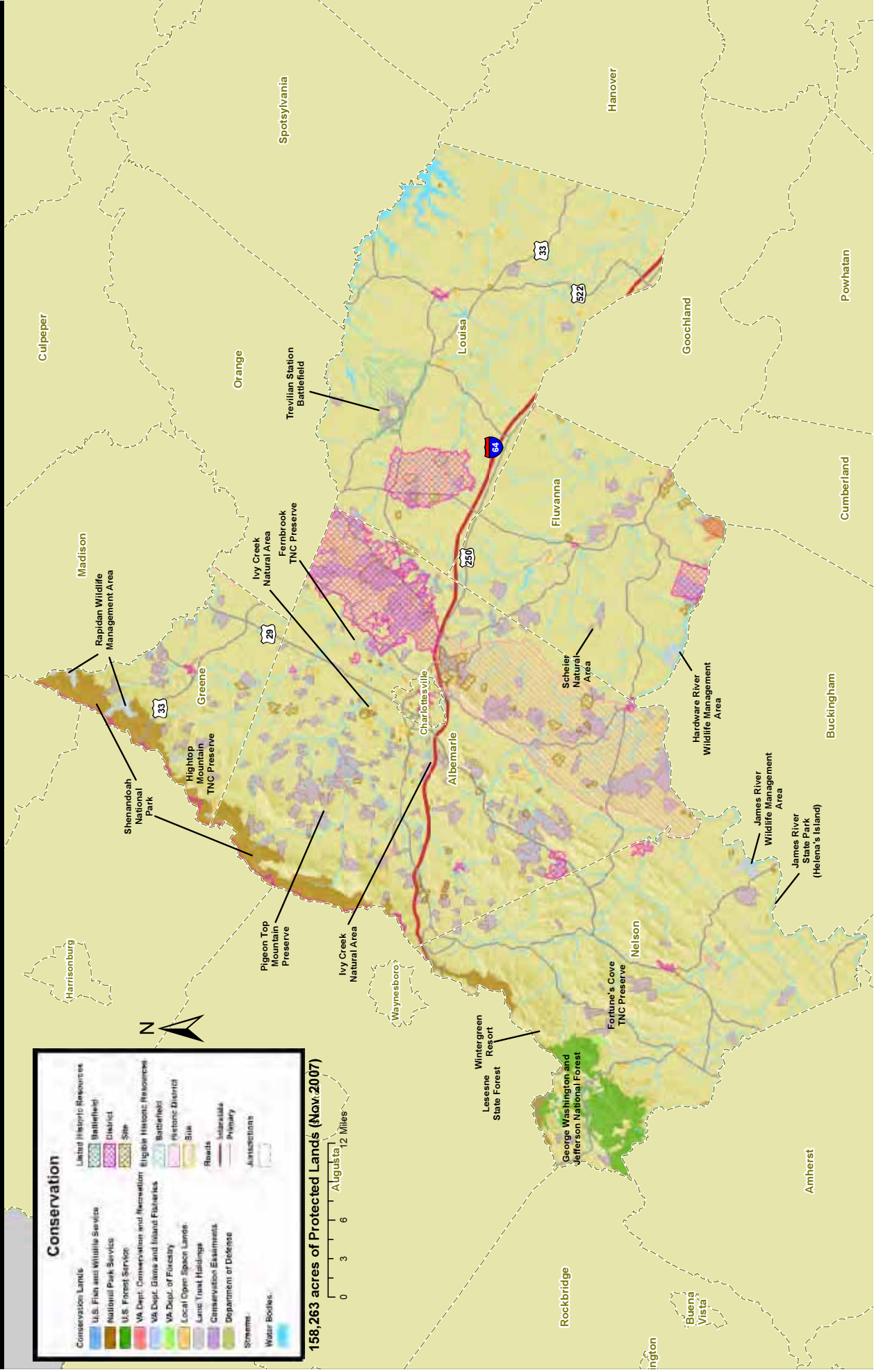
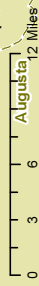
NI: not inventoried

(-) indicates surplus

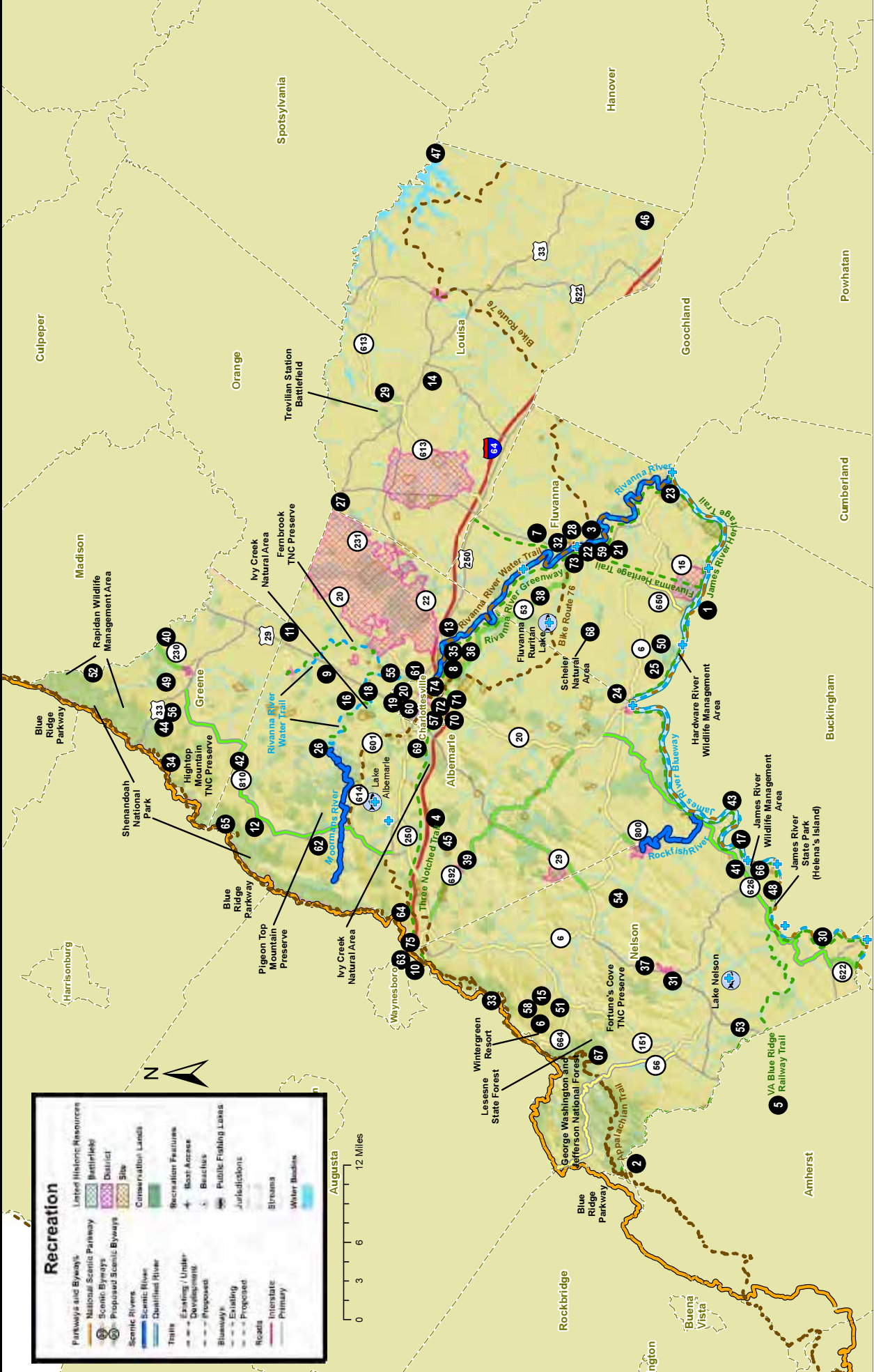
Map X-20. Region 10 (Thomas Jefferson Planning District) Conservation Lands



158,263 acres of Protected Lands (Nov.2007)



Map X-21. Region 10 (Thomas Jefferson Planning District) Outdoor Recreation



Introduction

Region 2000 Regional Commission includes 2,147 square miles and encompasses the counties of Amherst, Appomattox, Bedford and Campbell; the cities of Bedford and Lynchburg; and the towns of Altavista, Amherst, Appomattox, Brookneal and Pamplin City. The central region is flanked by two major rivers, the James River to the north and the Staunton River on the south. These rivers offer a multitude of recreational and historically significant resources such as the Kanawha Canal. Portions of the Staunton River are designated Virginia Scenic Rivers. In addition, Smith Mountain Lake and Holliday Lake state parks serve this region. Moving from west to east, the topography of the region ranges from mountainous to gently rolling farmland. These varieties of landscapes offer many different recreational activities.

Region 11 has a diverse base of industries including engineering, technical, health care, agricultural, forestry, education and tourism. The Blue Ridge Parkway, the Appalachian National Scenic Trail (AT), George Washington and Jefferson National Forests, and Smith Mountain Lake contribute to tourism. The 2005 estimated population for Region 11 is 234,900. In general, the area's growth rate between 2000 and 2005 has been about 2.6 percent. Future regional growth is anticipated to be steady, with the population in the region projected to increase 11.6 percent to 255,200 in 2020 from its 2000 census level of 228,616. As the population of Region 11 grows so do the recreational needs of its residents. While predominant land use is agricultural, several pockets of heavy industrial development create population centers with demands for recreational facilities and activities.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 11 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on the findings of the 2006 Virginia Outdoors Survey (VOS), the top ten outdoor activities in the region are – in order of their popularity — walking for pleasure, driving for pleasure, swimming, visiting historic sites, visiting natural areas, sunbathing, fishing, picnicking, boating, and using a playground. These, though in a different priority order, are the same as the statewide top ten rankings.

The most needed facilities are walking and jogging trails located close to home. Access to recreational waters is also in high demand in this region, especially for swimming, sunbathing, fishing and boating. One of the unique outdoor recreation findings in Region 11 is the importance of hunting. Though the frequency of participation has dropped relative to the 2002 Virginia Outdoors Survey, participation has not declined as much as in the rest of the state. In Region 11 there continues to be a need for open lands for this activity.

The results of the 2006 Demand, Supply and Needs Analysis for Region 11 identify the areas of greatest unmet recreational facility needs: tent camping sites, outdoor swimming, basketball courts, campsites, soccer fields, baseball fields, sunbathing opportunities, softball fields, and outdoor swimming pools see Table X-11).

All localities in Region 11 are served by a parks and recreation department. The urbanized areas within Region 11 have a better supply of recreational facilities, in terms of both quality and quantity than the rural areas. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures*, year ended June 30, 2005, per capita spending on parks and recreation for each locality in this region was: Bedford City, \$116.62; Lynchburg, 95.71; Amherst County, \$10.60; Bedford County, \$19.47; Appomattox County, \$15.19 and Campbell County, \$15.36. The budgetary and actual expenditures for the region indicate that spending for recreation in the urban areas, at an average of \$105.86, which is almost four times higher the average spent in the counties. The counties average expenditure is \$15.15, which is well below the statewide county average of \$43.75.

Land Conservation

Land Conservation is receiving greater attention from Virginia residents as urban sprawl threatens the eco-

logical health of natural systems, cultural resources and the beauty of the state's scenic landscapes. With population and associated development increasing at unprecedented rates, the conservation of farmland, parks, cultural resources and natural areas is essential to quality of life and economic viability of the state. Regional and local initiatives for land conservation are needed to save Virginia's outdoors (see Map X-22).

Large blocks of public lands provide much of the open space in Region 11. Federal land holdings include the George Washington and Jefferson National Forests (GW-Jeff National Forests), the Appalachian National Scenic Trail (AT), the Blue Ridge Parkway, Appomattox Court House National Historical Park, Holliday Lake and Smith Mountain Lake State Parks, natural area preserves, state wildlife management areas, state forests, and other state resources provide additional open space in the region. Many organizations work together with localities and the region to provide an array of land conservation mechanisms.

Amherst County is leading the way with a mapping system that can identify lands for conservation. This system identifies target areas for conservation and recommends development in areas where infrastructure is already in place.

Land Trusts and Conservation Programs Operating in Region 11

- Appalachian Trail Conservancy
- APVA Preservation Virginia
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Department of Historic Resources
- James River Association
- The 500-Year Forest Foundation
- The Conservation Fund
- The Nature Conservancy
- Virginia Outdoors Foundation
- Western Virginia Land Trust

Land conservation recommendations include:

- Localities that lie within the viewshed of the Blue Ridge Parkway and the AT should work to protect their scenic views. The National Park Service (NPS) has developed viewshed management and landscape design guidelines that may be useful in this endeavor.
- Regional and local organizations should encourage development away from mountaintops to protect significant scenic views.

- Regional and local organizations should provide adequate protection for existing working lands, including farmland and forestal lands.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Regional and local governments should protect the management of watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans.
- Regional and local agencies should evaluate the proposed drinking water reservoir on the Buffalo River for its potential to provide recreational opportunities.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-23).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Local agencies should support the implementation of the *Region 2000 Greenways and Blueways Plan*.
- Regional and local organizations should evaluate utility easements and private trails for public use according to the adopted *Region 2000 Greenways and Blueways Plan*.
- Regional and local organizations should connect trail facilities located in the adjacent counties.

- Regional and local organizations should consider using abandoned railroad corridors and private lands for a Lynchburg to Appomattox Trail. This trail could connect Lynchburg's Blackwater Creek Bikeway to the proposed James River Heritage Trail through Amherst, Campbell and Appomattox counties. The trail may also include an extension of the trail along Blackwater Creek to Linkhorn School. The Concord to Appomattox Trail would bridge the gap between the proposed Cumberland to Appomattox Trail and the James River Trail being built from the City of Lynchburg across southern Amherst County to the Mount Athos area of Campbell County.
- Regional and local organizations and agencies should develop a Lynchburg to Bedford trail along the corridor identified in the *Region 2000 Greenways and Blueways Plan*.
- Regional and local organizations and agencies should continue to expand the Blackwater Creek Trail System to link Lynchburg College Reservoir with Sandusky Park and Percival's Island. This trail would provide outdoor environmental education for Lynchburg College programs and the public. As part of the James River Heritage Trail System, the trail could include connections to the Ivy Creek Nature Center at the Lynchpin Industrial Center.
- Regional and local organizations should develop the Appomattox Heritage and Recreational Trail, a trail system that links historic resources, enhances tourism opportunities, and provides for improved wellness and quality of life benefits for area residents.
- Federal, state, regional and local agencies should continue collaborative efforts to create a trail connection between the Appomattox Courthouse National Historical Park and the High Bridge Trail State Park. The network would include pedestrian and bike facilities that link the park to key destinations in Appomattox County and the Town of Appomattox for recreation, wellness, transportation and heritage tourism.
- State, regional and local agencies should develop the Cumberland to Appomattox Trail connecting the Cumberland State Forest and the Appomattox Courthouse National Historical Park through the Buckingham-Appomattox State Forest. The existing Willis River Trail could be linked to this trail by using forest roads and short sections of trail across private land.

Statewide trunkline trails

- 1 The **Appalachian National Scenic Trail (AT)** was designated by Congress and is managed by the National Park Service (NPS). The AT runs through the

western portion of Region 11 along the Blue Ridge. Federal, state, regional and local agency efforts within Region 11 should continue to protect the setting and viewsheds along the AT to preserve the experience of a footpath in the wilderness.

- 2 State, regional and local organizations should develop the **James River Heritage Trail** in recognition of the 2007 commemoration of Jamestown and the James River. The trail along America's Founding River will ultimately stretch from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail would parallel the old Kanawha Canal towpath connecting park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia, including Glasgow Landing. Additional public access sites along the James River should be included along this trail.

Other Trails

- 3 The proposed **Central Virginia Greenway** should be developed by state, regional and local organizations to extend from the AT at the Peaks of Otter to the Appomattox Heritage and Recreation Trail. The trail would then connect to the Cumberland State Forest and link Bedford, Amherst, Campbell, Appomattox and Buckingham counties, and the cities of Bedford and Lynchburg.
- 4 State, regional and local organizations should develop a **Staunton River Trail** featuring Native American campsites and other historic and aesthetic points of interest along the scenic Staunton River from Altavista to Staunton River State Park.
- 5 National, state, regional and local organizations should extend the **Virginia Blue Ridge Railway Trail** along the old railroad right of way along the Piney and Tye Rivers to the AT.

Water access and blueways

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Local and regional recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as rest-

rooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.

- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- State, regional and local organizations should identify and increase water access opportunities to Virginia's southern rivers.
- Regional and local organizations should sponsor clean up days and education on litter and dumping to preserve water quality for all users and promote public access to the region's waters.

6 The **James River Water Trail** should be continued to the Upper James River. Additional public access areas are needed on the James River between Eagle Rock and Snowden and between Lynchburg and Bent Creek. Public access is also needed at the Cushaw hydropower project near Snowden. The Department of Conservation and Recreation (DCR), the United States Forest Service (USFS), and the Department of Game and Inland Fisheries (DGIF) should continue to work with localities to finalize and implement plans to acquire and develop a series of boating and fishing access sites and canoe-in campsites along the James River. Portage opportunities should be provided when possible around dams located on the James River.

7 State, regional and local organizations should develop a blueway on the **Staunton River**. Public access is needed on the Staunton River between the existing access points at Altavista, Long Island and Brookneal.

8 Appalachian Power Company should implement the **Smith Mountain Lake Shoreline Management Plan**, which considers public access opportunities and guidelines for protecting the scenic, recreational and environmental values of the lake.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and

decision-making processes to promote preservation and protection.

- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- There is a critical need for countywide surveys of the historic and architectural resources of Amherst, Appomattox and Campbell counties. State, regional and local organizations should partner to conduct this assessment.
- There is a critical need for an archaeological survey in Appomattox County and for an assessment of the county's archaeological resources. State, regional and local organizations should partner to conduct this assessment.
- State, regional and local organizations should evaluate Monacan Indian lands in the region for protection.
- 9** State, regional and local organizations should designate the **Curtis Community** as an historic district.

Scenic resources

Throughout Region 11, localities recognize the value of tourism. In Bedford and Amherst, there is a special recognition of the link between scenic vistas and tourism dollars. These localities are proposing viewshed ordinances to protect the setting of the Blue Ridge Parkway, a national treasure. Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways,

blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.

- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber-harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
 - Efforts should be continued to protect the natural and scenic resources of the Blue Ridge Parkway, AT, and George Washington-Jefferson National Forests. Local governments should support efforts to encourage adjacent landowners, localities and planning district commissions to develop a scenic overlay zone adjacent to and within the viewsheds as part of a multi-regional viewshed planning process. Federal and state agencies should coordinate with localities to help protect these resources.

Scenic highways and Virginia byways

On September 22, 2005, for the first time ever, four new national byway designations were given to Virginia roads. The Blue Ridge Parkway, a portion of which is located in Region 11, was given the highest designation as an All-American Road. This designation allows localities along the routes to access federal dollars for byway corridor projects (see Chapter VI). These major scenic highways attract tourists from throughout the nation, as well as international visitors. The character of the Blue Ridge Parkway is continually being altered from that of a pastoral scene to landscapes that are sometimes marked by incompatible development. Overlooks that once featured breathtaking vistas of farmsteads or forests now reveal factories and exploding suburban residential development. Subdivisions are already within a few hundred feet of this magnificent corridor, and as development continues, there will be additional impacts on the quality of the visitor experience.

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recog-

nized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place is retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

10 The diverse history and culture of the southern Appalachian Mountains is showcased along the **Blue Ridge Parkway**. Protection of the scenic viewsheds and natural, historical and cultural resources for the Blue Ridge Parkway corridor is critical to the continued beauty and uniqueness of these corridors and their environs. Increasing encroachment has a major impact on the quality of the visitor's recreational experience. Local governments should develop comprehensive plans and zoning ordinances to ensure that the intrinsic value of the parkway and its viewsheds are conserved.

The following road segments are potential and should be evaluated for consideration as Virginia Byways:

- 11** The portion of **US Route 29** that connects with Route 43 in Campbell County.
- 12** The portion of **Route 622** from Lynchburg to Nelson County.
- 13** The continuation of **Route 624** to create a loop.
- 14** **Routes 24 and 614** in Appomattox County from the Appomattox County and Campbell County line to the Buckingham County and Appomattox County line are elements of "Lee's Retreat Route."
- 15** A **James River Byway** would consist of roads that closely parallel the James River Bateau Festival Trail.

The corridor would include Route 622 and Route 130 in Amherst County.

Scenic rivers

In Region 11, the Staunton River is the only designated scenic river. For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segment has been evaluated and found to qualify for designation as Virginia Scenic Rivers:

- 16** The **Staunton River** in Campbell County from the Town of Altavista to the beginning of the current designation at Long Island.

The following river segment is a potential Virginia Scenic River and should be evaluated to determine its suitability for designation:

- 17** The **James River** in Campbell, Amherst and Appomattox counties from Lynchburg to Bent Creek.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 11

- Alliance for the Chesapeake Bay
- Blackwater Creek Watershed Initiative at Lynchburg College
- Chesapeake Bay Foundation
- Friends of the Rivers of Virginia
- Greater Lynchburg Environmental Network
- James River Association
- Middle James Roundtable
- Roanoke River Basin Association
- Smith Mountain Lake Association
- Upper Roanoke River Roundtable
- Virginia Conservation Network

Watershed recommendations for this region include:

- 18** Lynchburg College, in partnership with stakeholders representing local government, governmental

agencies, and private groups, should develop a **Blackwater Creek Watershed Management Plan**. The Blackwater Creek Watershed is within the James River Watershed. This watershed plan will address goals and commitments contained within the Chesapeake 2000 Agreement.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- 19** The **Claytor Nature Study Center** of Lynchburg College should continue to offer environmental and stewardship education and research programs to all age groups on this 470-acre Bedford County facility. Lynchburg College faculty and staff, federal and state agency staff, local conservation nonprofit organizations, and volunteers will partner on educational programming and research in developing this outdoor classroom as a central Virginia regional facility for K-12, college and adult populations.

- 20** Local organizations should continue development of the **Pedlar Riparian Trail** as an environmental education site to educate citizens about habitat protection and the environment.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy that allows mountain bikes to use appropriate national park trails.

- 21** The **Appomattox Court House National Historical Park** has management concerns that include the increasing traffic and adverse impact of State Road 24, protection of cultural resources and lands not currently within the park, and accelerated development on the park's boundaries. The state and local government should continue to work with NPS to address these issues.

- 22** The **Blue Ridge Parkway** and adjacent localities should continue to collaborate on enhancing heritage

tourism and guiding community gateway development and growth.

National forests

- New partnerships should continue to be developed to market recreational opportunities and rural economic development through tourism. The U. S. Forest Service should work with DCR, Virginia's Blue Ridge Highlands Tourism, Inc., and the Virginia Tourism Corporation to develop regional and international marketing strategies to showcase Virginia's outdoor recreation opportunities.
- Regional and local organizations should continue to place program emphasis on areas designated by Congress, such as the AT and Mount Pleasant National Scenic Area.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State Parks

23 Smith Mountain Lake State Park (1,248 acres) is located in Bedford County. Situated on the second largest body of freshwater in the state, the park offers a wide range of activities including swimming, fishing, boating, trails, camping, cabins, picnicking, and a visitor center, as well as interpretive and educational programming and special events. The Friends of Smith Mountain Lake State Park sponsor the park's Junior Ranger Program and assist in operating the visitor center. The park works cooperatively with community organizations in developing special events and programs. Through the 2002 General Obligation Bond (GOB), funding has been allocated for an improved visitor center and campground and for an improved boat launch parking lot. The approved park master plan proposes expanding the park office, converting the existing visitor center into an environmental education and discovery center, adding additional cabins and camping, and constructing an amphitheater. Additional funding will be needed for these proposed facilities.

24 Holliday Lake State Park (255 acres including 150 acre lake) is located in the middle of the Appomattox – Buckingham State Forest. The park facilities include a 30-site campground, a large shaded picnic area, two picnic shelters, two playgrounds, a boat ramp, a seasonal full-service concession stand

and camp store, and canoe, kayak, rowboat and paddle boat rentals. Fishing and swimming are popular activities. Educational and interpretive programs are available to area schools, youth and scout groups. The park has five hiking trails and one aquatic trail. A trailhead for the Carter Taylor can also be found in the park. This trail is a 12-mile loop in the Appomattox-Buckingham State Forest for hikers, bicycle riders and equestrians. The Holiday Lake 4-H Center is located across the lake from the park. Efforts should continue to develop cooperative activities and programs with the 4-H center and the state forest. Through the 2002 GOB, funds were allocated for an expanded campground.

State natural area preserves

There are currently no dedicated natural area preserves within Region 11. DCR has, as of November 2006, documented 109 occurrences of 67 rare species and natural communities in the Region 2000 Regional Commission. Twenty species are globally rare and five are federally threatened or endangered. Forty-four conservation sites have been identified in the district; 29 (66 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only three sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 11, DCR is particularly interested in protecting:

- Habitat for the globally rare Kankakee globe-mallow.
- Riparian areas in watersheds that support the federally endangered Roanoke logperch and other rare aquatic species.
- Riverside prairies.

State Fish and Wildlife Management Areas (WMA)

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.
- DGIF should acquire additional lands wherever feasible to provide additional access for public hunting, fishing and wildlife viewing recreation.

25 DGIF should continue to investigate opportunities at the **Featherfin WMA** to acquire in-holdings and to improve the area with trails and structures for wildlife viewing and other outdoor recreation.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as to establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

26 DOF should continue development of the **Appomattox-Buckingham State Forest to Cumberland State Forest** trail, which is part of the Cumberland to Appomattox Trail. The DOF trail will offer opportunities for horseback riding and establish primitive camping in the Appomattox-Buckingham State Forest.

Transportation programs

- Regional and local agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Regional and local agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Regional and local agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plans.
- Regional and local agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Regional and local agencies should implement the *Region 2000: Greenways and Blueways Plan*.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

27 The **Lynchburg Training School and Hospital** in Amherst County has approximately 100 acres of undeveloped land. Consideration for future use of the undeveloped land should include the preservation of open space, trails and connections to the James River.

28 Approximately 58 acres of the **Central Virginia Community College** tract in the City of Lynchburg are undeveloped and may have potential for recreational use.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate, state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The presence of Smith Mountain Lake has attracted a large retired population. Appalachian Power Company's (APCO) recreation plan emphasizes acquisition of land for recreational purposes and long-term leases with private entities to provide recreation services.
- Bedford County's major recreational need is athletic fields and courts, particularly in the fast growing Forest, Smith Mountain, Moneta and Stewartsville areas. These needs could be met through the development of a regional open space and park plan.
- When private recreational lands are converted to other uses, the localities will need to identify and evaluate other lands to replace the services provided by those sites.
- Regional and local agencies should provide three regional parks; one to be located near Montvale Elementary School, one near Route 714 adjacent to the landfill and the third near Route 460. The latter would be developed jointly by Campbell County and the City of Lynchburg.
- Bedford City should explore a cooperative agreement with Bedford County to share resources, since the city is landlocked and land resources are not available.

29 Continued funding and development of **Riveredge Park** (acquired by DCR as the Smiley Block property and leased to Amherst County) should provide enhanced public recreation and river access opportu-

nities. Initial park development includes a boat launching facility funded by the Commonwealth, City of Lynchburg, and Amherst County. A connector trail will link this park to the James River Heritage Trail.

30 Regional and local organizations should consider recreational development of the public land surrounding **Falling Creek and Beaver Dam reservoirs**, which are water sources for the inhabitants of the Roanoke and Staunton River Valley.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Developed campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities help meet the needs identified in the 2006 *Virginia Outdoors Survey*. Entrepreneurial opportunities should be evaluated for the establishment of outfitter services for canoeing and kayaking, boat launches, canoe-in campgrounds, fee-based hunting and fishing opportunities, multi-field sports complexes and swimming pools. Many of the needs could be met through the efforts of private enterprise, organizations or through partnerships and cooperative efforts by the private sector and units of governments to provide picnicking, camping and environmental education. These services could be linked to bed and breakfast opportunities, nursery and garden center operations, game farms, and historical restorations. This concept could be expanded to farmers markets, pick-your-own operations, wineries and craft fairs.

31 Lynchburg College should consider preservation strategies to allow College Lake to be available for public use. As **College Lake** has filled with sediment, wetlands have developed on Lynchburg College properties. These wetlands offer significant opportunities in research and learning. A system of boardwalks should be developed so that these wetlands can be accessed for environmental preservation and other educational programs.



Percival's Island Trail in the City of Lynchburg. Photo by BikeWalk Virginia.

Table X-11. Region 11 (Region 2000 Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	558,091	110	fields	72	38	49
Basketball	497,631	118	goals	53	65	77
Bicycling	388,338	28	miles	NI		
Mountain	55,809	4	miles	NI		
Other	332,529	24	miles	NI		
Lake, river and bay use (combined)	738,541	14,157	water acres	11,978	2,179	3,559
Power boating	367,875	8,867	water acres	S		
Sailing	52,089	451	water acres	S		
Saltwater fishing	167,427	942	water acres	S		
Jet ski, personal watercraft	53,484	838	water acres	S		
Water skiing, towed on water	97,666	3,060	water acres	S		
Camping	255,327	1,506	sites	1,569	-63	84
Tent camping	108,828	642	sites	486	156	218
Developed camping	146,499	864	sites	1,083	-219	-135
Fitness trail use	115,571	9	mile trails	8	1	2
Fields (combined)	553,208	116	fields	54	62	74
Football	313,926	66	fields	54	12	18
Soccer	239,282	50	fields	-	50	55
Stream use (combined)	888,063	566	stream miles	168	398	454
Freshwater fishing	772,026	543	stream miles	S		
Human-powered boating	64,878	17	stream miles	S		
Rafting	9,302	2	stream miles	S		
Tubing	41,857	5	stream miles	S		
Golfing	243,700	8	courses	217	-4	-3
Hiking, backpacking	388,338	199	trail miles	230	-31	-11
Horseback riding	65,111	28	miles	56	-28	-25
In-line skating	53,484	4	miles	NI		
Jogging, running	3,118,335	250	mile trails	NI		
Nature study, programs	74,412	11	sites	3	8	9

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-11. Region 11 (Region 2000 Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	258,582	671	tables	1,256	-585	-519
Skateboarding	90,690	28	sites	NI		
Snow skiing or snowboarding	48,833	1	ski lifts	-	1	1
Softball	367,410	65	fields	45	20	27
Sunbathing, relaxing on beach	551,813	40	beach acres	16	24	27
Swimming	2,325,380	162		NI		
Outdoor area	1,251,054	128	beach acres	16	112	125
Outdoor pools	692,963	29	pools	16	13	16
Indoor pools	381,362	4	pools	3	1	2
Tennis	146,266	91	courts	110	-19	-10
Used a playground	588,786	84	sites	118	-34	-26
Visiting gardens	115,106	13	sites	NI		
Visiting historic sites	362,062	31	sites	NI		
Visiting natural areas	412,057	70	sites	NI		
Volleyball	25,812	8	courts	3	5	5
Hunting	533,907	87,555	acres	83,299	4,256	12,789
Drive for pleasure	1,420,807	NA	NA	NI		
Driving motorcycle off road	88,364	40	miles	19	21	25
Driving 4-wheel-drive off road	128,361	NA	NA	NS		
Walking for pleasure	7,406,335	NA	NA	NI		
Bird watching	58,600	NA		NI		
Other	10,232	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

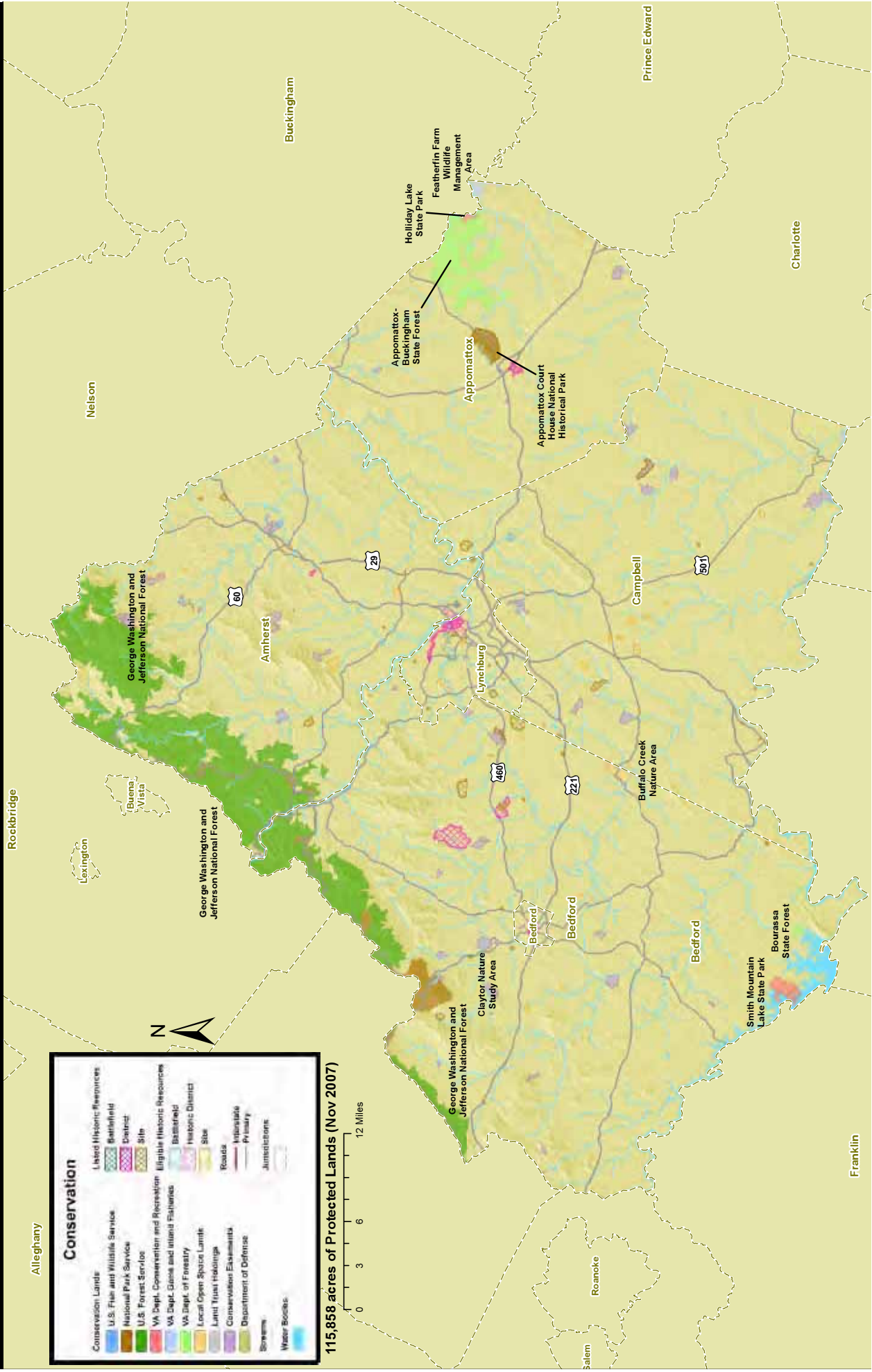
S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-22. Region 11 (Region 2000 Regional Commission) Conservation Lands



[illegible]

Introduction

The West Piedmont Planning District is made up of the counties of Franklin, Henry, Patrick and Pittsylvania; the cities of Danville and Martinsville; and the towns of Boones Mill, Chatham, Gretna, Hurt, Ridgeway, Rocky Mount, and Stuart. The area begins in the Blue Ridge and extends into the Piedmont physiographic province. The ruggedly beautiful landscapes of the Blue Ridge Mountains provide a variety of recreational opportunities ranging from the scenic views along the Blue Ridge Parkway to the trout streams of the Pinnacles of Dan. These attractions and this setting are popular for recreation and as family vacation destinations.

Fairy Stone State Park cabins and campgrounds have long been a favorite destination for Virginians and visitors from out of state. The entire park, which is one of the six original state parks opened to the public in 1936, is 4,537 acres; it also contains a 168-acre lake for fishing, swimming and small boat use. Philpott Reservoir is a U.S. Army Corps of Engineers (the Corps) flood retention and power production reservoir, which provides a large body of power-boating water far inland from the tidal rivers and bays of the state. Canoeing, fishing and other water-based recreational opportunities are provided in the many miles of high quality rivers and streams that drain into this area. The Smith River below Philpott Reservoir is a high quality brown trout fishery enjoyed by anglers from all over the country. Smith Mountain Lake, a hydroelectric power impoundment, provides 20,000 acres of flat water and nearly 500 miles of shoreline. This lake has a state park with traditional park offerings, private campgrounds open to the public, public boat ramps, marinas, docks and marine repair facilities. The West Central 4-H Center is located on the lake and provides lodging and conference facilities when summer programs for youth are not being offered.

The Virginia Department of Game and Inland Fisheries (DGIF) manages three state-owned wildlife management areas in the district. Fairy Stone Farms, Turkeycock Mountain and White Oak Mountain wildlife management areas provide more than 10,000 acres of public lands for hunting, nature study, trail use and open space.

Franklin County has entered into an agreement with the Department of Conservation and Recreation (DCR) to take over management of the 37-acre parcel of Smith Mountain Lake State Park that lies within Franklin County and is across the lake from the park.

Franklin County will develop recreational facilities on this parcel, thereby enhancing public access to the lake from the southern side. In partnership with DCR, DGIF and the Virginia Department of Transportation (VDOT), Franklin County plans to develop recreational facilities such as beach frontage, boating access, fishing, picnicking opportunities and walking/biking facilities. Also, Franklin County has adopted a trail and greenways plan (*Franklin County Trail System Plan 2004*) that addresses recreational trails as well as bicycle and pedestrian trails as alternative transportation corridors.

Henry County and the City of Martinsville have formed a Recreational Facilities Authority to jointly manage a \$4 million soccer complex and \$16 million arena for the region. The City of Martinsville, Henry County, non-profit organizations and citizen groups are working together to plan and develop trails, greenways, and blueways along the Smith River. The Smith River Trail system will consist of multi-use trails, riverside parks, and non-motorized boat landings along the Smith. The planned multi-use trails will be for biking and walking and will follow portions of the Smith River and lead into the City of Martinsville through a rails-to-trails project using segments of the abandoned Danville and Western Railroad. Public access to the Smith River has been enhanced for fishing and boating with the addition of three new public access areas.

Citizens in Patrick and Henry County are planning the Mayo River Trail between Fieldale and Stuart using portions of the bed of the abandoned Danville and Western Railroad.

The City of Danville has been making great progress in implementing its community trails and greenways plan. Some sections of abandoned rail line have been converted to trails, and connectors have been developed along the Dan River and throughout the city. Danville has also developed a skateboard park to provide participants with safe, off-street play areas. On the eastern side of Danville in Pittsylvania County, local supporters have developed six miles of the former Richmond to Danville Railroad into a trail that runs from Ringgold to the Pittsylvania County-Halifax County line. Danville is planning to connect its trail system to the trailhead in Ringgold. The remaining 20 miles of that rail corridor between the county line and South Boston are being acquired from Norfolk Southern and will be converted to a trail in the future.

The population of this region as measured by the 2006 census was 247,500. Like other areas of the state, most counties are growing while the cities have lost about 6 percent of their population. Henry County has shown a small population decline since the 2000 census was conducted, while Franklin County has seen population growth.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the *2007 Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 12 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Public participation in recreation is high and the 2006 *Virginia Outdoors Survey* (VOS) recorded high demand for most activities. These figures did not include imported demand generated by visitors. The needs analysis indicates a shortage of bicycle trail miles, campsites, playgrounds, swimming pools and hiking trails. Facilities for all other activities were found to be adequate, especially near urban areas. In more rural areas, planning and funding are needed to create additional park facilities, especially developed facilities. Tourists place considerable demand on recreational resources — creating shortages of trails, camping and water sport opportunities. When tourism is factored in, shortages are indicated in other activities (see Table X-12). In the more rural areas and in small towns, there is a need for additional developed recreation facilities to serve local residents.

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Henry, \$49.56; Patrick, \$7.20; Pittsylvania, \$0.48; the City of Danville, \$102.80; and the City of Martinsville, \$58.49. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map X-24.

Land Trusts and Conservation Programs Operating in Region 12

- Virginia Outdoors Foundation
- Trust For Public Land
- The Nature Conservancy
- The Conservation Fund
- Western Virginia Land Trust
- Forest Legacy Program

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-25)

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

1 The proposed **Trans-Virginia Southern Trail** will run from Cumberland Gap to the Chesapeake Bay across the southern portion of the state. In Region 12, the trail runs from the Blue Ridge Parkway to Fairy Stone State Park and Philpott Reservoir along the Smith River Trail to Martinsville. It then follows portions of the Danville and Western Railway and will connect to Danville using various existing and planned corridors. From Danville, the trail will follow the abandoned Norfolk, Franklin and Danville Railroad and the Richmond to Danville Railroad corridors to link with components of the Tobacco Heritage Trail. This will then link with the Virginia Beach Pipeline Trail, which will connect to the existing and proposed components of the Tidewater trail system. This “Cumberland Gap to the Chesapeake Bay Trail” will connect many of the towns in Southern Virginia and provide the backbone for many local trail systems. Regional and local organizations should partner with national and state organizations and agencies to continue plans and implementation for this trail.

Other trails

The following are greenway and trail proposals for this region:

2 The **Smith River Trail** system should continue to be developed by Henry County, the City of Martinsville and private entities along the Smith River and into Martinsburg using segments of the abandoned Danville and Western Railroad. These multi-use trails will become part of the Trans-Virginia Southern Trail and will be connected with Fairy Stone State Park and with the Tobacco Heritage Trail at Danville.

3 A system of trails and greenways throughout Danville should continue to be implemented using city-owned utility rights-of-way and other public and private properties. Components of the **Danville Riverwalk Trail** have been completed, and plans to extend the trail are under development. The Danville trail system should be extended to connect with the Richmond to Danville Rail-Trail at Ringgold.

4 A number of opportunities exist throughout the region for converting **abandoned railroads** to trails. Timely conversion is recommended to prevent further deterioration of existing beds, trestles and historic properties.

5 The section of the former **Richmond-Danville Railroad** line has been developed as a rail-to-trail from Ringgold to the Pittsylvania-Halifax County line.

Roanoke River Rails to Trails, Inc. should continue the effort to acquire the right-of-way from the Pittsylvania County-Halifax County line to South Boston. This rail line parallels the Dan River and would provide a terrestrial component to the proposed Dan River Canoe Trail.

6 Patrick and Henry counties should continue to plan the **Mayo River Trail**, which uses portions of the abandoned Danville and Western Railroad from Fieldale west toward Stuart.

7 The **Pigg River Heritage Trail** has regional historic significance and will provide the Town of Rocky Mount with pedestrian and bicycle facilities that could connect **Waid Park Recreation Area** with **Grassy Hills Natural Area Preserve**. DCR, the Department of Historic Resources (DHR), Franklin County and the Town of Rocky Mount should partner to implement these trail segments.

Water Access

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- State, regional and local agencies should enhance public access on the Banister, Dan, Staunton, and both forks of the Mayo River.
- 8** State, regional and local organizations should develop canoe trails and maps to facilitate trip plan-

ning for the Franklin County Blueways on the **Pigg River** in Franklin and Pittsylvania counties and the **Blackwater River** in Franklin County.

9 The **Smith River** is an outstanding trout fishery in the stretch below Philpott Dam. While three new public access sites were added in 2006, continued efforts should be made to enhance the fishery and increase public access where feasible. Suitable segments of the river that support recreational flows should be enhanced for use as a blueway. The Corps should consider weekend recreational releases from Philpott Dam.

10 The **Mayo River** system has the potential to become a full service recreational resource. With state park development occurring on the North Carolina portion of the river, there are opportunities to extend the range of services and facilities into Virginia. The current feasibility study (see Recommendations 25 and 26 below) being conducted by the state will address some of the access and use areas which should be developed to support a water trail. Regional and local governments and other stakeholders should work with canoeing groups and landowners to provide any missing components.

11 The **Staunton River** below Leesville Dam supports recreational boating for most of the season. While DGIF offers a series of public access areas along the river, there is a need for additional access and public use areas to meet all the requirements for a functional water trail. Local governments should work with canoeing groups and landowners to provide the missing components.

12 The **Dan River Blueway** is a canoe trail that currently is developed and managed as a trail only in the North Carolina section of the Dan River. This trail should be continued into Virginia and extended to Staunton River State Park. A series of managed access and public use areas should be provided to meet the needs of canoe trail users while protecting riparian property owners.

13 The **Banister River** in Pittsylvania County should be developed as a blueway and extended to join with the proposed blueway in Halifax County.

14 Emphasis should be placed on locating access sites at bridge crossings so that both sides of the river are adequately served. Where appropriate, canoe trails could be developed along rivers through the creation of portages around dams and other river obstacles. Special attention should be given to the provision

of additional access opportunities on **Smith Mountain Lake** and **Leesville Lake**, and the **Blackwater and Pigg** rivers. A newly developed river access facility at Lynch Landing in Franklin County has provided a much needed access site to the Pigg River. Work should continue on the removal of the dam on the Pigg River and the development of the Whitewater Park near Rocky Mount.

15 The **Smith River** offers good fishing and canoeing. While three new public access sites were added to the Smith in 2006, additional access needs to be developed where possible. The Smith River Trail should improve riverside access considerably.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of historic and architectural resources in Henry and Patrick counties.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly-owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and the economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

16 Linville Mountain in Franklin County is an important scenic viewshed from the Blue Ridge Parkway and a local and regional effort should be made to protect it from development impacts.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

There has been a tremendous interest in thematic driving trails including Civil War trails, the Wilderness Road Trail, Birding and Wildlife Trails, Revolutionary War trails, the African-American Heritage Trail system, and other driving tour routes. Specifically, the Crooked Road: Virginia's Heritage Music Trail, begins in Rocky Mount and continues on to the coalfield region of western Virginia connecting points of interest such as the Blue Ridge Institute, Floyd County Store, and the Carter Fold.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and

nominate scenic roads for designation as Virginia byways.

- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- Local jurisdictions should identify and nominate potential scenic roads for designation as Virginia Byways.
- Local governments should partner with other state, local and professional organizations to determine implementation strategies to protect the scenic assets of byway corridors.
- Communities along the Blue Ridge Parkway should consider strengthening local comprehensive plans and creating special zoning regulations to protect the unique scenic and economic benefits associated with scenic values and parkway viewsheds.

The region's beautiful mountains and river valleys are accessed by a system of well-maintained roads. Several of these roads are particularly scenic. The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

17 Route 8 from the Floyd County line to the North Carolina state line in Patrick County.

18 Routes 346 and 623 from Route 57 in Patrick County to the Franklin County line.

19 Routes 108 and 890 in Henry and Franklin counties from Martinsville to Penhook.

20 Route 863 in Pittsylvania County from Route 58 to the North Carolina state line.

21 Route 640 in Pittsylvania County beginning at Route 29 north of Blairs to Shockoe; then Route 832 from Shockoe to Chatham.

22 Route 57 from its junction with Route 8 in Patrick County to Martinsville.

23 **Route 648**, Kibler Valley Road, from Route 103 to the Pinnacle power plant in Patrick County.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools, e.g., land use overlays, corridor management plans, that will afford special recognition and protection to Virginia's scenic rivers.

The following river segment has been evaluated and found to qualify for designation as a Virginia Scenic River.

24 The **Blackwater River** from Route 220 to Smith Mountain Lake in Franklin County.

Concerning the items below, Numbers 25 and 26: DCR will complete *A Feasibility Study for Establishing a state park along the South Mayo and North Mayo Rivers in Henry County* by November 30, 2007. Included in the 2007 General Assembly resolution (HJR No. 709) mandating this study is a request to evaluate the rivers for Scenic River designation.

25 The **South Mayo River** in Patrick and Henry counties from Route 695 to the North Carolina state line.

26 The **North Mayo River** in Henry County from Route 695 to the North Carolina state line.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

27 The **Smith River** from Route 8 to Philpott Reservoir in Patrick County, from Philpott Dam to Bassett and from Route 622 to the North Carolina line in Henry County.

28 The **Sandy River** in Pittsylvania County.

29 The **Dan River** in its entirety.

30 The **Pigg River** in its entirety.

31 The **Staunton River** from Altavista to Long Island.

Watershed resources

In this region, the Dan River Basin Association is a major voice in watershed planning and management

issues. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 12

- Dan River Basin Association
- Roanoke River Basin Association
- Clean Virginia Waterways
- Virginia Conservation Network

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local and regional environmental education organizations should assess the outdoor environmental education facilities existing in this region.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy in order to allow mountain bikes to use appropriate national park trails.

32 The **Blue Ridge Parkway** provides a diversity of dispersed recreational opportunities in the spectacular setting of the Blue Ridge Mountains. A number of trails, historic sites, campgrounds and scenic vistas attract more than 10 million visitors each year to the Virginia portion of this popular national park. The Rocky Knob Recreation Area in Floyd and Patrick counties provides a variety of recreation attractions including the Rock Castle Gorge Trail, camping, picnicking and other services. Plans are underway to expand offerings at Rocky Knob to include an education center and other amenities. Due to site limitations, acquisition of additional land may be required. The Smart View Recreation Area, a little further north on the Parkway, also provides a range of recreational offerings.

The Trans-Virginia Southern Trail planners are seeking a route that will connect the Blue Ridge Parkway near Galax with Fairy Stone State Park. NPS planners should work with state and local trail planners to explore such a connector route.

Localities through which the parkway passes should maintain the scenic viewsheds and natural environments necessary for the continued popularity and national significance of the parkway. All plans and programs should recognize these values, and any activities within the parkway's viewshed should be designed to enhance visitor experiences and the attractiveness of the area. A special effort should be made to provide an adequate buffer between the parkway and development activities. The Blue Ridge Parkway Consortium may be able to address techniques for establishing this buffer as well as deal with other inconsistencies of land use along the parkway.

33 The Booker T. Washington National Monument, located in Franklin County, is an historic commemorative property situated in an area that is rapidly changing character from a rural, pastoral setting to residential subdivisions and shopping centers. Route 122 between Burnt Chimney and Smith Mountain Lake is a very scenic road corridor with several National Register sites, including the National Monument, located along it. An effort should be made to acquire conservation or historic easements on the properties along this corridor to ensure protection of the pastoral setting in which the Booker T. Washington farm is located. Efforts should especially be made to acquire ownership or easements on lands adjacent to the site that are critical to protection of the setting. Encroaching development is a primary issue. The park is implementing its General Management Plan, which was completed in 2000, as funding allows. Addressing accessibility issues and improving facilities are included in the plan.

The park staff has played an active role in regional trail discussions, and they are working with Franklin County and other partners to link their site with other public areas identified in the *Franklin County Trail System Plan 2004*.

Other federal facilities

34 Philpott Dam and Reservoir (owned and managed by the U. S. Army Corps of Engineers) in Franklin, Patrick and Henry counties contributes substantially to the supply of motor boating, sailing, skiing, canoeing and fishing opportunities in the region. The reservoir property also provides camping, trails, nature study and bank fishing opportunities. As

use levels for offered activities increase, consideration should be given to providing additional access, camping and day-use facilities. The fishery below Philpott Dam (on the Smith River) supports a significant brown trout fishery. The Corps should continue to cooperate with DGIF to adjust releases from the dam in support of an enhanced trout fishery.

One of the most important aspects of this property is public ownership of the entire shoreline. Unlike most lakes in Virginia, access to the lake for bank fishing and wildlife or scenic viewing is not blocked by private shoreline ownership. The Corps should continue their policy of retaining the ownership of the shoreline on their lakes. In addition to the availability to the public of the Philpott Lake 100-mile shoreline, the Corps also manages more than 6,000 acres of forest around the lake. DGIF manages 5,321 acres of adjacent public land as the Fairystone Farms Wildlife Management Area.

DCR is developing equestrian facilities at Fairy Stone State Park. The new equestrian campground and day-use area will attract riders from throughout the mid-Atlantic region. An expanded trail system that includes state park, wildlife management area and Corps lands will enhance the attractiveness of the area to equestrians and, therefore, have a positive economic benefit on the region.

The Trans-Virginia Southern Trail will be connecting trails west of the Blue Ridge Parkway with trails in Fairy Stone State Park and the Smith River Trail. The Corps is encouraged to cooperate with state and local trail planners to identify the best route through the Corps' project lands for this trail.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

35 Fairy Stone State Park (4,537 acres), located in Patrick and Henry counties, is partially bounded by the DGIF's Fairystone Farms Wildlife Management Area and the U.S. Army Corps of Engineer's Philpott Reservoir and Dam. The park's 168-acre Fairy Stone Lake flows into Philpott Reservoir. Listed on the National Register of Historic Places, Fairy Stone is one of the original six Virginia state parks opened in June 1936. The park offerings include 24 cabins, one lodge, a campground with water and electric sites, a group camp, picnicking and four shelters, visitor cen-

ter, Fayerdale Hall Conference Center, boat launch, fishing opportunities and trails. A swim beach, snack bar, and boat rentals are available during the summer season. Guided nature and history hikes, bluegrass music, fairy stone hunts, Junior Rangers, and other activities are offered through much of the year. School and outreach programs are also available.

Through the 2002 General Obligation Bond (GOB), funding has been allocated for dredging the lake and improving the boat ramp, constructing an equestrian campground and support facility, improving trails and acquiring land. The surrounding public land creates opportunities for expanded trail systems and other cooperative programming. The park should participate in the development of the Trans-Virginia Southern Trail as relates to its location in the park vicinity.

36 Smith Mountain Lake State Park (1,248 acres) is primarily situated on the Bedford County shore of the lake. A 37-acre peninsula (actually an island connected to the mainland by a causeway) is on the Franklin County shore of the lake. However, it should be noted that this small parkland peninsula is currently leased to Franklin County for development as a local park, which could include water access, fishing and picnicking. Smith Mountain Lake is the second largest body of freshwater in the state, and the state park offers a wide range of activities including swimming, fishing, boating, trails, camping, cabins, picnicking and a visitor center, as well as interpretive and educational programming and special events.

State natural area preserves

DCR has, as of November 2006, documented 147 occurrences of 65 rare species and natural communities in Region 12. Twenty species are globally rare and five are federally threatened or endangered. Sixty-seven conservation sites have been identified in the district. Of these, 24 (36 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only one site is protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local

land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 12, DCR is particularly interested in protecting:

- Biologically significant low-elevation outcrop communities in Franklin County.
- Habitat for the federally endangered small-anthered bittercress in Patrick County.
- Riparian areas in watersheds that support the federally endangered Roanoke logperch and other rare aquatic species.
- Additional lands around Grassy Hill Natural Area Preserve.

37 Grassy Hills Natural Area Preserve was established in 2000 near Rocky Mount in Franklin County. This property will be managed to protect and enhance the special habitats and plant communities located on the 1,347-acre property. In 2006, another donation was made that increased the size of the property by 147 acres. Opportunities for nature study programs will be afforded by this addition to the Natural Areas System. There is significant local interest with regard to the extent of public access opportunities that may become available at Grassy Hill. It may be advantageous for both state and neighboring local jurisdictions to jointly examine a usage plan that would address citizen outdoor recreational needs as they pertain to this nature preserve. A trail system was developed on the preserve in 2005 that affords visitors managed access to the property for nature study.

State Fish and Wildlife Management Areas (WMA)

- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.
- DGIF should continue to develop trail systems within wildlife management areas (WMAs) to facilitate access for nature study, bird watching, hunting and fishing. DGIF manages several large wildlife management areas in the district. Fairy Stone Farms, Turkeycock Mountain and White Oak Mountain WMAs provide more than 10,000 acres of public lands for hunting, nature study, trail use and open space. Additionally, under a lease agreement with American Electric Power that is in effect until 2010, DGIF manages Smith Mountain WMA, which adds an additional several thousand acres in the region that is available to the public.

- DGIF should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and wildlife viewing recreation.

38 Fairy Stone Farms, Turkeycock Mountain, White Oak Mountain and Smith Mountain wildlife management areas are large open spaces that can meet many regional demands for dispersed recreation. Nature study, wildlife viewing, picnicking and fishing are also available. Consideration should be given to providing additional recreational facilities such as camping.

In a combined effort with local governments, hiking trails should be more fully developed for use outside of the normal hunting season. Trails could be designed so that horseback riding and bicycling may take place on roads and larger trails.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.

Other state lands

- The Virginia Museum of Natural History in Martinsville should continue to increase understanding and appreciation for the natural resources of the Commonwealth through education, research, collections, publications and exhibits.

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- 39 Danville Community College** has 40 acres of wooded land that may be suitable for recreational use.
- 40 Patrick Henry Community College** in Henry County has 80 acres of land that may have recreational potential.
- 41** The Board of Directors of the Virginia Community College System currently holds title to a 380-acre parcel of land in Franklin County near Burnt Chimney that was donated by the owner with the requirement that it be used for public educational and recreational purposes. Local and state agencies should participate jointly in planning for the use of the **James Turner Smith Estate Tract** to ensure that local recreational and open space needs are addressed.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating

the recommendations of local public health agencies, and they should include “active living” opportunities into all phases of transportation planning, land use planning and project design.

Local and regional parks and recreation departments

All of the localities in Region 12 are served by a parks and recreation department. For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills by creating new and needed parks.
- Consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.

42 North Carolina is acquiring land along the **Mayo River** for a river oriented state park. The Henry County Board of Supervisors, through the 2007 General Assembly (HJR 709), requested that a study be undertaken to determine the feasibility of establishing a state park along the South Mayo and North Mayo River in Henry County, Virginia. Development of a park on both sides of the state line would help protect the river while enhancing eco-tourism in both states. A part of the study will address the feasibility of a local or regional park. DCR will complete the final report by November 30, 2007.

43 The **Southern Virginia Recreational Facilities Authority** has been established to operate a soccer complex and river access facility on the Smith River near Martinsville and a new arena near Martinsville. The authority will seek funding to expand the range of recreational facilities they can offer.

Private sector

This region is a major destination area for vacationers. Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Regional and local organizations and businesses should assess the expansion capability for the hospitality industry to support outdoor recreation venues. Bed and breakfasts, hotels, motels and camping facilities that are located in attractive settings near recreation areas may find ample demand to justify the investment.

- Local governments and developers should give design consideration to the natural contours of the land when planning and constructing.
- Regional and local organizations should continue to support campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities to help meet the needs identified in the 2006 Virginia Outdoors Survey.
- Regional and local organizations and businesses should assess entrepreneurial opportunities that may exist for outfitter services to provide canoeing, kayaking, boat launches, canoe-in campgrounds, multi-field sports complexes and swimming pools.
- Private sector should consider fee-based hunting, fishing and boating access.
- The impact the private sector has on the supply of outdoor recreation areas and facilities is made clear when a major manufacturer closes its doors and leaves a community. Many of the recreational facilities that had been developed on the manufacturing plant's property are sold along with the plant to a new buyer who may have no interest in providing recreation. Private businesses should consider transferring title to recreation areas and facilities to local governments before disposing of unwanted property to maintain the maximum numbers of parks, playing fields or recreation areas in public ownership.

44 **The DuPont Wildlife Habitat Improvement Area** in Martinsville is a 548-acre parcel that the company has made available to the Wildlife Habitat Enhancement Council to manage for wildlife habitat. It lies along the Smith River and provides opportunities for hiking, canoeing and nature study. Public access to the Smith River could be improved on this property.

45 **Smith Mountain Dam and Leesville Dam** were constructed by Appalachian Power Company (APCO, a subsidiary of American Electric Power) as pumped storage hydro-electric projects. The lakes that the two dams created provide most of the flat water recreational acreage in the region. These lakes have become important destination tourist attractions and popular second home or retirement locations. In 2005, a Shoreline Management Plan was developed for the project that establishes a framework for management of the lakes' important natural, scenic and recreational resources. APCO should remain attentive to the need to protect major portions of the lakes' waterfront from development to ensure that those natural, scenic and recreational values are retained and properly protected from development.

Table X-12. Region 12 (West Piedmont Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	598,037	118	fields	96	22	26
Basketball	533,249	126	goals	126	0	4
Bicycling	416,134	30	miles	NI		
Mountain	59,804	4	miles	NI		
Other	356,330	25	miles	NI		
Lake, river and bay use (combined)	791,402	15,171	water acres	21,550	-6,379	-5,909
Power boating	394,206	9,501	water acres	S		
Sailing	55,817	483	water acres	S		
Saltwater fishing	179,411	1,009	water acres	S		
Jet ski, personal watercraft	57,312	898	water acres	S		
Water skiing, towed on water	104,656	3,279	water acres	S		
Camping	273,602	1,614	sites	1,989	-375	-325
Tent camping	116,617	688	sites	264	424	445
Developed camping	156,985	926	sites	1,725	-799	-771
Fitness trail use	123,843	10	mile trails	7	3	3
Fields (combined)	592,804	125	fields	82	43	46
Football	336,396	71	fields	82	-11	-9
Soccer	256,408	54	fields	-	54	56
Stream use (combined)	951,626	607	stream miles	2	605	624
Fresh water fishing	827,284	582	stream miles	S		
Human-powered boating	69,522	18	stream miles	S		
Rafting	9,967	2	stream miles	S		
Tubing	44,853	6	stream miles	S		
Golfing	261,143	9	courses	265	-6	-6
Hiking, backpacking	416,134	213	trail miles	90	124	131
Horseback riding	69,771	30	miles	43	-13	-12
In-line skating	57,312	4	miles	NI		
Jogging, running	3,341,531	268	mile trails	NI		
Nature study, programs	79,738	11	sites	-	11	12

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-12. Region 12 (West Piedmont Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	277,090	719	tables	1,749	-1,030	-1,007
Skateboarding	97,181	30	sites	NI		
Snow skiing or snowboarding	52,328	1	ski lifts	-	1	1
Softball	393,708	70	fields	77	-7	-5
Sunbathing, relaxing on beach	591,309	42	beach acres	27	15	17
Swimming	2,491,820	173		NI		
Outdoor area	1,340,599	137	beach acres	27	110	115
Outdoor pools	742,562	31	pools	33	-2	-1
Indoor pools	408,658	5	pools	4	1	1
Tennis	156,735	98	courts	174	-76	-73
Used a playground	630,929	90	sites	154	-64	-61
Visiting gardens	123,345	14	sites	NI		
Visiting historic sites	387,976	33	sites	NI		
Visiting natural areas	441,551	75	sites	NI		
Volleyball	27,659	8	courts	10	-2	-2
Hunting	572,122	93,822	acres	19,472	74,350	77,256
Drive for pleasure	1,522,502	NA	NA	NI		
Driving motorcycle off road	94,689	43	miles	1	42	44
Driving 4-wheel-drive off road	137,548	NA	NA	NS		
Walking for pleasure	7,936,447	NA	NA	NI		
Bird watching	62,794	NA		NI		
Other	10,964	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

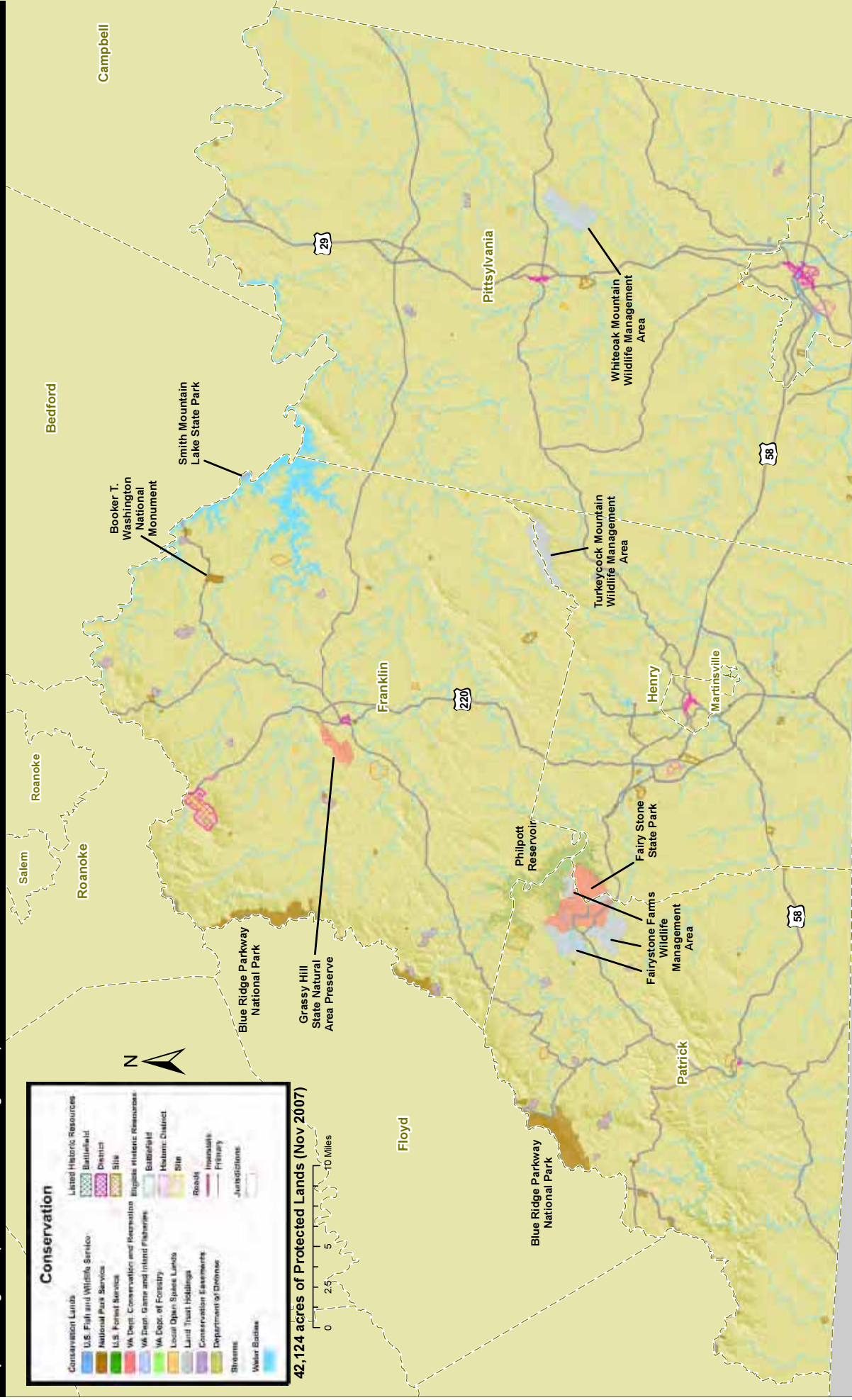
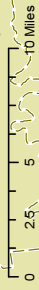
NI: not inventoried

(-) indicates surplus

Map X-24. Region 12 (West Piedmont Planning District) Conservation Lands



42,124 acres of Protected Lands (Nov 2007)



NORTH CAROLINA

Map X-25. Region 12 (West Piedmont Planning District) Outdoor Recreation

Recreation

Legend:

- Parkways and Byways:**
 - National Scenic Parkway
 - State Scenic Byway
 - Proposed Scenic Byways
- Scenic Rivers:**
 - Scenic River
 - Qualified River
- Trails:**
 - Existing / Under Development
 - Proposed
- Blueways:**
 - Existing
 - Proposed
- Roads:**
 - Interstate
 - Primary
- Listed Historic Resources:**
 - National Historic Landmark
 - State Historic Site
 - County Historic Site
- Conservation Lands:**
 - State Park
 - County Park
 - Private Land
- Recreation Features:**
 - Boat Access
 - Public Fishing Lakes
 - Jacobson
 - Streams
 - Water Bodies

Map Labels:

- Blue Ridge Parkway
- Blue Ridge National Park
- Grassy Hill State Natural Area Preserve
- Smith Mountain Lake State Park
- Fairy Stone State Park
- Philpott Reservoir
- Stanton River Blueway
- Blackwater River Blueway
- Staunton River Blueway
- Blue River Blueway
- Plum River Blueway
- Whiteoak Mountain Wildlife Management Area
- Turkeycock Mountain Wildlife Management Area
- Fairystone Farms Wildlife Management Area
- Patrick
- Floyd
- Roanoke
- Bedford
- Campbell
- North Carolina

Scale: 0 to 10 Miles

North Arrow: N

Introduction

The Southside Planning District is composed of Halifax, Mecklenburg and Brunswick counties and the towns of Alberta, Boynton, Brodnax, Chase City, Clarksville, Clover, Halifax, LaCrosse, Lawrenceville, Scottsburg, South Boston, South Hill and Virgilina. The region lies in the Piedmont Plateau physiographic province and is characterized by gently rolling uplands.

The Staunton (Roanoke) and Dan Rivers are the major recreational and scenic rivers in the region. Two other rivers, the Meherrin and Nottoway, also provide recreational boating, canoeing and fishing. The Staunton River is a designated state scenic river from Long Island in Campbell County to Clover Landing in Halifax County. The Meherrin is a designated state scenic river in Brunswick County.

The U.S. Army Corps of Engineers has developed the John H. Kerr Reservoir on the Roanoke River in Halifax and Mecklenburg counties. Dominion Virginia Power has developed Lake Gaston further downstream in Mecklenburg and Brunswick counties and into North Carolina. The combination of the two lakes provides more than 73,000 acres of inland waters for recreation. It should be noted that while there is a fair amount of public access to the Kerr Reservoir, public access to Lake Gaston is limited.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the *2007 Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 13 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Public participation in recreation is high, and the 2006 *Virginia Outdoors Survey (VOS)* recorded high demand for most activities. The needs analysis indicates a shortage of bicycle trail miles, campsites, playgrounds, swimming pools and hiking trails. Planning and funding are needed to create additional

developed park facilities for citizens. The needs analysis did not include demand generated by visitors from outside the region who use facilities. When visitor and tourist use of outdoor recreation facilities is factored in, shortages are indicated in other activities (See Table X-13).

Residents of Southern Virginia have an excellent supply of water-based recreation areas and facilities. Though few areas are publicly managed, the rural character of the area assures adequate open space and dispersed recreational lands in the short term. Some local parks, coupled with state parks and U.S. Corps of Engineer facilities, provide the majority of the public park acreage and facilities. The 2006 *Virginia Outdoors Survey* recorded a need for baseball fields and basketball courts in most local communities and for up to 21 soccer and football fields in the region. The large number of private recreational enterprises located around Lake Gaston and the Kerr Reservoir appear as surpluses in the inventory. However, these facilities often are not available for local use because of heavy seasonal visitation. Public areas may need to be developed to meet local needs not adequately met by private providers.

The region continues to experience a slight decline in population. In 2000, the region had a population of 88,149. By 2005, the population had decreased to 87,600. None of the localities in the Region 13 are served by a full-time parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Brunswick, \$1.79; Halifax, \$4.58; and Mecklenburg, \$0.92. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from Towns, \$43.75 from counties, and \$76.45 from cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map X-26.

Land Trusts and Conservation Programs Operating in Region 13

- Virginia Outdoors Foundation
- Trust For Public Land
- The Nature Conservancy
- The Conservation Fund
- Forest Legacy Program

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map 27).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide Trunkline Trails

1 The proposed **Trans-Virginia Southern Trail** runs from the Cumberland Gap to the Chesapeake Bay across the southern portion of the state. In this region, the trail runs from the Pittsylvania County line east along the abandoned Norfolk, Franklin and Danville Railroad and the Richmond to Danville Railroad corridors to link with components of the Tobacco Heritage Trail. This then connects to the Virginia Beach Pipeline Trail which links with existing and proposed compo-

nents of the Tidewater trail system. This “Cumberland Gap to the Chesapeake Bay Trail,” once constructed, will connect many of the towns in Southern Virginia and provide the backbone for many local trail systems. State, regional and local agencies and organizations should partner to continue planning and implementation of this trail.

2 The **Tobacco Heritage Trail** utilizes abandoned railroad corridors and a series of connector trails to link the communities of the region together. This trunk-line trail system forms the major elements of the Trans-Virginia Southern Trail as it crosses through the region. State, regional and local agencies and organizations should continue to partner to continue planning and implementation of this trail.

Other trails

3 The abandoned **Seaboard Coastline** railroad corridor is being evaluated as the route of the Southeast High Speed Rail Line. This project should be developed as a multi-modal transportation project by including the provision of a bicycle and pedestrian trail in the planning, design and construction of the high speed rail service. From just south of Petersburg to Raleigh, this corridor could serve as the alignment for the East Coast Greenway. This corridor also connects the Tobacco Heritage Trail on the Norfolk, Franklin and Danville rail line with the Tobacco Heritage Trail on the Virginian rail corridor, thereby linking the two rails-to-trails together from LaCrosse to Alberta.

4 The **Dan River Trail** should connect South Boston with Staunton River State Park. This trail would follow the river and lie mostly on Corps of Engineer project lands.

5 The section of the former **Richmond-Danville Railroad** line is being developed as a rail-to-trail conversion from Ringgold to South Boston. This rail line parallels the Dan River and would provide a terrestrial component to the proposed Dan River Canoe Trail. This trail is an identified component of the Tobacco Heritage Trail system. The Richmond to Danville Railroad line between South Boston and Clover is lightly used and should be considered for a rail-with-trail project linking the Tobacco Heritage Trail to the Wilson Kautz Raid Trail and the Staunton River Trail.

6 The **Staunton River Trail**, a multi-use trail connecting Staunton River Battlefield with Staunton River State Park, is being planned. This trail would follow the river and lie mostly on the Corps project lands. An intermediate access and parking area needs to be developed at the Dryburg Road crossing of Difficult Creek.

7 Improvements have been made with the 1992 bond funds at **Occoneechee State Park** to enhance public health, safety and enjoyment of the park. Trails have been enhanced throughout the park. A connector trail needs to be developed that will link the state park with the Tobacco Heritage Trail near Jeffress. The Tobacco Heritage Trail should be extended south into Clarksville from Jeffress using the old Route 58-Business bridge over the reservoir. The remaining sections of abandoned Norfolk, Franklin and Danville rail corridor in Halifax County should be acquired. This trail should be extended into North Carolina and connected to Danville from the south.

8 **U.S. Bicycle Route 1** should be enhanced and properly identified. State, regional and local agencies and organizations should determine the best route and develop plans for signage and mapping.

9 The Towns of Halifax and South Boston should continue to develop a trail on utility easements that follow **Terry's Creek and Toot's Creek**.

10 A **connector trail** should be developed that will join the **Tobacco Heritage Trail at Lawrenceville** with the Tobacco Heritage Trail segment located on the old Virginian Rail Road corridor in the vicinity of Dolphin or Smokey Ordinary.

11 A **trail corridor** should be identified that would link **Lawrenceville with Fort Christanna** in Brunswick County. Portions of this trail could provide access to the Meherrin River, which is a state scenic river.

Water Access

Blueways and water access are critical in a water rich state such as Virginia. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- State, regional and local agencies and organizations should partner to provide needed access approximately every five miles along the Staunton, Dan, Meherrin, Banister, and Nottoway rivers. Although many access sites are already provided, several long stretches of these rivers need additional access. Where appropriate, portages should be created around dams and other river obstacles. Support facilities needed for water trails should be added at appropriate intervals.
- 12 The **Staunton River** below Leesville Dam supports recreational boating for most of the season. While DGIF offers a series of public access areas along the river, there is a need for additional access and public use areas to meet all the expectations for a water trail. Local governments should work with local user groups and landowners to provide additional public access where needed to make the water trail functional and provide the needed support facilities for recreationists.
- 13 State, regional, and local agencies and organizations should partner to develop the **Dan River** as a water trail from Danville to Staunton River State Park. A series of managed access and public use areas should be provided to meet the needs of water trail users while protecting riparian property owners.
- 14 State, regional, and local agencies and organizations should evaluate the **Banister River** in Halifax County as a potential blueway.
- 15 The **Meherrin River** in Brunswick County was recently designated a scenic river. The Meherrin River is an attractive resource, but a series of public access sites and use areas needs to be developed to support recreational use of the river. Regional and local organizations and agencies should work together to extend this water trail for the entire length of the Meherrin River.
- 16 The **Nottoway River** provides excellent scenery and recreational boating. State, regional and local agencies and organizations should develop this resource as a water trail.

17 Lake Gaston needs additional public access on the Virginia portion of the lake. There are only four public boat landings on the Virginia portion of the lake and no public access for swimming or picnicking. The Department of Conservation and Recreation (DCR), the Department of Game and Inland Fisheries (DGIF), and local governments should work with public and private partners to provide additional public access for boating, swimming, picnicking and lake use on the Virginia portions of the lake.

18 Additional public access is needed for **Kerr Reservoir**, especially for bank fishing and lakeside trails for scenic viewing and wildlife watching. DCR, DGIF and local governments should work with public and private partners to provide additional public access on Kerr Reservoir.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build relationships with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations who own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of historic and architectural resources in Mecklenburg and Brunswick counties.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from mountaintops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. There has also been a tremendous interest in thematic trails including Civil War trails, the Wilderness Road Trail, the Birding and Wildlife trails, the Revolutionary War trails, the African-American Heritage Trail system, and other driving tour routes. The region's beautiful countryside is accessed by a system of well-maintained roads. Several of these roads are particularly scenic. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

- 19 The Route **715** loop from Route 46 over Iron Bridge and back to Route 46 in Brunswick County makes a scenic tour and crosses the Meherrin State Scenic River.
- 20 **Routes 360** (Mountain Road) and **Route 659** (River Road) in Halifax County as components of a scenic loop that includes Routes 729, 360, 659, and 729 in Pittsylvania County.
- 21 Route **615** and **Route 707** from Route 903 westward to Route 58.
- 22 Routes which make up **Bike Route 1** through the region: **Routes 4, 674, 669, 664 and Route 635** from Route 4 to the North Carolina line.
- 23 **Route 903** in Brunswick County from Ebony to the North Carolina line.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. The Meherrin River in Brunswick County was designated as a Virginia Scenic River in 2006. The Staunton River had its Scenic River designation extended from Brookneal to the Clover Landing in Halifax County. Regional and local recommendations include:

- Localities should adopt planning tools, e.g., land use overlays, corridor management plans, that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- 24 The **Dan River** in its entirety.
- 25 The undesignated portions of the **Meherrin River** in Mecklenburg County.
- 26 The **Nottoway River** in Brunswick County.
- 27 The **Banister River** in Halifax County.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed Groups in Region 13

- Dan River Basin Association
- Roanoke River Basin Association
- Clean Virginia Waterways
- Virginia Conservation Network

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local and regional environmental education organizations should assess the outdoor environmental education facilities existing in this region.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

Other Federal Facilities

- 28 The **John H. Kerr Reservoir** and associated project lands in Mecklenburg and Halifax counties offers areas that may be suitable for additional recreational

opportunities. The John H. Kerr Reservoir includes 25,000 acres of project lands in Virginia in addition to reservoir acreage. Some of these lands have development potential for increasing recreational use of this 20,000-acre lake. In particular, two long-distance trails have been proposed on project lands. The first is along the north bank of the Dan River from South Boston to Staunton River State Park. The second is along the banks of the Staunton River from Staunton River Battlefield State Park to Staunton River State Park. There is also an opportunity to increase the number of bank fishing and water access areas around the reservoir. Small parking areas with short trails along the shoreline in areas with good fishing potential should be developed to meet the need for more fishing access.

Sections of the Tobacco Heritage Trail traverse Kerr Reservoir property and require restoration of several bridges that were removed during salvage. Piers and bridge support structures still remain, but spans need to be replaced. The Corps should cooperate with Tobacco Heritage Trail managers to restore the missing bridges.

29 Fort Pickett in Nottoway, Dinwiddie and Brunswick counties should be evaluated for opportunities to increase public recreational use within the base mission.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State Parks

30 The **Staunton River Battlefield State Park** is being expanded through acquisition of additional lands to protect the battlefield site. The Mulberry Hill Plantation buildings have been stabilized. The plantation and its owners played prominent roles in the settlement and history of this part of the Staunton River Valley.

Archeological excavations at the park have uncovered significant artifacts of Native American habitation of this area. The refurbished Randolph train depot has exhibits that tell several “stories” — the story of the people who inhabited this area prior to European colonization and the story of the settlement and history of the Staunton River Valley.

31 At **Staunton River State Park**, efforts are underway to develop equestrian facilities to include a horse trail connecting the park with the Staunton River Battlefield State Park. This trail would follow the river and lie mostly on the Corps of Engineer project lands. There have been major additions of land to the western edge of Staunton River State Park. This new acreage includes fishing lakes, locations for additional overnight facilities and additional miles of roads suitable for equestrian and bicycle trails. The master plan for the park should be revised to consider how the new lands should be managed.

Park staff should cooperate with the U. S. Army Corps of Engineers, local governments and trail advocacy organizations to develop and operate the Dan River Trail and the Staunton River Trail on Kerr Reservoir project lands.

32 Improvements have been made with the 1992 bond funds at **Occoneechee State Park** to enhance public health, safety and enjoyment of the park. The campgrounds have been improved and the visitor center exhibits replaced. An equestrian campground is under development. A connector trail needs to be constructed that links the park to the Tobacco Heritage trail near Jeffress.

33 A state park has been proposed in Brunswick County that would take advantage of the features of the Meherrin State Scenic River, Fort Christanna, and the historic, scenic, and recreational resources of the region. Another potential site in Brunswick County is on Lake Gaston where additional public ownership would enhance public access to water based recreational activities.

State Fish and Wildlife Management Areas (WMA)

The Virginia Department of Game and Inland Fisheries should continue to develop trail systems within wildlife management areas to facilitate access for nature study, bird watching, hunting and fishing. The Virginia Department of Game and Inland Fisheries (DGIF) manages the 1,400- acre Dick Cross Wildlife Management Area in this region.

34 Additional land acquisitions are proposed for the **Dick Cross** (formerly Elm Hill) **Wildlife Management Area** in Mecklenburg County. This wildlife management area contains lands that can meet many regional demands for dispersed recreation. In a combined effort with local governments, hiking trails can be more fully developed and enjoyed outside of the normal hunting

season. and horseback riding and bicycling may take place on roads and larger trails. Nature study, wildlife viewing, picnicking and fishing are also available.

State natural area preserves

Difficult Creek Natural Area Preserve in Halifax County is located within Region 13.

DCR, as of November 2006, documented 194 occurrences of 82 rare species and natural communities in the Southside Planning District. Twenty-five species are globally rare and four are federally threatened or endangered. Sixty-six conservation sites have been identified in the district; 32 (48 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, no sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 13, DCR is particularly interested in protecting:

- Buffer lands around Fort Pickett.
- Additional lands around Difficult Creek Natural Area Preserve.
- Piedmont hardpan forest and Piedmont savannah communities.
- Granite flatrock communities.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

The following properties contain undeveloped land that may be suitable for recreational use:

35 Medium Security Institute #1 in Brunswick County has 700 acres of undeveloped land that should be evaluated for its potential for meeting local recreational demand.

36 Southside Community College in Brunswick County has 62 acres of land that should be evaluated for its recreational potential.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Region 13 counties have an adopted Bicycle-Pedestrian plan. VDOT and the local governments should work closely together to implement these plans.

37 U.S. Bicycle Route 1 should be enhanced and properly identified. State, regional and local agencies and organization should determine the best route and develop plans for signage and mapping (see Recommendation 8).

38 Bicycle and pedestrian accommodations should be included as part of the project scope when planning the **Southeast High Speed Railway** on the alignment of the former CSX Railroad's Seaboard Line (the S Line). This corridor would make an appropriate

alignment for the East Coast Greenway, and it also provides important linkages for the Tobacco Heritage Trail and the Trans-Virginia Southern Trail (see Recommendation 3).

Local and regional parks and recreation departments

In this region, only Halifax County and the Town of South Boston have full time parks and recreation departments. The other localities should consider making a larger commitment to addressing the recreational needs of their citizens. For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The Tobacco Heritage Trail will be connecting many of the communities of Southern Virginia together as one long linear park. Local governments should partner to continue planning and implementation of this trail.

Regional Parks

39 Great Creek Reservoir in Brunswick County is a 212-acre impoundment with 8.1 miles of shoreline. The lake provides opportunities for fishing and boating. Recreational facilities recently constructed on the upland areas will provide picnicking, trails, athletic play fields and other opportunities for the community. Brunswick County should work with other regional and local partners to connect this park to the Tobacco Heritage Trail and to downtown Lawrenceville so the public can visit the park without having to drive a vehicle.

Local Parks

40 The Town of Alberta is developing a park and trails system and may utilize portions of the Virginian Railroad corridor through town. This section of railroad will also be part of the Tobacco Heritage Trail and should connect the town's trails with the rest of the region.

41 The Town of South Boston is developing **Cotton Mill Park**. A connector trail should link the park to the Tobacco Heritage Trail.

42 The **Town of LaCrosse** is developing a town park system. The Town should look for connectors to the Tobacco Heritage Trail.

43 Brunswick and Mecklenburg Counties should look for opportunities to acquire park land on **Lake Gaston** to help meet the need for public access and water enhanced recreation.

Private sector

This region is a major destination area for vacationers. Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- There is a great deal of interest in outdoor adventure recreation. Canoe liveries and rafting trips may be good businesses to develop along canoeable rivers such as the Dan, Nottoway, Staunton and Meherrin. By developing agreements with riparian landowners along a river, livery operators can offer their customers canoeing trips of various lengths with camping available at prearranged spots.
- Local governments and developers should give design consideration to the natural contours of the land when planning and constructing.
- Regional and local organizations should continue to support campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities.
- Regional and local organizations and businesses should assess entrepreneurial opportunities that may exist for outfitter services to provide canoeing, kayaking, boat launches, and canoe-in campgrounds. Multi-field sports complexes and swimming pools may also be appropriate private sector endeavors.
- Private enterprise should consider fee-based hunting, fishing and boating access.
- Regional and local organizations and businesses should assess the expansion capability for the hospitality industry to support outdoor recreation venues. Bed and breakfasts, hotels, motels and camping facilities that are located in attractive settings near recreation areas may find ample demand to justify the investment.
- Marinas, and especially dry storage boat facilities, should be evaluated for the Kerr Reservoir and Lake Gaston on the Virginia side.

44 Lake Gaston was constructed by Dominion Power Company as a hydro-electric project. The lake that the dam created provides a significant amount of flat water recreational acreage for the region. This lake has become an important destination tourism attraction and a popular second home or retirement location. In 2005, the project was re-licensed by the Federal Energy Regulatory Commission (FERC), and Dominion agreed to contribute funds to acquire and develop a public park on the Virginia shore of the reservoir. Local and state governments should try to identify the best site to acquire and develop (see Recommendation 33).



View to Kerr Reservoir. Photo by DCR.



Oconeechee State Park cabin. Photo by DCR.

Table X-13. Region 13 (Southside Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	207,198	41	fields	32	9	11
Basketball	198,828	47	goals	28	19	21
Bicycling	160,270	11	miles	NI		
Mountain	23,993	2	miles	NI		
Other	136,277	10	miles	NI		
Lake, river and bay use (combined)	256,498	4,870	water acres	54,077	-49,207	-49,076
Power boating	126,851	3,057	water acres	S		
Sailing	17,966	155	water acres	S		
Saltwater fishing	58,537	329	water acres	S		
Jet ski, personal watercraft	21,557	338	water acres	S		
Water skiing, towed on water	31,588	990	water acres	S		
Camping	127,018	749	sites	2,751	-2,002	-1,946
Tent camping	61,618	363	sites	664	-301	-269
Developed camping	65,400	386	sites	2,087	-1,701	-1,677
Fitness trail use	60,596	5	mile trails	2	3	3
Fields (combined)	217,827	46	fields	25	21	23
Football	113,292	24	fields	25	-1	0
Soccer	104,535	22	fields	-	22	23
Stream use (combined)	382,089	243	stream miles	96	147	161
Freshwater fishing	332,192	234	stream miles	S		
Human-powered boating	24,803	6	stream miles	S		
Rafting	5,932	1	stream miles	S		
Tubing	19,162	3	stream miles	S		
Golfing	112,326	4	courses	126	-3	-3
Hiking, backpacking	165,037	85	trail miles	226	-141	-137
Horseback riding	33,579	15	miles	75	-60	-59
In-line skating	24,416	2	miles	NI		
Jogging, running	1,129,896	91	mile trails	NI		
Nature study, programs	30,772	4	sites	1	3	4

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-13. Region 13 (Southside Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from Home	119,942	311	tables	915	-604	-583
Skateboarding	51,004	16	sites	NI		
Snow skiing or snowboarding	19,893	1	ski lifts	-	1	1
Softball	153,914	27	fields	21	6	8
Sunbathing, relaxing on beach	222,307	16	beach acres	2	14	15
Swimming	1,006,320	69		NI		
Outdoor Area	529,960	54	beach acres	2	52	55
Outdoor pools	309,099	13	pools	22	-9	-8
Indoor pools	167,261	2	pools	-	2	2
Tennis	68,096	43	courts	20	23	25
Used a playground	259,821	37	sites	38	-1	1
Visiting gardens	42,536	5	sites	NI		
Visiting historic sites	153,824	13	sites	NI		
Visiting natural areas	181,370	31	sites	NI		
Volleyball	22,578	7	courts	-	7	7
Hunting	260,095	42,653	acres	103,952	-61,299	-58,232
Drive for pleasure	631,386	NA	NA	NI		
Driving motorcycle off road	34,745	16	miles	-	16	17
Driving 4-wheel-drive off road	73,916	NA	NA	NS		
Walking for pleasure	2,876,555	NA	NA	NI		
Bird watching	25,741	NA		NI		
Other	21,460	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

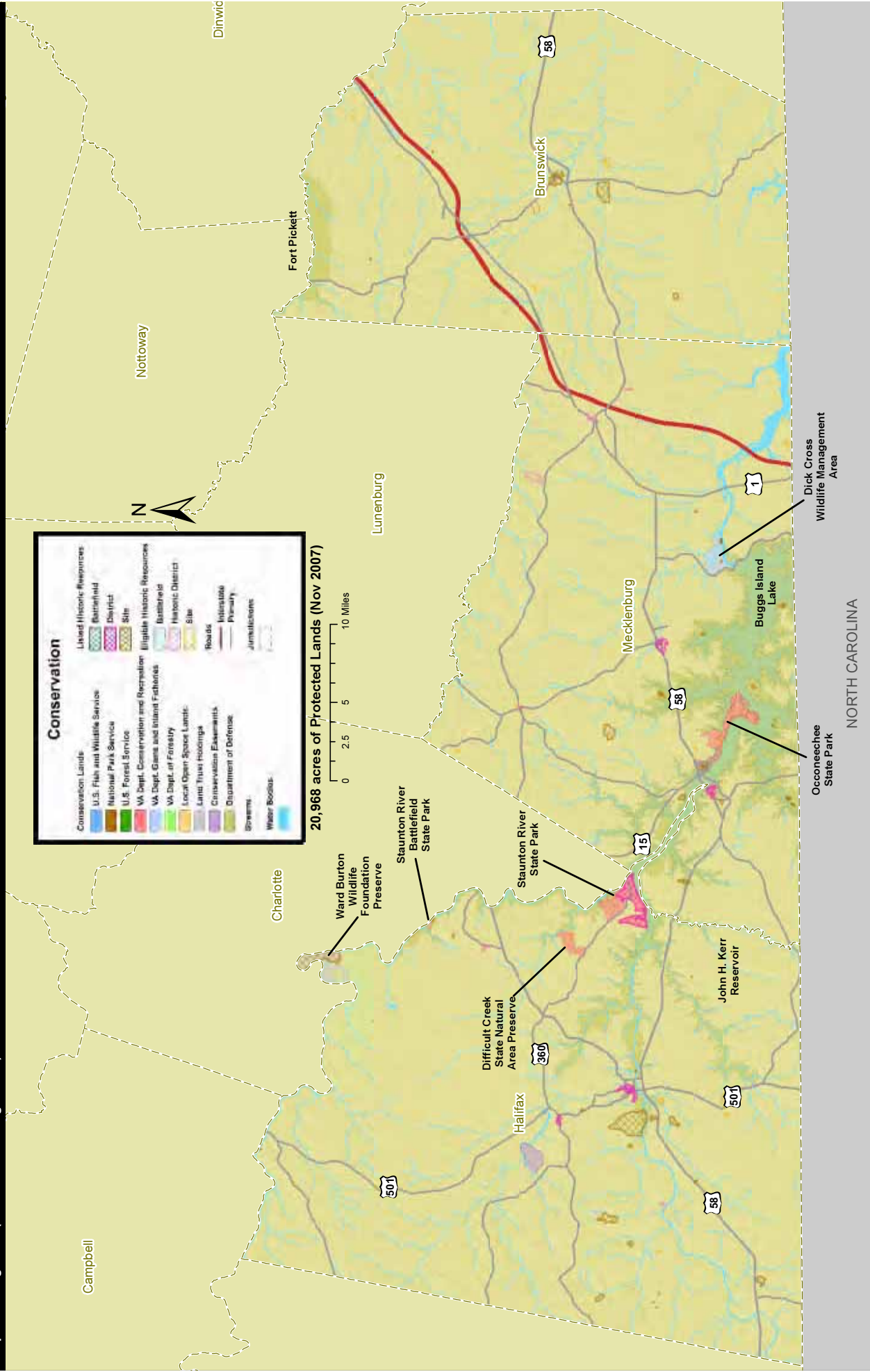
S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-26. Region 13 (Southside Planning District) Conservation Lands



[illegible]

Introduction

The Commonwealth Regional Council, formerly the Piedmont Planning District, lies in Virginia's Piedmont physiographic province. Rolling terrain and a rural countryside are the region's dominant characteristics. It is comprised of the counties of Amelia, Buckingham, Charlotte, Cumberland, Lunenburg, Nottoway and Prince Edward, and the towns of Blackstone, Burkeville, Charlotte Court House, Crewe, Dillwyn, Drakes Branch, Farmville, Kenbridge, Victoria, Phenix and part of Pamplin.

The region experienced a 2.9 percent population growth rate between 2000 and 2005. Future growth is anticipated to be steady, with the population in the region projected to increase 15.2 percent to 111,900 in 2020 from its 2000 population level of 97,102.

The region has a large number of streams and rivers. Some of the more significant rivers include the Slate, Appomattox, Nottoway, James, Meherrin (also North, Middle and South Meherrin), Willis, Staunton and North. The James and Appomattox rivers form the northern boundary of the region, while the Staunton and Meherrin rivers form the region's southern boundary. This richness in water resources gives the region the potential for water-related recreation; however, there is a need for greater public access to this region's waters.

The region's combination of rolling terrain, numerous water bodies, rural open space, working lands and small communities creates distinctive and pleasant scenery with lasting visual impressions. Most of the region's roads are edged with fields and forestland. State forests, parks, natural areas and wildlife management areas provide a core of publicly owned open space, natural resources and recreational opportunities. Four state wildlife management areas are: Amelia, Featherfin Farm, Horsepen Lake and Briery Creek. State parks include Bear Creek Lake, James River, Twin Lakes and Holliday Lake, as well as Sailor's Creek Battlefield, Staunton River Battlefield and the newly acquired High Bridge Trail State Park. The Appomattox-Buckingham, Cumberland and Prince Edward-Gallion state forests are also located in the region.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 14 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Based on input from public meetings, there is more need for transportation alternatives, specifically trails for walking, hiking and bicycling. If developed with multiple uses in mind, a comprehensive trail system could link small communities and specific destinations, thus providing exercise options and transportation alternatives. Safe cycling and walking opportunities should be provided for the entire community, but especially around Longwood University, Farmville and other towns in the region.

There is high demand for some recreational activities including walking, driving for pleasure, swimming, fishing, boating, use of playgrounds, bicycling and softball. The demand survey (see Table X-14) indicates a surplus of horseback riding trails. This surplus of riding trails attracts equestrians to this region, further justifying the need for campgrounds for horse enthusiasts.

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Amelia County, \$13.00; Buckingham County, \$5.50; Charlotte County, \$0.93; Cumberland County, \$2.95; Lunenburg County, \$0.00; Nottoway County, \$2.03; Prince Edward County, \$3.90; Town of Blackstone, \$61.50; and the Town of Farmville, \$1.32. The towns of Dillwyn, Phenix, Drakes Branch, Keysville, Charlotte Court House, Kenbridge, Victoria, Crewe, Burkeville and Pamplin were not listed in the report. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

The following counties in Region 14 do not have a full-time parks and recreation department to provide related facilities and programs to their community: Charlotte County, Cumberland County, Lunenburg County, Nottoway County and Prince Edward County.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map X-28.

Land Trusts and Conservation Programs Operating in Region 14

- APVA Preservation Virginia
- The Chesapeake Bay Foundation
- Civil War Preservation Trust
- The Conservation Fund
- The 500-Year Forest Foundation
- Friends of the Appomattox River
- James River Association
- The Nature Conservancy
- Roanoke River Rails to Trails, Inc.
- Virginia Department of Historic Resources
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Local and regional agencies and organizations should protect water quality and health of riparian lands adjacent to the James River.
- To reduce the amount of development sprawl in Region 14, local and regional agencies should implement conservation and land planning measures.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Regional and local agencies should develop a regional green infrastructure plan and promote the value of the planning model.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, scenic highways and Virginia byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-29).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

- Regional and local organizations and agencies should support efforts of the Farmville Greenways Alliance and other trail groups and expand these initiatives throughout the region.

Statewide trunkline trails

- State, regional and local agencies and organizations should support implementation of the James River Heritage Trail, which is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail follows the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia.
- State, regional and local agencies and organizations should support implementation of the Trans-Virginia Southern Trail, which will stretch from the Cumberland Gap to the Chesapeake Bay. This trail network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. A major segment of this trail includes the Tobacco Heritage Trail.

Regional Trails

- The Commonwealth Region Council has developed the Piedmont Regional Bicycle and Pedestrian Plan, which should guide efforts to improve bike and pedestrian facilities in Region 14.

1 The **Dogwood Trail** in Farmville should be connected to the proposed Wilkes Lake Park Trail and the High Bridge Trail State Park along Buffalo Creek.

- 2 State, regional and local agencies and organizations should support implementation of the **James River Heritage Trail**.
- 3 The **Cumberland-Appomattox Trail** in Cumberland and Buckingham counties would cross this region south of the James River.
- 4 State, regional and local agencies and organizations should support implementation of the **Trans-Virginia Southern Trail**.
- 5 **U.S. Bicycle Route 1** should be enhanced and properly identified. State, regional and local agencies and organizations should determine the best route and develop plans for signage and mapping.
- 6 The Department of Conservation and Recreation (DCR) should propose **Twin Lakes State Park** as part of the African-American Trail.
- 7 **High Bridge Trail State Park** is planned as a 33.8-mile stretch of a former Norfolk Southern rail corridor from near Burkeville to near Pamplin City. This trail will eventually connect with Appomattox Courthouse National Historic Park, Holliday Lake State Park, Featherfin Wildlife Management Area, Sailor's Creek Battlefield State Park, Twin Lakes State Park and the Tobacco Heritage Trail near Meherrin. The Department of Conservation and Recreation (DCR) should pursue funding and implementation of plans for this state park.
- 8 The **Tobacco Heritage Trail** should continue to be developed by converting abandoned railroads into trails. Components in the region include portions of the former Virginian Railroad corridor.

Water Access

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Blueways and water access are critical in a water rich state such as Virginia. Water access should be a high priority for public acquisition. Water access recommendations include:

- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Regional and local organizations should encourage conservation easements that allow public access.

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- 9 Regional and local agencies and organizations should develop the **Appomattox River Blueway**.
- 10 State, regional and local agencies should provide additional public access on the **James, Appomattox, Staunton** and **Slate rivers**, as well as all canoeable streams in the region.
- 11 The **Amelia Wildlife Management Area** has the potential to accommodate primitive camping and picnicking for non-motorized boats as a part of the Appomattox River Blueway.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should partner with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.

- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Regional and local agencies should support Civil War battlefield protection efforts.
- Regional and local agencies should protect Civil Rights in Education sites.
- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of historic and architectural resources in Amelia, Buckingham and Prince Edward counties.
- Local government and local and regional organizations should work with the state to meet the critical need for archaeological surveys in Amelia, Charlotte, Lunenburg, Nottoway and Prince Edwards counties, as well as for archaeological assessments of the archaeological resources in these five counties.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
- Encourage development away from mountaintops to protect significant vistas.
- Consider timber harvesting impacts on key viewsheds.

- Protect viewsheds along river corridors and scenic byways.
- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. There has been a tremendous interest in thematic trails including Civil War trails, the Wilderness Road Trail, the Birding and Wildlife trails, the Revolutionary War trails, the African-American Heritage Trail system, and other driving tour routes. The next logical step after the *Scenic Roads in Virginia* map would be to develop a series of regional maps or booklets that describe and help locate the resources and services found in all sections of the state. In Region 14, the Civil Rights in Education Heritage Trail, Lee's Retreat and the Wilson-Kautz Raid Trail should be supported and promoted for their historical and educational value and as a tourism driver. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments are potential Virginia byways and should be evaluated to determine if they qualify for designation:

- 12 **Route 15** south of Farmville in Prince Edward County.

13 A portion of **Route 460** in northern Prince Edward County.

14 **Route 626** in Appomattox and Buckingham counties.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools, e.g., land use overlays, corridor management plans, that will afford special recognition and protection to Virginia's scenic rivers.

In order to more successfully protect river resources, the following recommendations are given:

15 The **Staunton River** from Route 761 (Long Island) to Route 360 is designated a state scenic river. Impacts to the Staunton River from proposed commercial development along the riverbanks should be carefully evaluated. The Staunton River should be protected as a unique regional resource. Inappropriate development that compromises the scenic qualities of the river and the enjoyment of its natural beauty should be discouraged. Appropriate setbacks and buffers should be incorporated into plans to assure preservation of the river corridor and protect water quality.

16 The **North Meherrin River** from the Route 712 Bridge to the junction of the South Meherrin River is designated a state scenic river. Impacts to the North Meherrin River from proposed commercial development along the riverbanks should be carefully evaluated. The North Meherrin River should be protected as a unique regional resource. Inappropriate development that compromises the scenic qualities of the river and the enjoyment of its natural beauty should be discouraged. Appropriate setbacks and buffers should be incorporated into plans to assure the preservation of the river corridor and protect water quality.

The following river segments qualify for designation as Virginia Scenic Rivers:

17 The **James River** from Wingina to Maidens.

18 The **Staunton River** from Route 360 to Staunton River State Park.

19 The **Meherrin River** from the North Meherrin confluence to the Brunswick County line.

20 The **Appomattox River** from Route 612 to Route 608 in Prince Edward and Buckingham counties.

21 The **Slate River** from Route 20 to the James River in Buckingham County.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

22 The **Appomattox River** from Route 608 to the Powhatan County line.

23 The **James River** from Bent Creek to Wingina in Buckingham County.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 14

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Clean Virginia Waterways
- Friends of the Rivers of Virginia
- James River Association
- Middle James Roundtable
- Roanoke River Basin Association
- Virginia Conservation Network

Watershed recommendations for this region include:

- Regional and local organizations and agencies should conserve areas around Roanoke Creek.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local and regional environmental education organizations should assess the outdoor environmental education facilities existing in this region. Environmental education should be expanded in the region by providing more opportunities at the region's vast public natural areas and parks, including the state parks, state forests and wildlife management areas.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy in order to allow mountain bikes to use appropriate national park trails.
- NPS, with state, regional and local partners, should continue to develop multi-modal connections to NPS sites as a component of an interconnected, statewide system of trails and greenways. Efforts underway should be supported at parks such as Petersburg National Battlefield, Appomattox Court House National Historical Park and Richmond National Battlefield, which are currently engaged in efforts to link battlefields, historic sites, parks and communities.
- NPS should continue to work with state agencies to elevate battlefield protection in various land conservation, scenic viewsheds and heritage preservation initiatives.
- NPS should rely on partnerships to identify, prioritize and develop strategies to protect critical resources.

Other federal facilities (military)

24 Fort Pickett in Nottoway, Dinwiddie and Brunswick counties should be evaluated for opportunities to increase public recreational use within the base mission.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State Parks

25 Bear Creek Lake State Park (326 acres) is in Cumberland County and is surrounded by the Cumberland State Forest. The park has a 40-acre lake available for swimming, fishing and boating. The 2002 General Obligation Bond (GOB) provided funds to construct one six-bedroom lodge, 10 two-bedroom cabins, two three-bedroom cabins and a meeting

facility with a kitchen. The park has traditionally offered 53 campsites with a mix of full service hook-ups and tent sites, picnicking, swim beach and concession, and boat rentals. The park has more than six miles of hiking trails and also provides links to the Willis River Trail and Cumberland multi-use trail located in the state forest. Also through the 2002 General Obligation Bond (GOB), the park received funds to construct new trails and renovate existing trails.

26 Holliday Lake State Park (255 acres) is in Appomattox County and is surrounded by the Appomattox-Buckingham State Forest. The park has a 150-acre lake which is available for swimming, boating and fishing. Existing park facilities include a 30-site campground, a large shaded picnic area, two picnic shelters, two playgrounds, a boat ramp, a seasonal full-service concession stand and camp store, and boat rentals. Through the 2002 GOB, the park will be getting a campground expansion and funds to enhance the trail system. The park has five hiking trails and one aquatic trail. Lakeshore Trail is a 6.3-mile hiking trail that loops around the lake and the Holliday Lake 4-H Educational Center. A trailhead for the Carter Taylor Multi-Use Trail can also be found in the park. This trail is a 12-mile loop in the Appomattox-Buckingham State Forest for hikers, bicycle riders and horseback riders.

27 James River State Park (1,525 acres) is in Buckingham County. The park was acquired with funds from the 1992 General Obligation Bond. Water access and water views are a primary focus of the park offerings. The park has three fishing ponds, three miles of riverfront, two primitive campgrounds and two boat launches. In addition, the park offers two picnic areas, six shelters, and 20 miles of trails for hiking, biking and equestrian use. The 2002 GOB has provided funds for several new park facilities, which include 16 cabins and two six-bedroom lodges, a third campground with full-service hook-ups, an equestrian campground and an office-visitor center complex as well as trail improvements.

28 Sailor's Creek Battlefield State Park (321 acres) is in Amelia, Nottoway and Prince Edward counties. Placed on the National Register of Historic Landmarks in 1985, the park was the scene of the last major battle of the Civil War. On April 6, 1865, also referred to as the Black Thursday of the Confederacy, General Robert E. Lee's Army of Northern Virginia lost 7,700 men, including eight generals. This defeat was key to Lee's decision to surrender at Appomattox Courthouse 72 hours later, ending the war in Virginia. Period costumed interpreters commemorate the event and con-

duct other living history events throughout the year. The Hillsman House, used as a field hospital during the battle, is open to visitors. The park is also a stop on the Lee's Retreat Driving Tour. Through the 2002 GOB, funding was provided to build a visitor center and support facility, renovate the Hillsman House and enhance the trails within the park.

29 Staunton River Battlefield State Park (300 acres) is in Charlotte and Halifax counties. The park is split by the Staunton River, and includes a .8-mile segment of abandoned rail corridor that crosses the Staunton River Bridge and travels past the Randolph Depot. The visitor center was opened in 1995 as a result of a unique partnership between Virginia State Parks, Virginia Power, Old Dominion Electric Cooperative and the Historic Staunton River Foundation. The park also includes Mulberry Hill, which was nominated to the National Register of Historic Places in 1972 for its significance as the home of Judge Paul Carrington, who was a distinguished jurist and leader of the independence movement in Virginia in the late 1700s. Mulberry Hill also played a prominent role in the Battle of Staunton River Bridge during the Civil War in 1864. The park offers hiking, bicycle, and self-guided historical and nature trails. A picnic area and shelter are also available. Through the 2002 GOB, funding was available to renovate Mulberry Hill and to construct an equestrian facility.

30 High Bridge Trail State Park (approximately 600 acres) is an abandoned railroad right-of-way that was donated by Norfolk and Southern Railway Company (NSR) to DCR for development as a state park. The trail is 33.8 miles long, and it starts near Burkesville in Nottoway County, extends northwest into Cumberland and Prince Edward counties, bisects the Town of Farmville, and ends near Pamplin City. Originally, the rail line was a portion of the Petersburg to Lynchburg rail line constructed by Southside Railroad Company from 1849 to 1854. The railroad right-of-way has a typical width of approximately 80 feet and is wider in areas that were necessary for construction of the railway. A park master plan has been developed, which describes proposed future development for the site. Initial funding for development of the park would be through grants and a special appropriation by the 2007 General Assembly.

31 Twin Lakes State Park (495 acres) is centrally located in Prince Edward County and was originally acquired in 1939 from local farmers. During the time of segregation in the south (1950), the property was split into two parks, Prince Edward State Park for Negroes and Goodwin Lake State Recreational Area,

which served whites. Each park consisted of a lake for swimming and fishing, a camping area and a picnic area. In 1964, the two were merged back into one park, and in 1986, it was given the current name. The park offerings today still include swimming, fishing, and camping, as well as cabins, trails, two boat launches, and a conference center, which has three meeting rooms, a full service kitchen, and a dining area. Through the 2002 GOB, funding has been allocated for a maintenance area and residence. Because of its unique history, efforts should be made to include the park as a stop on the African American Trail.

State natural area preserves

There are currently no dedicated natural area preserves within Region 14. DCR has, as of November 2006, documented 142 occurrences of 81 rare species and natural communities in this region. Twenty-five species are globally rare and five are federally threatened or endangered. Forty-seven conservation sites have been identified in the district. Twenty-five sites (53 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, no sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 14, DCR is particularly interested in protecting:

- Significant communities and rare species habitats along the Nottoway River in Lunenburg and Nottoway counties.
- Piedmont hardpan forest and Piedmont savannah communities.
- Granite flatrock communities.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best

Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.

- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

32 The DOF should continue development of the Appomattox to Cumberland hiking trail in the **Appomattox-Buckingham State Forest**.

33 The DOF should expand bicycling and hiking opportunities in **Prince Edward-Gallion State Forest**.

34 A comprehensive program should be established between DOF and DCR to preserve, develop and interpret the **Camp Gallion Civilian Conservation Corps** site in Gallion State Forest.

State fish and wildlife management areas (WMA)

- The Virginia Department of Game and Inland Fisheries (DGIF) should continue to work with local and regional governments to support the Birding and Wildlife trail program.
- DGIF should continue to develop trail systems within wildlife management areas to facilitate access for activities other than hunting and fishing.
- 35** DGIF should evaluate the **Amelia WMA** in Amelia County for its potential to accommodate additional recreational development, such as trails and river

access opportunities, which would be beneficial in meeting some of the region's recreational needs.

36 The **Featherfin Farm WMA** was acquired by the DGIF in 2005. The parcel, located about 10 miles west of Farmville, consists of approximately 2,800 acres and borders more than 10 miles of the Appomattox River in Prince Edward, Appomattox and Buckingham counties. The property has a long-established hunting heritage and will be included in DGIF's Quota Hunting system, which requires hunters to apply pre-season and be selected for hunting privileges by random drawing. This largely wooded tract provides a diversity of rolling piedmont habitats that support upland species such as deer, turkeys, squirrels and an occasional bear, and it includes approximately 300 acres of fields and woodland edges that provide habitat for rabbits, quail and other small game. A variety of other wildlife also occurs on the property, which promises to provide good wildlife viewing opportunities. DGIF should evaluate the **Featherfin Farm WMA** for its potential to accommodate additional recreational development during non-hunting seasons.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The counties of Charlotte, Cumberland, Lunenburg, Nottoway, and Prince Edward do not have a fulltime parks and recreation department to provide related facilities and programs to their communities. These localities should consider committing resources for the development of parks and recreation departments.

37 Localities should consider transforming old school sites and other abandoned public sites for public parks and recreational use. One such project is located on 9.25 acres in Dillwyn and is known as the **Buckingham Training School**. This adaptive reuse project serves as a community park. As planned by Buckingham County, the buildings on this site, the first African-American High School in Buckingham County (1923), should be restored and adapted to meet other public beneficial uses.

Private sector

This region is a major destination area for vacationers. Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-C: Resource Agencies.

The following recommendations pertain to this region:

- Regional and local organizations should continue to support campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities.
- Regional and local organizations and businesses should assess entrepreneurial opportunities that may exist for outfitter services to provide canoeing, kayaking, boat launches, canoe-in campgrounds, multi-field sports complexes and swimming pools.
- Private sector should evaluate fee-based hunting, fishing, camping and boating access opportunities.
- There is a need to provide areas for the use of all-terrain vehicles. The private sector should evaluate the potential to offer these opportunities.
- Regional and local organizations and businesses should assess entrepreneurial opportunities that may exist as a result of the new High Bridge Trail State Park. Activities that will support the park include campgrounds and cabins for hikers, bicycle rentals, horse livery and bed and breakfast establishments.



Sailors Creek State Park. Photo by DCR.

Table X-14. Region 14 (Commonwealth Regional Council) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	236,338	47	fields	28	19	25
Basketball	210,734	50	goals	8	42	49
Bicycling	164,452	12	miles	NI		
Mountain	23,634	2	miles	NI		
Other	140,818	10	miles	NI		
Lake, river and bay use (combined)	312,753	5,995	water acres	2,533	3,462	4,280
Power boating	155,786	3,755	water acres	S		
Sailing	22,058	191	water acres	S		
Saltwater fishing	70,901	399	water acres	S		
Jet ski, personal watercraft	22,649	355	water acres	S		
Water skiing, towed on water	41,359	1,296	water acres	S		
Camping	108,124	638	sites	240	398	485
Tent camping	46,086	272	sites	28	244	281
Developed camping	62,039	366	sites	212	154	204
Fitness trail use	48,942	4	mile trails	-	4	4
Fields (combined)	234,270	49	fields	9	40	47
Football	132,940	28	fields	9	19	23
Soccer	101,330	21	fields	-	21	24
Stream use (combined)	376,072	240	stream miles	144	96	129
Freshwater fishing	326,934	230	stream miles	S		
Human-powered boating	27,474	7	stream miles	S		
Rafting	3,939	1	stream miles	S		
Tubing	17,725	2	stream miles	S		
Golfing	103,201	3	courses	90	-2	-1
Hiking, backpacking	164,452	84	trail miles	156	-72	-60
Horseback riding	27,573	12	miles	128	-116	-114
In-line skating	22,649	2	miles	NI		
Jogging, running	1,320,536	106	mile trails	NI		
Nature study, programs	31,512	4	sites	-	4	5

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-14. Region 14 (Commonwealth Regional Council) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	109,503	284	tables	388	-104	-65
Skateboarding	38,405	12	sites	NI		
Snow skiing or snowboarding	20,680	1	ski lifts	-	1	1
Softball	155,589	28	fields	18	10	13
Sunbathing, relaxing on beach	233,679	17	beach acres	5	12	14
Swimming	984,740	69		NI		
Outdoor area	529,790	54	beach acres	5	49	57
Outdoor pools	293,453	12	pools	9	3	5
Indoor pools	161,497	2	pools	-	2	2
Tennis	61,940	39	courts	33	6	11
Used a playground	249,336	35	sites	9	26	31
Visiting gardens	48,745	5	sites	NI		
Visiting historic sites	153,324	13	sites	NI		
Visiting natural areas	174,496	30	sites	NI		
Volleyball	10,931	3	courts	1	2	3
Hunting	226,096	37,077	acres	70,752	-33,675	-28,619
Drive for pleasure	601,676	NA	NA	NI		
Driving motorcycle off road	37,420	17	miles	-	17	19
Driving 4-wheel-drive off road	54,358	NA	NA	NS		
Walking for pleasure	3,136,397	NA	NA	NI		
Bird watching	24,815	NA		NI		
Other	4,333	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

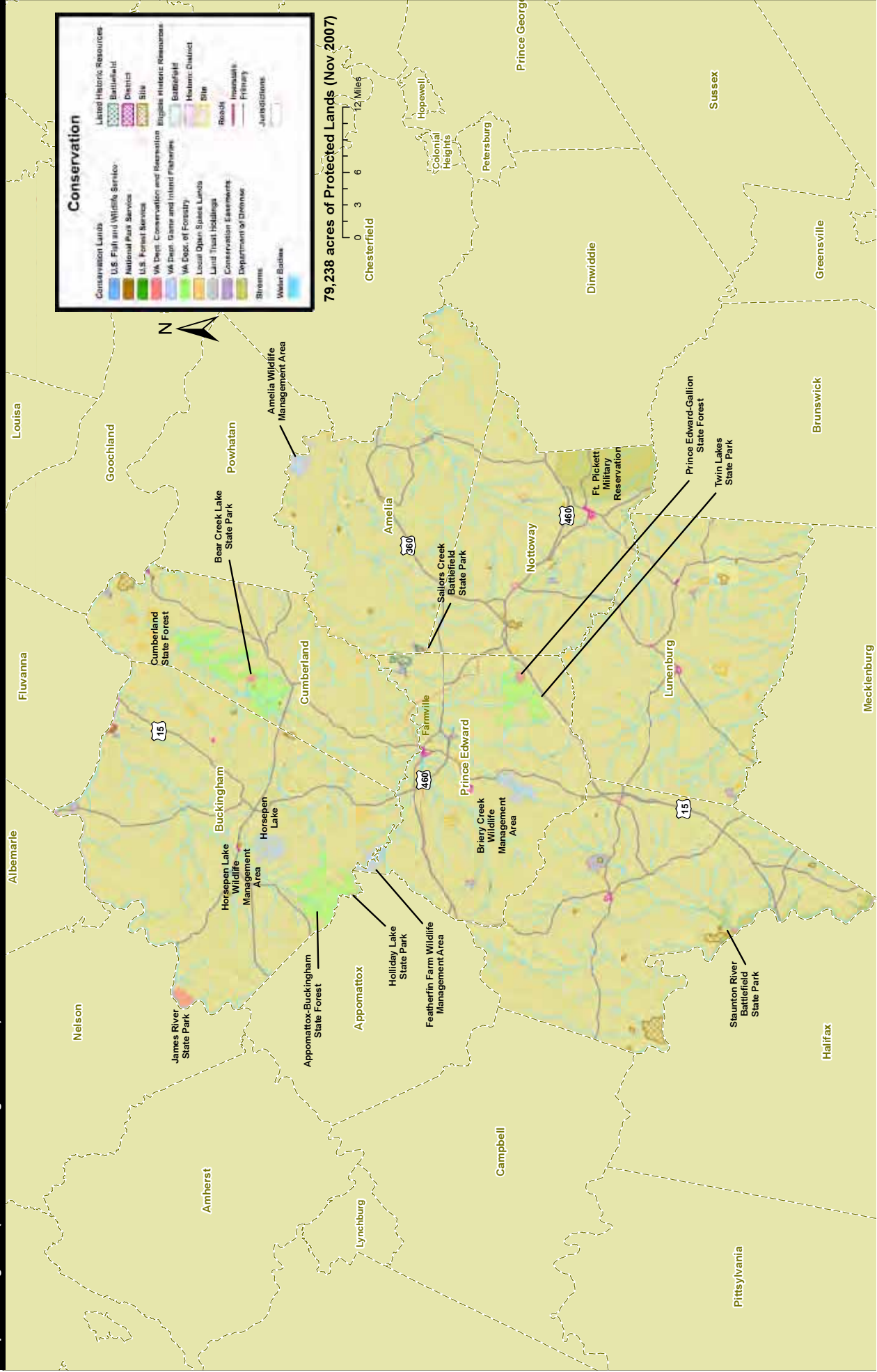
S: same as combined

NS: not inventoried separately

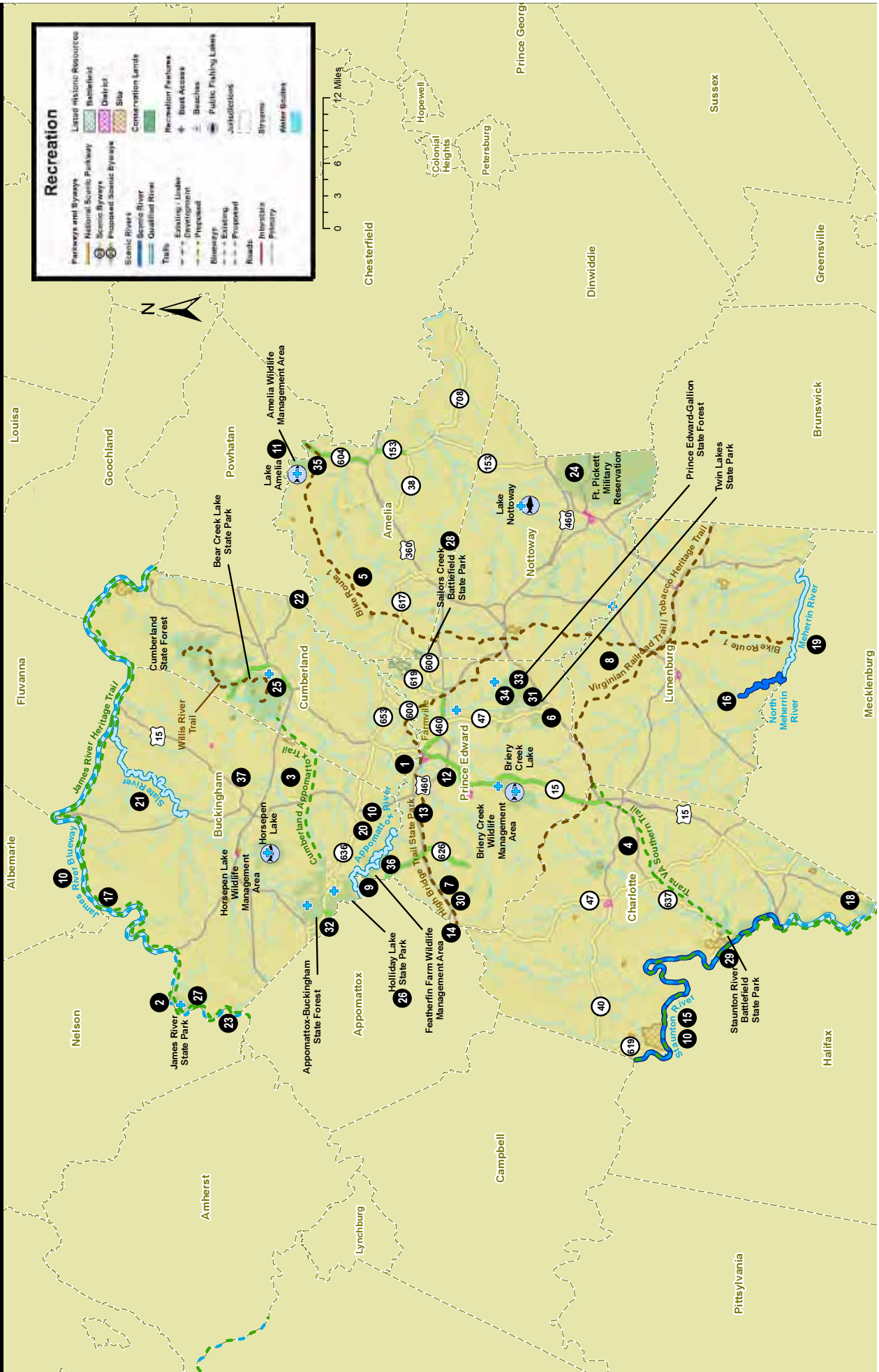
NI: not inventoried

(-) indicates surplus

Map X-28. Region 14 (Commonwealth Regional Council) Conservation Lands



Map X-29. Region 14 (Commonwealth Regional Council) Outdoor Recreation



Introduction

The Richmond Regional Planning District is in the center of Virginia's urban crescent, which stretches from Northern Virginia to the Hampton Roads Metropolitan Area. Composed of a mix of urban and rural jurisdictions, the area is experiencing rapid growth. Region 15 region consists of Charles City, Chesterfield, Hanover, Henrico, Goochland, New Kent and Powhatan counties, the city of Richmond and the town of Ashland.

Separated by the fall line and straddling two physiographic regions — the Coastal Plain to the east and the Piedmont to the west — this region offers a variety of terrain and habitats. The Piedmont is characterized by rolling hills, meandering rivers and a mixture of residential and working lands. The Coastal Plain is flat with tidal rivers and streams as well as tidal and some non-tidal wetlands.

Seven rivers flow through the area including the James, Appomattox, Chickahominy, South Anna, North Anna, Pamunkey and Little. All offer opportunities for recreation and provide a variety of habitats. Of these, the James is the largest, and it offers diverse recreation, especially at the Falls of the James in Richmond. This section of the river provides swift flowing white-water conditions supporting canoeing, kayaking and rafting activities. Other popular water-related activities include bank fishing, wading and boat angling, tubing, wading and swimming, rock-hopping, and nature walks and hiking.

Federal, state and local park and open space resources are found in the region. Federal properties include 13 units of the Richmond National Battlefield Park, the Maggie Walker Historical Site, Presquile National Wildlife Refuge and Harrison Lake National Fish Hatchery. State-owned resources include Pocahontas State Park, the newly acquired Powhatan State Park, and wildlife management areas at Game Farm Marsh and on the Powhatan and Chickahominy rivers. In addition, there are a number of locally owned resources and sites of regional importance.

The region continues to experience rapid growth. In 2000, the population was 865,941. By 2005, population had increased to 925,800, an increase of 6.9 percent. The region's population grew 7.9 percent from April of 2005 to July of 2006, adding another 86,166 people. Future growth in the overall area is expected to be rapid. Population is projected to increase 27.2

percent to 1,101,400 in 2020. Chesterfield, Henrico and Hanover counties are among the fastest growing in the state by numeric growth, with residents having increased by 26,600, 21,000 and 8,800, respectively, from 2000-2005. New Kent, Powhatan and Goochland counties are also among the fastest growing in the state, with growth rates of 16.3 percent, 15.2 percent and 14.2 percent, respectively, over the same period. Region 15 is home to three of the top 10 Virginia cities and counties when measured by 2005 population. Chesterfield is ranked fourth, Henrico County is ranked fifth and the City of Richmond is ranked tenth.

Area growth has occurred mainly in western Henrico County, southern Hanover County, and northern and western Chesterfield County. Recently, there has been development within the urban core along the James River in Richmond. Significant future growth is anticipated to extend southwesterly through Chesterfield County along the Interstate-288 corridor, north along the I-95 corridor in Hanover, and along the I-64 and I-295 corridors through Goochland, Hanover, Henrico, New Kent and Charles City counties.

With the large numbers of people, urbanization and development in this region, there is a need to protect critical open space and provide more recreational opportunities. Actions should be encouraged that enhance the scenic qualities of the region's river and scenic road corridors, create greenways, develop parks and protect important natural areas, forests and farmland. This in turn will enhance the quality of life in the region.

Because Region 15 is predominantly urban, consideration should be given to urban issues with regard to parks and recreational opportunities. Planning for the urban population should include the needs of those who may have limited means of transportation. The major state and regional park systems that offer large areas of open space and natural area experiences are not typically in urban settings. Thus greenways, urban open spaces and stream valleys can be re-established in neglected areas to meet some of the demand for natural and passive areas in urban settings.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 15 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Public participation in recreation is high and the 2006 *Virginia Outdoors Survey* (VOS) recorded high demand for most activities. The needs analysis shows demand is high in the area for activities such as walking, bicycling, playground use, soccer fields and water-related recreation opportunities such as swimming and boating (See Table 15).

All localities in Region 15 are served by a parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Charles City, \$47.28; Chesterfield, \$25.19; Hanover, \$27.50; Henrico, \$49.56; Goochland, \$19.55; New Kent, \$18.09; Powhatan, \$4.71; the City of Richmond, \$35.88; and the town of Ashland, \$12.50. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties and \$76.45 from cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown Map X-30.

Land Trusts Operating in Region 15:

- APVA Preservation Virginia
- Capital Region Land Conservancy
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- Friends of Chesterfield's Riverfront
- Friends of Virginia's Rivers
- Historic Polegreen Church Foundation
- James River Association
- National Park Trust
- Scenic Virginia
- The Conservation Fund
- The 500-Year Forest Foundation
- The Nature Conservancy
- Trust for Public Land
- Williamsburg Land Conservancy
- Virginia Department of Historic Resources
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Use conservation measures to buffer existing historical properties and set aside additional properties that are currently unprotected.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Efforts should be initiated for a regional green infrastructure plan and to promote the value of this planning model.
- The Chesterfield County Committee on the Future prepared a report in 2005 titled *Green Infrastructure: Protecting Resources for Future Generations*. The report documents the growing concern for the loss of open space, natural resources and historical sites. It also provides recommendations and related strategies for protecting these resources through the use of a green infrastructure plan. Chesterfield County should work to implement the recommendations in this report.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-31).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

- Develop a master plan for statewide trunkline trails through the Richmond Region.

1 The **East Coast Greenway**, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects urban, suburban and rural America. The East Coast Greenway has a “close the gaps” strategy of connecting existing trails, parks, neighborhoods and historic sites. Potential connections for the East Coast Greenway which should be evaluated and implemented in this region by local, regional and state agencies and organizations include:

- the proposed Cannon Run Natural Area connecting residents in Highland Park to the James River.
- the proposed Southside Richmond Rail to Trail (on abandoned CSX Railway property) connecting Maury Street Park to Westover Hills Community Center.
- the proposed South Bank Linear Park along the James River from Ancarrow's Landing to the Port of Richmond.
- the proposed Falling Creek Linear Park in Chesterfield County.
- the proposed James River Historic Trail in Chesterfield County.
- the partially built Historic Seaboard Airline Railroad Rail to Trail (now abandoned CSX Railway property) connecting eastern Chesterfield County to Colonial Heights and Petersburg. This trail could provide needed recreational and training facilities for new staff deployed at Fort Lee. The National Park Service's Rivers Trails and Conservation Assistance Program (RTCA) is providing consultation assistance to the Chester Linear Pathway Scoping Project.

2 The **James River Heritage Trail** is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail parallels the old Kanawha Canal towpath, and it follows park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia. The trail segments that should be evaluated and implemented in this region by local, regional and state agencies and organizations include:

- The Virginia Capital Trail along Route 5, a 52-mile trail linking resources between the current Capital of Virginia (Richmond) with the Colonial Capital of Virginia (Williamsburg). The trail, which has been approved by all local jurisdictions, should be constructed in a manner that preserves the historic and scenic beauty of its unique tree corridor. RTCA is

partnering with the Virginia Capital Trail Foundation for trail corridor planning, signage, amenities and interpretive planning to coordinate with local, state and national initiatives.

- The Richmond Canal and Riverfront, including the proposed “Legacy Project,” to extend the Canal Walk from 17th and Cary Streets to the Great Shiplock Park.
- Trails through the James River Park system in Richmond.

Other trails

3 Local and regional agencies and organizations should implement recommendations for the **Lower Appomattox River Trail and Greenway** and research cooperative regional management and operation alternatives for this resource that traverses more than 400 acres in five jurisdictions. When completed, the system will consist of bicycle and multi-purpose trails linking natural and cultural heritage sites and other linear open spaces in the region between Lake Chesdin and the City Point area in Hopewell. The goal of this 22-mile trail network is to link all recreational, cultural and natural features, and historic sites on both sides of the Appomattox River. A portion of the greenway is under development along Virginia State University property westward from Ettrick. Another portion eastward from the Brasfield Dam is also planned. Across the river, work is also underway in Petersburg (see Region 19 for more information).

4 The City of Richmond should expand **Oregon Hill Linear Park** to provide bicycle and pedestrian access from Monroe Park and Virginia Commonwealth University to the James River.

5 Local and regional agencies and organizations should complete **The Slave Trail** in Richmond connecting Ancarrow's Landing to the Lumpkins Jail archeological site as part of the African American Heritage Trails. Reconciliation Park at 15th and Main streets should be incorporated into the Slave Trail project. This trail should be evaluated for its potential to become part of the East Coast Greenway and the James River Heritage Trail.

6 Local and regional agencies and organizations should connect **Pocahontas State Park to the Government Center Trail** in Chesterfield.

7 Local and regional agencies and organizations should develop **walking-bicycle trails along Michaux Creek** and the Courthouse Village Service areas in Powhatan.

8 Local and regional agencies and organizations should expand the **Wahrani Nature Trails** in New Kent County to allow for mixed use by mountain bicyclists, walkers and joggers.

Water access

Blueways and water access are critical in a water rich state such as Virginia. The Richmond region is blessed with water resources offering a variety of recreation experiences. Boasting a blueway with Class IV and V rapids through the heart of downtown Richmond, James River Park was named Best Urban Park in the Readers' Choice Awards sponsored by Blue Ridge Outdoors magazine for two consecutive years. The lower Pamunkey River was recognized along with the Mattaponi as an American Canoe Association's Recognized Water Trail in 2006. Established by the Mattaponi and Pamunkey Rivers Association, the water trail along these two tributaries of Virginia's York River features some of the last remaining pristine fresh water paddling on the Atlantic seaboard. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- 9** The U.S. Fish and Wildlife Service (USFWS) should provide fishing access for people with physical challenges. Developments at **Lake Harrison National Fish Hatchery** provide access for people with disabilities.

10 The Department of Game and Inland Fisheries (DGIF) and Henrico County should provide fishing access for persons with disabilities at the **Osborne Boat Landing**.

11 State, regional and local agencies and organizations should develop a public boat ramp at **Lawrence Lewis Jr. Park** in Charles City County. The county has accepted all the terms and conditions from the U.S. Fish and Wildlife Service (USFWS) as described by the U.S. Army Corps of Engineers.

12 Chesterfield County and DGIF should renovate and expand the **Dutch Gap Boat landing** on the James River in Chesterfield County. The site frequently is at full capacity, and the launch area should be relocated away from commercial shipping lanes. Chesterfield and DGIF should also evaluate opportunities for a public powerboat launch in the vicinity of the James River and Falling Creek.

13 Chesterfield County and DGIF should evaluate access to the **Appomattox River in eastern Chesterfield County**. Additional whitewater canoe access points should be established on the Appomattox River between the Brasfield Dam at Lake Chesdin and the Harvell Dam just beyond Virginia State University.

14 State and local agencies should provide additional access on the **Appomattox River at the Route 360 crossing** in western Chesterfield County.

15 State and local agencies should provide additional access on the **Appomattox River** at the River Road crossing in western Chesterfield County.

16 New Kent County and DGIF should evaluate the feasibility of a **public boat ramp at Big Creek** on the Pamunkey River. This site includes several hundred acres of natural waterways, swamps and marshlands, which provide considerable opportunity for water-oriented recreational pursuits.

17 State and local agencies should provide public access along the **Pamunkey River at the Route 360 crossing**.

18 State and local agencies should provide public access along the **Pamunkey River below the Route 301 bridge**.

19 State and local agencies should provide public access along the **Chickahominy River near Game Farm Marsh**.

20 State and local agencies should provide public access along the **North Anna River below Lake Anna Dam**.

21 State and local agencies should provide public access along the **South Anna River at Route 1**.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build partnerships with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for a countywide survey of the historic and architectural resources of New Kent County.

22 Chesterfield County should implement the proposed expansion of the **Eppington Plantation** site to preserve the site's historical landscape and provide public access to the Appomattox River.

23 Chesterfield County and the Henricus Foundation should continue making improvements to the **Citie of Henricus**, the second successful English settlement in America.

24 Chesterfield County should implement development plans at **Mid-Lothian Coal Mines**, an early mining and railroad site in Chesterfield County.

25 Archeological remnants of the **Falling Creek Ironworks**, a 1619 early industrial site in Chesterfield County, have recently been uncovered. Local, regional and state agencies and organizations should preserve the site's historical and natural features and consider appropriate development to allow for interpretation and tourism.

26 Henrico and Goochland counties should evaluate the old canal locks and railroad embankment to include the **Gayton Coal Mines** and other historic interests. In addition, the heavily wooded swamps and ravines along Tuckahoe Creek could provide a natural setting for outdoor recreational and ecological study.

27 A bill to amend the National Trails System Act to designate the **Washington-Rochambeau Route** as a National Historic Trail was introduced in both houses of Congress in July 2006 and is currently in committee. This 600-mile route was followed by the American and French armies in 1781 and 1782 under George Washington and the Comte de Rochambeau as they traveled to, and returned from, the siege and victory at Yorktown. This route, which passes by Hanover Courthouse and through New Kent County en route to Yorktown, has also been designated as a special highway by the state. The state and local agencies should sign this designated route and evaluate road segments for scenic character and future protection for the scenic integrity of the route.

28 Legislation was passed to designate **The Captain John Smith Chesapeake National Historic Trail** as the nation's first national historic water trail. County commissioners, mayors, businesses, tourism agencies and nonprofit organizations should continue to develop and promote this trail along the James, Chickahominy, Mattaponi, Pamunkey and York rivers to promote stewardship of the Chesapeake Bay.

29 In 1988, the General Assembly officially designated the **James River Batteau Festival Trail** from Lynchburg to the City of Richmond. Localities along the route should work towards conservation and rehabilitation of remaining navigational structures from the days of the batteau. Boshers Dam and the current

condition of the James River and Kanawha Canal within Richmond prevents canal boats and batteaus from passing through downtown and into the tidal portion of the James River. The annual James River Batteau Festival and other significant tourist attractions would benefit from the availability of a functional canal and navigation system around the dams and falls at the city.

30 Route 1 is an historic highway, and there are many nationally significant sites along it, including Drewry's Bluff, Dutch Gap, the Cite of Henricus and Falling Creek Ironworks. This route should be marketed as "**Historic Route One**" in a coordinated effort between historical interest groups and adjacent landowners making scenic improvements along the corridor.

31 New Kent County should continue working on an **Eltham Battlefield** project in eastern New Kent County. The proposed project will connect battlefields in Eltham to an existing trail system and allow for preservation of historic resources and interpretation of historic events for visitors.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.

32 The City of Richmond and local, regional and state organizations should preserve historic viewsheds along the James River throughout the region and especially the **viewshed from Libby Hill**, which mirrors the view to the Thames in Richmond, England and resulted in the naming of Richmond, Virginia.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- Local governments should develop and adopt comprehensive plans and zoning ordinances to ensure that the scenic resources along roadways are protected.
- Localities should take steps to beautify and protect scenic quality to include measures like Powhatan County has implemented in adding plantings to designated byways.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

33 **Route 605** in Hanover County.

34 **Route 249 and Route 60** in western New Kent County and eastern Henrico County.

35 **Route 604** in Chesterfield, Powhatan and Amelia counties.

36 **Route 522** in Northern Powhatan County.

Scenic rivers

Portions of the James, Appomattox and Chickahominy rivers have been designated state scenic rivers. The James was the first Virginia river to receive some type of official recognition. In 1972, the City of Richmond secured designation of a portion of the James within the city as a historic river by the Virginia General Assembly. In 1984, the designation was extended through downtown Richmond; a formal declaration as a state scenic river followed. This eight-mile section is named the Historic Falls of the James Scenic River and extends from the western city limits of Richmond to Orleans Street. The lower James River is designated a state historic river for 1.2 miles from Trees Point in Charles City County to Lawnes Creek at the Isle of Wight and Surry County lines.

Approximately five miles of the Appomattox River below Lake Chesdin was designated a state Scenic River in 1977. The Appomattox River designation was extended 1.2 miles to 100 feet from the base of the Lake Chesdin Dam by the 1998 Virginia General Assembly. In 1990, an approximate 10-mile section of the Chickahominy River, from Route 360 to the junction of the Hanover-Henrico-New Kent county line in Hanover County, was designated a state scenic river.

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Regional and local agencies and organizations should develop a management plan for the James, Appomattox and Chickahominy rivers to protect the scenic quality of these river corridors.

The following river segments qualify for designation as Virginia Scenic Rivers:

37 The **Chickahominy River** at the New Kent, Henrico and Charles City County line to the Route 618 Bridge.

38 The **James River** from Orleans Street to Surry County.

39 The **North Anna River** from Route 738 to Route 1 at Chandler Crossing.

40 The **James River** from Wingina to Maidens Landing.

41 The **South Anna River** from Route 673 to Route 686.

42 The **Pamunkey River** from Route 614 to Pampatike Landing.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

43 The **South Anna River** from Lake Gordonsville to Route 673.

44 The **South Anna River** from Route 678 to the confluence with the Pamunkey River.

45 The **Chickahominy River** from Route 618 to the James River.

46 The **Pamunkey River** in its entirety.

47 The **North Anna River** from Lake Anna to Route 738 (Anderson Bridge)

48 The **North Anna River** from Route 1 at Chandler Crossing to the confluence with the Pamunkey River.

49 The **James River** from Maidens Landing to Watkins Landing.

Watershed resources

This region is within the Chesapeake Bay Watershed and drains to the James and rivers. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs. Watershed recommendations for this region include:

- Joint meetings of decisionmakers should continue in the Crater and Richmond planning district commissions to work toward green infrastructure planning across the watersheds in both regions.
- Regional coordination and partnerships should be continued through the Middle James Roundtable and other watershed groups.

Watershed groups in Region 15

- Chickahominy Watershed Alliance
- Falls of the James Scenic River Advisory Council
- Friends of Chesterfield's Riverfront
- Friends of the Lower Appomattox River
- Friends of the Rivers of Virginia
- James River Association
- James River Advisory Council
- Middle James Roundtable
- Virginia Conservation Network
- Alliance for the Chesapeake Bay
- The Chesapeake Bay Foundation.

Environmental and land stewardship education

Outdoor environmental education centers and programs are available throughout the region and include Rockwood Park and Pocahontas State Park in Chesterfield County, the Reedy Creek Nature Center in Richmond, and Three Lakes Park in Henrico County. Other outdoor environmental opportunities include Virginia Commonwealth University's Inger and Walter Rice Center for Environmental Life Sciences, a field station devoted to a broad array of environmental research, teaching and public service. The Robins Nature and Visitor Center at Maymont also leads a variety of educational programs, behind-the-scenes tours, night hikes and many other public programs about Virginia's native species, habitats and landscapes.

For detailed information on environmental and land stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- The Richmond Greater Richmond Environmental Education Network (GREEN) committee coordinated by Virginia Naturally should expand to help maximize the use of outdoor education facilities.

50 The **New Kent Forestry Center** should consider the feasibility of an environmental education center.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy in order to allow mountain bikes to use appropriate national park trails.
- NPS, with local and regional agencies, should continue coordination and partnerships involving the Maggie L. Walker National Historic Site; the Richmond National Battlefield Park, which encompasses Beaver Dam Creek, Gaines' Mill, Glendale (Frayser's Farm) and Malvern Hill; a portion of the 1864 Overland Campaign including Totopotomoy Creek and Cold Harbor; naval action at Drewry's Bluff; and actions along the Richmond-Petersburg front encompassing Fort Harrison, New Market Heights, Deep Bottom and Parker's Battery. Other NPS sites to be involved in community outreach and partnership may include Hanover's Rural Plains, the Civil War Visitor Center at Tredegar Iron Works and the Chimborazo visitor center and museum on Richmond's east side.
- Local, regional and state agencies and organizations should continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program to connect people to heritage, outdoor recreation and educational opportunities and resources. The National Park Service coordinates the Chesapeake Bay Gateway program (www.baygateways.net) that promotes historic and environmental focus on water access. As of April 2006, Gateway sites in Region 15 are Lawrence Lewis Jr. Park in Charles City County, Dutch Gap, the Lower James River Water Trail and Captain John Smith's Adventures on the James River.

U.S. Fish and Wildlife Service (USFWS)

51 The **Harrison Lake National Fish Hatchery** should be sufficiently funded to remain in operation in order to maintain its important function in restoring anadromous fish to the Chesapeake Bay and its rivers as well as to provide public recreation opportunities.

52 The USFWS should continue to work with partners, including the U.S. Coast Guard and the U.S. Army Corps of Engineer, to provide safe public access to the refuge for compatible public use, including wildlife observation and deer hunting as funding allows.

Presquile National Wildlife Refuge has been put into "preservation status" due to decreased funding for manpower and projects. Details of preservation strategies are being developed for this refuge. There is more information on this at <http://www.fws.gov/refuges/profiles/index.cfm?id=51623>

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

53 **Pocahontas State Park** (7,919 acres) is located in Chesterfield County. Built by the Civilian Conservation Corps (CCC), this was the first recreational park in the Richmond-Petersburg-Hopewell area. The NPS donated the facility to Virginia State Parks in 1946, making it the largest Virginia state park. Traditional offerings of the park include a 129-site, full-service campground; picnicking and seven picnic shelters; an aquatic recreation center; more than 50 miles of trail and forest roads for hiking, biking, bridle or multiuse; nature and cultural interpretive and educational programs; fishing on Swift Creek and Beaver Lakes; and paddling on Swift Creek Lake. The park's CCC Museum is located in an original CCC building and highlights the accomplishments of the CCC across the state. The park also has the Heritage Amphitheater, an outdoor venue that accommodates concerts, stage performances and other large gatherings of up to 4,000 people. The Heritage Center is a meeting facility adjacent to the amphitheater and houses the park's nature center. Also, available are Algonquian Ecology Camp and Swift Creek Camp that offer two to four cabin groups and an activity-dining hall with kitchen.

Funding from the 2002 General Obligation Bond (GOB) was allocated to expand the campground and construct camping cabins, to improve roads and parking, and to construct an equestrian center. The park has also been able to use GOB funds to improve existing trails.

Opportunities could exist for Pocahontas to be connected to the East Coast Greenway, and efforts should be made to link the park to the Chesterfield County Government Center Trail. Cooperative programming with the county should continue as they relate to programs offered at the state park amphitheater.

54 **Powhatan State Park on the Historic James River** (1,564 acres), located in Powhatan County, is a new park created by the General Assembly in 2003 by a land transfer from the Beaumont Juvenile Correction Center to the Department of Conservation and Recreation (DCR). The park has two miles of frontage on the James River, providing public access for boating and fishing. The park's completed master plan calls for the development of a traditional state park.

The first phase of the master plan calls for the development of multi-use trails, picnicking, river access for boating and fishing, canoe-in primitive camping, roads and support facilities. At full build out, the park will provide a full service campground, an equestrian campground, cabins, a visitor education center, additional picnicking facilities and river access. Funding is needed for development as well as operational and staffing costs.

The need exists for additional parkland and water access in this region of the state; potential acquisitions should be explored as follows:

55 In the vicinity of the confluence of the **North and South Anna rivers**.

56 Along the **Pamunkey River in Hanover County**.

57 Along the **James River east of Richmond**.

State fish and wildlife management areas (WMA)

The Virginia Department of Game and Inland Fisheries (DGIF) operates three WMAs for public use in the region. Kittiewan Wildlife Preserve is not open to the public.

- DGIF should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation.
- DGIF should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and wildlife viewing recreation.
- DGIF should continue to work with local and regional governments to support the Birding and Wildlife trails program.

58 More than 5,000 acres have been acquired at the **Chickahominy WMA** in Charles City County. DGIF should consider expanding recreational opportunities, particularly along the Morris Creek portion of the property. An additional 103.5 acres acquired across from **Game Farm Marsh** off Chickahominy Lake in New Kent County will enable the DGIF to offer more opportunities for waterfowl hunting, fishing, boating and wildlife viewing.

59 DGIF should evaluate opportunities for increased water-oriented recreation at the **Powhatan WMA** in Powhatan County. Resources include the two lakes within the area and Appomattox River frontage.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
 - Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
 - Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
 - Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
 - Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
 - Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
 - Local, state and regional agencies and organizations should target agricultural lands for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.
- 60** DOF should develop plans for forest-managed hiking trails, canoe launching facilities and a water trail at **Crawford State Forest** in partnership with the New Kent Forestry Center.

State natural area preserves

Cumberland Marsh Natural Area Preserve in New Kent County is the only dedicated natural area within the Richmond Regional Planning District. The DCR has, as of November 2006, documented 266 occurrences of 95 rare species and natural communities in the Richmond Regional Planning District. Twenty-four species are globally rare and six are federally threatened or endangered. One hundred seventeen conservation sites have been identified in the district. Of these, only 29 sites (25 percent) have received any level of protection through ownership or management by state, federal and non-government organizations. However, only one site is protected well enough to ensure the long-term viability of the rare species and natural communities it supports.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 15, DCR is particularly interested in protecting:

- Significant communities and rare species habitats along the Chickahominy River.
- Significant communities and rare species habitats along the Pamunkey River.

61 While a portion of the state-owned **Elko Tract** in eastern Henrico County has been transferred to the Henrico County Industrial Development Authority, consideration should be given to utilizing the certain undeveloped portions of the property to help meet natural heritage resource protection and outdoor recreation needs of the region. DCR would like to dedicate a portion of the Elko property south of Portugee Road as a natural area preserve. This area includes White Oak Swamp, which is an area of historical and ecological significance and should be protected. The area contains wetlands rich in rare and native plant and animal species, and is suitable for a variety of open space activities.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- All community college properties should be explored to determine if undeveloped portions of those properties could be used to meet the recreation and conservation needs of the region.
- All Virginia Department of Corrections properties should be evaluated for recreation and conservation.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Localities in the Region 15 should seek guidance from the 2002 Richmond Regional Bicycle and Pedestrian Plan.
- Greenways and trails listed in the Richmond Area Metropolitan Planning Organization's 2026 Long Range Transportation Plan should be considered for designation and development by local, regional and state agencies and organizations.

62 State and local agencies should enhance and maintain signage along the Interstate **Bike Route 1 and Bike Route 76** through the region. When road improvements are made, a bike lane should be added, and facilities for bicyclists should be available along the route.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.

- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Chesterfield County should implement the adopted the 2020 updated Parks and Recreation Comprehensive Master Plan and Public Facilities Plan that guides the county's acquisition and development of the park system. Also, the recent bond referendum which allocates more than \$20 million for facility renovation and new construction within the park system should be implemented.
- Henrico County should implement the adopted Update 2015 Parks, Recreation and Open Space Plan. The plan provides a comprehensive approach to parks and open space planning. The Update 2015 Plan includes a revised parks, recreation and open space classification system to permit a more detailed analysis of resources, protection issues, and parks and recreation facility needs.
- Lands along approximately six miles of the James River through Richmond have been acquired by the city and improved for the public's access and enjoyment. Local, regional and state agencies and organizations should evaluate the extension of the parkland westward through Henrico and Chesterfield counties. This extension would provide valuable open space and recreational opportunities to area residents and help to protect the James River corridor. In addition, the city should place existing park lands in the James River Park and along the river in a conservation easement.
- Local and regional agencies and organizations should consider forming a regional park authority to facilitate management and the expansion of resources needed to best address the parks and natural areas along or in close proximity to the James and Appomattox rivers. Technical assistance for initiating a regional park authority may be requested from the DCR. A source of seed funding would be helpful in generating interest among multi-jurisdictional partners.
- 63** Local and regional agencies should develop a regional park located along the **Chickahominy River** near Providence Forge in Charles City County. This would complement the existing Chickahominy River WMA farther downstream and help to preserve an important natural resource.
- 64** Chesterfield county should develop a passive park along Falling Creek on the 167-acre **Stratton Property** near Chippenham Parkway.

65 Chesterfield County should continue development of **Irvin G. Horner Park** on Otterdale Creek for active and passive recreational activities.

66 Chesterfield County should continue development of **Lake Chesdin Park** in the southern part of the county that has approximately 200 acres of parkland on the north side of the **Appomattox River**. Development of passive recreational facilities along the lake should be a priority.

67 Chesterfield County should implement the master plan for the 262-acre **Brown and Williamson** property to include additional public access, as well as linkages with other parks and access points along the James River.

68 Chesterfield County should acquire and develop a **regional park site** in the **Winterpock area** to serve the fast-growing Spring Run community and the southwestern quadrant of the county.

69 Chesterfield County should continue development of amenities at **Dutch Gap Conservation Area** to promote conservation, improve boating access, provide bank fishing, and interpret the landscape and natural resources.

70 Chesterfield County should develop a **regional park in the Midlothian area**. Land acquisition is critical due to fast growth.

71 Hanover County should implement the recently approved master plan for the 221-acre **March Park** providing passive recreation within this natural area.

72 Hanover County should evaluate the potential for lands along the scenic **South Anna River** to become a regional park.

73 Hanover County should evaluate the potential for land adjacent to the whitewater fall line section of the **Little River** as a regional park.

74 Henrico County should evaluate the **Belmont Park-Horse Swamp** for regional recreational development linked by trails.

75 Henrico County should implement the recently approved master plan for **Four Mile Creek Park**.

76 Henrico County should develop a natural area and park at their 500+-acre site along the **Chickahominy River**.

77 New Kent County should implement the adopted Master Plan for Parks and Recreation. The county should also implement a **100-acre site off Crisscross Road** near I-64 as a multi-purpose site including both active recreation and nature study.

78 New Kent County should evaluate **Diascund Reservoir** for the development of water-oriented and water-enhanced recreational facilities.

79 Powhatan County should develop an **amphitheater in Fighting Creek Park**.

80 The City of Richmond, through the Richmond Riverfront Development Corporation, should proceed with the development of the **James River and Kanawha Canal** system through the area. The project provides the opportunity for people to enjoy a renovated canal system. Walking trails, boat rides providing access to historic areas and other amenities are included in the project. The NPS has relocated its Richmond Battlefield Park Headquarters to the Tredegar Iron Works complex, which is adjacent to the canal.

81 The City of Richmond should expand the public park system to create a continuous public space linkage between many of the historic spaces in the city's east end including Chimborazo Park, Libby Hill Park, Jefferson Park, Great Shiplock Park and the canal system. These proposed **City of Richmond park connections** include the designation of natural areas surrounding Gillies Creek Park as park land.

Private sector

Due to the populations and the expected growth in this region, the opportunities for public-private partnerships, as well as private investment in recreation, are numerous. The demand for access to resources and facilities is far greater than the present supply. The seven rivers in this region provide opportunity for water-based developments, access and services. Campgrounds, golf courses, tennis courts and swimming pools can be provided by the private sector. Private lands could provide open space and greenways through voluntary granting of open space and conservation easements, management agreements or other means to help meet the need for activities such as walking and bicycling.

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-C: Resource Agencies. The following recommendations pertain to this region:

- Regional and local organizations should continue to support private facilities, such as campgrounds, resident summer camps for children, golf courses, tennis courts, swimming pools, marinas and indoor recreational facilities to help meet the needs identified in the 2006 Virginia Outdoors Survey.
- Cumberland Marsh Natural Area Preserve is located in New Kent County and is owned and managed by The Nature Conservancy. Facilities include a handicapped accessible boardwalk and observation platform with interpretive signs. This marsh supports perhaps the greatest biological diversity on the Pamunkey River. TNC should continue providing public access at this site.
- The private sector should evaluate opportunities to meet the need for all terrain vehicles (ATV) in the region.
- The Richmond region should be considered as a location for a gateway hostel convenient to mass transit and amenities of the urban core.
- Local governments and developers should give design consideration to the natural contours of the land when planning and constructing.



Over twenty miles of trails along the river combined with urban whitewater attracts international games, outdoor enthusiasts and tourists to the City of Richmond. Photo by Stuart Connack, Jr.



Outdoor activities along the region's beautiful rivers build leadership and foster team work and self esteem. Photo by Richmond Department of Parks, Recreation and Community Facilities and Passages.

Table X-15. Region 15 (Richmond Regional Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	384,863	76	fields	73	3	27
Basketball	749,395	178	goals	67	111	166
Bicycling	938,195	67	miles	NI		
Mountain	120,833	9	miles	NI		
Other	817,363	58	miles	NI		
Lake, river and bay use (combined)	840,309	13,599	water acres	37,998	-24,399	-20,174
Power boating	339,842	8,191	water acres	S		
Sailing	52,283	452	water acres	S		
Saltwater fishing	317,186	1,784	water acres	S		
Jet ski, personal watercraft	59,545	933	water acres	S		
Water skiing, towed on water	71,454	2,239	water acres	S		
Camping	221,914	1,309	sites	6,265	-4,956	-4,550
Tent camping	141,746	836	sites	74	762	1,022
Developed camping	80,168	473	sites	6,191	-5,718	-5,571
Fitness trail use	585,573	47	mile trails	20	27	41
Fields (combined)	1,013,135	213	fields	123	90	156
Football	336,937	71	fields	112	-41	-19
Soccer	676,198	142	fields	11	131	175
Stream use (combined)	569,888	332	stream miles	236	96	199
Freshwater fishing	425,238	299	stream miles	S		
Human-powered boating	106,890	27	stream miles	S		
Rafting	11,038	2	stream miles	S		
Tubing	26,723	3	stream miles	S		
Golfing	640,471	22	courses	279	6	13
Hiking, backpacking	270,131	139	trail miles	92	47	90
Horseback riding	79,877	35	miles	18	17	27
In-line skating	222,204	16	miles	NI		
Jogging, running	3,703,403	297	mile trails	NI		
Nature study, programs	82,491	12	sites	3	9	12

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-15. Region 15 (Richmond Regional Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	376,150	977	tables	930	47	350
Skateboarding	214,362	66	sites	NI		
Snow skiing or snowboarding	109,214	3	ski lifts	-	3	4
Softball	435,695	78	fields	66	12	36
Sunbathing, relaxing on beach	1,071,808	77	beach acres	61	16	40
Swimming	2,904,630	187		NI		
Outdoor area	1,379,699	141	beach acres	61	80	124
Outdoor pools	909,149	38	pools	24	14	26
Indoor pools	615,782	7	pools	2	5	7
Tennis	374,116	234	courts	157	77	149
Used a playground	1,463,934	208	sites	94	114	179
Visiting gardens	196,063	22	sites	NI		
Visiting historic sites	658,770	56	sites	NI		
Visiting natural areas	512,377	87	sites	NI		
Volleyball	191,706	57	courts	9	48	65
Hunting	248,055	40,678	acres	108,599	-67,921	-55,283
Drive for pleasure	2,285,944	NA	NA	NI		
Driving motorcycle off road	39,213	18	miles	1	17	22
Driving 4-wheel-drive off road	105,729	NA	NA	NS		
Walking for pleasure	8,388,571	NA	NA	NI		
Bird watching	79,877	NA		NI		
Other	81,330	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

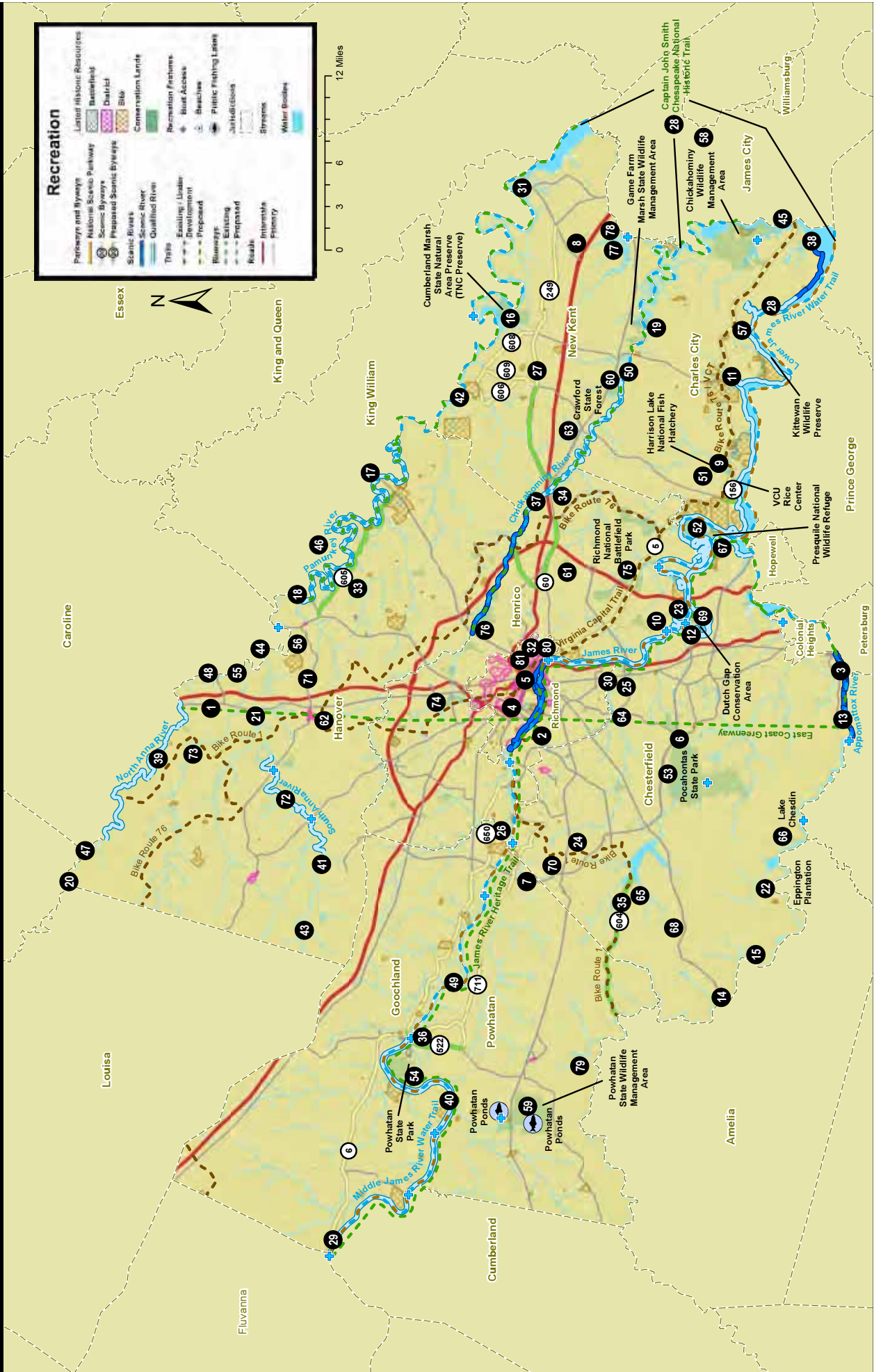
NS: not inventoried separately

NI: not inventoried

(-) indicates surplus



Map X-31. Region 15 (Richmond Regional Planning District) Outdoor Recreation



Introduction

Situated midway between Richmond, Virginia and Washington, D.C., the George Washington Regional Commission (GWRC), formerly the Rappahannock Area Development Commission (RADCO) Planning District, is one of rapidly changing land use patterns. Straddling the East Coast's most heavily traveled interstate, I-95, the area is made up of Stafford, King George, Spotsylvania and Caroline counties, along with the City of Fredericksburg and the towns of Bowling Green and Port Royal. As the highly urbanized I-95 corridor grows to the east and west, nearby agricultural areas absorb the pressures of the rapidly expanding population base and its increasing need for housing, transportation and services. Expansive agricultural tracts interspersed with large-lot suburban properties and typical suburban subdivisions flank the intensely developed interstate corridor.

The region continues to experience a rapid growth rate. In 2000, the region had a population of 241,044. By 2005, the population had increased to 296,900, an increase of 23 percent. In fact, all the localities in the region experienced growth in that five-year period. Future growth is anticipated to be rapid, with the population in the region projected to increase 58 percent to 380,700 in 2020 from its 2000 population level of 241,044. Stafford, Spotsylvania and King George counties are among the fastest growing in the state, with 2000-2005 growth rates of 26.9 percent, 26.1 percent and 19 percent, respectively.

The presence of Lake Anna has provided the catalyst for the development of a large retirement community. As the population of the area continues to grow, conflicting interests will compound the task of protecting and managing the region's resources. In preparing for the future, plans for Region 16 should include the protection and preservation of natural and manmade resources, access to outdoor recreational facilities and open space for all residents, and the development of livable communities. Resource protection strategies should include consideration for land uses immediately adjacent to the significant historical and natural resources of the region. It is essential that these unique resources not be compromised by the negative impacts of inappropriate development.

Tourism is a key element in the region's economy. With an abundance of historical and cultural resources of both state and national significance, the area is a popular tourist destination. Civil War battlefields, historic buildings and gardens attract more than a million visitors to the region every year. Linking sites through the development of a well-integrated multi-use trail system will provide recreational opportunities for residents as well as visitors.

Proposed major development in the Fredericksburg area along the Rappahannock River at I-95 will have a considerable impact on the existing open space and the character of the region. There are approximately 2,500 sites slated for development to include a mix of offices, hotels, convention centers, homes and retail establishments. Project design considerations should include site selection and treatment that is suitable to the topography, sensitive to environmental conditions and respectful of local history. Of particular importance is the location selected and the site design developed for the national slavery museum to be included in this development project. Care must be taken to create an atmosphere of solemn reflection and dignity appropriate to the theme of the museum.

Bisecting the region on a north-south axis, roughly coinciding with the fall line, I-95 marks not only the area of most rapid development, but also the boundary between the rolling hills of the Piedmont to the west and the flatter, gently sloping Coastal Plain to the east. Many rivers and their countless tributaries flow across the region. From the Potomac River in the north and south to the Rappahannock, the Matta, the Po, the Ni (coalescing to form the Mattaponi), and the North Anna rivers, the rivers and streams of the region provide ample opportunities for many types of water-based recreational activities. Flowing eastward across the region, rivers lose their rapids and flashy characteristics more typical of the Piedmont to widen into smooth-flowing tidal rivers flanked by wide floodplains with broad wetlands in the comparatively flat Coastal Plain. The Rappahannock River is valued as a recreational resource as well as for its scenic beauty. From its headwaters at Chester Gap to the Mayfield Ferry Farm Bridge below Fredericksburg, the Rappahannock has been designated a state scenic river. The York, Rappahannock and the Potomac serve the region as gateways to the Chesapeake Bay.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 16 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Results of the 2006 *Virginia Outdoors Survey (VOS)* indicate that despite the availability of a wealth of resources, user facilities for some activities remain marginal. Respondents to the survey indicated a need for access to recreational waters for boating, fishing, swimming and beach use. A similar deficiency is seen in the limited number of miles of trails available for hiking, walking, bicycling, jogging and horseback riding. In addition, public playgrounds, separate from those associated with local schools, and public swimming pools were listed as desired amenities (See Table X-16). Local plans for the future also include small neighborhood parks, larger regional facilities, trails that provide links within and between communities and access to water resources. Local governments within the I-95 corridor area must also respond to an increasing need for athletic fields.

The creation of the Fredericksburg-Stafford Park Authority was an important step in the development of a regional approach to outdoor recreation planning. As the area continues to grow, the need for multi-jurisdictional resource development and management will increase. Preservation of open space and natural resources within this rapidly changing area will be a challenge to all localities. The quality of life now enjoyed by residents of the area will be assured through comprehensive region-wide planning and the implementation of effective growth management strategies.

Based on input from public meetings, there is continued need for transportation alternatives, specifically trails for walking, hiking and bicycling. If developed with multiple uses in mind, a comprehensive trail system could link small communities and specific destinations, thus providing exercise options and

transportation alternatives. Safe cycling and walking opportunities should be provided for the entire community, but especially around Mary Washington University.

All localities in Region 16 are served by a parks and recreation department. The towns of Bowling Green and Port Royal do not have their own departments, but are served by the Caroline County Parks and Recreation Department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Stafford, \$38.17; King George, \$28.81; Spotsylvania, \$26.90; Caroline, \$10.91; and the City of Fredericksburg, \$107.95. Bowling Green and Port Royal were not listed in the report. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

Recognizing the impediments to open space preservation in the area, local governments are developing strategies for the development of comprehensive, regional park systems. Stafford County's Needs Assessment, for example, encourages the aggressive acquisition and development of properties noting, "Delays in implementation will only increase costs." Since current growth rates in the area have exceeded projections, many localities find themselves behind the curve in meeting recreational needs. Open space protection strategies should include inter-jurisdictional efforts to develop and maintain greenways and regional parks.

Localities are encouraged to work with local residents to identify and preserve the many historic features found throughout the region. Native American village sites, Civil War trenches and battlefields, historic river fords, the canals and mill sites along the Rappahannock River, and the historic Spotswood furnace – all mark significant moments in the Commonwealth's history, worthy of recognition and preservation.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown Map X-32.

Land Trusts Operating in Region 16

- APVA Preservation Virginia
- The Chesapeake Bay Foundation
- Civil War Preservation Trust
- The Conservation Fund
- The 500-Year Forest Foundation
- Friends of the Rappahannock
- The Nature Conservancy
- Northern Neck Land Conservancy
- The Northern Virginia Conservation Trust
- Potomac Conservancy
- Virginia Department of Historic Resources
- Virginia Outdoors Foundation

Land conservation recommendations include:

- In order to protect watersheds and broad areas of natural significance, federal, state, regional and local agencies and organizations should conserve portions of the Quantico and A.P. Hill military installations.
- Local and regional agencies and organizations should develop conservation measures to protect the water quality of the Mattaponi River and the health of adjacent riparian lands.
- Federal, state, regional and local agencies and organizations should use conservation measures to buffer the Fredericksburg area battlefields, as well as recognize the need to set aside additional properties that are currently unprotected.
- State, regional and local agencies and organizations should develop conservation measures to protect The Hopyard.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- A regional green infrastructure plan and a planning model should be developed and promoted.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-33).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

1 Local, regional and state agencies and organizations should implement development of the **East Coast Greenway**. This greenway is proposed to span almost 3,000 miles from Maine to Florida and aims to connect all the major cities of the East Coast along a continuous, off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects urban, suburban and rural America.

2 Local and regional agencies and organizations should implement the **Potomac Heritage National Scenic Trail** (PHNST).

The PHNST connects the outstanding natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands and includes a water-based, blueway component. The National Park Service (NPS) manages this partnership, which has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies. Due to the National Scenic Trail designation, localities that host the PHNST should protect its corridor with buffers, setbacks, vegetative screening and similar viewshed preservation tools. Local government should identify the PHNST in all local comprehensive plans with development to follow as conditions permit.

The 50-mile segment of the PHNST in Region 16, following the Potomac River through King George and Stafford counties, will link the area to state and county parks, wildlife refuges and wetlands. It will provide access to historical and cultural features along with marinas, schools, commercial areas and neighborhoods along the Potomac River waterfront. A link to the City of Fredericksburg is included in the plan, and a link to Barnesfield Park in King George County is recommended. Three Stafford trails have already been designated as part of the PHNST system. The planned Government Island Trail, Falmouth-Ferry Farm Trail and Aquia Creek Water Trail were all chosen for their access to a host of historic, educational and recreational resources. They join hundreds of other locally managed trails, selected by the NPS, within a 425-mile corridor between the Chesapeake Bay and the Allegheny Highlands.

Other trails

③ Local, regional and state agencies and organizations should develop a greenway, hiking and water trail system along the **Rappahannock River**. This system would link the upper and lower Rappahannock basins. The segment of the trail in Region 16 could provide opportunities for canoe-in camping and access to historic sites and rock climbing areas. Preservation and enhancement of mill sites and the canal system along the Rappahannock River are also suggested.

④ If identified issues are resolved, the **Dahlgren Junction Railroad corridor**, listed in the *VOP* since 1989, has potential as a connector multi-use trail and an alignment for the PHNST.

⑤ Local, regional and state agencies and organizations should develop the **Fredericksburg - Orange** trail along the old **Virginia Central Railroad** linking Fredericksburg to Orange. With two small sections complete, one in Alum Spring Park maintained by the City of Fredericksburg, and the other linking a school and playing fields in Spotsylvania County, the proposed trail would provide access to Civil War battlefields, historic properties, schools, playgrounds and commercial sites.

⑥ The Fredericksburg-Stafford Park Authority should complete the **South Stafford Bicycle Trail**, a three-mile trail linking two parks in Stafford County.

⑦ The City of Fredericksburg and the Fredericksburg-Stafford Park Authority should link the **South Stafford**

Bicycle Trail with the **Old Mill Park Trail** proposed in the City of Fredericksburg.

⑧ Local and state agencies should enhance and properly identify **Interstate Bicycle Route 1**.

Water access

Blueways and water access are critical in a water rich state like Virginia. Despite the abundance of rivers and streams in the region, public access to them is limited. Region 16 residents cite a scarcity of boat launches and minimal opportunities for bank fishing and swimming. Where the opportunity exists, access through land acquisition or use agreement should be pursued. The development of portages around dam sites and other river obstacles is encouraged to facilitate river use. In addition, water trails should be developed along the Rappahannock, the Potomac and other rivers in the area. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas. An example would be the proposed Aquia Creek Water Trail in Stafford County.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- ⑨ Local, regional and state agencies and organizations should provide additional boating and fishing access at **Lake Anna**.
- ⑩ Local, regional and state agencies and organizations should provide additional access on all rivers in

the region including the **Potomac, Rappahannock, North Anna, Matta, Po, Ni and Mattaponi**.

11 The **Potomac River Water Trail** helps individuals explore this almost 100-mile route the original way — by water. On the trip, visitors can experience the Potomac's natural areas and wildlife and parts of the region that seem little changed from earlier times. Local, regional and state agencies should develop a water trail along the Potomac River from Washington, D.C. to the Chesapeake Bay based on the guide prepared by the Department of Conservation and Recreation (DCR) and Maryland's Department of Natural Resources.

12 The **Rappahannock River**, the longest free flowing river in the Chesapeake Bay watershed, extends from its origin at Chester Gap in Shenandoah National Park in western Virginia to Stingray Point in the Chesapeake Bay, a total of 184 miles. The Friends of the Rappahannock and DCR should develop a water trail along a portion of the Rappahannock. The recommended water trail will cover historical paddling trips from Kelly's Ford to the Fredericksburg City Docks, the middle section of the river.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.

- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for a county-wide survey of the historic and architectural resources of King George County.
- A bill to amend the National Trails System Act to designate the Washington-Rochambeau Route as a National Historic Trail was introduced in both houses of Congress in July 2006 and is currently in committee. This 600-mile route was followed by the American and French armies in 1781 and 1782 under George Washington and the Comte de Rochambeau as they traveled to, and returned from, the siege and victory at Yorktown. This route, which runs through Stafford County, Fredericksburg, Spotsylvania County and Caroline County en route to Yorktown, has also been designated as a special highway by the state. The state and local agencies should sign this designated route and evaluate road segments for scenic character and future protection for the scenic integrity of the route.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from hilltops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.

- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

Scenic roads recommendations for the region include:

- There has been a tremendous interest in thematic trails including the Civil War Trails, the Wilderness Road Trail, the Birding and Wildlife trails, the Revolutionary War trails, the African-American Heritage Trail and other driving tour routes. Regional and local agencies and organizations should develop a series of regional maps or booklets that describe and help locate the resources and services. This product would support and expand the information available on the *Scenic Roads in Virginia* map.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation as Virginia Byways:

- 13 Route 208** in Spotsylvania County through the battlefield area to the Louisa County line.
- 14 Route 3** in King George, Stafford and Spotsylvania counties.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. The following river section has been designated as a State Scenic River:

- 15** The Rappahannock River from its headwaters to the Route 3 Bridge at Ferry Farm is a legislatively designated scenic river. Impacts to the **Rappahannock River** from proposed commercial development along the riverbanks should be carefully evaluated. As a state scenic river, the Rappahannock River should be protected as a unique regional resource. Inappropriate development that compromises the scenic qualities of the river and the enjoyment of its natural beauty should be discouraged. Local governments should establish appropriate setbacks and buffers should be incorporated into plans to assure the preservation of the river corridor and consideration for impacts to water quality.

The following river segments qualify for designation as Virginia Scenic Rivers:

- 16** The **North Anna River** in Caroline County, from Route 738 to Route 1 at Chandler Crossing.
- 17** The **Rapidan River** from Germana Ford to its confluence with the Rappahannock River.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- 18** The **Rappahannock River** from the Route 3 Bridge at Ferry Farm to the Mayfield Bridge in Fredericksburg to the Chesapeake Bay.
- 19** The **Mattaponi River** in its entirety.
- 20** The **North Anna River** from Lake Anna to Route 738.
- 21** The **North Anna River** from Route 1 at Chandler Crossing to its confluence with the Pamunkey River.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 16

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Friends of Stafford Creeks
- Friends of the Rappahannock
- Friends of the Rivers of Virginia
- Virginia Conservation Network

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local agencies and organizations should evaluate the existing outdoor environmental education opportunities and identify potential additions and opportunities for improving accessibility to outdoor educational programming.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the NPS to revise policy in order to allow mountain bikes to use appropriate national park trails.
- The Chesapeake Bay Gateways Network, managed by the NPS, connects visitors with the Chesapeake Bay and its rivers through 150 exceptional parks, wildlife refuges, museums, sailing ships, historic communities, trails and more. Gateways are the special places where individuals can experience the authentic Chesapeake. Local, regional and state agencies and organizations work to market the Chesapeake Bay Gateways in this region, which include the Caledon Natural Area, the Potomac Gateway Welcome Center, the Rappahannock River Water Trail and the Potomac River Water Trail.

22 The **Fredericksburg and Spotsylvania National Military Park**, at 9,000+ acres, is the largest military park in the world. Composed of several battlefield sites, cemeteries and historical structures, the park

hosts more than one million visitors annually. Localities should work with the NPS to link park sites with other attractions within the region through the development of an integrated trail system. In order to protect this important historic resource, localities should strongly consider the impacts of future development in areas adjacent to park lands. The park should work with the Virginia Department of Transportation (VDOT) and local jurisdictions on traffic planning that accommodates the growing population yet protects the battlefields' historic resources

U.S. Fish and Wildlife Service (USFWS)

23 Established on May 28, 1996, the **Rappahannock River Valley National Wildlife Refuge** is a component of the Eastern Virginia Rivers National Wildlife Refuge Complex, which also includes James River and Presquile national wildlife refuges. The USFWS is authorized to purchase up to 20,000 acres within the boundary refuge area. As of July 2001, a total of 4,800 acres had been purchased from willing sellers. The USFWS should continue to acquire these lands and manage the refuge and surrounding lands for appropriate recreation, public access and habitat protection.

Other federal facilities (military)

24 **Fort A.P. Hill** periodically hosts the international Boy Scouts of America Jamboree, an event attended by 40,000 participants in 2005. Local residents are interested in access to parts of this facility for trail use, specifically hiking, mountain biking, horseback riding and ATV use. User groups should contact appropriate authorities at A.P. Hill to develop working agreements for recreational use. Currently, each request is considered on a case-by-case basis.

A unique partnership that has developed around the Fort A. P. Hill military base will allow the Trust for Public Land to conserve the 1,320-acre Portabago Creek property for wildlife habitat through a conservation easement held by the Virginia Outdoors Foundation. The partnership involves the U.S. Department of Defense, the military installation and several conservation groups and agencies.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

25 Lake Anna State Park (2,810 acres) is in Spotsylvania County. Additional acreage has been acquired using the 2002 General Obligation Bond (GOB) acquisition funds. The acquisition further protects the park boundaries and the lake shore. Through the bond, the park was provided funding to construct 10 two-bedroom cabins and a full service (water and electric hook ups) campground. The need for picnic shelters continues to exist. The trail system has increased with approximately 14 miles of multi-use trails. Additional trails are planned for the new acreage.

26 Caledon Natural Area (2,585 acres) is in King George County. Although no new facilities were added with the 2002 GOB; the bond provides funds for trail improvements. With only nine miles of hiking trails in 2,585 acres, opportunities are great for additional trails. Interpretation and environmental education focusing on the bald eagle are prominent offerings at the park, but the site's natural and cultural resources offer extensive opportunities to expand interpretive and educational offerings. The proximity of Caledon to the Dahlgren Junction Railroad corridor and the Potomac Heritage National Scenic Trail creates additional educational and recreational opportunities for the park and region.

27 Widewater State Park (1,089 acres) is in Stafford County. Funding from the 2002 GOB funds was used to acquire this property. The master plan has not been developed and will need to be approved prior to any development on the site. The park has shoreline on the Potomac River and Aquia Creek providing additional open space protection in a rapidly developing region. In addition, much needed water access can be developed in a manner that enhances the shoreline. The potential also exists for the site to become part of the Potomac River Water Trail and Potomac Heritage National Scenic Trail.

State natural area preserves

Chotank Creek Natural Area Preserve in King George County is the only dedicated natural area located within the George Washington Regional Commission region. DCR has documented 308 occurrences of 85 rare species and natural communities here. Seventeen of these species are globally rare, and six are listed as threatened or endangered. As of November 2006, there were 116 conservation sites identified within Region 16. Sixty-nine sites (59 percent) are protected to some degree through ownership and management by state, federal and non-government organizations. However, only two sites are protected well enough to

ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 16, DCR is particularly interested in protecting:

- Establishing a new natural area preserve at Crows Nest in Stafford County.
- Securing buffer lands around Fort A. P. Hill and Quantico Marine base.
- Protecting wetlands that support rare and threatened plant species.

State Fish and Wildlife Management Areas (WMA)

- The Department of Game and Inland Fisheries (DGIF) should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

28 The Pettigrew WMA is 934 acres in Caroline County. The area offers a broad range of opportunities for hunting and hiking. Ware Creek offers limited fishing opportunities.

29 The 462 acre Land's End WMA was established in 1966 and expanded in 1970. It consists of two tracts of land, the 50-acre Salem Church tract and the 412-acre Land's End tract, located in southeastern King George County. Land's End WMA is a mixture of open farmland, woodland and wetlands. It is bordered on two sides by the Rappahannock River and on one side by Jett's Creek. Due to deed restrictions, Land's End WMA has been managed primarily as a refuge for migrating waterfowl. Each winter, arctic-nesting Canada geese are attracted by the thousands to feed in the abundant fields of corn, milo and winter wheat and to rest in the adjoining Nanzattico Bay. Bald eagles, deer, turkey and songbirds are also commonly sighted on Land's End WMA. DGIF should evaluate the management goal to promote wildlife viewing and waterfowl and wildlife habitat management research.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- All community college properties should be explored to determine if undeveloped portions of those properties could be used to meet the recreation/conservation needs of the region.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Local and regional agencies should consider forming a regional park authority to facilitate management and the expansion of resources needed to best address the parks and natural areas along or in close proximity to the Rappahannock River. Partners could include the City of Fredericksburg, Stafford, Spotsylvania, Culpeper, Fauquier and Rappahannock counties. Technical assistance for initiating a regional park authority may be requested from the DCR. A source of seed funding would be helpful in generating interest among multi-jurisdictional partners.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Outfitters, as well as local "Friends" groups on the Rappahannock and Rapidan rivers, should continue to enhance access and the quality of the recreational experiences on the rivers while contributing to local economies.
- Local governments and developers should give design consideration to the natural contours of the land when planning and developing.



Shipwreck off the shoreline of Widewater State Park. Photo by Elizabeth Daly.

Table X-16. Region 16 (George Washington Regional Commission) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	384,863	76	fields	73	3	27
Basketball	749,395	178	goals	67	111	166
Bicycling	938,195	67	miles	NI		
Mountain	120,833	9	miles	NI		
Other	817,363	58	miles	NI		
Lake, river and bay use (combined)	840,309	13,599	water acres	37,998	-24,399	-20,174
Power boating	339,842	8,191	water acres	S		
Sailing	52,283	452	water acres	S		
Saltwater fishing	317,186	1,784	water acres	S		
Jet ski, personal watercraft	59,545	933	water acres	S		
Water skiing, towed on water	71,454	2,239	water acres	S		
Camping	221,914	1,309	sites	6,265	-4,956	-4,550
Tent camping	141,746	836	sites	74	762	1,022
Developed camping	80,168	473	sites	6,191	-5,718	-5,571
Fitness trail use	585,573	47	mile trails	20	27	41
Fields (combined)	1,013,135	213	fields	123	90	156
Football	336,937	71	fields	112	-41	-19
Soccer	676,198	142	fields	11	131	175
Stream use (combined)	569,888	332	stream miles	236	96	199
Freshwater fishing	425,238	299	stream miles	S		
Human-powered boating	106,890	27	stream miles	S		
Rafting	11,038	2	stream miles	S		
Tubing	26,723	3	stream miles	S		
Golfing	640,471	22	courses	279	6	13
Hiking, backpacking	270,131	139	trail miles	92	47	90
Horseback riding	79,877	35	miles	18	17	27
In-line skating	222,204	16	miles	NI		
Jogging, running	3,703,403	297	mile trails	NI		
Nature study, programs	82,491	12	sites	3	9	12

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-16. Region 16 (George Washington Regional Commission) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	376,150	977	tables	930	47	350
Skateboarding	214,362	66	sites	NI		
Snow skiing or snowboarding	109,214	3	ski lifts	-	3	4
Softball	435,695	78	fields	66	12	36
Sunbathing, relaxing on beach	1,071,808	77	beach acres	61	16	40
Swimming	2,904,630	187		NI		
Outdoor area	1,379,699	141	beach acres	61	80	124
Outdoor pools	909,149	38	pools	24	14	26
Indoor pools	615,782	7	pools	2	5	7
Tennis	374,116	234	courts	157	77	149
Used a playground	1,463,934	208	sites	94	114	179
Visiting gardens	196,063	22	sites	NI		
Visiting historic sites	658,770	56	sites	NI		
Visiting natural areas	512,377	87	sites	NI		
Volleyball	191,706	57	courts	9	48	65
Hunting	248,055	40,678	acres	108,599	-67,921	-55,283
Drive for pleasure	2,285,944	NA	NA	NI		
Driving motorcycle off road	39,213	18	miles	1	17	22
Driving 4-wheel-drive off road	105,729	NA	NA	NS		
Walking for pleasure	8,388,571	NA	NA	NI		
Bird watching	79,877	NA		NI		
Other	81,330	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

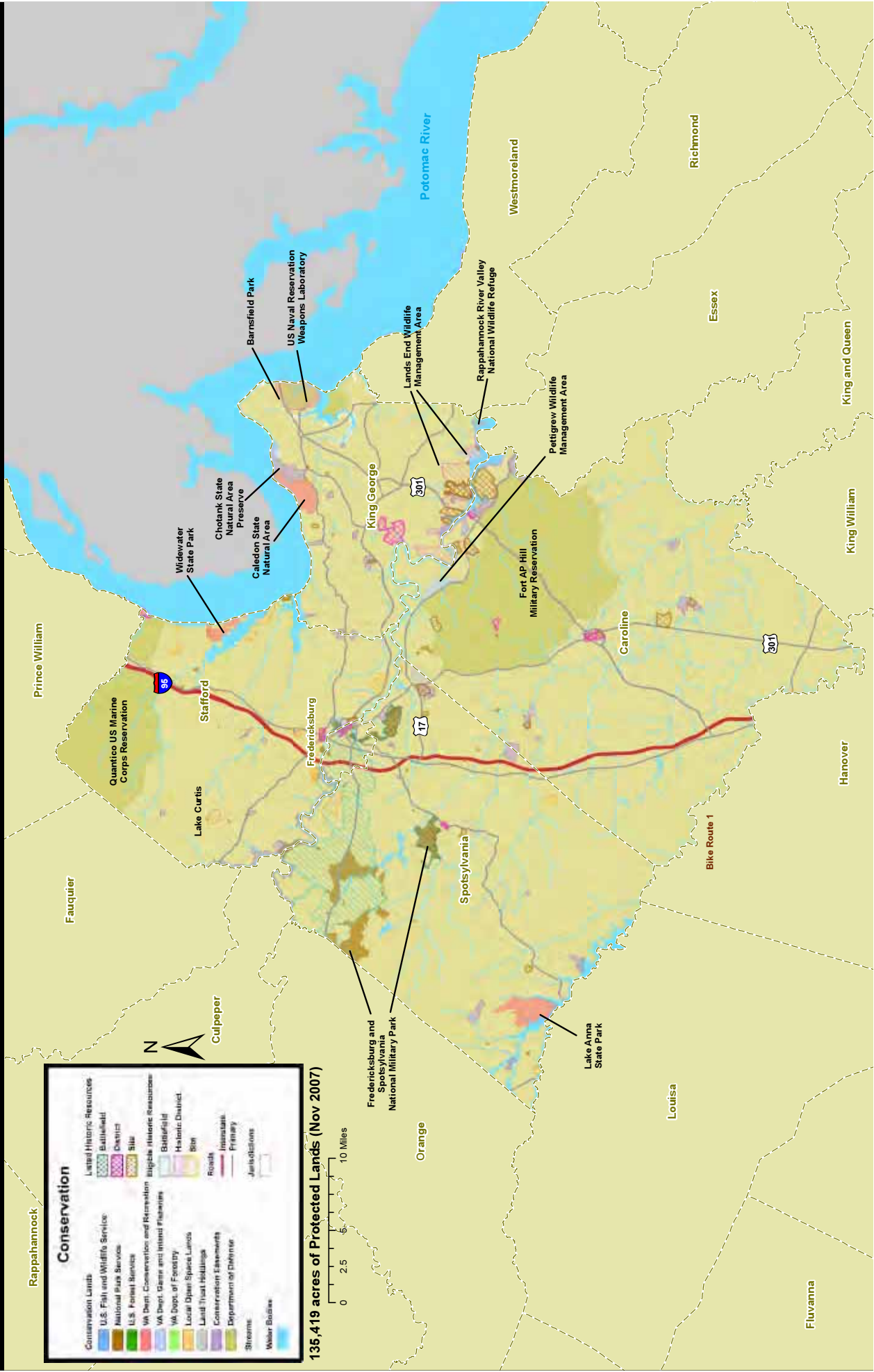
S: same as combined

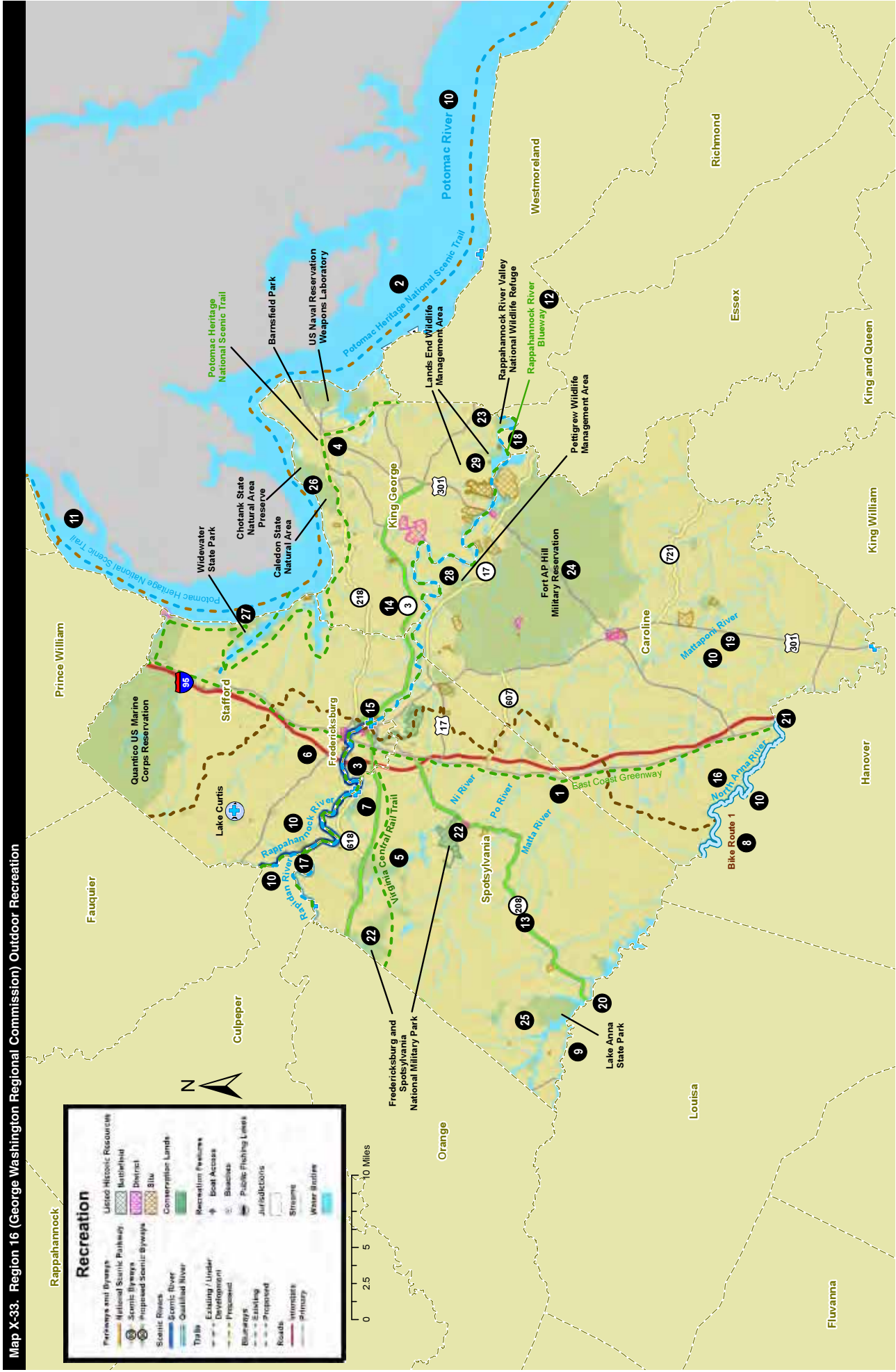
NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Map X-32. Region 16 (George Washington Regional Commission) Conservation Lands





Introduction

The Northern Neck, encompassing 8,200 square miles, is a special and unique place in the Commonwealth. The region is a tapestry of farms, vast tracts of forest and tidal saltwater fishing spots. Unspoiled wetlands and tidal creeks and marshes entice canoeists and kayakers to enjoy the solitude. Captain John Smith was perhaps the Northern Neck's first tourist and called the area "a place heaven and earth never agree more to man's habitation." Some years later George Washington referred to the Northern Neck as "the Garden of Virginia." The region is steeped in history, attracting tourists to historic villages and offering opportunities to learn about marine lore in the waterfront villages of Reedville and Irvington. Tourism, outdoor recreation, history and the natural resources of the Northern Neck beckon visitors and residents eager to escape urban life and the sprawl of suburban growth.

Historically, the regions surrounding the Northern Neck have seen unprecedented growth and urbanization, while the Northern Neck still remains among the least-developed areas in the Tidewater region of Virginia. Development pressures from more urbanized areas and the attractiveness of the region for retirement continue to influence population increases. Overall population growth in the 1990s was 11.7 percent compared to 14.4 percent statewide. Most of the growth in the Northern Neck was due to in-migration. The population growth rate for the region is expected to be approximately 16 percent during the period from 2005 to 2020 (the 2005 population of 49,353 is expected to grow to 57,200 by 2020). A commitment to resource based tourism and to the quality of life in the area will help maintain the Northern Neck's character and the economic stability of the region.

The Potomac and Rappahannock rivers and the Chesapeake Bay form three of the boundaries for the Northern Neck Planning District. The region includes four counties: Lancaster, Northumberland, Richmond and Westmoreland, and it consists of 492,800 land acres and 42,433 water acres. Six towns are located within the region: Colonial Beach, Irvington, Kilmarnock, Montross, Warsaw and White Stone. There are more than 1,000 miles of shoreline, which comprise 38 percent of the total Tidewater shoreline in Virginia. Wetlands cover 37,890 acres of the region. Water-related and other natural resources are abundant, making this region one of the most important for environmental and conservation planning in the Chesapeake Bay watershed.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 17 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

The Northern Neck Tourism Council maintains a comprehensive list of outdoor recreational opportunities at www.northernneck.org.

As indicated in the 2006 *Virginia Outdoors Survey* (VOS), the most popular outdoor activities in the region are related to utilization of water resources and beaches along with walking and bicycling trails (see Table X-17). Fishing ranked highest among the water-related activities, followed closely by swimming and boating. Survey respondents indicated that public access to water is lacking, especially with a projected increase in tourist numbers. There is a similar insufficiency in trail miles available for walking, hiking, bicycling, jogging and horseback riding. Public swimming pools and playgrounds (separate from those associated with local schools) are also among desired community amenities.

As localities in this region plan for future outdoor recreational needs, the inclusion of small neighborhood parks, larger regional facilities, and trails linking communities and water access points should be considered. Residents also express interest in adding playgrounds, public swimming pools and bicycle facilities. Trails, blueways and greenways linking existing recreational, historic, cultural and natural resources would increase the number of trail miles suitable for walking, bicycling and boating. In addition, continuing to promote linkages between historical, scenic and cultural resources is supported by statewide survey

results, which indicate that visiting historic sites is second only in popularity to walking for pleasure.

One of the largest voids in parks and recreation departments in Virginia is in the Northern Neck region. None of the counties employ a full-time parks and recreation director. These localities have turned any recreation programming over to private service providers. While private organizations may provide recreation programming in the short term, they are not charged with planning for the long term recreation, park and open space needs of this community. With populations anticipated to increase in each of the four Northern Neck counties, this is a troubling trend.

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each county in this region was: Westmoreland \$10.33; Richmond, \$40.59; Northumberland, \$3.88; and Lancaster, \$6.52. This compares to statewide per capita spending on parks and recreation of \$55.31. Breaking these numbers down, the average spending per capita for towns was \$85.51; for counties, \$43.75; and for cities, \$76.45.

Land conservation

Federal land holdings include the Rappahannock River Valley National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service, and the George Washington Birthplace National Monument, managed by the National Park Service. State conservation lands include four natural area preserves and Chilton Woods State Forest. The region has two state parks protected for outdoor recreation and conservation: Belle Isle State Park on the Rappahannock River and Westmoreland State Park on the Potomac River. A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map 34.

Land Trusts Operating in Region 17:

- Virginia Outdoors Foundation
- Northern Neck Land Conservancy
- Chesapeake Bay Foundation
- Potomac Conservancy
- APVA Preservation Virginia
- The 500-Year Forest Foundation

Land conservation recommendations include:

- Property owners and local agencies and organizations should continue to work with land trusts to protect important private land holdings to expand the conservation base in Region 17 for the protection of wetlands and water resources.
- Land trusts should obtain additional easements to buffer the Rappahannock River Valley Wildlife Refuge.
- Local residents, agencies and organizations should pursue conservation measures to protect water quality and the health of adjacent riparian lands along Cat Point Creek and the Corrotoman River.
- Local and regional agencies and organizations should implement recommendations from the Northern Neck Land Conservation and Cultural Action Strategy to establish a land conservation program.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Stakeholders, including local governments, the Northern Neck Planning District Commission, the Middle Peninsula Planning District Commission and other interested entities, should form a regional partnership to address green infrastructure.
- Local and regional agencies should pursue Virginia Coastal Zone Management Program support for green infrastructure initiatives for the region.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map 35).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

1 Local and regional agencies and organizations should implement the **Potomac Heritage National Scenic Trail** (PHNST).

- Northern Neck Heritage Trail is part of the PHNST.

The PHNST connects the outstanding natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands. The National Park Service (NPS) manages this partnership, which has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies. The PHNST could become the thread from which a vibrant environmentally-based economic development strategy can be woven, tying together existing historic and natural resources such as the George Washington Birthplace, Westmoreland State Park, Caledon Natural Area and the Steamboat Era Museum in Irvington. The PHNST should be incorporated into local comprehensive plans. Water trails and land trails would provide opportunities for boaters, kayakers, canoeists, hikers and bicyclists to move between key tourist destination sites.

Other Trails

2 Local and regional agencies and organizations should complete a **water trail** and **bicycle route** from the **George Washington Birthplace** to **Mount Vernon**. Alternatives to protect scenic resources along these multiuse corridors should be explored.

3 The James Monroe Foundation should develop a parking lot, trails and interpretive sign at **Monroe's Birthplace** in Westmoreland County, and they should work with local and regional agencies to connect the birthplace with the town of Colonial Beach via a bicycle-walking trail.

4 Local and regional agencies and organizations should establish a specific route for **bicycling between northern Stafford County and the Town of Reedville** in Northumberland County with extensions to Caledon Natural Area and to Irvington. This will serve as a connecting route to the PHNST.

Water access

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water has always been key to life in the Northern Neck, and water access should be a high priority for public acquisition. The accessibility of the Northern Neck's water resources for all citizens and visitors is paramount to the economic stability and aesthetic appeal of the quality of life the region offers. Statewide, water access is one of the highest recreational demands in Virginia, with fishing ranking seventh and boating ranking tenth in popularity. State agencies should work with the Northern Neck Public Access Authority to obtain funding for additional public access sites, especially at previous ferry landing locations.

Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters and along blueways including the Northern Neck Blueway and the Captain John Smith Chesapeake National Historic Scenic Trail.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Local, regional and state agencies should provide an additional 49 water access points in the Chesapeake Bay watershed in Virginia to meet the commitments of the Chesapeake Bay Agreement.
- Local, regional and state agencies should assess the availability of former steamboat landings in tributary streams and on the Potomac and Rappahannock rivers for water access.

- Local, regional and state agencies should implement a water trail and bicycle route from Washington's Birthplace in Westmoreland County to Ferry Farm in Stafford County to Mount Vernon in Fairfax County.
- Local and regional agencies should develop water trail segments in Richmond and Lancaster counties along Rappahannock tributaries.

5 Local and regional agencies should develop **water-to-land access between Stratford Hall Plantation and the George Washington Birthplace National Monument**. This access would complement the existing Potomac River Water Trail part of the PHNST.

6 The Department of Conservation and Recreation (DCR) should develop a **canoe and kayak camping area** along the shoreline within **Westmoreland State Park**.

7 Local and regional agencies should develop the **Monroe Bay water trail** segment incorporating James Monroe Birthplace in Westmoreland County.

8 DCR and local and regional agencies should develop **Hughlett's Point to Dameron Marsh Kayak Trail** in Northumberland County.

9 Local and regional agencies should develop the water trail segment for **Cat Point Creek Blueway** in Richmond County.

10 Local and regional agencies should provide water overlooks at **Powers Land** and other bay and river resources of the region.

11 Local, regional and state agencies should evaluate the region for potential areas to locate fishing piers. **Totuskey Creek** is a potential location for a fishing pier.

12 Local and regional agencies should consider **Vir Mar Beach** as an enhanced beach access point with wayside access including picnic and parking areas.

Historic and landscape resources

The economic future of the Northern Neck may be in heritage tourism and the proud preservation of historical landmarks. The region is pursuing designation as a National Heritage Area. The Northern Neck Farm Museum, Christ Church, James Monroe and George Washington birthplaces, Stratford Hall, Hughlett Tavern as well as several other points of historical significance make this region a natural setting for historic

landmark preservation. The Northern Neck Tourism Council and the Northern Neck Planning District Commission have worked to connect and promote many of the historic resources along with the culturally rich landscapes.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government should incorporate the National Park Service's Captain John Smith Chesapeake National Historic Trail in local comprehensive plans as a way to further heritage and ecotourism in the region.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways,

blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.

- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
- Consider scenic views along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.
- Regional and local agencies and organizations should retain cultural landscapes and views along water bodies throughout the region.
- Regional and local agencies and organizations should protect the unique scenic beauty of the Northern Neck landscape by managing growth to respect the cultural heritage and landscapes that create a unique sense of place.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.

- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- The Northern Neck Planning District Commission coordinates transportation initiatives for the region. As stated in the annual 2006-2007 planning district commission work plan, the commission should encourage localities to nominate roads for Virginia Byways designation.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

13 Routes 205 and 3 in Westmoreland County.

14 Route 360 in Richmond and Northumberland counties.

15 Route 354 in Lancaster County.

Scenic rivers

Currently there are no Virginia Scenic Rivers designated in the Northern Neck region. For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. Regional and local recommendations include:

- Localities should adopt planning tools (e.g., land use overlays, corridor management plans) that will afford special recognition and protection to Virginia's scenic rivers.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

16 The Rappahannock River from the Route 3 bridge at Ferry Farm to the Chesapeake Bay.

17 The Corrotoman River in Lancaster County.

18 Cat Point Creek from Route 622 to its junction with the Rappahannock River.

Watershed resources

The Northern Neck is included in both the Shenandoah-Potomac watershed and the Rappahannock watershed. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed Groups in Region 17:

- Cat Point Watershed Project
- Chesapeake Bay Foundation
- Dividing Creek Watershed Association
- Friends of Dragon Run
- Friends of Totuskey Creek
- Friends of the Rivers of Virginia
- Lancaster and Morratco Creeks Watershed Partnership
- Northumberland Association for Progressive Stewardship

Watershed recommendations include:

- Local and regional agencies and organizations should protect watersheds and broad areas of natural significance in the Dragon Run corridor.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local and regional environmental education organizations should assess the outdoor environmental education facilities existing in this region and expand environmental education by providing more opportunities at the region's vast public natural areas and parks, including state parks, state forests and wildlife management areas.
- Local and regional agencies and organizations should develop cooperative partnerships with federal and state outdoor recreation providers to offer educational outreach to serve the localities and region.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with NPS to revise policy, in order to allow mountain bikes to use appropriate national park trails.

- NPS should continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program and PHNST to connect people to heritage, outdoor recreation, and educational opportunities and resources.
- NPS should continue PHNST trail corridor management implementing partnerships involving NPS units and local, state and regional entities. Working together, partners achieve diverse goals ranging from development of a sustainable transportation system to linking conservation lands as part of an extensive green infrastructure network.
- NPS, with local, regional and state partners, should pursue access from the Potomac River to the George Washington Birthplace National Monument as part of the PHNST water trail. This is one of the priorities of the PHNST. One of the biggest management issues for the birthplace site is preserving the cultural landscape. In addition, the birthplace should continue to work collaboratively with a number of partners on regional trail and heritage tourism efforts and the Chesapeake Bay Gateways and Water Trails Network.

U.S. Fish and Wildlife Service (USFWS)

- USFWS should continue to seek opportunities to acquire additional sites along the Potomac River to help protect eagle habitat and other natural heritage resources.
- 19 USFWS should continue to develop outdoor recreation and outreach education opportunities at the **Rappahannock River Valley National Wildlife Refuge (NWR)**. The Rappahannock River Valley NWR was established in 1996 to protect outstanding fish and wildlife habitat in and along the river. A two-year effort began in April 2006 to develop a comprehensive conservation plan for the Rappahannock River Valley NWR. This plan coordinates with ongoing programs and regional initiatives to link regional opportunities. USFWS set a refuge land protection goal of 20,000 acres in seven counties, flanking both sides of the river from Skinners Neck south to Belle Isle State Park. As of 2005, the USFWS had acquired nearly 8,000 acres from willing sellers, including 1,400 acres under conservation easement.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

20 Belle Isle State Park (733 acres) is located on the Rappahannock River in Lancaster County. The park has seven miles of frontage on the north shore of the Rappahannock, and it borders Deep and Mulberry creeks. Accommodation for special events and overnight stays are offered in the Bel Air Mansion and Guest House. The park has a boat launch on Deep Creek and a car top launch on Mulberry Creek. Picnicking and shelters are available. Diverse tidal and nontidal wetlands, lowland marshes, tidal coves and upland forests create numerous opportunities for environmental education and interpretive programming. Multi-use trails also provide access to wildlife viewing areas within the park.

Belle Isle has a 29-site full service campground, a group cabin and a new visitor center, all funded by the 2002 General Obligation Bond (GOB). The new visitor center will allow for greatly expanded interpretive and educational programming on the park's unique natural and cultural resources. The property should be evaluated to determine the feasibility of establishing mountain bike trails within the park.

With its potential for canoe-in campsites, Belle Isle should be incorporated into the NPS's Captain John Smith Chesapeake National Historic Trail as well as into future Rappahannock River Water Trail initiatives.

21 Westmoreland State Park (1,299 acres) is located on the Potomac River in Westmoreland County. One of six original Virginia state parks established in 1936, Westmoreland park is listed on the state and national historic registers. Traditional recreational offerings include cabins, camping, swimming, picnicking, trails, and boating and fishing access. The park's natural and cultural features create ample opportunity for interpretive and educational opportunities both on land and on the river.

Additional projects are proposed in the park's master plan, such as upgraded overnight and conference facilities, which would require funding and staff support. Located on the Potomac River Water Trail, the master plan also proposes development of canoe-in camping. The park could also be a point of interest on the Potomac Heritage National Scenic Trail. Other trail opportunities include links between the George Washington Birthplace and Stratford Hall. An evaluation should be performed to determine if the park is a likely location for mountain bike trails.

Future state park sites

Due to the extremely high demand for public access to the waters of the Commonwealth, any large acreage waterfront property that becomes available on the major tidal rivers or their tributaries in the region should be evaluated for potential acquisition and development as a regional or state park. Potential acquisitions should be explored along the Potomac, Little Wicomico and Great Wicomico rivers in Northumberland County.

State natural area preserves

The following natural area preserves are located within this district: Hickory Hollow in Lancaster County and Bush Mill Stream, Dameron Marsh and Hughlett Point in Northumberland County.

DCR has, as of November 2006, documented 168 occurrences of 29 rare species and natural communities in the Northern Neck Planning District. Nine species are globally rare and three are federally threatened or endangered. One hundred and one conservation sites have been identified in the district; only 31 sites (31 percent) have received any level of protection through ownership or management by state, federal and non-government organizations.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 17, DCR is particularly interested in protecting:

- Lands around Hughlett Point and Dameron Marsh natural area preserves.
- Sandy beach habitats and associated wetlands and uplands that support the threatened northeastern beach tiger beetle.
- Bald eagle nesting habitat.
- Based on analysis of the site's carrying capacity, additional public access is recommended at Dameron Marsh.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken forested environments.
- Agricultural lands should be targeted for reforestation to protect the water quality of the area and limit the effects of erosion.

22 DOF should provide hiking, picnicking and nature study at the **Virginia Tech Forest Management Station** in Richmond County. This state forest includes 55 acres suitable for dispersed recreation.

23 DOF should develop conservation education opportunities and passive recreational activities, including trails, at **Chilton Woods State Forest** in Lancaster County.

State fish and wildlife management areas (WMA)

- The Northern Neck Planning District Commission's annual work plan for 2006-2007 indicates they will continue to assist the Virginia Department of Game and Inland Fisheries (DGIF) with further planning, development and marketing of the Coastal Wildlife and Birding Trail.
- DGIF should continue to work with local and regional governments to support the Birding and Wildlife Trail program.

Virginia Marine Resources Commission (VMRC)

- VMRC should continue promotion of saltwater recreational fishing opportunities in the Commonwealth through continued construction of new reef sites and augmentation of existing artificial fishing reef sites.
- VMRC should increase public access to salt water sites.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

Other state-owned lands that contain significant undeveloped open space that may have some potential for local recreational use have not been identified in Region 17.

24 The Virginia Outdoors Foundation (VOF) and the property owner should maintain the **Vera Knols Tract**, located in Northumberland County, as a natural area.

25 Recreational access at **Rappahannock Community College** in Richmond County should be improved and expanded. The campus has 118 acres of land and is already on the Virginia Wildlife and Birding Trail.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportu-

nities into all phases of transportation planning, land use planning and project design.

- The Northern Neck Planning District Commission coordinates transportation initiatives for the region. Their annual work plan for 2006-2007 indicates the Rideshare Program will continue. The 2007 VOP recommends support of the planning district commission's commitment to continuing work on regional multi-use trail networks, the PHNST and other water trails.
- Local, regional and state agencies and organizations should provide multi-use paths and prepare educational programs emphasizing the sharing of roadways by motorists and bicyclists.
- The Virginia Department of Transportation (VDOT) should construct road shoulders for bicyclists and pedestrians.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Explore reclamation of abandoned landfills into new and needed parks.
- Each of the counties and towns of Region 17 should consider establishing local parks and recreation departments. The purpose of the departments would be to provide quality recreation programs, but also to facilitate the acquisition and development of parks and the conservation of dwindling open space and waterfront. Parks and recreation services provide a myriad of benefits to communities and are vital to the health and well being of local citizens. Although not a mandated service from the Commonwealth, these departments can provide many social, economic and environmental benefits to communities.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate, and state or federally owned lands in order to increase local access and meet outdoor recreation needs.

- Local and regional agencies should initiate development of a system of local and regional parks that will supplement the base of state and federally owned lands. Currently there are no regional parks that are locally owned or operated in partnership with multiple organizations and agencies. It is important to meet the outdoor recreation needs for a growing region by increasing local and regional opportunities.

Private sector

This region is a major destination area for vacationers. Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Local and regional agencies and organizations should continue support for the Northern Neck Tourism Council and tourism efforts related to outdoor recreation, heritage and ecotourism, which is a component of the Northern Neck Planning District Commission's annual work plan for 2006-2007.
- The private sector should explore opportunities for additional water access for boating and fishing.
- Entrepreneurs should evaluate the need for facilities such as marinas, dry storage areas, fishing piers, bait and tackle shops, and food service establishments to support water access activities.
- Entrepreneurs should evaluate the potential for creating and marketing water-to-land access points that provide safe areas for boats to dock for overnight stays, meals or sightseeing.
- The private sector should evaluate the potential and marketing strategy for market boat-in bed and breakfasts.
- The private sector should explore opportunities to convert abandoned seafood processing facilities into water-based recreational developments.



George Washington Birthplace National Park. Photo by DHR.

Table X-17. Region 17 (Northern Neck Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	82,542	16	fields	16	0	2
Basketball	94,771	22	goals	3	19	22
Bicycling	137,570	10	miles	NI		
Mountain	21,400	2	miles	NI		
Other	116,171	8	miles	NI		
Lake, river and bay use (combined)	729,887	11,773	water acres	291,921	-280,148	-278,704
Power boating	325,074	7,835	water acres	S		
Sailing	48,914	423	water acres	S		
Saltwater fishing	253,741	1,427	water acres	S		
Jet ski, personal watercraft	71,078	1,114	water acres	S		
Water skiing, towed on water	31,081	974	water acres	S		
Camping	69,855	412	sites	2,064	-1,652	-1,602
Tent camping	26,699	157	sites	282	-125	-105
Developed camping	43,156	255	sites	1,782	-1,527	-1,496
Fitness trail use	31,081	2	mile trails	2	0	1
Fields (combined)	143,685	30	fields	4	26	30
Football	47,385	10	fields	4	6	7
Soccer	96,299	20	fields	-	20	23
Stream use (combined)	202,483	95	stream miles	18	77	89
Freshwater fishing	106,795	75	stream miles	S		
Human-powered boating	58,697	15	stream miles	S		
Rafting	2,344	0	stream miles	S		
Tubing	34,647	5	stream miles	S		
Golfing	97,064	3	courses	126	-4	-3
Hiking, backpacking	60,531	31	trail miles	17	14	18
Horseback riding	18,037	8	miles	-	8	9
In-line skating	3,872	0	miles	NI		
Jogging, running	252,722	20	mile trails	NI		
Nature study, programs	22,317	3	sites	-	3	4

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-17. Region 17 (Northern Neck Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	67,257	175	tables	320	-145	-124
Skateboarding	18,343	6	sites	NI		
Snow skiing or snowboarding	12,840	0	ski lifts	-	0	0
Softball	56,047	10	fields	6	4	5
Sunbathing, relaxing on beach	223,170	16	beach acres	33	-17	-15
Swimming	509,520	37		NI		
Outdoor area	296,031	30	beach acres	33	-3	1
Outdoor pools	144,194	6	pools	11	-5	-4
Indoor pools	69,295	1	pools	1	0	0
Tennis	25,476	16	courts	16	0	2
Used a playground	110,566	16	sites	6	10	12
Visiting gardens	23,998	3	sites	NI		
Visiting historic sites	60,735	5	sites	NI		
Visiting natural areas	101,089	17	sites	NI		
Volleyball	51,665	15	courts	-	15	17
Hunting	117,699	19,301	acres	1,000	18,301	20,668
Drive for pleasure	361,352	NA	NA	NI		
Driving motorcycle off road	23,846	11	miles	-	11	12
Driving 4-wheel-drive off road	11,464	NA	NA	NS		
Walking for pleasure	1,577,474	NA	NA	NI		
Bird watching	48,404	NA		NI		
Other	16,407	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

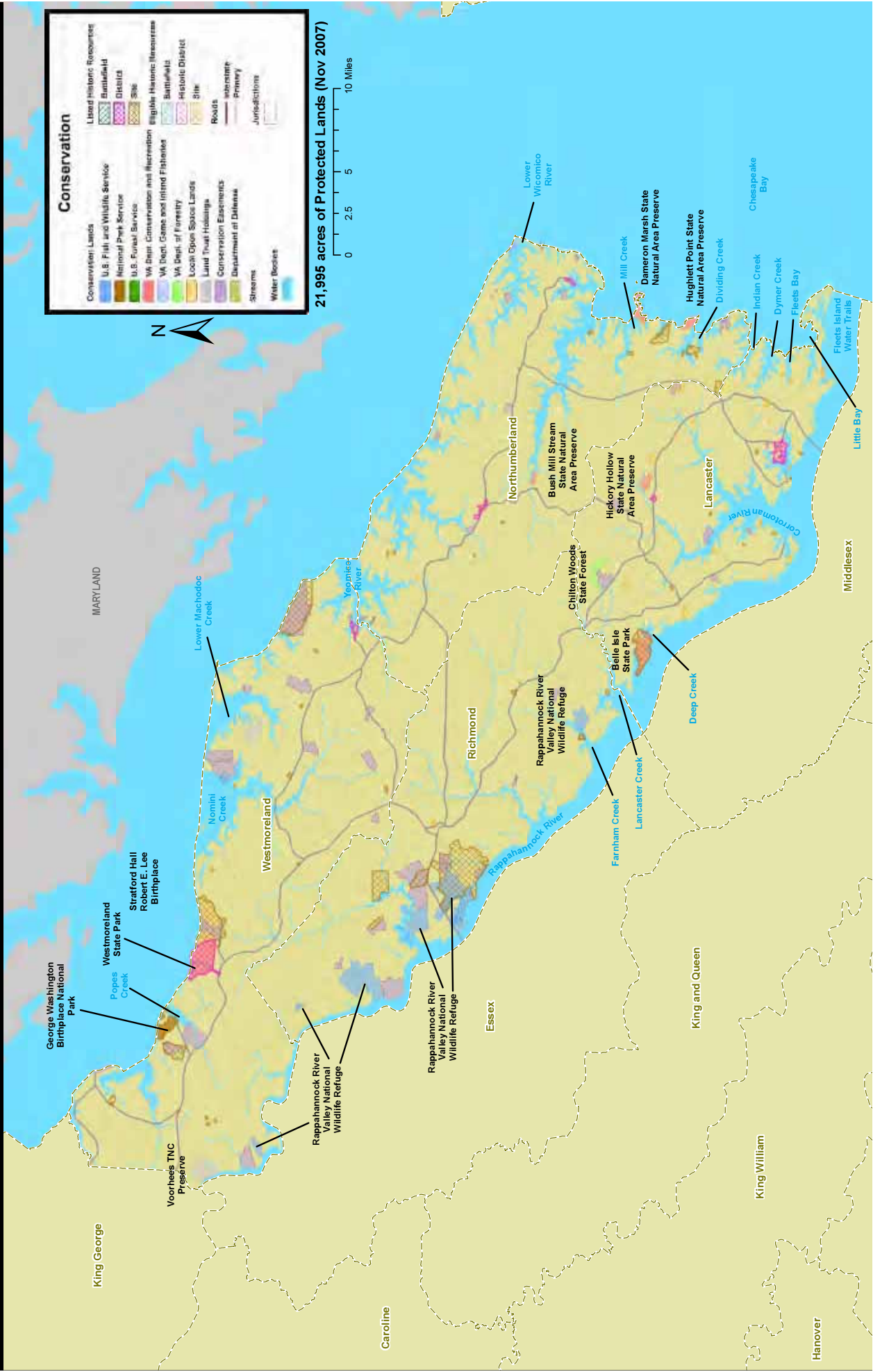
S: same as combined

NS: not inventoried separately

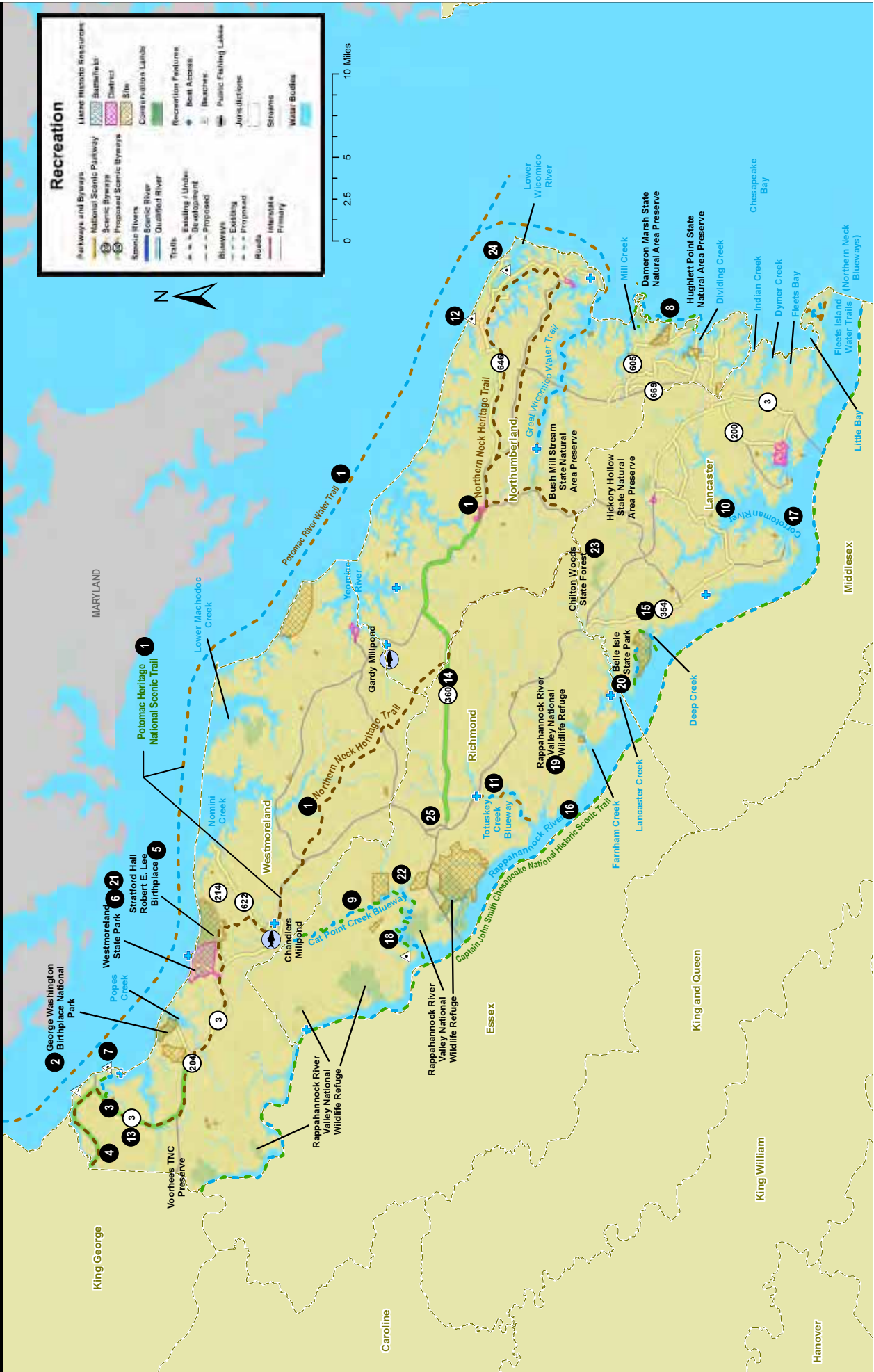
NI: not inventoried

(-) indicates surplus

Map X-34. Region 17 (Northern Neck Planning District) Conservation Lands



Map X-35. Region 17 (Northern Neck Planning District) Outdoor Recreation



Introduction

The Middle Peninsula encompasses 1,388 square miles known as Virginia's River Country, an area of countless waterways. The region is graced with small towns and villages having easy access to the Chesapeake Bay and its tributaries. The rural character and rich history abound among closely-knit communities surrounded by working farms and forests. The region has a high quality of life with opportunities for water oriented living including the scenic beauty of the tidal marshes and wooded stream valleys dissecting every nook and cranny of land. Captain John Smith explored the Middle Peninsula, and Pocahontas is said to have lived here. Steeped in history, tourists journey to the region seeking historic villages and opportunities to live near the Chesapeake Bay.

The Middle Peninsula economy and recreational opportunities are dependent on the region's abundant natural resources. The region offers opportunities for both the commercial and recreational harvesting of fin-fish and shellfish. The construction and maintenance of both pleasure and workboats and the use of the waterways for transport and recreation are vital facets of the community. The region also has vast forests and sawmills producing pulp for industry. Tourism is one of the largest industries in the Middle Peninsula Planning District.

The Virginia Institute of Marine Science at Gloucester Point and the centrally located Rappahannock Community College provide a resource base from which the region can address water-related and resource-related management issues. Both of these schools add to the knowledge about natural resources as well as provide seminars, classes and public information.

The Middle Peninsula Planning District is in the east-central Tidewater region of Virginia and includes nine local governments: the counties of Essex, Gloucester, King and Queen, King William, Mathews and Middlesex and the towns of Tappahannock, West Point and Urbanna. Region 18's northern border is the Rappahannock River; the Chesapeake Bay is on its eastern side; its southern border is the York River; and the western border is Caroline County. The district is largely rural, with thousands of acres of ecologically valuable tidal and non-tidal wetlands, forests, pastures, rivers, streams and embayments. The topography ranges from flat, level areas to gently rolling hills up to 200 feet above sea level.

Although Gloucester is in the Middle Peninsula Planning District Commission, it is also a member of the Hampton Roads Planning District Commission. For the purposes of this plan, Gloucester data and information will appear only in the Middle Peninsula region to avoid duplication.

The region's 2000 Census population was 83,684 people. The region's population grew by almost 15 percent during the last decade, which is just above the 14.4 percent statewide growth rate. Gloucester and King William counties have had the most significant changes in populations, followed by Essex and Middlesex. Middlesex County's population increases by three times its base rate of 9,932 between May and October due to the number of vacation and second homes located in this county. All four of these counties grew faster than the state average; most of the growth is a result of in-migration. Region 18's population is expected to grow to 100,100 by 2020, which represents a 16 percent increase in growth from 2005. Less than 4 percent of jobs are farm-related. Most residents who work are commuters who travel to the Richmond and Hampton Roads regions. Increasingly, Middle Peninsula pastoral images are giving way to development that is eroding the distinctive qualities that make the region unique. Commitment to resource-based tourism, public access to the area waterways and to the quality of life in the area will help maintain the character and the economic stability of the region.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 18 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

As indicated in the 2006 *Virginia Outdoors Survey (VOS)*, the most popular outdoor activities in the

region are related to the use of water resources and beaches along with walking and bicycling trails (see Table X-18). Fishing ranked highest among the water-related recreation followed closely by swimming and boating. Respondents to the survey indicated that access to water was a definite need that is not being met adequately, especially with the numbers of tourists expected to increase. There is a similar deficiency in the number of trail miles available for walking, hiking, bicycling, jogging and horseback riding. In addition, public playgrounds, separate from those associated with local schools and public swimming pools, were listed as desired community amenities.

Small neighborhood parks, larger regional facilities and trails linking communities and water access points should be included in localities' plans to meet the outdoor recreational needs of residents. The 2006 VOS and inventory show a need for additional active recreation facilities, especially basketball courts, baseball fields and multipurpose fields for soccer and football. In addition, Region 18 remains an area where citizens are interested in hunting and off-road motorcycling, both of which require a large land base. Efforts to make lands available for off-road motorcycling and hunting should be pursued by interest groups and the localities.

Other areas of need for recreational activities include playgrounds, bicycle facilities, and access to water for boating, canoeing, kayaking, fishing and swimming. There is a particular interest in Region 18 to make additional beaches available to the public. Trails, blueways and greenways linking existing recreational, historic, cultural and natural resources could increase the number of miles of trails suitable for walking, bicycling and boating. Promoting and forming linkages between historical, scenic and cultural resources is important, as visiting historic sites is second in popularity to walking for pleasure.

Four of the six counties in the Middle Peninsula are served by a parks and recreation department. The town of Tappahannock does not have its own department, but it is served by the Essex County parks and recreation department. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Essex, \$17.80; Middlesex, \$2.08; Gloucester, \$22.58 and King William, \$22.99. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map 36.

Land Trusts Operating in Region 18

- Virginia Outdoors Foundation
- Chesapeake Bay Foundation
- Friends of Dragon Run
- Mathews Land Conservancy
- Middle Peninsula Land Trust
- APVA Preservation Virginia
- The Nature Conservancy
- The 500-Year Forest Foundation

Land conservation recommendations include:

- Local regional and state agencies and organizations should obtain easements to buffer the Rappahannock River Valley National Wildlife Refuge.
- Local regional and state agencies and organizations should evaluate conservation measures for the Piankatank River to protect water quality and the health of adjacent riparian lands.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Localities should work with the Middle Peninsula Planning District Commission to form a regional partnership to address green infrastructure.
- The Middle Peninsula Planning District Commission should pursue Virginia Coastal Zone Management Program support for green infrastructure initiatives for the region.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, water-sheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map 37).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails. Trail and greenway recommendations include:

- 1 Complete the **King and Queen County landfill trail** project.
- 2 Complete the **West Point trail**.
- 3 **Beaverdam Park** in Gloucester County has the potential for numerous trails, including horse and mountain bike trails. The park already has four trails totaling approximately nine miles.
- 4 Implement **Point Walk at Gloucester Point** as an interpretive trail featuring the natural, cultural and ecological significance of the area.

Water access

Middle Peninsula Chesapeake Bay Public Access Authority

The Middle Peninsula Planning District Commission's Public Access Site Inventory was completed in 1999. This study identified 326 potential Virginia Department of Transportation (VDOT) maintained road termini (points), defined as any primary or secondary road that ends in or near proximity to any tributary that could yield access to public waters. The Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA) is in the process of prioritizing sites for public access and working to secure additional public access to water access sites throughout the region.

Water has always been key to life in Middle Peninsula, and water access should be a high priority for public acquisition. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Implement the Town of West Point water access plans.
- Public fishing lakes in each county are needed to meet the demand for freshwater fishing in this region.

Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- VDOT and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- 5 Local and regional agencies and organizations should support development of the **Algonquin Trace Water Trail** on the York River.
- 6 Local and regional agencies and organizations should support the development of **Gloucester water trails**.
- 7 Local and regional agencies and organizations should continue support for the **King and Queen County Heritage gateways and trails**.
- 8 Local and regional agencies and organizations should support the development of trails by the Friends of the Dragon along **Dragon Run**.

- 9 Local and regional agencies and organizations should continue support for the **Mattaponi and Pamunkey rivers water trails** to be connected with York River water trails.

The lower Pamunkey River was recognized along with the Mattaponi as an American Canoe Association Recognized Water Trail in 2006. Established by the Mattaponi and Pamunkey Rivers Association, the water trail along these two tributaries of Virginia's York River features some of the last pristine fresh water paddling on the Atlantic seaboard.

- 10 Local and regional agencies and organizations should support the system of **water trails in Mathews County**.
- 11 Local and regional agencies and organizations should provide canoe and kayak access at the **Route 17 bridge over Dragon Run**.
- 12 Local and regional agencies and organizations should provide improved public access at the **Poropotank River**.
- 13 Local and regional agencies and organizations should support development of the **Tappahannock Waterfront Park**.
- 14 While there have been many changes to **Gloucester Point Beach** over the last few years, the potential remains for additional improvements. Gloucester County should expand boating and fishing access at this park.
- 15 Local and regional agencies and organizations should consider a **public beach** acquisition at the mouth of the **Poropotank River**.
- 16 VDOT and the local government should consider development of two access points on VDOT lands on the **Pamunkey River** for car top boat launching and crabbing.
- 17 Mathews County should develop boat access to the Mathews County Court House on the headwaters of **East Creek**.

Chesapeake Bay Gateways

The National Park Service (NPS) coordinates the Chesapeake Bay Gateways Program (<http://www.baygateways.net>) to promote a historic and environmental focus on water access. Designated Chesapeake Bay Gateways in the Middle Peninsula include:

- Mathews County Visitor and Information Center
- James Mills Scottish Factor Store
- Pamunkey Indian Reservation
- Gloucester Point
- York River Water Trail
- Mathews Blueways Water Trail

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should partner with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.

- Local government and local and regional organizations should work with the state to meet the county-wide surveys of historic and architectural resources in Gloucester, King and Queen, King William, Mathews and Middlesex counties.
- Local government and local and regional organizations should work with the state to meet the critical need for archaeological surveys in Mathews and Middlesex counties, as well as for assessment of archaeological resources in those two counties.
- State, regional and local agencies and organizations should partner to provide updated interpretive panels and walkways at Tyndall's Point explaining the significance of the Revolutionary and Civil wars.
- Local governments should incorporate the National Park Service's Captain John Smith Chesapeake National Historic Trail into local comprehensive plans as a way to further heritage and ecotourism in the region.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Consider scenic views along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.
- Local government should retain cultural landscapes and views along water bodies throughout the region.

- Regional and local agencies and organizations should protect the unique scenic beauty of the Middle Peninsula landscape by managing growth to respect the cultural heritage and landscapes that create a unique sense of place.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- The Department of Conservation and Recreation (DCR) and VDOT should evaluate the roads accessing the Rappahannock River Valley National Wildlife Refuge for their scenic qualities once a request is received from the local government.
- DCR and VDOT should evaluate Route 30 from West Point to Barnhamsville to Williamsburg for scenic qualities once a request is received from the local government.
- DCR and VDOT should evaluate Route 14 from Shacklefords to Adner in lower King and Queen County once a request is received from the local government.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

- Local regional and state agencies and organization should designate and interpret the John Smith Capture Route with signage as a driving trail high-

lighting historical points of interest related to Captain John Smith's adventures in the Middle Peninsula.

- 18** DCR and VDOT should evaluate **state Route 17** in Gloucester for scenic qualities once a request is received from the local government.

Scenic rivers

In Region 18 there are currently no designated scenic river segments.

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers.

The following river segments qualify for designation as Virginia Scenic Rivers:

- 19** The **Mattaponi River** from Monday Bridge (Route 628) to the Walkerton Bridge (Route 629) in King and Queen and King William counties.
- 20** **Dragon Run** from its headwaters in Essex County and King and Queen County to the Piankatank River in Middlesex County and Gloucester County
- 21** The **Pamunkey River** from Route 614 to the Pampatike Landing in King William County.
- 22** The **Piankatank River** from Route 17 to the Chesapeake Bay in Middlesex, Gloucester and Mathews counties.
- The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:
- 23** The **Mattaponi River** in King William County and King and Queen County from Route 628 to Monday Bridge and from Aylett to West Point.
- 24** The **Rappahannock River** from the Westmoreland County-King George County line to the Chesapeake Bay.
- 25** The **Pamunkey River** from the King William County-Caroline County line to Route 614 and from Pampatike Landing to the York River.
- 26** The **York River** from West Point to the Chesapeake Bay.
- 27** The **Ware River** in Gloucester County.

- 28** The **Poropotank River** along the eastern boundary of King and Queen and Gloucester counties.

Watershed resources

Region 18 is included in both the York watershed and the Rappahannock watershed. Small coastal basins in the region include the Mobjack, Ware, Severn, North and East rivers as well as Dragon Run and Piankatank River. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs. Watershed recommendations for this region include:

Watershed groups in Region 18

- Dragon Run Steering Committee
- Friends of Dragon Run
- Friends of Urbanna Creek
- Friends of the Rivers of Virginia
- Mattaponi and Pamunkey Rivers Association
- Save the Old Piankatank

Environmental and land stewardship education

St. Margaret's School in Tappahannock hosts the Chesapeake Bay Foundation's course entitled "Teachers on the Bay" each summer. The Browne Tract in Essex and King and Queen counties also offers environmental education opportunities. For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Develop cooperative partnerships with federal and state outdoor recreation providers to offer educational outreach to serve the localities and region.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the NPS to revise policy, in order to allow mountain bikes to use appropriate national park trails.
- Local, regional and state agencies and organizations should continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program to connect people to heritage, outdoor recreation, and educational opportunities and resources.

U.S. Fish and Wildlife Service (USFWS)

29 USFWS should continue to develop outdoor recreation and outreach education opportunities at the **Rappahannock River Valley National Wildlife Refuge** (NWR). The Rappahannock River Valley NWR was established in 1996 to protect outstanding fish and wildlife habitat in and along the river. A two-year effort began in April 2006 to develop a comprehensive conservation plan for the Rappahannock River Valley NWR. This plan coordinates with ongoing programs and regional initiatives to link regional opportunities. USFWS set a refuge land protection goal of 20,000 acres in seven counties, flanking both sides of the river from Skinners Neck south to Belle Isle State Park. As of 2005, the USFWS had acquired nearly 8,000 acres from willing sellers, including 1,400 acres under conservation easement.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

30 **Middle Peninsula State Park** (438 acres) in Gloucester County on the York River, has been acquired for development as a new state park. This region has been recommended as a location for a state park since the 1965 plan. Additional acreage, from a willing seller or donor, is still needed to enhance the resources of the current site. Before any facility development can occur on the site, a master plan is needed. In addition, funding is necessary to implement development and to staff and operate the park.

Opportunities exist for this state park site to provide access or links to various regional trail initiatives along the York River such as the Captain John Smith Water Trail and other land-based initiatives.

The need exists for additional parkland and water access in this region of the state. Potential acquisitions should be explored in the vicinity of Lagrange Creek and the Rappahannock River in Middlesex County and eastward into Mathews County.

State natural area preserves

The two natural area preserves in Region 18 are Bethel Beach and New Point Comfort. Both are in Mathews County.

The DCR has, as of November 2006, documented 217 occurrences of 56 rare species and natural communities in the Middle Peninsula Planning District. Eleven species are globally rare and four are federally threatened or endangered. One hundred seven conservation sites have been identified in the district. Twenty-five sites (23 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. Only three sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 18, DCR is particularly interested in:

- Protecting sandy beach habitats that support threatened northeastern beach tiger beetle.
- Protecting bald eagle nesting habitat.
- Protecting wetlands that support rare animal and plant species.
- Continuing to pursue the conservation of lands along Dragon Run.

Virginia Marine Resources Commission (VMRC)

- VMRC should continue promotion of saltwater recreational fishing opportunities in the Commonwealth through continued construction of new reef sites and augmentation of existing artificial fishing reef sites.
- VMRC should increase public access sites to salt water.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.

- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
 - Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
 - Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
 - Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
 - Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
 - Local, state and regional agencies and organizations should target agricultural lands for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.
 - DOF should continue negotiations for The Nature Conservancy land to be transferred to state forest and evaluate these lands for potential recreation opportunities.
- 31** DOF should support recreational access, trails and water access at the **Browne Tract** and the **Browne State Forest**.

The Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPA) purchased the Browne Tract, a 274-acre site, to protect coastal resources and provide public access within the Dragon Run watershed. The MPCBPA will manage 137 acres straddling the boundaries of Essex and King and Queen counties, while DOF will manage the remaining 137 acres in Essex County. The recreational use zones will geographically separate activities that have high potential for conflict and limit recreational access to conservation areas. The existing trail networks will be expanded and include a footbridge across the Dragon Run. Interpretive and directional signage will guide and educate visitors. Larger resource protection zones and special management areas will demonstrate best management practices for timber management and conservation of natural resources. Forested buffers will be retained in riparian areas, creating wildlife corridor habitat protection.

32 **Sandy Point State Forest** is approximately 2,000 acres and is in King William County. More than 15 miles of graveled or dirt roads provide opportunities for hiking, horseback riding, bicycling, nature study and hunting throughout the forest. In addition, there is approximately 3.5 miles of frontage on the Mattaponi River, offering opportunities for water access and boating. DOF should expand recreational opportunities, road improvements for year-round vehicular access to boating, and water related activities at Sandy Point State Forest.

33 DOF should continue development of a demonstration model farm, improve hunting and fishing opportunities, and expand conservation and passive recreational activities at **Zoar State Forest**.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

34 **Rappahannock Community College**, south campus in Gloucester County, has 199 acres of land. The community college should evaluate these lands for recreational potential.

35 The **Virginia Institute of Marine Science** should evaluate shoreline for opportunities for access to the water, as well as consider opportunities for special interpretive and environmental education programs.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with VDOT to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume road-

ways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.

- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include “active living” opportunities into all phases of transportation planning, land use planning and project design.
- State regional and local agencies and organizations should support the Town of Urbanna and Town of West Point alternative transportation initiatives.
- VDOT should expand bike routes with safe standards.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Local and regional parks and recreation agencies and organizations should work with the planning district commission and the Middle Peninsula Chesapeake Bay Public Access Authority to identify and develop regionally significant parklands to sup-

plement the state and federal lands providing public recreation and natural resource protection.

- 36 Local and regional parks and recreation agencies and organizations should consider development of a community park in the **Town of West Point**.

- 37 Local and regional parks and recreation agencies and organizations should consider development of a **regional park in Gloucester County** to include soccer fields, a swimming pool and other amenities.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- The private sector should become involved in the planning and development of water trails.
- The private sector should support water-based recreation.
- The private sector should support and maintain cultural sites that are vital to the local economy.
- The private sector should provide marinas and boat storage areas.
- The private sector should provide water oriented bed and breakfasts, restaurants and other accommodations and attractions, especially those that can be reached by water.
- The private sector should provide guide services for fishing and hunting.
- The private sector should provide rental of water sports equipment.



Kayaking on the Mattaponi. Photo by Middle Peninsula Planning District Commission.

Table X-18. Region 18 (Middle Peninsula Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	143,249	28	fields	14	14	18
Basketball	164,471	39	goals	11	28	33
Bicycling	238,748	17	miles	NI		
Mountain	37,139	3	miles	NI		
Other	201,609	14	miles	NI		
Lake, river and bay use (combined)	1,266,688	20,432	water acres	166,718	-146,286	-143,589
Power boating	564,152	13,597	water acres	S		
Sailing	84,888	735	water acres	S		
Saltwater fishing	440,357	2,477	water acres	S		
Jet ski, personal watercraft	123,353	1,933	water acres	S		
Water skiing, towed on water	53,939	1,690	water acres	S		
Camping	121,231	715	sites	3,954	-3,239	-3,145
Tent camping	46,335	273	sites	236	37	73
Developed camping	74,896	442	sites	3,718	-3,276	-3,218
Fitness trail use	53,939	4	mile trails	1	3	4
Fields (combined)	249,359	52	fields	16	36	43
Football	82,235	17	fields	16	1	4
Soccer	167,123	35	fields	-	35	40
Stream use (combined)	351,401	165	stream miles	147	18	40
Freshwater fishing	185,339	130	stream miles	S		
Human-powered boating	101,866	26	stream miles	S		
Rafting	4,068	1	stream miles	S		
Tubing	60,129	8	stream miles	S		
Golfing	168,450	6	courses	63	2	3
Hiking, backpacking	105,049	54	trail miles	17	37	44
Horseback riding	31,302	14	miles	4	10	11
In-line skating	6,720	0	miles	NI		
Jogging, running	438,588	35	mile trails	NI		
Nature study, programs	38,730	6	sites	-	6	6

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-18. Region 18 (Middle Peninsula Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	116,721	303	tables	827	-524	-484
Skateboarding	31,833	10	sites	NI		
Snow skiing or snowboarding	22,283	1	ski lifts	-	1	1
Softball	97,268	17	fields	14	3	6
Sunbathing, relaxing on beach	387,302	28	beach acres	21	7	10
Swimming	884,250	65		NI		
Outdoor area	513,749	53	beach acres	21	32	39
Outdoor pools	250,243	11	pools	19	-8	-7
Indoor pools	120,258	1	pools	1	0	1
Tennis	44,213	28	courts	33	-5	-2
Used a playground	191,882	27	sites	13	14	18
Visiting gardens	41,648	5	sites	NI		
Visiting historic sites	105,403	9	sites	NI		
Visiting natural areas	175,435	30	sites	NI		
Volleyball	89,663	27	courts	2	25	28
Hunting	204,262	33,497	acres	2,495	31,002	35,424
Drive for pleasure	627,110	NA	NA	NI		
Driving motorcycle off road	41,383	19	miles	1	18	20
Driving 4-wheel-drive off road	19,896	NA	NA	NS		
Walking for pleasure	2,737,638	NA	NA	NI		
Bird watching	84,004	NA		NI		
Other	28,473	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

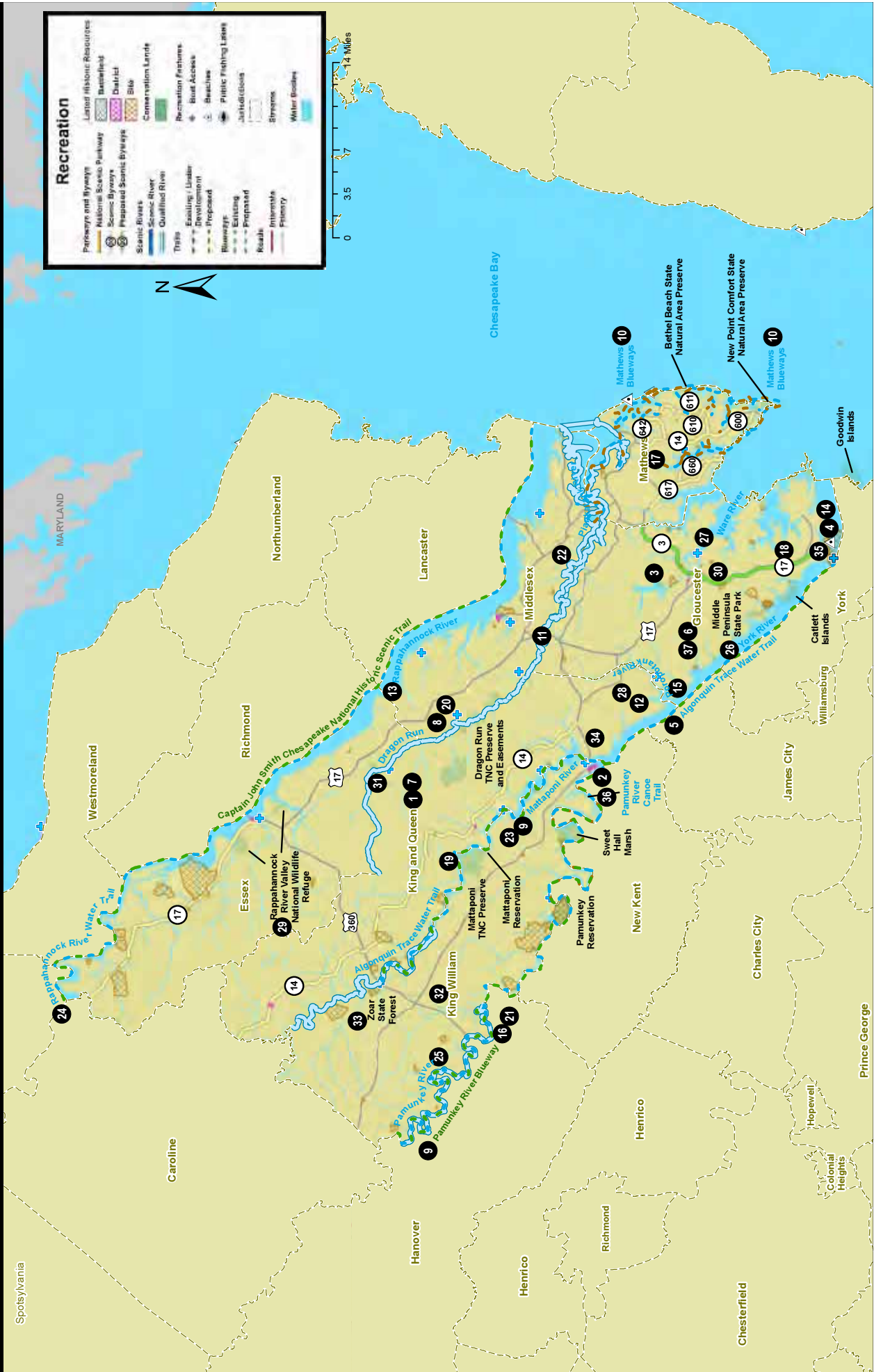
NS: not inventoried separately

NI: not inventoried

(-) indicates surplus



Map X-37. Region 18 (Middle Peninsula Planning District) Outdoor Recreation



Introduction

The Crater Planning District derives its name from a large crater left by an explosion during the siege of Petersburg in the Civil War. The planning district is composed of the counties of Chesterfield, Dinwiddie, Greenville, Prince George, Sussex and Surry; the cities of Colonial Heights, Emporia, Hopewell and Petersburg; and the towns of Claremont, Dendron, Jarratt, McKenney, Stony Creek, Surry, Wakefield and Waverly. Because Chesterfield County is also a member of the Richmond Regional Planning District (Region 15), for the purposes of the *Virginia Outdoors Plan* information on Chesterfield is included only in Region 15.

Region 19 encompasses an area of approximately 1,889 square miles. The district straddles the fall line, with the western sections of Dinwiddie and Greenville counties in the Piedmont Plateau and the remaining areas in the Coastal Plain. Elevations range from 400 feet above sea level in the west to less than 100 feet in the east. Some low-lying areas contain large fresh-water swamps.

The area's rivers have been important to its development. Petersburg, a river port since the 1700s, was settled at the point where the Appomattox River crossed the fall line. Hopewell is just downstream at the confluence of the James and Appomattox rivers. The Nottoway and Blackwater rivers have headwaters within the district, while the Meherrin River traverses Greenville County in the southern portion of the region.

Interstate 95 is the principal highway in the Crater Planning District, connecting Richmond and points south to North Carolina. Interstate 85 originates in Petersburg and angles to the southwest through Dinwiddie County, eventually entering central North Carolina. Newly constructed Interstate 295 provides a circumferential route around the Richmond area, intersecting with I-95 in Prince George County, south of Petersburg. Arterial routes 58 and 460 provide east-west links through the region. Route 58 passes through Greenville County and Emporia, paralleling the North Carolina state line. Route 460 crosses Dinwiddie County, passing through the Petersburg area and providing a principal business route for eastern communities in the region.

Most of the recreational resources of the region are associated with developed areas near the major rivers and Lake Chesdin. Most of the shoreline is privately owned; however, there are limited opportunities for the general public to access the waters for recreational pursuits. The numerous Civil War battlefields, operated by the National Park Service (NPS), provide for dispersed picnicking and trail use in addition to their interpretive benefits. The Civil War Preservation Trust has acquired four sites in Dinwiddie County. These are the Reams Station, Peeble Farm, Hatchers Run and White Oak Road properties, and they are available for public educational purposes. Fort Lee has numerous athletic facilities and areas that were designed for military personnel but afford area citizens some limited use.

Residents of the counties in the southern Crater Region have thousands of acres of corporate timberlands available for hunting and other dispersed recreational activities. The smaller Piedmont streams and reservoirs in Greenville County meet some of the resident demand for water-based or water-enhanced recreation. However, Buggs Island Lake, Lake Gaston and the tidal estuaries of southeastern Virginia attract many more users.

Special events in the region include the BikeWalk Virginia event in Emporia, the batteau festival in Petersburg and biannual river cleanups along the Appomattox River sponsored by the Friends of the Lower Appomattox River.

In 2000, the region had a population of 167,129. By 2005, the population had increased to 170,400, an approximate 2 percent increase. For this same five-year period, Sussex County is thought to have had a slight decline in population. Regional growth is anticipated to be moderate with the influx of military and civilian related jobs at Fort Lee contributing to the population change in the region.

The Base Realignment and Closure station impacts on Fort Lee reallocates and increases the personnel housed on post as well as off post. The daily average of students training at Fort Lee will increase by 184 percent from 3,431 to 9,739. An additional 1,716 permanent military personnel are expected at Fort Lee by 2011. Family members are anticipated to increase from 4,954 to 8,336. This military population, in addition to the contractor support and civilian permanent employees, will bring the total increase in employment

at Fort Lee to 29,802 or approximately 15,000 additional persons by 2011. This increase will impact recreational resources and the demand for a diversity of recreational resources in the region.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 19 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

As localities in Region 19 plan for future outdoor recreational needs, small neighborhood parks, larger regional facilities, and trails linking communities and water access points are needed. Trails, blueways and greenways linking existing recreational, historic, cultural and natural resources could increase the number of miles of trails suitable for walking, bicycling and boating. Linkages between historical, scenic and cultural resources are supported by survey results that indicate that visiting historic sites is second in popularity to walking for pleasure. The 2006 *Virginia Outdoors Survey (VOS)* indicates a need for additional active recreation facilities, especially basketball courts, multi-purpose fields for soccer and football, as well as baseball and softball fields (see Table X-19). Region 19 requires a large land base for recreational activities like hunting, horseback riding and off-road vehicle use. Water related access for fishing, swimming, boating, canoeing and kayaking are also needed.

A significant void in parks and recreation departments exists in the Crater region. Greensville and Sussex counties as well as the City of Emporia do not employ a full-time parks and recreation director. These localities have turned recreation programming over to private service providers. While private organizations may provide recreation programming in the short term, they are not charged with planning for the long term recreation, park and open space needs of a community. With populations anticipated to increase in each of these localities, this is a troubling trend. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government*

Revenues and Expenditures (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Prince George, \$16.77; Petersburg, \$57.09; Colonial Heights, \$77.64; and Hopewell, \$75.97. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities in Virginia.

Land conservation

The Albemarle-Pamlico is the second largest estuarine system in the country. Forestland conservation in Region 19 will demonstrate Virginia's commitment to a 2001 Memorandum of Agreement with North Carolina to work together to restore and maintain the biological integrity of the Albemarle-Pamlico sounds' estuarine system. Land conservation will also support goals of the Albemarle-Pamlico National Estuarine Program (APNEP), established in 1987 by the EPA to conserve the estuary's natural resources. A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map 38.

Land conservation recommendations include:

- Local and regional programs are needed to promote conservation through region-wide partnerships to link existing outdoor recreation resources and identify and conserve key landscape connections for wildlife and water quality.
- State and federal agencies, localities and private conservation organizations should complete comprehensive river corridor protection and management plans for the Nottoway, Meherrin and Blackwater rivers.

Land Trusts Operating in Region 19

- APVA Preservation Virginia
- Chesapeake Bay Foundation
- Civil War Preservation Trust
- The Conservation Fund
- Department of Historic Resources
- Izaak Walton League
- James River Association
- James River Soil and Water Conservation District
- The Nature Conservancy
- Virginia Outdoors Foundation
- The 500-Year Forest Foundation

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- Local, regional and state governments and partnering organizations should support regional efforts to initiate green infrastructure planning.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map 39).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails. Trail and greenway recommendations include:

Statewide trunkline trails

- 1 The **East Coast Greenway**, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects urban, suburban and rural America. The East Coast Greenway Trail corridor could go through Prince George, Sussex, Greenville and the cities of Petersburg and Colonial Heights. Planning for the Southeast High Speed Railway along the route of CSX's Seaboard Rail Corridor (the "S" line) should include incorporation of the East Coast Greenway as a bike-walk facility in a multi-modal transportation corridor.

- 2 The **Trans-Virginia Southern Trail** will stretch from the Cumberland Plateau to the Chesapeake Bay. Comprised of many trails now existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. This multi-purpose, non-motorized, cross-country trail corridor crosses through Sussex and Greensville counties using the abandoned Norfolk Southern Virginian railroad corridor and the Lake Gaston-Virginia Beach Water Pipeline corridor. Local, regional and state agencies and organizations should work to connect trails and develop new trails as part of the Trans-Virginia Southern Trail.

Regional trails

Trail and greenway recommendations include:

- 3 Dinwiddie County should implement the **"The Battlefield Connection...A Greenway to the Past, A Link of the 'Trekking Dinwiddie,'** a trail system focusing on the natural and cultural resources in the northeastern portion of Dinwiddie County. The trail is proposed to link the county's recreational resources, Civil War battlefields and other historic sites.

Lower Appomattox River Trail, Greenway and Blueway

The Lower Appomattox River Trail, Greenway and Blueway traverses over 400 acres in six jurisdictions. Research is needed to identify cooperative regional management and operations alternatives for this recreation resource. When completed, the trail and blueway system will consist of bicycle and multi-purpose trails, linking natural, cultural, heritage and other linear open spaces in the region between Lake Chesdin in Dinwiddie and the City Point area in Hopewell. The 22-mile trail network will link all recreational, cultural and natural features, and historic sites on both sides of the Appomattox River. Critical components of the Lower Appomattox River Trail, Greenway and Blueway are the Virginia Dominion Power Canal, the Petersburg waterfronts, the Hopewell waterfront and re-establishment of the federal navigation channel in the Appomattox River to the historic harbor in downtown Petersburg. Also included in the Lower Appomattox River Trail and Greenway are the pedestrian and wayside exhibits associated with the NPS Grant's Headquarters at City Point in Hopewell. This site, at the confluence of the James and Appomattox rivers, serves as a gateway to the trail.

4 Local, regional and state agencies and organizations should implement recommendations for **the Lower Appomattox River Trail, Greenway and Blueway**. There is an opportunity to connect the 300-acre **Lee Park** to the Lower Appomattox River Trail and Greenway along stream corridors and Petersburg's city streets. The **City of Colonial Heights** has a multi-use greenway located along the Appomattox River from just south of Temple Avenue to just west of the Boulevard, Route 1/Route 301, that should be connected to the Lower Appomattox River Trail and Greenway. Opportunities to link Chesterfield County to the Lower Appomattox River Trail and Greenway should also be pursued.

5 The City of Petersburg and NPS should implement the **Appomattox River Heritage Trail** in Petersburg connecting Fort Lee and the Petersburg battlefields. This trail includes a two-mile pedestrian trail from the historic train station along the Appomattox River in Petersburg. The original Petersburg harbor should be reopened to accommodate recreational use including boating and public access. The south channel of the river was closed years ago to reduce flooding, but could be reopened with control structures to provide the critical link in the greenway and water trail.

6 The City of Hopewell should connect the **Cabin Creek Trail** with several parks and recreational facilities including Hopewell High School, Mathis Park, Crystal Lake Park, Atwater Park and the new Atwater Soccer Complex. Approximately 5,298 feet of the Cabin Creek Trail has been completed, and there are also possibilities to connect this trail with the Lower Appomattox River Trail and Greenway.

7 Consider the abandoned **Seaboard Coast Railroad** corridor between Petersburg and North Carolina for a potential rail-trail conversion. The Department of Rail and Public Transportation is considering a rapid rail transit line in this corridor. If the route does not use the Seaboard Coast Railroad, a rail-trail conversion should be pursued. This route should be evaluated to function as a segment of the East Coast Greenway.

8 The Department of Forestry (DOF) should pursue opportunities for trails in the proposed **state forest in Sussex County**.

Water access

Blueways and water access are critical in a water rich state such as Virginia. Water access should be a high priority for public acquisition. A discussion of the

water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Local, regional and state agencies and organizations should increase water access for the public on the James, Appomattox, Blackwater, Meherrin and Nottoway rivers.
- Local, regional and state agencies and organizations should provide canoe and kayak launch sites on the Appomattox River, especially in Petersburg.
- Local, regional and state agencies and organizations should provide canoe and kayak launch sites on the Nottoway River and along the proposed Blackwater River Blueway.
- Local, regional and state agencies and organizations should implement plans for the Lower Appomattox River Trail, Greenway and Blueway.
- Local, regional and state agencies and organizations should participate with the James River Advisory Council and other partners in pursuing a landscape and river corridor management plan for the James River through the region that extends from the City of Richmond to Prince George County.
- Local, regional and state agencies and organizations should incorporate the Captain John Smith Adventures on the James River Trail into local com-

prehensive plans as a way to further heritage and ecotourism in the region. In Region 19, the Oyster Loop includes sites at Smith's Fort Plantation, Chippokes Plantation State Park, Hog Island Wildlife Management Area and Fort Huger. In addition, the U.S. Congress created the Captain John Smith Chesapeake National Historic Trail with 2,300 miles of water trail throughout the Bay area. This is the nation's first national historic water trail commemorating the explorations of Captain John Smith. This trail will likely coincide with the state designation for the Captain John Smith on the James Trail. It should also be included in local comprehensive plans as a way to further heritage and ecotourism in the region.

- 9 Local, regional and state agencies and organizations should evaluate the **Petersburg harbor** for potential to include a regional water park.
- 10 Local, regional and state agencies and organizations should provide additional **public access to the Appomattox River in Ettrick** upstream of the Harwell Dam.
- 11 The City of Hopewell should provide public access for boating at the **Hopewell Marina** on the Appomattox River.
- 12 The City of Hopewell should secure a legal agreement to ensure permanent public access and trails along the Appomattox River at the former site of the **Copeland Elementary School**.

Historic and landscape resources

The Civil War battlefields, historic Petersburg and Hopewell, and the expanses of forest and working farms in the region create interesting and significant cultural opportunities for visitors and residents. Region 19 has just begun to tap into the potential that many of these resources have in attracting tourists. Also, the regional interest in connecting these resources for marketing purposes is just beginning. Over time, the linkages of all these cultural resources with outdoor recreation opportunities will attract more tourists and improve the quality of life for residents.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources

should be included in local land use planning and decision-making processes to promote preservation and protection.

- Regional and local agencies should partner with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for county-wide surveys of historic and architectural resources in Dinwiddie, Greensville, Prince George, Sussex and Surry counties.
- Local, regional and state agencies and organizations should establish connections between the battlefields in the region for education and outdoor recreation opportunities. The Civil War Preservation Trust has acquired portions of four battlefields in Region 19: Reams Station, Peeble Farm, Hatchers Run and White Oak located in Dinwiddie County.
- Local and regional agencies and organizations should pursue opportunities for interpretation of African American history especially related to Pocahontas Island and the Fort Powhatan site.
- Local, regional and state agencies and organizations should develop ecotourism opportunities through interpretation of Native American sites in the region.
- Local, regional and state agencies and organizations should interpret the prehistoric site at Aberdeen as well as pre-revolution and Revolutionary War history.
- The NPS and Virginia Institute of Marine Science should evaluate the issues related to underwater archaeological significance at the City Point Pier in Hopewell.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Maintain and create views along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.
- Scenic corridors in the Crater region are located along the rivers, near the battlefields and include the rural landscapes and historic districts. Localities should ensure that a component of their comprehensive plan provides for the protection and enhancement of scenic resources, visual character and viewsheds.

Scenic highways and Virginia byways

There has been a tremendous interest in thematic trails including three Civil War driving tours programs: Lee vs. Grant, Lee's Retreat and the Wilson-Kautz Raid. In addition other thematic driving tours in the Crater region include the James River Plantations Driving Tour, Captain John Smith's Adventures on the James and the Wildlife and Birding Trail Tour. Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and

nominate scenic roads for designation as Virginia byways.

- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

13 Routes 10 and 156 in Prince George and Surry counties from Hopewell to the Surry County-Isle of Wight County line.

14 Route 35 in Sussex County from the Southampton County line to Route 301.

15 Route 40 in Sussex and Surry counties from Route 301 to Route 10.

16 Route 460 to connect existing Virginia byways 627 and 708 in Dinwiddie County.

17 Rives Road between Route 301 and Route 460.

Scenic rivers

In Region 19 there are currently three designated scenic river sections. Forty miles of the Nottoway River in Sussex and Southampton counties, between Route 40 at Stony Creek and Route 633 at Carey's Bridge, is designated as a Virginia Scenic River. A segment of the Appomattox River, from below the Lake Chesdin dam to the Route 36 bridge in the City of Petersburg, has also been recognized as a state scenic river. The lower James River is designated a state historic river for 1.2 miles from Trees Point in Charles City County to Lawnes Creek at the Isle of Wight and Surry County lines (Region 23). For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers.

The following river segments qualify for designation as Virginia Scenic Rivers:

- 18 The **Nottoway River** from Route 630 in Prince Edward and Lunenburg counties to Route 609 in Dinwiddie and Brunswick counties.
 - 19 The **James River** between Hopewell and the Surry County-Prince George County line. The reach in Surry County was designated a Historic River by the 1988 General Assembly.
- The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:
- 20 The **Meherrin River** in Greensville and Southampton counties to the Virginia-North Carolina state line.
 - 21 The **Blackwater River** from the headwaters to Zuni.
 - 22 The **Nottoway River** at the Brunswick-Dinwiddie line to Route 609.
 - 23 The **Nottoway River** from Route 630 in Sussex and Greensville counties to Route 40 in Sussex County. And, the Nottoway River from Route 653 in Southampton County to the Virginia-North Carolina state line.
 - 24 The **Appomattox River** from Campbell's Bridge to the confluence with the James River in Hopewell.

Watershed resources

The region's watersheds include the Chowan basin flowing south into North Carolina and the James River flowing east into the Chesapeake Bay. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs. Watershed recommendations for this region include:

- Local and regional agencies should protect watersheds by integrating watershed management planning into local land use ordinances and comprehensive plans through Department of Conservation and Recreation's (DCR's) Chesapeake Bay Preservation Act land use management initiative.
- Local and regional agencies should develop and implement long-term watershed-wide water supply protection plans in the Nottoway and Blackwater watersheds. The Nottoway and Blackwater rivers are part of the drinking water supply for more than 700,000 residents in the south Hampton Roads metropolitan region. Anticipated changes in land use

due to economic growth in the Crater District may adversely impact water quality and quantity on both rivers if watershed protection is not addressed.

Watershed groups in Region 19

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Chowan River Basin Roundtable
- Friends of Chesterfield's Riverfront
- Friends of the Lower Appomattox River
- Friends of the Rivers of Virginia
- James River Advisory Council
- James River Association
- Middle James Roundtable

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Local and regional agencies and organizations should develop and program environmental education opportunities at the Prince George Appomattox River Park.
- Local and regional agencies and organizations should develop and program environmental education opportunities at Lee Park in Petersburg
- DCR should continue to offer outdoor environmental education, as well as natural and cultural interpretive programs, at Chippokes State Park.
- NPS should continue to offer interpretive programs and outdoor environmental education at City Point and at the Petersburg National Battlefield.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the National Park Service (NPS) to revise policy in order to allow mountain bikes to use appropriate national park trails.

- NPS will support efforts underway at parks such as Petersburg National Battlefield, Appomattox Court House National Historical Park, and Richmond National Battlefield Park, which are currently engaged in efforts to link battlefields, historic sites, parks and communities.
- NPS will work with state, regional and local agencies to elevate battlefield protection with land conservation, scenic viewshed and heritage preservation initiatives by implementing partnerships to identify, prioritize and develop strategies to protect critical resources.
- NPS, regional and local agencies will continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program to connect people to heritage, outdoor recreation, and educational opportunities and resources.

Chesapeake Bay Gateways

The NPS coordinates the Chesapeake Bay Gateway Network (<http://www.baygateways.net>) to promote a historic and environmental focus on water access and stewardship. Designated Chesapeake Bay Gateways in the Crater Planning District include the Lower James River Water Trail and Chippokes State Park.

25 NPS should implement the May 2005 general management plan for **Petersburg National Battlefield**, a nationally recognized regional historical attraction. NPS and the localities throughout the region should work together to provide additional trail opportunities within Petersburg National Battlefield (such as the proposed trail in the Five Forks Battlefield) and link them to the Lower Appomattox River Trail and Greenway and to privately owned Civil War sites.

26 NPS should implement the park's general management plan for **Grant's Headquarters at City Point**. This plan also suggests providing water-to-land access on the river, particularly since the area serves as the gateway and the terminus for the Lower Appomattox River Trail and Greenway.

The Petersburg National Battlefield and Grant's Headquarters at City Point

The battlefield includes Grant's Headquarters at City Point in Hopewell and the eastern and western front segments of the battlefield, along with Poplar Grove National Cemetery and Five Forks Battlefield in Dinwiddie County. The Home Front unit in Old Town Petersburg is a new partnership with the city for which a joint visitor contact station is presently being developed. In addition to activation of the Home Front unit, a new visitor contact station is slated for construction at Five Forks in 2008. Currently, legislation for a park boundary expansion to 7,238 acres, which would include 12 nationally significant battlefields has been written for introduction to Congress.

Grant's Headquarters at City Point is a unit of Petersburg National Battlefield in the City of Hopewell. The site was the Federal Army's debarkation point for men and materials during the siege of Petersburg, and it also served as Grant's logistical base of operations. The Eppes' dwelling, known as "Appomattox," was an early plantation dating back to 1763. Ulysses S. Grant, general-in-chief of all Union armies, commanded the various forces from a log cabin located on the front lawn. In accord with the park's general management plan, Appomattox Manor will become a house museum, and the nearby park-owned "Bonaccord" (circa 1845) will become the visitor contact station.

U.S. Fish and Wildlife Service (USFWS)

27 Encourage partnership and negotiation between local and regional governments and organizations and the USFWS to allow additional recreational access at the **James River National Wildlife Refuge (NWR)**, incorporating strategies to involve volunteers in assisting USFWS staff in managing and monitoring the refuge. Located in Prince George County, the refuge is eight miles southeast of the City of Hopewell and thirty miles southeast of the City of Richmond. The James River NWR encompasses 4,200 acres of forest and wetland habitats along the James River, bordered by Powells Creek to the west and the historic Flowerdew Hundred Plantation to the east. Originally, the refuge was created in 1991 to protect nesting and roosting habitat for the threatened American bald eagle. A secondary objective is to provide an opportunity to view wildlife in its natural environment, so that the public

may better appreciate the refuge's role in conservation of wildlife resources. The James River NWR has been selected for "preservation status" due to decreased funding for manpower and projects.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

28 Chippokes Plantation State Park (1,946 acres) is one of the oldest working farms in the United States. Listed on the National Register of Historic Places in 1969, Chippokes is a living historical exhibit located in a rural agricultural area along the James River in Surry County. In addition, the park has a wide variety of recreational offerings, including a swimming complex, visitor center, picnic facilities, conference center with kitchen, 43-site campground, three colonial style rental cabins, and hiking, biking and equestrian trails. The formal gardens surrounding the Chippokes Mansion are accented by azaleas, crepe myrtle, box-wood and seasonal flowers. Mansion tours are offered routinely and in association with special events.

Unique within the state park system, Chippokes Plantation State Park is managed cooperatively with the Chippokes Plantation Farm Foundation, which was created by the Virginia General Assembly in 1977 to establish, administer and maintain the model farm. The foundation operates the Farm and Forestry Museum and oversees the farm operation on approximately 470 acres of crop and pasture on the park. Cooperative programs and special events are offered at the Farm and Forestry Museum and on the grounds of the mansion.

Through funding from the 2002 General Obligation Bond (GOB), the pool concession has been renovated, the campground expanded, and historic structures near the mansion have been renovated. In 2004, the park acquired Walnut Valley Farm as a gift from Mrs. Lucy Reasor in memory of her husband, Woodrow. The farm adjoins the original historic section of the park. The maintenance area has been relocated to the new acquisition as part of the renovation of the historic structures. This creates new educational opportunities for interpreting the cultural features of this historic site.

Chippokes State Park is located on the Captain John Smith Adventures on the James Trail and is also a site

in the Chesapeake Bay Gateways Network. The park participates in tourism initiatives of both Surry County and the South Side of the James regional tourism group. Other cooperative regional opportunities include the re-establishment of the Old Chipoax Road, 3.5 mile road trace, as a multiple-use trail. The old road runs from the James River through the park and continues to historic Bacon's Castle.

State fish and wildlife management areas (WMA)

In Region 19, there is limited availability of hunting sites open to the general public. Most hunting is managed through hunt clubs, and opportunities for private citizens in Region 19 to enjoy the outdoors as sportsmen are lacking. The Department of Game and Inland Fisheries (DGIF) is encouraged to continue seeking opportunities to establish wildlife management areas in the district and to continue partnering with other agencies and private organizations that advance public hunting programs.

29 DGIF should repair the breached dam at the **Game Refuge Lake in Sussex County**, located north of Route 35, to restore the fishery.

30 DGIF should improve public access amenities at **Hog Island WMA** to include picnicking and beach area, as well as other recreational amenities that support the mission of this WMA.

Hog Island Wildlife Management Area (WMA)

Hog Island WMA includes 3,908 acres on three tracts of land in Surry County. Close to sea level in elevation, the Hog Island Tract is a mixture of flat, open land and pine forest interspersed with tidal marshes and controlled ponds. Intensive wildlife management on this tract includes a vast dike system to create impoundments that are seasonally drained and flooded to produce native plant foods for wintering waterfowl. Surrounding fields provide an additional food source in the form of annual agricultural crops. Hunting, fishing and hiking are allowed on the property, and a boat ramp is on Lawnes Creek. Several miles of pedestrian trails are available, and the area has potential for picnic area development and public access to the pristine, natural beach on the James River.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use DOF properties as field classrooms to help with educational programs.
- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Local, state and regional agencies and organizations should target agricultural lands for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.
- DOF should be encouraged to protect forestlands along the Meherrin, Nottoway and Blackwater rivers to preserve valuable viewsheds, to benefit flood protection efforts, and to maintain water quality for humans and wildlife.
- DOF should establish conservation planning a state forest in Sussex County with public access for outdoor recreation activities, especially trails. Excellent acquisition opportunities for large-scale forestland conservation are emerging as corporate timber companies divest their land holdings. The Nature Conservancy has secured large forest tracts from International Paper in the vicinity of Piney Grove Natural Preserve. The DOF intends to acquire this property as a state forest. Once established, 25 percent of timber revenue proceeds will flow back to the localities.

State natural area preserves

Natural area preserves located in Region 19 are Chub Sandhill and Dendron Swamp in Sussex County and

Cherry Orchard Bog in Sussex and Prince George counties. These sites could offer some limited opportunities for compatible forms of recreational use such as hiking trails and bird watching.

DCR has, as of November 2006, documented 585 occurrences of 191 rare species and natural communities in the Crater Planning District. Forty-three species are globally rare and seven are federally threatened or endangered. One hundred forty-six conservation sites have been identified in the district, but only 39 (27 percent) have received any level of protection through ownership or management by state, federal and non-government organizations. Only one site is protected well enough to ensure the long-term viability of the rare species and natural communities it supports.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 17, DCR is particularly interested in:

- Helping establish a state forest in Sussex County.
- Supporting efforts to expand protection and ecological management of forestland around Piney Grove.
- Expanding forestland protection along the Blackwater River and Nottoway River.
- Establishing a natural area preserve in Prince George County to restore pine flatwoods and coastal plain depression pond communities.

31 Continuing efforts to secure **buffer lands around Fort Pickett.**

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these

resources available for local use as parks and open space.

32 Richard Bland College and surrounding communities should partner to develop recreational opportunities as well as environmental outreach education for area citizens.

The college is in Prince George and Dinwiddie counties and contains almost 700 acres, of which approximately 20 percent are developed.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Local and regional agencies should support a regional bicycle and trails plan to include alternative transportation initiatives and link heritage tourism. Each locality should work to have the plan adopted as part of the local comprehensive plan.
- Local and regional agencies should support the Tri-Cities bikeway improvements.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The Appomattox River is the thread that ties many recreation resources together into a multi-jurisdictional linear park. The localities in this region should consider the formation of a regional park authority to facilitate management and expansion of resources needed to meet growing outdoor recreation demand in this region. The DCR may offer technical assistance for initiating a regional park authority. A source of seed funding would be helpful in generating interest among multi-jurisdictional partners.

33 The Appomattox Riverside Park should expand to provide a variety of recreational uses and ultimately to connect with the Petersburg waterfront via trails along the old canal towpath. Maintenance on the dam should be conducted to preserve the historic canal. The park, developed by the City of Petersburg in the Ferndale area, is below Lake Chesdin in Dinwiddie County.

34 The Appomattox River Park located in Prince George County is under construction and will be completed by December 2008. The park will include walking trails, an educational center, comfort station and a river observation deck that can be used for wildlife observation, water monitoring and fishing. Some trails are wheelchair accessible. Opportunities to expand the trails and extend the property should be pursued in partnership with surrounding property owners.

35 Lee Park should connect to the Lower Appomattox River Trail and Greenway. This linkage will connect the park with other natural resources and pedestrian trails. In addition, the Lee Park Master Plan expands and improves the outdoor recreational opportunities this site affords the region. The park is located in the City of Petersburg and boasts an abundance of cultural and natural history, and it includes Willcox Lake, which offers opportunities for waterfront recreation. This 300-acre park provides both active recreation venues and opportunities for nature study. The Willcox Watershed Conservancy is now building partnerships for enhancement of the park and connections to other regional resources.

36 A **regional park** should be developed with public access along the James River in the historic plantation area in **Prince George County**. This regional park should provide both land and water-based recreational facilities.

37 Water access and water-related recreational opportunities should be provided at a **regional park** in **Surry County**. This regional park should take advantage of the beautiful natural setting of forest, water and marsh along the James River near the Town of Claremont.

38 A **regional park** should be established along the **Nottoway River** and its environs in Sussex County. This park should offer an ideal location for various woodland and water-oriented recreational activities.

39 The **Slagle Lake** property should be acquired as a regional park making contributions to the recreational resources of the region due to its historical significance and proximity to the City of Emporia.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Private developments could provide access points for major streams and rivers.
- The private sector can play a primary role in making the numerous historic sites available for local residents and visitors.
- The demand for camping should be supported by private campgrounds.
- Off-road vehicle opportunities could be met in part by private lands.

40 **Pamplin Historical Park and The National Museum of the Civil War Soldier**, a non-profit organization, should continue to market and offer heritage tourism as well as linkages to other regional resources, especially battlefields and pedestrian trails.

Pamplin Historical Park and The National Museum of the Civil War Soldier

The park currently offers visitors a personal encounter with the life of the common Civil War soldier through its state-of-the-art museums, as well as its Civil War Adventure Camp. The visitor actually listens to the story of a particular soldier while experiencing the museum exhibits. The privately owned 422-acre campus in northern Dinwiddie County encompasses four award-winning museums, three historic homes, living history presentations, guided tours and the Breakthrough Battlefield of April 2, 1865. The remnants of nearly one mile of fortifications constructed by Confederate soldiers remain. The Pamplin Historical Park area saw 16,000 Americans engaged in combat, with approximately 2,600 killed or wounded. In addition to the military history, Tudor Hall Plantation's costumed interpreters present the daily routines associated with farm life in the early to mid-1800s, including a multi-media exhibit on slavery. The extensive trails provide opportunities to experience the area's natural history and beauty. Visitors who choose to enlist as Civil War soldiers sleep in re-created huts and barracks, eat a soldier's supper and breakfast, and learn drills, tactics and camp skills.

Table X-19. Region 19 (Crater Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	222,835	44	fields	56	-12	-11
Basketball	433,897	103	goals	97	6	9
Bicycling	543,212	39	miles	NI		
Mountain	69,962	5	miles	NI		
Other	473,250	34	miles	NI		
Lake, river and bay use (combined)	486,536	7,874	water acres	24,736	-16,862	-16,660
Power boating	196,767	4,743	water acres	S		
Sailing	30,272	262	water acres	S		
Saltwater fishing	183,649	1,033	water acres	S		
Jet ski, personal watercraft	34,476	540	water acres	S		
Water skiing, towed on water	41,372	1,296	water acres	S		
Camping	128,487	758	sites	875	-117	-98
Tent camping	82,070	484	sites	1	483	495
Developed camping	46,417	274	sites	874	-600	-593
Fitness trail use	339,045	27	mile trails	6	21	22
Fields (combined)	586,601	123	fields	25	98	101
Football	195,085	41	fields	25	16	17
Soccer	391,516	82	fields	-	82	84
Stream use (combined)	329,963	192	stream miles	32	160	165
Freshwater fishing	246,211	173	stream miles	S		
Human-powered boating	61,889	16	stream miles	S		
Rafting	6,391	1	stream miles	S		
Tubing	15,472	2	stream miles	S		
Golfing	370,830	13	courses	108	7	7
Hiking, backpacking	156,405	80	trail miles	74	6	8
Horseback riding	46,249	20	miles	29	-9	-8
In-line skating	128,655	9	miles	NI		
Jogging, running	2,144,257	172	mile trails	NI		
Nature study, programs	47,762	7	sites	-	7	7

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-19. Region 19 (Crater Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	217,789	565	tables	335	230	245
Skateboarding	124,115	38	sites	NI		
Snow skiing or snowboarding	63,235	2	ski lifts	-	2	2
Softball	252,266	45	fields	53	-8	-7
Sunbathing, relaxing on beach	620,573	44	beach acres	23	21	23
Swimming	1,681,770	108		NI		
Outdoor Area	798,841	82	beach acres	23	59	61
Outdoor pools	526,394	22	pools	10	12	13
Indoor pools	356,535	4	pools	1	3	3
Tennis	216,612	135	courts	75	60	64
Used a playground	847,612	121	sites	83	38	41
Visiting gardens	113,519	12	sites	NI		
Visiting historic sites	381,425	32	sites	NI		
Visiting natural areas	296,664	50	sites	NI		
Volleyball	110,997	33	courts	5	28	29
Hunting	143,623	23,553	acres	93,373	-69,820	-69,215
Drive for pleasure	1,323,553	NA	NA	NI		
Driving motorcycle off road	22,704	10	miles	-	10	11
Driving 4-wheel-drive off road	61,216	NA	NA	NS		
Walking for pleasure	4,856,952	NA	NA	NI		
Bird watching	46,249	NA		NI		
Other	47,090	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

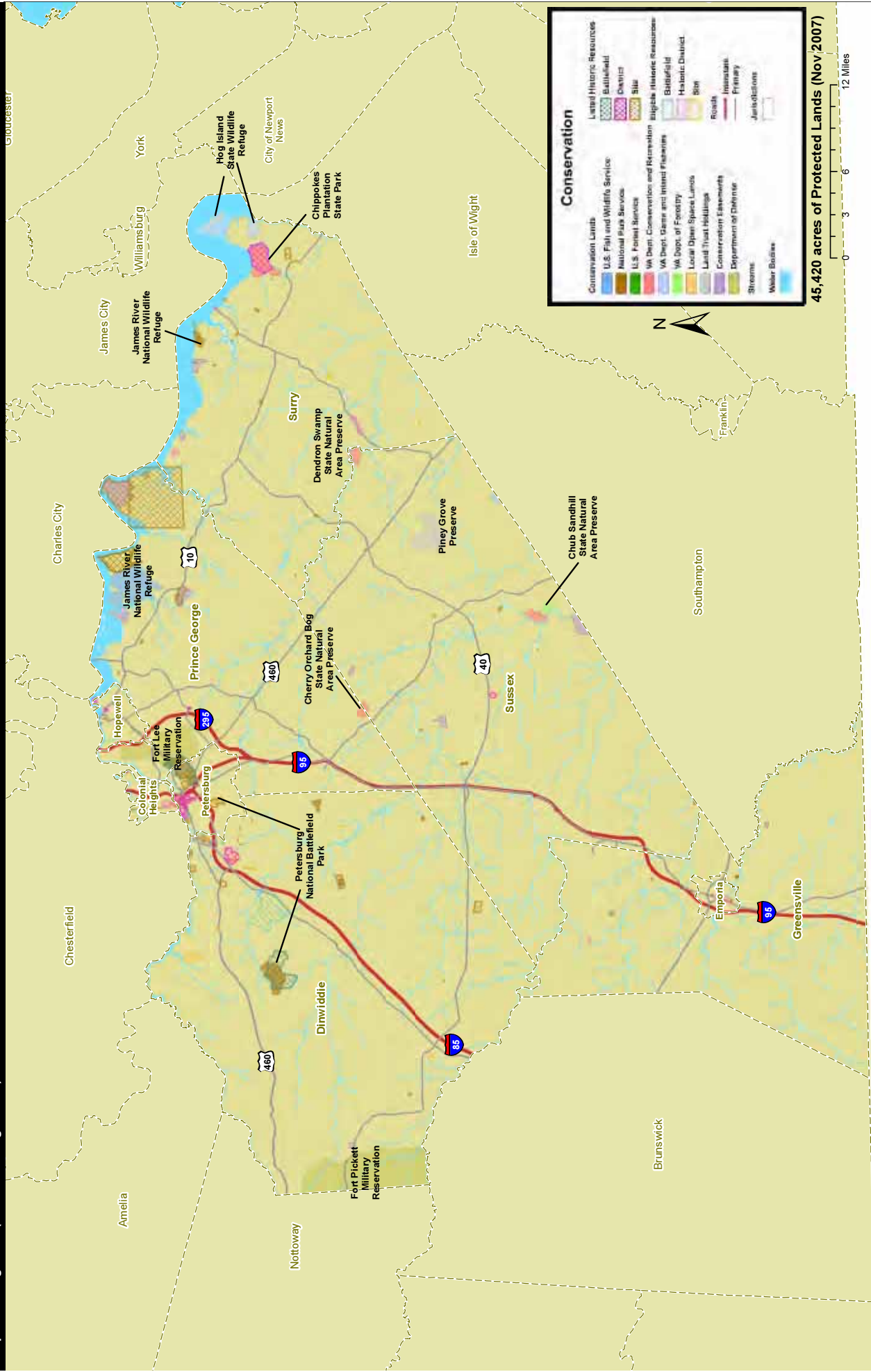
S: same as combined

NS: not inventoried separately

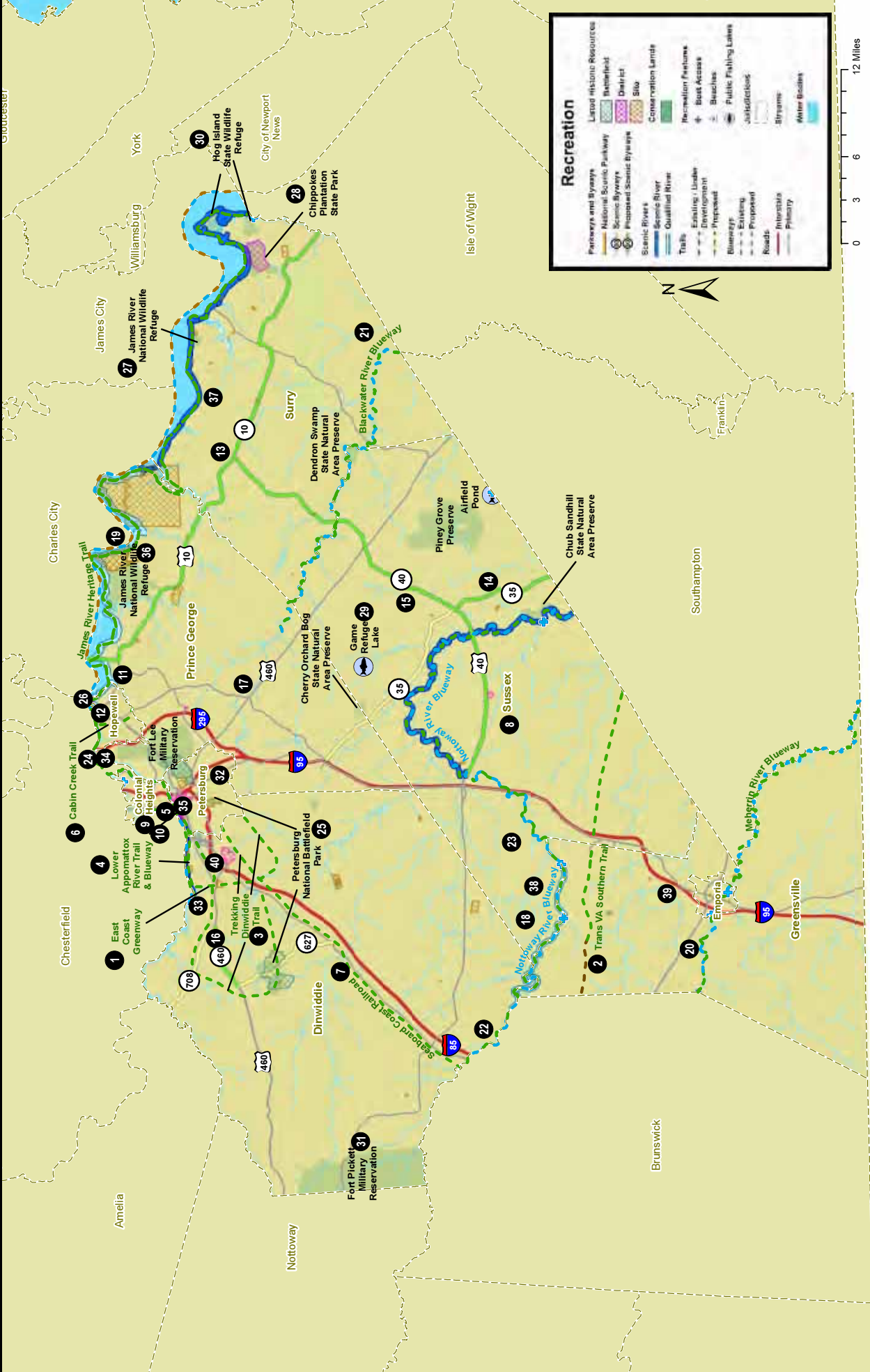
NI: not inventoried

(-) indicates surplus

Map X-38. Region 19 (Crater Planning District) Conservation Lands



Map X-39. Region 19 (Crater Planning District) Outdoor Recreation



Introduction

The Accomack-Northampton Planning District (Region 22) is comprised of the counties of Accomack and Northampton, and the towns of Accomac, Belle Haven, Bloxom, Cape Charles, Cheriton, Chincoteague, Eastville, Exmore, Hallwood, Keller, Melfa, Nassawadox, Onancock, Onley, Painter, Parksley, Saxis, Tangier and Wachapreague. This region is rich in natural resources and recreational opportunities. There are vast incubating and feeding grounds for bird and sea life, as well as vital resources that sustain many species of migratory fish and wildlife on their journeys. Region 22 has a significant percentage of the state's saltwater marshes and shoreline, including most of the state's Atlantic Ocean coastline. This unspoiled coastline, along with wide expanses of marshlands, shallow bays and winding channels, is guarded by a chain of barrier islands located on the seaward side of the peninsula. It is the variety and quantity of natural and cultural resources that establishes the Eastern Shore of Virginia as an important eco-tourism destination.

Virginia's Eastern Shore is the narrow, 70-mile long, southern portion of the Delmarva Peninsula separating the Atlantic Ocean from the Chesapeake Bay. On the Seaside (Atlantic coastline), there are quaint villages surrounded by rich farmland, pristine salt marshes and shallow bays abundant with marine life. Beyond these shallow bays lie Virginia's barrier islands, which are almost totally in conservation ownership. These islands form a chain that protects the seaside's tidal creeks, bays, marshes and the mainland. The Chesapeake Bay side of Virginia's Eastern Shore is characterized by islands, inlets, creeks and marshlands; sandy beaches are located along the southern end of the peninsula. This geographic region of Virginia would likely be most affected by climate change and sea level rise over time due to the narrowness of the peninsula and the many tributaries that lead into the mainland from both the ocean and Chesapeake Bay. Any significant change in sea-level and ocean warming could not only affect natural resources, but also outdoor recreation, residential properties, commercial properties and eco-tourism.

Less than one percent of Virginia's population resides on the Eastern Shore. Approximately 12 percent of the jobs in the region are natural resource dependent, involving agriculture, forestry, fisheries and eco-tourism. The estimated 2005 population for the region is 52,400, which is an increase from the 2000 Census'

figure of 51,398. The area is expected to grow at an eight percent rate and in 2020 will have approximately 56,700 people. Northampton County's estimated 2005 population is 13,200, while Accomack County has approximately three times that number. By 2020, Accomack County is expected to have three-fourths the population of Virginia's Eastern Shore population with 44,500 people. Northampton County's population is anticipated to decrease by approximately 1,000 people. Already, almost all the population on Virginia's Eastern Shore is located in Accomack County, which grew faster than the state as a whole during the 1990s due to in-migration. The Accomack-Northampton Planning District works with each locality to develop comprehensive plans that include the protection of open space and outdoor recreation resources while accommodating development.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 18 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Recent studies have identified significant facility needs for close-to-home types of activities. The most pressing needs are trails for walking, jogging and bicycling. Additional desired facilities are active recreation fields for soccer, football, baseball and softball as well as volleyball and basketball courts. With growing trends in eco-tourism, additional nature study and environmental education facilities should be considered throughout the region to meet the interests of residents and visitors.

Local priorities on the Eastern Shore should include the development of a number of small community parks and at least two district parks, providing game fields and courts, picnic sites, swimming pools and trails. Certain immediate recreational needs may be

satisfied by further developing existing park facilities (see Table X-20). Earlier outdoor recreation studies identified a deficiency in passive recreational areas (parks, trails and picnic areas), as well as a shortage of Bay and ocean access. These studies and follow-up efforts resulted in the acquisition of Kiptopeke State Park, which is located between the community of Cape Charles and the Chesapeake Bay Bridge Tunnel. In addition, these studies identified the Cape Charles area for open space acquisition. The Cape Charles Wildlife Management Area (WMA) has been acquired (by the Virginia Department of Game and Inland Fisheries (DGIF), and the Magathy Bay Natural Area Preserve has been purchased by the Department of Conservation and Recreation's Division of Natural Heritage. These lands conserve important resources and offer opportunities to link the southern-most portion of the Eastern Shore with Kiptopeke State Park.

Both Accomack and Northampton counties are served by a parks and recreation department. Most of the towns lack individual departments, but they are served by the counties' parks and recreation departments. According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Accomack, \$13.86 and Northampton, \$15.72. This compares to statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

The **Eastern Shore Tourism Commission** maintains a comprehensive list of outdoor recreation opportunities at www.esvatourism.org.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown on Map X-40.

Since the Eastern Shore Land Trust began in 2003, 4,200 acres in Northampton and Accomack counties have been preserved. Due to the efforts of nonprofit and private organizations, nearly all of the barrier islands of Virginia have been acquired and are being conserved in perpetuity. In addition to their conservation value, some of these islands offer opportunities for recreation. Three barrier islands are managed by

federal agencies, and one island is maintained as a state natural area preserve. Two marshland areas on the Bayside are managed by the state: one for wildlife management and hunting, the other as a protected natural area. The state also owns extensive wetlands between the mainland and barrier islands on the Seaside for wildlife management. Kiptopeke State Park is located on the southern end of the Northampton County, and is being developed to provide recreation opportunities and management of unique habitats. Recent additions to the southern tip of the shore include the Cape Charles WMA and the Magathy Bay Natural Area Preserve.

Land Trusts Operating in Region 22

- Chesapeake Bay Foundation
- Virginia Eastern Shore Land Trust
- APVA Preservation Virginia
- The 500-Year Forest Foundation
- The Nature Conservancy
- Virginia Outdoors Foundation

Land conservation recommendations include:

- Local agencies, private landowners and organizations should continue conservation efforts with The Nature Conservancy and state agencies on the seaside of Virginia's Eastern Shore for migratory bird habitat.
- Local government should pursue funding for the Northampton County Purchase of Development Rights (PDR) program.
- Local, regional and state agencies and organizations and private landowners should consider Accomack County's interest in wildlife corridor protection when they are planning future development.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.

- Regional agencies and organizations should initiate green infrastructure planning to consider special features of the Eastern Shore, particularly the effect of climate change on sea level rise.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-41).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails. Trail and greenway recommendations include:

- Accomack and Northampton counties should implement the Eastern Shore of Virginia Bicycle Plan adopted in 2004.

1 Local agencies should provide **additional connections to trail facilities** and continue development of Virginia's **Eastern Shore Seaside Trail**. For example, connect the new trail boardwalk and overlook on the seaside of Virginia's Eastern Shore with other trails. The trail, boardwalk and overlook offer unique views of the 45-acre coastal maritime forest and a spectacular vista of seaside marsh along Brockenberry Bay. The site is accessed off highway 636 near Eastville and Cheriton adjacent to the county landfill.

2 Local agencies, in partnership with DCR and the U.S. Fish and Wildlife Service (USFWS), should implement the **Central Accomack Bicycle Loop** to link the towns of Onley, Accomack and Onancock with connections to Nandua High School and Nandua Middle School. Trail construction south from Kiptopeke State Park to the Eastern Shore Virginia National Wildlife Refuge should be a first phase priority.

3 DCR should develop a trail **connection between Kiptopeke State Park and Cape Charles Coastal Habitat Natural Area Preserve**.

Water access

A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Local, regional and state agencies and organizations should maintain and improve existing boat ramps.
- Local, regional and state agencies and organizations should provide additional public beach access.
- Localities should identify opportunities to develop more public access for kayaking and canoeing, both Bayside and Seaside.
- Local, regional and state agencies and organizations should consider old ferry crossings, landing sites and bridges for water access.
- 4** Additional **Eastern Shore Seaside Water Trail** docks for Quinby and Willis Wharf should be constructed.

Eastern Shore Seaside Water Trail

Although there is abundant water and open space in Region 22, public access is limited. For example, many of the beach areas are either privately owned or difficult to reach. This is the case with the barrier island beaches which are privately owned, or if public, managed as natural areas. The Seaside Water Trail provides access to these Seaside barrier areas via 100 miles of paddling routes and 20 public access points.

A trail map and guide for the Seaside Water Trail was developed by the Accomack-Northampton Planning District Commission and Virginia Coastal Zone Management Program. The guide outlines 100 miles of paddling routes for canoes and kayaks in the barrier island system. Thirty-two paddling routes have been mapped between Eastern Shore Wildlife Refuge in Cape Charles and Chincoteague Island in Northampton County. The water trail map and web site identifies appropriate public access locations and cultural resources and amenities near these locations, and it provides expected paddling time and level of difficulty for each of the routes. Emergency and safety information and an overview of the barrier island visitation rules and regulations as well as information on wildlife and conservation practices are also identified along the trail. As a part of the Seaside Water Trail, the towns of Chincoteague and Wachapreague installed two floating docks for canoes and kayaks with Virginia Coastal Zone Management Program funding.

The seaside internet mapping system developed by the Virginia Coastal Program Office serves as the foundation for long-term restoration and management strategies for the seaside of Virginia's Eastern Shore. The internet mapping includes the Seaside Water Trail, major seaside public access locations, barrier island ownership and access, forest change, shorebird concentration, colonial water bird survey, oyster restoration sites, sea grass restoration sites and phragmites coverage.

Historic and landscape resources

The historic character and cultural landscapes of the Eastern Shore make it a primary attraction for tourists.

The Eastern Shore Tourism Commission promotes a small town sojourn featuring the many vibrant small towns on the shore and links highlights together in a tourist package.

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build relationships with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for a county-wide survey of the historic and architectural resources of Accomack County.
- Local government and local and regional organizations should pursue additional historic districts for towns and areas with unique Eastern Shore cultural and visual identity.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and

Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Maintain and create views along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.
- Regional and local agencies and organizations should preserve key cultural landscapes to retain visual identity of the Eastern Shore.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation:

- 5 **Bayside Road** in Northampton County to Saxis Wildlife Management Area
- 6 **US Route 13** from Virginia Beach across the Chesapeake Bay Bridge Tunnel to Cape Charles.
- 7 State **Route 184** in Northampton County.
- 8 State **Route 182** in Accomack County.
- 9 State **Route 718** in Accomack County.
- 10 State **Route 13** in Accomack County.
- 11 State **Route 659** in Accomack County.
- 12 State **Route 679** in Accomack County.

Scenic rivers

In Region 22 there are currently no designated scenic river segments.

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers.

The following river segments qualify for designation as Virginia Scenic Rivers:

- 13 **Onancock Creek** (entire tributary)
- 14 **Occohannock Creek** (entire tributary)
- 15 **Machipongo River** (entire river)

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- 16 **Pitts, Bullbeggar and Holden** tidal freshwater creeks linking to Pokomoke Sound in Accomack County.
- 17 **Kings Creek** in Northampton County.
- 18 **Hungar's Creek** in Northampton County.

Watershed resources

The Accomack-Northampton Planning District is divided into two watersheds, the Bayside Eastern Shore and the Seaside Eastern Shore. The Bayside Eastern Shore watershed drains directly into the Chesapeake Bay and the Seaside Eastern Shore drains into the Atlantic Ocean. Accomack County has adopted Bay Act ordinances only on the Bayside watershed, while Northampton County adopted Bay Act ordinances on both the Bayside and Seaside watersheds. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs. Watershed recommendations for this region include:

- Local, regional and state agencies and organizations should partner to protect watersheds and broad areas of natural significance in the southern tip of the Eastern Shore.

Watershed Groups in Region 22

- The Eastern Shore Soil and Water Conservation District
- Virginia Eastern Shorekeeper
- Friends of the Rivers of Virginia

Environmental and land stewardship education

The Wallops Station NASA launch range includes six launch pads, three blockhouses for launch control, and assembly buildings that support the preparation and launching of suborbital and orbital launch systems. While the site does not offer opportunities for conservation or outdoor recreation, the educational outreach program for visitors and the community is well developed. In addition, outdoor education facilities and environmental education programming are provided at Kiptopeke State Park. The central part of the Eastern Shore is lacking in outdoor education opportunities.

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

Virginia Eastern Shorekeeper

The Virginia Eastern Shorekeeper, a member of Waterkeeper Alliance, was established for the general purpose of protecting, preserving and improving the quality of the tidal waters of the Eastern Shore of Virginia. In October 2003, a shorekeeper was hired to be an advocate for the tidal waters of Northampton and lower Accomack counties on the Eastern Shore of Virginia.
shorekeeper@verizon.net
www.waterkeeper.org/subsites/subcontact.aspx?userid=73

19 A regional partnership involving local, regional and state agencies could promote the use of the **Virginia Institute of Marine Science (VIMS) property near Wachapreague** to be used for outdoor environmental education.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Continue collaborative efforts through the Chesapeake Bay Gateways and Water Trails Program on the Bayside of the Eastern Shore to

connect people to heritage, outdoor recreation, and educational opportunities and resources.

Assateague Island National Seashore

www.nps.gov/asis

Mike Hill, Superintendent, (410) 641-1443

U.S. Fish and Wildlife Service (USFWS)

- The USFWS should continue to work closely with the National Park Service and other partners and organizations to optimize compatible recreational opportunities at Chincoteague National Wildlife Refuge and Assateague Island National Seashore while protecting sensitive beach habitat.
- The Town of Cape Charles, USFWS and DCR should partner to connect Cape Charles by trail to Kiptopeke State Park

Chincoteague National Wildlife Refuge

Chincoteague National Wildlife Refuge includes more than 14,000 acres of beach, dunes, marsh and maritime forest, most of which is in Virginia. It is located along the Atlantic Flyway, making it a vital nesting and feeding spot for a large number and diversity of birds. The refuge also provides environmental education resources and wildlife-dependent recreational opportunities. The website address is www.fws.gov/northeast/chinco

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

The need exists for additional parkland and water access in this region of the state; potential acquisitions should be explored as follows:

20 Along the **Seaside of Northampton and Accomack counties**.

21 **Kiptopeke State Park** (540 acres) is in Northampton County. The park offers recreational access to the Chesapeake Bay and the chance to explore a unique coastal habitat featuring a major flyway for migratory birds. Recreational opportunities

include opportunities for swimming, camping, picnicking, hiking and pier fishing, along with the availability of a boat ramp, bird banding station and hawk observatory. The 2002 General Obligation Bond (GOB) provided funds for the construction of five six-bedroom lodges. The master plan also identifies the need for additional cabins, a visitor center and an overnight environmental education facility. The park's proximity to the USFWS Eastern Shore of Virginia National Wildlife Refuge creates opportunities for collaborative programming and research.

Virginia Marine Resources Commission

- VMRC should continue promotion of saltwater recreational fishing opportunities in the Commonwealth through continued construction of new reef sites and augmentation of existing artificial fishing reef sites.
- VMRC should increase opportunities for public access.

State natural area preserves

The following natural area preserves are located within the district: Marks and Jacks Islands, Mutton Hunk Fen, Parkers Marsh and Parramore Island in Accomack County and Cape Charles Coastal Habitat, Magothy Bay, Savage Neck Dunes, William B. Trower Bayshore and Wreck Island in Northampton County.

The Department of Conservation and Recreation has, as of November 2006, documented 419 occurrences of 104 rare species and natural communities in Region 22. Ten species are globally rare and six are federally threatened or endangered. Eighty-three conservation sites have been identified in the district; 49 sites (59 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only two sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 22, DCR is particularly interested in protecting:

- Migratory land bird habitat in southern Northampton County.
- Sea level fen communities and associated uplands.
- Freshwater marshes and associated uplands in Accomack County.
- Sandy beach habitats and associated wetlands and uplands that support threatened northeastern beach tiger beetle.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Accomack and Northampton counties should implement the Eastern Shore of Virginia Bicycle Plan adopted in 2004.
- The Town of Chincoteague should continue development of the Chincoteague Bicycle Plan adopted October 6, 1997.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate, and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Local agencies should make capital improvements in neighborhood parks throughout the region.
- Accomack and Northampton counties should consider developing small community parks, as well as at least two district parks to provide athletic facilities, picnic sites, trails, and opportunities for swimming, nature study and environmental education.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies. Local and regional recommendations include:

- The private sector should implement cooperative tourism to integrate and link ecotourism, geotourism and cultural and historical tourism.
- The private sector should evaluate opportunities for fee-based hunting, fishing and boating access.
- The private sector should support water-based recreation.
- The private sector should provide marinas and boat storage areas.
- The private sector should provide water oriented bed and breakfasts, restaurants and other accommodations and attractions, especially those that can be reached by water.
- The private sector should provide rental of water sports equipment.



Kiptopeke State Park. Photo by DCR.

Table X-20. Region 22 (Accomack-Norhampton Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	85,311	17	fields	3	14	15
Basketball	97,187	23	goals	7	16	20
Bicycling	130,540	9	miles	NI		
Mountain	23,687	2	miles	NI		
Other	527,583	38	miles	NI		
Lake, river and bay use (combined)	563,803	9,437	water acres	428,528	-419,091	-417,854
Power boating	251,104	6,052	water acres	S		
Sailing	40,168	348	water acres	S		
Saltwater fishing	246,821	1,388	water acres	S		
Jet ski, personal watercraft	55,936	876	water acres	S		
Water skiing, towed on water	24,645	772	water acres	S		
Camping	60,424	352	sites	5,305	-4,953	-4,909
Tent camping	22,583	133	sites	1,699	-1,566	-1,550
Developed camping	37,043	218	sites	3,606	-3,388	-3,358
Fitness trail use	25,262	2	mile trails	1	1	1
Fields (combined)	113,140	25	fields	7	18	21
Football	38,835	8	fields	7	1	2
Soccer	78,443	16	fields	-	16	19
Stream use (combined)	195,686	78	stream miles	-	78	88
Freshwater fishing	87,778	62	stream miles	S		
Human-powered boating	48,159	12	stream miles	S		
Rafting	1,827	0	stream miles	S		
Tubing	29,169	4	stream miles	S		
Golfing	98,709	3	courses	64	0	0
Hiking, backpacking	50,940	26	trail miles	26	0	3
Horseback riding	15,779	7	miles	4	3	4
In-line skating	3,980	0	miles	NI		
Jogging, running	210,732	17	mile trails	NI		
Nature study, programs	21,802	3	sites	3	0	1

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-20. Region 22 (Accomack-Norhampton Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	57,611	150	tables	1,065	-915	-896
Skateboarding	15,396	5	sites	NI		
Snow skiing or snowboarding	11,340	0	ski lifts	-	0	0
Softball	48,604	9	fields	12	-3	-2
Sunbathing, relaxing on beach	201,473	14	beach acres	574	-560	-558
Swimming	444,588	34		NI		
Outdoor area	273,523	28	beach acres	574	-546	-543
Outdoor pools	128,912	5	pools	10	-5	-4
Indoor pools	59,180	1	pools	-	1	1
Tennis	20,963	13	courts	16	-3	-1
Used a playground	87,413	12	sites	10	2	4
Visiting gardens	18,538	2	sites	NI		
Visiting historic sites	48,021	4	sites	NI		
Visiting natural areas	80,046	14	sites	NI		
Volleyball	46,088	14	courts	1	13	15
Hunting	93,285	15,298	acres	21,150	-5,852	-3,890
Drive for pleasure	283,076	NA	NA	NI		
Driving motorcycle off road	19,445	9	miles	6	3	4
Driving 4-wheel-drive off road	11,939	NA	NA	NS		
Walking for pleasure	1,330,368	NA	NA	NI		
Bird watching	40,751	NA	NA	NI		
Other	13,665	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

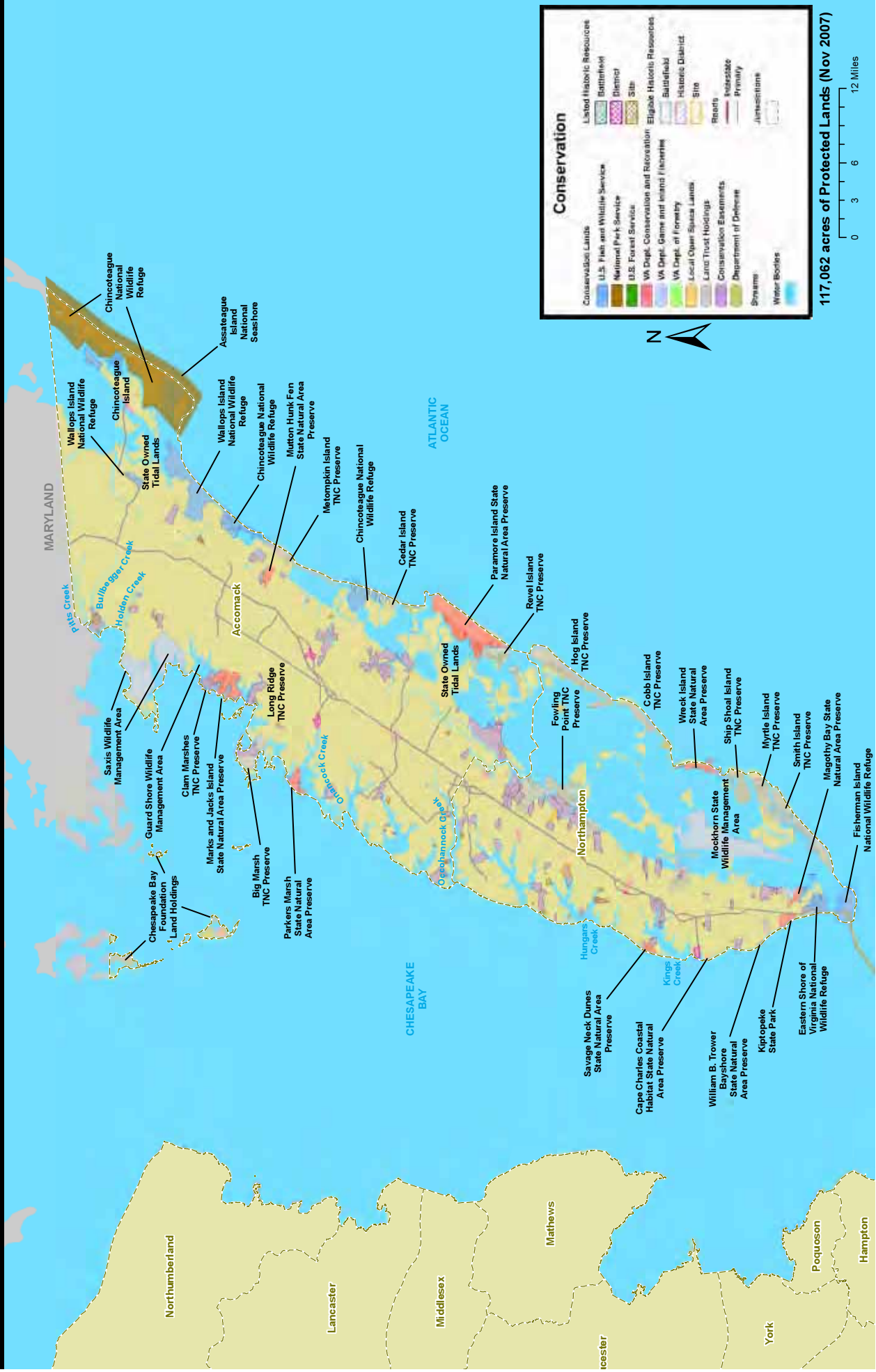
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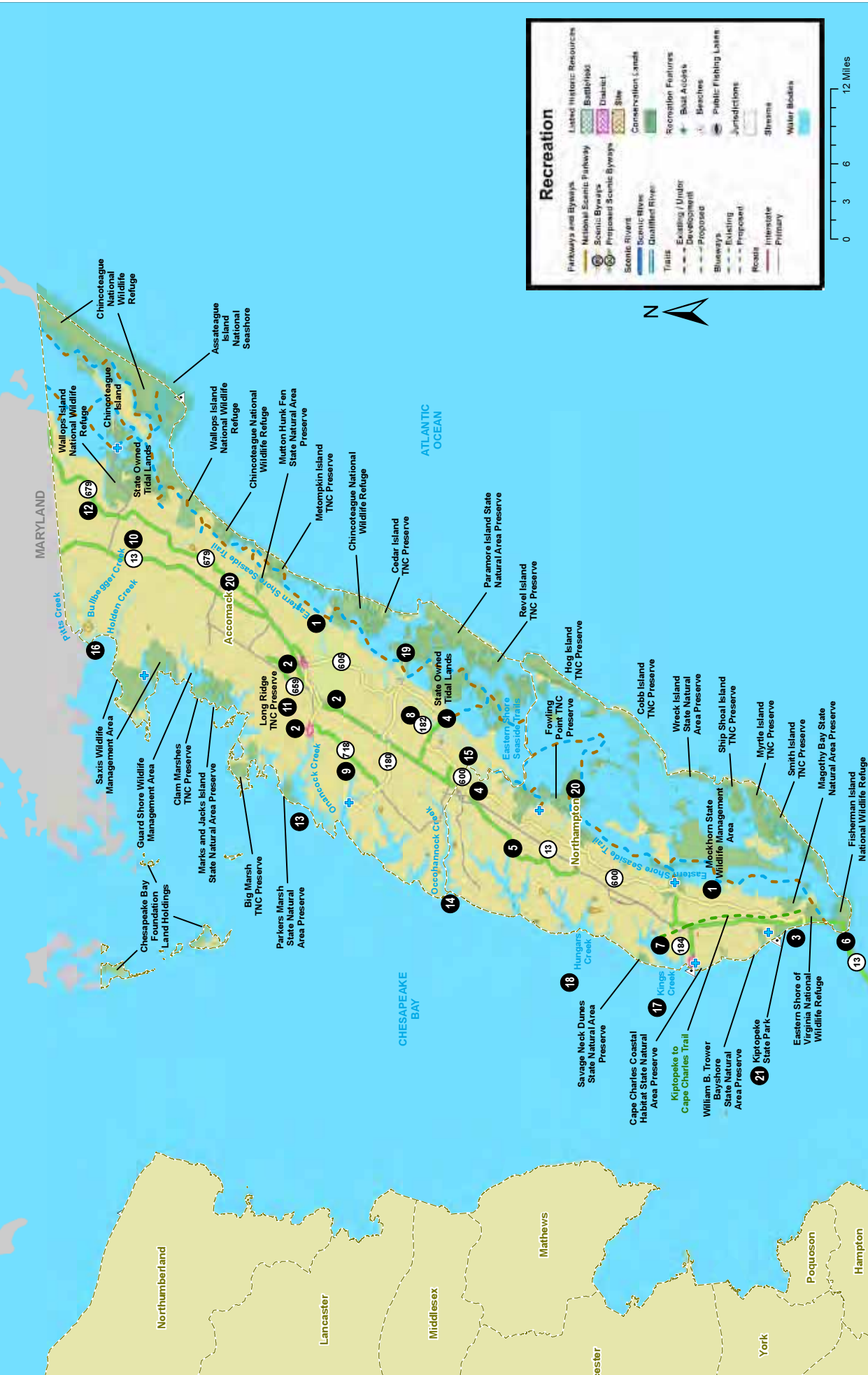
NI: not inventoried

(-) indicates surplus

Map X-40. Region 22 (Accomack Planning District) Conservation Lands



Map X-41. Region 22 (Accomack Planning District) Outdoor Recreation



Introduction

The Hampton Roads Planning District (Region 23) covers approximately 2,500 square miles and is home to more than 1.6 million people. This region encompasses 22 local governments, including the counties of Isle of Wight, James City, Southampton and York. While both Gloucester and Surry counties are a part of the Hampton Roads Planning District, each shares membership in other planning district commissions. Surry County is a part of the Crater Planning District, and information about Surry is included in Region 19. Gloucester County is a part of the Middle Peninsula Planning District, and information about Gloucester is included in Region 18. Other localities included in this planning district include: the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach and Williamsburg; and the towns of Boykins, Branchville, Capron, Courtland, Ivor, Newsoms, Smithfield and Windsor.

Future growth in the region is anticipated to be rapid, with the population in the region projected to increase to 1.7 million by 2020. Expected growth rates for Chesapeake, James City, Isle of Wight and York counties are 22 percent, 38 percent, 21 percent and 30 percent, respectively. In addition, the City of Suffolk is anticipated to have a growth rate of 27 percent by 2020. Remaining counties' and cities' growth rates are steady, but under 20 percent. Hispanic populations in the region continue to expand. Hampton, Newport News, Norfolk, Virginia Beach and Williamsburg all have populations of Hispanic ethnicity that are more than 3 percent.

Region 23 lies in the Mid-Atlantic Coastal Plain. Three major river drainage systems in the region include the York, James and Chowan basins. To the east, the Atlantic Ocean and the Chesapeake Bay form an undulating natural boundary for the region. The predominant features of the region include coastal shorelines, vast expanses of open water, and marshlands and swamps. Most portions of the James and York rivers in the region are estuarine. Freshwater systems in the region include the Nottoway, Blackwater, Meherrin, North Landing and Northwest rivers, Back Bay, and the Dismal Swamp. The waterways form diverse natural systems provide excellent habitats, as well as opportunities for boating, picnicking, camping, swimming and other outdoor enjoyment.

The expanse of water and outdoor opportunities associated with the coastal landscapes of the region offer abundant outdoor recreation. Whether it is exploring history, cultural activities, playing sports, boating, canoeing, enjoying the scenic beauty of rural landscapes and protected natural areas, discovering the diverse natural areas, or becoming involved in an educational or interpretive opportunity, Hampton Roads offers a great variety of experiences for everyone. This region has a wealth of biodiversity and is home to one third of the rare, threatened and endangered plants in the Commonwealth.

The region relies heavily on its water resources for economic well-being. The City of Virginia Beach is one of the major destination beach areas for visitors on the East Coast. In the western part of the region, rural counties have received less development pressure to date. Isle of Wight, while still predominantly rural, is experiencing increased growth pressure. Other urban communities in the region continue to experience development and redevelopment and are, in part, magnets for growth occurring in surrounding communities.

Because the Hampton Roads Planning District is heavily populated, urban issues with regard to parks and recreational opportunities need to be considered. Excellent conservation practices are critical in this urban environment. Planning in urban population areas should include alternative transportation modes, especially for populations without access to personal vehicles. Because open space and leisure activities are important to quality of life, so is the availability of a variety of recreational experiences. Since major state and regional park systems, which offer large areas of open space and natural area experiences, are not typically located in urban settings, greenways, urban open spaces and stream valleys can be blended into systems to meet some of the demand for natural and passive areas in urban settings.

For more information on the region and a specific report on the region's open space and parks, visit www.odu.edu/bpa/forecasting/sor2006.shtml

The Old Dominion University Economic
Forecasting Project
2006 State of the Region Report

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan* (VOP), it is important to integrate these recommendations with those that follow for Region 23 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Currently, the most popular activities in the region are outdoor beach use, walking, bicycling and boating. The most pressing recreational needs in this region are additional boating facilities and public access to beaches. Additional walking trails and playgrounds within walking distance of most populations are also needed. Large tracts of land are in demand for hunting and horseback riding. Both indoor and outdoor swimming facilities, golf courses, fitness trails and tennis courts are needed and could be provided in part by private sector initiatives close to neighborhoods. With traffic congestion becoming an increasing concern in Hampton Roads, the demand for bicycling facilities to meet both commuter and student needs is increasing (See Table X-21).

All counties but Southampton County in Region 23 have full-time parks and recreation departments and all cities. While private organizations may provide recreation programming for Southampton in the short term, they are not charged with planning for the long term recreation, park and open space needs of a community.

According to the Commonwealth of Virginia Auditor of Public Accounts, *Comparative Report on Local Government Revenues and Expenditures* (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: City of Chesapeake, \$35.56; City of Hampton, \$121.59; City of Newport News, \$103.85; City of Norfolk, \$67.01; City of Poquoson, \$97.54; City of Portsmouth, \$97.54; City of Suffolk, \$63.16; City of Virginia Beach, \$52.67; City of Williamsburg, \$123.44; Isle of Wight County, \$30.84; James City County, \$84.87; Southampton County, \$00.00; and York County, \$24.30. The City of Franklin was not listed in the report. This compares to

a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown Map X-42.

Land Trusts Operating in Region 23

Virginia Outdoors Foundation
The Nature Conservancy
Chesapeake Bay Foundation
The Elizabeth River Project
Hampton Land Conservancy
Williamsburg Land Conservancy
Newport News Green Foundation, Inc
APVA Preservation Virginia
The 500-Year Forest Foundation

Land conservation recommendations include:

- Southern Watershed Area Management Plan Conservation Corridor – A conservation corridor system in the cities of Chesapeake and Virginia Beach was delineated in conjunction with the Southern Watershed Special Area Management Program (SWAMP). The corridor system includes 259 acres in the City of Chesapeake and 400 acres in Virginia Beach for a total of 659 acres. Approximately 272 acres within the corridor system have been protected through a combination of fee simple purchase and conservation easements. Several efforts are underway to protect additional acreage within the corridor system. An Application for Coastal and Estuarine Land Conservation Program (CELCP) funding to purchase a set of parcels in the two cities is currently pending.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.

- Localities should support implementation of regional green infrastructure planning, which is being coordinated by the Hampton Roads Planning District for a regional conservation corridor system to include open space, conservation land, recreation opportunities and wildlife corridors.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-43).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

- 1 Local, regional and state agencies and organizations should implement the **James River Heritage Trail** that is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail follows the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia.
- 2 Local, regional and state agencies and organizations should implement the **Trans Virginia Southern Trail** that will stretch from the Cumberland Gap to the Chesapeake Bay through Region 23. This trunkline trail is comprised of many trails existing or underway. This network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. In Hampton Roads, the corridor could go through the City of Virginia Beach, Chesapeake County, City of Suffolk, Isle of Wight County and Southampton County.
- The portion of the Virginia Beach Pipeline Trail should be constructed using the right-of-way of the Lake Gaston-Virginia Beach water pipeline.

3 The **East Coast Greenway**, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects urban, suburban and rural America. An East Coast Greenway spur is planned eastward to the coastal area of Virginia and into North Carolina. As plans for the corridor proceed, localities and regional representatives should be involved in the decision making process.

- Consideration should be given to co-alignment of the East Coast Greenway spur with the doubling of the Midtown Tunnel between Portsmouth and Norfolk. The East Coast Greenway spur corridor could be located in Isle of Wight County and the cities of Suffolk, Norfolk and Chesapeake.
- The cities of Suffolk, Portsmouth, Chesapeake and Norfolk have teamed up to develop an inter-city trail connection in the south side Hampton Roads area. Portions of the Multi-City Bike Trail could link with the Virginia Capital Trail and the East Coast Greenway spur. The Multi-City Bike Trail totals 28 miles in length and will promote regionalism by improving links with Suffolk, the Suffolk Seaboard Coastline Trail along Route 164, the Naval Base with Downtown Norfolk and eastward to Virginia Beach along the Elizabeth River Trail tying into the light rail corridor alignment.
- The East Coast Greenway will use the Dismal Swamp Canal Trail and Greenway, a 20-mile long trail that parallels the Dismal Swamp Canal and US 17. This portion of the East Coast Greenway spur will span between the City of Portsmouth and Elizabeth City, North Carolina. An 8.5-mile portion of this trail is located in the southwestern section of Chesapeake and was made possible through the relocation of U.S. Route 17 approximately one-half mile to the east. The land use plan for the land between the trail and the new Route 17 designates 75 percent of the land for conservation and recreation. This open space provides a crucial link between the Great Dismal Swamp Wildlife Refuge and the Northwest River Conservation Corridor included in the Southern Watershed Area Management Plan. Recommendations for the Dismal Swamp Canal Trail and Greenway include providing additional amenities, such as permanent parking, picnicking, an additional boat ramp, wayside and a separated natural surface trail for horses. Also proposed is a 3-mile extension of the trail to the north tying into the historic Deep Creek community and

the northern terminus of the Dismal Swamp Canal, along with acquisition of conservation land adjacent to the trail for habitat preservation and passive recreation.

- A portion of the East Coast Greenway spur will be co-aligned with the Virginia Capital Trail along Route 5 with the trail crossing the James River near the mouth of the Bay. The Virginia Capital Trail, which has been approved by all of the local jurisdictions, should be constructed in a manner that preserves the historic and scenic beauty of its unique canopied tree corridor. Support from the region's localities, state agencies and nonprofit organizations is needed for continued implementation of the Virginia Capital Trail to Richmond. Opportunities for linking other trail spurs and the Virginia Capital Trail with the East Coast Greenway should be pursued by local and regional agencies and organizations.
- The Peninsula Greenway is proposed in James City County along the existing utility corridor shared by Virginia Dominion Power, Colonial Gas and Newport News Water Works. This trail would traverse the length of the county and serves as the structural spine for greenway development. Local, regional and state agencies and organizations should integrate this trail with the East Coast Greenway and incorporate the Regional Bikeway Plan.

Other trails

In Region 23, efforts are underway to coordinate local trails and greenways planning and development. A formal program to coordinate plans on the Upper Peninsula has been in effect for some time, and localities are discussing approaches for broader regional coordination through the Hampton Roads Planning District. Locally and regionally initiated trail and greenway planning is important for identifying and providing these desirable resources. Such plans should reflect efforts to link existing and proposed trails and greenways into a regional greenways network connecting existing and proposed recreational, natural, cultural, water, commercial and any additional resources the community deems desirable. New facilities should be developed in coordination with road improvements, land development projects and through individual project initiatives. The implementation of this plan will require the participation of all affected localities.

- The Hampton Roads Center Parkway Greenway is being developed along the new east-west expressway. The greenway will connect Newport News and Hampton to the 8-mile trail system at Sandy Bottom Nature Trail. The City of Hampton should connect

this trail system to a series of inter-connected trails throughout the city, possibly utilizing old railroad and utility line rights-of-way. An abandoned section of railroad should be targeted for connection of Old Town Phoebus with an area along Interstate 64 adjacent to downtown Hampton. This greenway could also include a trail to Fort Monroe, especially if it is developed as a park.

- The Cross County Greenway should be developed and managed as a primary greenway corridor in James City County connecting Jamestown Island with York River State Park. This corridor links the Powhatan Creek Greenway with the York River Greenway at the James City County District Park Sports Complex.
- The Powhatan Creek Greenway should be developed and managed as a natural corridor located in James City County's sensitive environmental area along Powhatan Creek and within the Chesapeake Bay Resource Protection Area (RPA).
- The Williamsburg Inner and Outer loops are trails within James City County that should be developed and managed as parallel facilities to existing roadways, including the Route 199 Inner loop corridor and the Outer loop on Centerville Road in Lightfoot south to Route 5 along Greensprings Road.

Water Access

Blueways and water access are critical in a water rich state like Virginia. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas and blueways including the Captain John Smith Chesapeake National Historic Trail, the James River Heritage Trail, Virginia Beach Scenic Waterways, York County Blueways, Elizabeth River Water Trail, Powhatan Creek Blueway, Nottoway River Water Trail and the Blackwater River Water Trail.

- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings and old ferry landing sites.
- Identify and increase public access to provide more water access sites within the Chesapeake Bay watershed in Virginia to meet the commitments of the Chesapeake Bay Agreement.
- Identify and increase water access opportunities to Virginia's southern rivers.

4 The **Buckroe Beach Park** plan should maximize the amount of open space for public beach access. The opportunity to plan recreation along publicly owned beaches in the Commonwealth is indeed rare. The 2006 *Virginia Outdoors Survey* (VOS) shows additional access to the water and beaches are needed to meet recreational demand for present and future generations.

5 **Newmarket Creek**, which runs 12 miles through the City of Hampton, should be developed as a blueway and greenway park. Newmarket Creek will become the core of an extensive blueway system for the city. The first canoe launch has been installed at Air Power Park on Mercury Boulevard. This location will connect the greenway park to the Bass Pro Shop Lake on Power Plant Parkway, which is a distance of approximately five miles. A blueway and greenway guide is being developed for Hampton. Newmarket Creek connects with Back River and, eventually, the Chesapeake Bay. The master plan for the combined greenway-blueway is currently being developed with recommendations including a seven-acre site with interpretive center and launch area as well as other water access amenities.

6 **Elizabeth River Water Trail**, connecting **Paradise Creek** in Portsmouth with other regional wildlife corridors and water trails, should be developed and managed to support Paradise Creek Nature Park as the vital link in these corridors and trails.

7 Implement the development of the **Chickahominy Water Trail** as an addition to the John Smith's Adventures on the James River Water Trail. This water trail would highlight historic events related to the 1607-1609 time period and identify land access points for recreational access to and from the river.

8 The **York River Water Trail** (www.yorkcounty.gov/parksandrec/images/h2otrail.pdf) includes trailhead locations at New Quarter Park, Back Creek Park, Smith Landing, Riverwalk Landing and Old Wormley Creek Landing. Improvements at each of these sites and enhancements along the water trail should be maintained as a recreational destination.

9 **Isle of Wight blueways** are planned on the Pagan River, Jones Creek and Cypress Creek. Each water body will have historical interpretative signage installed to identify significant historical events associated with the Civil and Revolutionary wars. Kiosks located at key access points along the trail will include interpretive education related to historical events as well as graphic and photographic representations. Continued management, improvement and linkages to water and land-based facilities should be pursued as part of this blueway.

10 The **Chesapeake Intracoastal Waterway** from Great Bridge in Chesapeake through Virginia Beach to North Carolina should be evaluated for extended recreational opportunities on land as well as in the water.

11 **Jamestown Campground and Yacht Basin** is being purchased with support from Virginia Land Conservation Foundation funding. It is a 112-acre waterfront property surrounding the historic and cultural resources at Historic Jamestowne on Jamestown Island and the Jamestown Settlement, and it should be integrated with surrounding recreational, tourist and cultural resources.

12 **West Neck Creek, Pocaty River, Blackwater Creek** (in the City of Virginia Beach), **Muddy Creek** and **Asheville Bridge Creek** should have limited non-motorized boat access. These water bodies are adjacent to sensitive lowlands that have high water tables and erodible shorelines. Increased erosion along these waterways will negatively affect the scenic beauty of these resources and degrade the existing water quality of the streams. Plans to mitigate erosion and improve public access at these sites should be pursued.

13 The Hoffer Creek Wildlife Foundation operates a 142-acre preserve in the Churchland area of Portsmouth. The **Hoffer Creek Preserve** property is managed by the foundation for environmental education, research and recreation, and it provides access for canoes and kayaks along 2.5 miles of the creek. Additional public access, outreach and education should be pursued at this site.

14 **Tyler's Beach** offers water access to the James River in Isle of Wight County at Tyler's Beach Boat Ramp, located on Tyler's Beach Road in Smithfield. Tyler's Beach Boat Ramp is a 13-acre facility that includes a public beach, fishing, boat ramp and harbor. This facility needs bulkhead replacement, beach development and construction of a restroom facility.

15 Regional and local organizations should continue to support the **Captain John Smith Chesapeake National Historic Water Trail** in Virginia and conduct a comprehensive access study to determine potential locations for visitor services along the trail. In addition, state, regional and county agencies should continue to develop water trail segments of the **Captain John Smith Adventures on the James River and Captain John Smith Adventures on the Pamaunk Flu** to promote stewardship of the Chesapeake Bay as well as additional public access and recreational opportunities.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build relationships with local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.
- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.

- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for a citywide survey of the historic and architectural resources of Newport News.
- Local government and local and regional organizations should work with the state to meet the critical need for an archaeological survey in the City of Norfolk, as well as for an assessment of the city's archaeological resources.
- A bill to amend the National Trails System Act to designate the Washington-Rochambeau Route as a National Historic Trail was introduced in both houses of Congress in July 2006 and is currently in committee. This 600-mile route was followed by the American and French armies in 1781 and 1782 under George Washington and the Comte de Rochambeau as they traveled to and returned from the siege and victory at Yorktown. The route, which passes through Hampton Roads, has also been designated as a special highway by the state.

16 Research the feasibility of the **Deep Creek Canal and Albemarle and Chesapeake Canal** as a designated historic transportation route.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Consider timber-harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.
 - Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.

- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.
- Route 5 and the Virginia Capital Trail are significant scenic corridors incorporating expanded historic tourism and recreation opportunities. Scenic corridor management strategies should be evaluated and implemented in local comprehensive plans.
- Captain John Smith Adventures on the James Driving Trail includes many scenic vistas and corridors. Scenic corridor management strategies should be evaluated and implemented in local comprehensive plans.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate Virginia byways and scenic highways into local comprehensive plans and zoning ordinances to ensure viewsheds are conserved and the sense of place retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.
- National Scenic Byway status has been conferred upon the Colonial Parkway, but it has also been awarded the even higher designation of All-American Road, which means that the parkway is of national significance and a destination in itself. The Colonial Parkway is an integral part of the Colonial National Historical Park, and it is a journey through 174 years of the English Colonial history of America. The 23-mile road begins at Jamestown, which was the first permanent English settlement in America, passes through Williamsburg, and ends at Yorktown, the site of the final major battle of the Revolutionary War. Along the entire route, spectacular views of the James and York rivers abound, and turnouts and

parking areas are provided along the way for quick glimpses or contemplation.

- Protection of the scenic viewsheds of the Colonial Parkway and the natural, historical and cultural resources of the Colonial National Historical Park is critical to the continued beauty and uniqueness of this corridor and its environs.
- Development of a Virginia Karst Trail is recommended to help educate the public about karst resources. This thematic trail will promote resource management goals and best management practices that help landowners protect sensitive karst resources, such as caves, springs and sinkholes. The trail will focus on above-ground features and tourist caves throughout the state and Grafton karst, the Chuckatuck karst, and the Yorktown geologic formation on the Peninsula in Region 23. The Virginia Karst Trail, endorsed by the Virginia Region of National Speleological Society, will benefit through increased educational, commercial and tourism activities.

Scenic roads recommendations for the region include:

- 17** Local, regional and state agencies should explore the concept of a scenic state connector road and greenbelt between **Green Spring** and the **Colonial Parkway**. Greenspring Road should be evaluated for its potential as part of the Virginia Byways Program as this portion of the road is concurrent with the Virginia Capital Trail.

The following road segments are potential Virginia Byways and should be evaluated to see if they qualify for designation:

- 18** The **Green Sea Byway** is proposed to connect the Back Bay Wildlife Refuge to the Great Dismal Swamp by using secondary roads in the cities of Virginia Beach and Chesapeake. A segment of the Green Sea Byway has been designated in Virginia Beach. Other portions connecting to the Great Dismal Swamp are pending evaluation by local, regional and state agencies and organizations.

- 19** State **Route 35** in Southampton County.

- 20** **U.S. Route 13** to the Eastern Shore.

- 21** **U.S. Route 17** in Isle of Wight County.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers.

In Region 23, the following are designated scenic rivers:

- The North Landing River and tributaries from the North Carolina state line to its headwaters, including segments of Pocaty Creek, Blackwater Creek and West Neck Creek. This river system flows adjacent to the North Landing River Natural Area Preserve, which encompasses approximately 1,900 acres. The Nature Conservancy owns an additional 6,000 acres within the river system.
- Nottoway River from the bridge at Route 40 at Stony Creek to Route 653 (Carey's Bridge) in Southampton County.
- The Lower James River is designated a state historic river for 1.2 miles from Trees Point in Charles City County to Lawnes Creek at the Isle of Wight and Surry County lines.

The following river segments are potential Virginia scenic rivers and should be evaluated to determine suitability for designation:

- 22 The **Nottoway River** from Carey's Bridge at Route 653 to the North Carolina state line.
- 23 The **Blackwater River** in Isle of Wight and Southampton counties from the City of Franklin to the Surry County line.
- 24 The **Chickahominy River** in James City County from Providence Forge to the James River.
- 25 The **Northwest River** in Chesapeake, from its headwaters to the North Carolina state line. This river could be added to the present designation for the North Landing River and its tributaries.
- 26 The **James River** from the Charles City-James City County line to Hampton Roads. Part of this reach has been designated by the General Assembly as a Historic River.
- 27 **Alton's Creek** and **Milldam Creek**, both tributaries to the North Landing River in Virginia Beach.

Watershed resources

Hampton Roads is in the James River and Chowan River watersheds. A portion of the area is in the Chesapeake Bayside watershed with water flowing directly into the Bay. For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 23

- Alliance for the Chesapeake Bay
- Back Bay Restoration Foundation
- Blackwater/Nottoway Riverkeeper Program
- Chesapeake Bay Foundation
- Elizabeth River Project
- Friends of Powhatan Creek
- Friends of the Rivers of Virginia
- James River Association
- Lynnhaven River 2007

Watershed recommendations for this region include:

- Implementation of forestland conservation will demonstrate Virginia's commitment to a 2001 Memorandum of Agreement between Virginia and North Carolina to work together to restore and maintain the biological integrity of the Albemarle-Pamlico sounds estuarine system. Land conservation will also support goals of the Albemarle-Pamlico National Estuarine Program (APNEP), established in 1987 by the EPA to conserve the estuary's natural resources.
- Regional and local agencies should make long-term water supply protection planning in the Nottoway and Blackwater watershed a high priority for the south Hampton Roads district. The Nottoway and Blackwater rivers are part of the drinking water supply for more than 700,000 residents in the south Hampton Roads metropolitan region. State agencies, planning districts and other stakeholders in the Blackwater-Nottoway watersheds are strongly encouraged to develop and implement watershed-wide water supply protection plans. Anticipated changes in land use due to economic growth in Region 23 may adversely impact water quality and quantity on both rivers if watershed protection is not addressed.
- Flood abatement strategies for the Blackwater River should favor protection of existing forested wetlands in the watershed. State agencies and private organizations, such as The Nature Conservancy, are encouraged to acquire and manage bottomland hardwood tracts along the river. Six of the 10 worst floods on record for the river have occurred in the past eight years. Intensive timber harvesting in wetland areas is thought to be a key contributing factor to the flooding. Maintaining forest cover is recognized as a cost-effective strategy for reducing the frequency of catastrophic flooding. State, federal and local stakeholders as well as private organizations are encouraged to pursue coordinated flood

reduction strategies to help protect the economic stability of the City of Franklin, situated along the Blackwater.

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

- Regional and local environmental education providers should continue cooperation at outdoor facilities, especially with the Chesapeake Bay Education Center located at First Landing State Park.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

28 Fort Monroe is adjacent to the City of Hampton at the confluence of the James River at Hampton Roads and the Chesapeake Bay. In the past, public access was restricted due to the property's military mission. Fort Monroe is included in the Base Realignment and Closure (BRAC) list. Strong consideration for the property's cultural and scenic qualities and opportunities for regional and statewide recreational benefits should be prioritized in redevelopment and conservation plans for the property. Pursuant to state legislation enacted in 2007, the National Park Service has been requested to perform a reconnaissance study to help evaluate whether Fort Monroe should become affiliated with the National Park System to help manage and preserve the historic and natural resources at Old Point Comfort. In addition, **Fort Norfolk**, **Fort Custis** and **Fort Wool** complement the historic and recreational components and should be included in plans for recreation at Fort Monroe. Fort Norfolk should be evaluated for the potential to provide a pedestrian trail adjacent to the water in an urban environment. Management of all of these facilities should maximize conservation and public accessibility. Public access to the water should be a particularly high priority.

29 The possibility of using the **Fort Story** beach for providing additional public access may be a future consideration. Other U.S. military installations in the region should also be evaluated for their potential to be used for joint recreational activities, particularly beach and water access.

30 Cheatham Annex, located adjacent to New Quarter Park in York County, should be considered for recreational opportunities and water access.

National parks

- Continue collaborative efforts through the **Chesapeake Bay Gateways and Water Trails Program** and **Potomac Heritage National Scenic Trail** (PHNST) to connect people to heritage, outdoor recreation, and educational opportunities and resources.

Chesapeake Bay Gateways

The National Park Service coordinates the Chesapeake Bay Gateway Program (www.baygateways.net) to promote a historic and environmental focus on water access. Designated Chesapeake Bay Gateway sites in the Hampton Roads Planning District include:

The Waterman's Museum
Yorktown Visitor Center and Battlefield
York River State Park
Chickahominy Riverfront Park
Powhatan Creek Blueway
Jamestown Island
Mariner's Museum
Virginia Living Museum
Norfolk Waterway Trail System
Hoffler Creek Wildlife Preserve
Elizabeth River Trail – Atlantic Coastal Spur
Nauticus National Maritime Center
Eastern Branch Elizabeth River
Chesapeake Bay Center at First Landing State Park
Great Bridge Lock Park
James River Water Trail
Powhatan Creek Blueway

31 The National Park Service (NPS) supports the establishment of bikeways and walking and jogging trails in the **Colonial National Historical Park and Jamestown Island** along the **Colonial Parkway** corridor, now designated an All American Road and National Scenic Byway. Pavement improvements for bicyclists and signage for pedestrians and bicyclists would improve safety. NPS plans to explore the feasibility of building a trail for walkers, joggers and bicyclists as part of Yorktown Battlefield. The feasibility of building a trail linking the west tour road to Surrender Field to prevent conflicts between vehicles and pedestrians or cyclists will be studied. Due to increased development in the area, NPS is interested

in working to protect the vistas adjacent to and throughout the park. NPS also plans to study the effects of heavy visitation on several sites along the Colonial Parkway. It will assess opportunities to improve facilities, e.g., hardening trails and adding comfort stations and overflow parking. NPS recommends the **Cheatham Pond** tract be divided into parcels with long-term leases or management agreements with both the U.S. Navy and York County. A portion of the parcel tentatively proposed for development and management by York County has excellent potential for a public boating access site, along with passive recreational facilities such as hiking, biking and equestrian trails and picnic areas.

U. S. Fish and Wildlife Service (USFWS)

32 Continue maintenance of the agreement allowing access through **Back Bay National Wildlife Refuge (NWR)** to **False Cape State Park**. In 1989, USFWS received approval to expand the **Back Bay NWR** to the north and west of Sandbridge and along the western shore of Back Bay. When complete, the 6,340-acre expansion will provide additional protection for the marshes and fastlands surrounding Back Bay and help to initiate the recovery of this important resource. The westward expansion of Back Bay NWR should include provisions for canoeing, kayaking and bank fishing. This may be accomplished by renovating former boat ramps and through partnerships with the Commonwealth and the City of Virginia Beach. High priority should be given to the relocation of the visitor center to the western side of Back Bay to improve to the refuge's accessibility for environmental education.

33 The **Great Dismal Swamp NWR** consists of about 109,000 acres in Virginia and North Carolina and is managed by USFWS. Approximately 84,000 acres are located in the cities of Suffolk and Chesapeake. Measures to protect the refuge and provide appropriate access to the area immediately surrounding the refuge are being addressed. A comprehensive conservation plan for the Great Dismal Swamp NWR is being completed. In the 2000 Appropriation Act, the Virginia General Assembly directed that, "The Virginia Tourism Corporation, with the assistance of the City of Suffolk, shall develop a Public Use Development Plan and Environmental Assessment for the Great Dismal Swamp Wildlife Refuge." Recommendations from the report, *Opportunities for Regional Tourism Development*, should be considered with regard to the Great Dismal Swamp Wildlife Refuge.

34 **Plum Tree Island NWR** in Poquoson is an extensive marsh system of more than 3,275 acres. The island was an old Air Force bombing range, which,

because of potential hazards, is not available for public use. However, an expansion has been approved. By acquiring marsh systems to the west of Plum Tree Island, it will be possible to provide additional protection for critical habitat, and to provide opportunities for controlled public hunting and wildlife observation. Opportunities for partnership between the USFWS and others to provide compatible recreational and environmental education for Virginia's citizens should continue. The proposed expansion of **Plum Tree Island** should be evaluated to possibly include public access to Back River and Lloyd Bay for fishing and wildlife observation.

35 **Nansemond NWR** is located on the Nansemond River in Suffolk. It is a satellite refuge managed by Great Dismal Swamp NWR. Nansemond NWR became part of the USFWS National Wildlife Refuge System in 1973 when the U.S. Navy transferred 207 acres of salt marsh to the service. In 1999, an additional 204 acres of upland grassland and forested stream corridors were transferred from the U.S. Navy. It is not open to the public. This facility should be evaluated for its potential to provide outreach, education and public access.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

36 Due to the extremely high demand for public access to the waters of the Commonwealth, any large acreage waterfront property that becomes available on the major tidal rivers or their tributaries in the region should be evaluated for potential acquisition and development as a regional or state park. In Region 23, potential acquisitions should be explored in the western part of the region along the **Nottoway River** in Southampton County.

37 **False Cape State Park** (4,321 acres) is in Virginia Beach, between Back Bay National Wildlife Refuge and the North Carolina state line. The park is a mile wide barrier spit between Back Bay and the Atlantic Ocean with close to six miles of beach. No vehicular access is permitted. Access is by hiking, biking or tram, or coordinated as part of a scheduled education program. Parking is available at Little Island Recreation Area or the refuge. The park offers primitive camping, hiking, biking, fishing, canoeing, kayaking and boat-

ing. There is also an overnight environmental education center. In addition to environmental education, other programs include astronomy, night hikes, bird hikes, canoe trips and seining programs. Special programs are offered in conjunction with the Virginia Aquarium and Marine Science Center, Virginia Institute of Marine Science, and Back Bay National Wildlife Refuge. The trails within the park allow visitors to observe beaches, dunes, maritime forests, wooded swamps, marshes and the Bay all within one park visit.

In 2002, a significant portion of the park (3,573 acres) was dedicated as a state natural area preserve. Through a Memorandum of Understanding with the USFWS addressing access across the Back Bay National Wildlife Refuge, the refuge cooperatively manages the impoundments at False Cape. Through the 2002 General Obligation Bond (GOB) referendum, the park will be getting a new office-visitor center complex.

38 First Landing State Park (2,889 acres), is in Virginia Beach on the Chesapeake Bay. The park, one of the six original Civilian Conservation Corps (CCC) state parks opened in June of 1936, is listed on the National Register of Historic Places. The park's name was changed in 1997 from Seashore State Park to First Landing State Park to reflect its heritage as the first place where members of the Virginia Company landed. It is also listed as a National Natural Landmark for its significant natural features, rare species and communities. The park offers boating, swimming, nature and history programs, hiking, biking, picnicking, a boat launch, cabins, a full service campground with water and electric hookups, and 19 miles of trails. The Chesapeake Bay Center, which serves as the park office, visitor and environmental education center, features programs developed in cooperation with the Virginia Aquarium and Marine Science Center. Boardwalks connect the campground and Chesapeake Bay Center with the beach while protecting the sensitive dune areas.

Through the 2002 GOB referendum, the park has upgraded the campground with water and electric hookups, replaced campground bathhouses, constructed new storage facilities in the maintenance area, and made improvements to the Trail Center and Chesapeake Bay Center.

39 York River State Park (2,550 acres) is in James City County. The park has 3.5 miles of shoreline on the York River. Included within the park is the Taskinas Creek National Estuarine Research Reserve, which is managed by the Virginia Institute of Marine Science-Chesapeake Bay National Estuarine Research

Reserve (NERR) program. The designated area of Taskinas Creek is managed for research and educational purposes that supports research and monitoring in a unique watershed containing upland forest, freshwater habitats, estuarine habitats and meso-haline tidal habitats. The park was once the historic 18th Century Taskinas Plantation, which qualifies the park to become a National Historic Landmark. The park also contains significant Native American archaeological sites, one of which, the Croaker Landing Site, is on the National Register of Historic Places. There are also two known 10,000-year-old Paleo-Indian activity areas within the park's boundaries that are also eligible for National Register listing.

The park offers day-use activities such as picnicking, fishing, and nature and environmental education programming. Canoeing and kayaking are available on Taskinas Creek. The Croaker Landing boat launch provides boater access to the York River. There is also a fishing pier constructed at Croaker Landing supported in part by Smurfit Stone, a local industry. The 2002 GOB provided funds toward the fishing pier and for improvements to the boat launch.

State fish and wildlife management areas (WMA)

Wildlife Management Areas in Hampton Roads include the Ragged Island WMA, Princess Anne WMA and Cavalier WMA. The Department of Game and Inland Fisheries (DGIF) should continue to investigate opportunities to acquire in-holdings in their WMAs and to improve each area with trails and other structures for wildlife viewing and other outdoor recreation. They should also acquire additional lands wherever feasible to provide additional access for public hunting, fishing and other wildlife viewing recreation.

40 Four tracts, totaling 1,546 acres, make up the **Princess Anne WMA** located on Back Bay in Hampton Roads. This serves as DGIF's major waterfowl hunting area. Hunting opportunity is further enhanced by a long-standing cooperative agreement with Virginia State Parks allowing hunting on some park acreage. Over the years, changes in salinity and the decline in aquatic vegetation has altered the fishery in Back Bay proper. There is also a boat ramp and parking at the Princess Anne headquarters. Continued public access improvements for wildlife habitat and fisheries should be sought to sustain the WMA resources.

41 The **Cavalier WMA** is comprised of two parcels, the 750-acre Dismal Swamp tract adjoining the Dismal Swamp Canal and the 3,800-acre Cavalier tract that abuts the North Carolina state line near Route 17 in

the City of Chesapeake. Cavalier WMA provides coastal and forested habitats for a wide range of wildlife, including black bear, neo-tropical migratory songbirds, canebrake rattlesnakes, white-tailed deer and eastern wild turkeys. The 3,800-acre main tract, located approximately 2.5 miles east of the Great Dismal Swamp NWR, was once part of the Great Dismal Swamp but was ditched and drained more than 200 years ago. The Dismal Swamp tract lies approximately six miles to the north and west of the main Cavalier tract. Deer and bear hunting is conducted through the department's quota hunt system at this WMA. Access and management for game should be continued and expanded where feasible.

42 The **Ragged Island WMA** consists of 1,537 acres of brackish marsh and small pine islands along the south side of the lower James River in Hampton Roads. There is the opportunity to hunt deer in the pine islands and other high ground. The James offers saltwater fishing, and freshwater fishing is available on the creeks. The area has interpretive signs and trails, and it has been designated a Watchable Wildlife Area. The boardwalk gives bird-watchers, hikers and photographers some unique opportunities. A public fishing pier is located at the north end of the James River Bridge. There are two parking lots, both entered from U.S. Highway 17. A boardwalk, viewing platform and trail, financed through the Non-game Wildlife and Endangered Species Program, allows easy walking access for viewing the marsh. Continued management for public access and sustained wildlife and fisheries habitat is recommended.

Virginia Marine Resources Commission (VMRC)

- VMRC should continue promotion of saltwater recreational fishing opportunities in the Commonwealth through continued construction of new reef sites and augmentation of existing artificial fishing reef sites.
- VMRC should increase opportunities for public access.

State forests

- Local and regional agencies should encourage the use of Department of Forestry (DOF) Best Management Practices in floodplain forest areas, particularly those adjacent to state-designated scenic waterways.
- Local and regional agencies should use any future DOF properties as field classrooms to help with educational programs.

- Local and regional agencies should coordinate with DOF and seek the assistance of local trail and river user organizations to develop forest trails and publish maps for each state acquired forest, as well as establish greenways and blueways for public use.
- Local and regional agencies should investigate opportunities to acquire fee simple ownership or easements to conserve working farms and forests in the region.
- Local and regional agencies should work with DOF to create defensible space around buildings to reduce the risk of wild fires through the DOF Fire Wise Program.
- Localities should work with DOF on education and monitoring of tree diseases and other pests that could weaken the forested environments.
- Local, state and regional agencies and organizations should target agricultural lands for reforestation to protect the water quality of the area and limit the effects of erosion on these lands.
- In 2006, International Paper sold company-owned forest located in the Nottoway, Blackwater and Meherrin River watersheds to The Nature Conservancy (TNC). DOF is interested in acquiring the land for a state forest.
- Establish a state forest in Sussex and Southampton Counties with opportunities for public access to outdoor recreation. TNC has secured large tracts from International Paper in the vicinity of the Piney Grove Natural Preserve. DOF should acquire this property as a state forest.

State natural area preserves

The Hampton Roads region is in the Atlantic Flyway, enhancing opportunities to observe waterfowl throughout the region during certain periods of the year. In general, the region boasts abundant natural resources. Lands protected by federal, state and local ownership, dedication or easements allow for biodiversity and provide opportunities for the enjoyment of nature. Properties boasting this richness could be incorporated into ecotourism initiatives, which could further promote their special character while providing a profitable tourist alternative to the region.

North Carolina has a wildlife management area designated on the Northwest River adjacent to the City of Chesapeake. This landholding by North Carolina strengthens the management of the river corridor as a biologically diverse area, and it is accessible from Virginia by boat. There are also extensive state wildlife

management areas on the western shore of Back Bay, including the Princess Anne Wildlife Management Area and the Whitehurst Tract. Because ecotourism is expected to be more popular in the future, it is essential that important lands within Hampton Roads be identified and conservation mechanisms established to ensure the longevity of this biodiversity.

The following natural area preserves are located within the district: Antioch Pines and Blackwater Ecological Preserve in Isle of Wight County; Grafton Ponds in the City of Newport News; North Landing River and False Cape State Park in the city of Virginia Beach; and Northwest River in the City of Chesapeake.

The Department of Conservation and Recreation (DCR) has, as of November 2006, documented 1,116 occurrences of 295 rare species and natural communities in the Hampton Roads Planning District. Fifty-three species are globally rare and eight are federally threatened or endangered. Two hundred twenty-one conservation sites have been identified in the district; 99 sites (45 percent) have received some level of protection through ownership or management by state, federal and non-government organizations. However, only six sites are protected well enough to ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 23, DCR is particularly interested in protecting:

- Pine barren communities.
- Seasonal depression ponds and other significant wetlands.
- Large blocks of old-growth cypress-tupelo swamps.
- Additional habitat for rare reptiles and amphibians.
- Additional lands along the Northwest and North Landing Rivers.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

- The College of William and Mary, Old Dominion University, Norfolk State University, Christopher Newport University, Tidewater Community College, Paul D. Camp Community College and Thomas Nelson Community College should evaluate opportunities to provide outdoor education opportunities and recreation in the region.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.
- Localities should implement bicycle, pedestrian and greenways items in local plans, i.e., *Forward Chesapeake 2026 Comprehensive Plan*, City of Franklin *2003 Parks, Recreation and Open Space Master Plan*, City of Newport News *2001 Framework for the Future Bikeways Plan*, City of Norfolk *1992 Living Community Bicycle Plan*, City of Virginia Beach *2004 Bikeways and Trails Plan for the City of*

Virginia Beach, Isle of Wight 2006 Proposed Improvements for Bicycles/Pedestrians, 2002 James City County Greenway Master Plan; the City of Williamsburg 1989 Comprehensive Sidewalk Plan, York County 2005 Comprehensive Plan: Charting the Course to 2025, and 1998 The Williamsburg, James City and York County Regional Bicycle Facilities Plan.

- Local, regional and state agencies and organizations should implement alternate transportation and separate bicycle facilities in the right-of-way of the proposed Southeastern Parkway.
- Local, regional and state agencies and organizations should implement the 2030 Transportation Plan (under development) that will address multimodal transportation options for the region.

Local and regional parks and recreation departments

The Hampton Roads Planning District area has many large parks that serve the entire region. These parks include lands surrounding water supply reservoirs, as well as properties acquired by localities to provide local recreational opportunities or to protect biologically diverse areas. Each property should be evaluated and management plans adopted to ensure the appropriate balance of recreational and conservation initiatives. Regional open space plans, to include recreational and conservation opportunities, are important in compiling information from various existing plans available from localities and other regional studies. The Hampton Roads Conservation Corridor Study addresses open space and links recreational opportunities to the regional networks through regional corridor connections.

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- The City of Virginia Beach should implement the *Virginia Beach Outdoors Plan* 2000 update as a guidance document for open space and recreational

planning as well as integrate the plan as part of the next revision to the city's comprehensive plan. The plan encompasses greenways, beaches and scenic waterways, cultural and natural areas, parks and athletic facilities, trails, and open space preservation.

- The City of Chesapeake should implement *A Window Into The Year 2010 ... A Plan For Parks & Recreation*.
- James City County should implement its parks and recreation master plan. The recommendations in the plan are estimated to cost \$150 million for land acquisition to add 68 multi-use athletic fields, 75 miles of new multi-use trails, 37 miles of greenways, 13 new boating and canoeing waterway access sites, and to purchase and preserve more than 4,100 acres of undeveloped property. The preservation efforts would be in addition to the 2,650 acres that are already owned by the city for recreational use and preservation as open space.
- The City of Chesapeake should implement the Open Space Master Plan completed in November 2000. The plan connects the cultural, historic, natural and scenic resources of the city by a non-motorized trail.
- The City of Franklin should implement the Parks, Recreation and Open Space Master Plan completed in March 2003. This plan calls for trails, picnic areas, nature programs, camping sites and access to the Blackwater River. The plan also recommends programs to incorporate greenways and conservation of open space into existing and new development.
- 43 The City of Chesapeake should expand recreational opportunities while maintaining resource integrity to meet growing population demands at the 763-acre **Northwest River Park**. This park is an incredible natural area with opportunities and programs for environmental education, fishing, birding, camping, picnicking, canoeing, boating and hiking.
- 44 The City of Newport News should expand opportunities to connect other parks and natural areas by trails and greenways to **Newport News Park**. These resources should be evaluated for hiking and bird-watching opportunities. This park is an 8,065-acre site straddling the City of Newport News-York County line. This municipal park, one of the largest in the United States, provides a vast array of outdoor recreational opportunities including camping, fishing, hiking, picnicking, golfing and boating. This site also contains significant Civil War era earthworks, as well as the majority of the Grafton Ephemeral Ponds Natural Complex, which provides a wealth of potential interpretive opportunities.

45 The City of Hampton should continue to manage and monitor public access opportunities at **Grandview Nature Preserve**. This park is a critical marsh and beach habitat located on the Chesapeake Bay, and it is currently being recommended for natural area dedication. Combined with the adjoining Grundland Creek Park, the sites total approximately 600 acres. The beach is home to the northeastern beach tiger beetle, which is a federally threatened species and proposed for state listing as endangered. The least tern, a species of concern, has the largest nesting colony on the east coast at this site. The colony is also one of the oldest documented in the country. Because of its sensitive nature, only passive recreational activities, such as hiking and bird watching, are available.

46 The City of Suffolk should continue to expand public access opportunities for fishing at **Lone Star Lakes**. These lakes provide more than 1,100 acres of land and freshwater with potential for additional developments. This lake system is connected to salt water via Chuckatuck Creek.

47 York County should create trail linkages at **Waller Mill Park** and provide signage and mapping to broaden connections with nearby recreational opportunities. This park is owned and operated by the City of Williamsburg and provides a major freshwater-oriented park with opportunities to connect with a network of local bike trails.

48 James City County should implement the **Chickahominy Riverfront Park** master plan and continue to promote the park as a Chesapeake Bay Gateway. The park, 140 acres located on the Chickahominy River and bordered by Gordons Creek, offers camping, boating, a swimming pool and fishing. The park is also a trailhead for the Virginia Capital Trail and is along the John Smith Trail. Facilities include two outdoor swimming pools, boat ramp, fishing pier, campsites, a small driving range, a pavilion and a small store.

49 James City County should continue to offer and expand fishing, boating, picnicking and playground opportunities at **Little Creek Reservoir Park**. This is a scenic park overlooking a 996-acre reservoir, which is a water supply for Newport News.

50 Regional and local agencies and organizations should incorporate **New Quarter Park**, a 550-acre site on Queen Creek in York County, into plans for a regional greenway system. The park is currently used for group activities and includes active recreational

facilities, picnic facilities and canoe access to Queen Creek.

51 Freshwater fishing should be expanded at **Lake Prince, Lake Cahoon, Lake Mead, Lake Kilby, Lake Burnt Mills, Spaetes Run Lake and Western Branch Reservoir**. These lakes are all water supply reservoirs located on impounded tributaries of the Nansemond River within Suffolk. Lake Prince and the Western Branch Reservoir connect to the Nansemond River. Although little upland is owned by the cities of Norfolk and Portsmouth, it is possible that additional compatible recreational resources, such as hiking trails, picnicking and environmental education, could be developed through cooperative agreements. **Lake Smith** and **Lake Whitehurst**, serving as municipal water supply for the City of Norfolk, and **Lake Airfield** in Sussex County could also provide recreational opportunities in the region.

52 Regional and local agencies and organizations should work together to connect Paradise Creek in Portsmouth with other regional wildlife corridors and water trails and support **Paradise Creek Nature Park** as the vital link in these corridors and trails.

Paradise Creek Nature Park

Paradise Creek Nature Park will be a 40-acre park maintained by the City of Portsmouth. The Elizabeth River Project and the Virginia Port Authority are partnering to acquire the land and design and construct the park prior to turning it over to the city. The park will feature 10 acres of restored wetlands, boardwalks that go up into the tree canopy, a canoe-kayak launch, walking trails, a tidal garden, a pedestrian bridge, educational spaces and a terraced "earth works" sculpture that will give a view of the creek and the nearby Elizabeth River from 50 feet in the air. The park is the cornerstone project of the efforts to restore the 1.5 mile-long Paradise Creek, and it will provide the first public access along the creek. A water trail is being planned, and there will be a wildlife corridor with almost 100 acres of habitat conserved in the 2.9-square-mile watershed. More information is available at www.elizabethriver.org/FrontPgStories/Park.htm.

53 The City of Hampton should continue and expand outdoor environmental education opportunities at **Sandy Bottom Nature Park** and partnerships with other regional outdoor education providers.

Sandy Bottom Nature Park

Sandy Bottom Nature Park, in the City of Hampton, is a 456-acre environmental education facility situated in an area dominated by pine hardwood mixed forest and non-tidal wetlands. The park is home to the state endangered cane-brake rattlesnake and Mabee's salamander. A 52-acre borrow mining pit site has been converted to wetlands, complete with a perimeter trail, boardwalk, observation tower and canoe trails. There is a 10,000 square foot nature center and a wildlife exhibit area. The park provides year-round interpretive programming for school groups and the general public. Recreational activities include hiking, biking, camping, picnicking, canoeing and fishing. Conference and classroom facilities are available. More information is available at www.hampton.va.us/sandybottom.

54 Local government and stakeholders should acquire a parcel of property on the tip of the Harris Creek peninsula as an open space and natural area in the **Harris Creek Area**. This area is in Hampton and borders on the Back River, which feeds into the Chesapeake Bay. The 155-acre property features forested wetlands, marsh and forested uplands and is becoming threatened by development. Wetland restoration with an educational component may be a part of the future of this site. Public access at this site should be limited to passive recreational activities.

55 Isle of Wight County should implement its capital improvement plan, including upgrading or construction of the following facilities at **Carrollton Nike Park**: relocation of the Soccer Field Complex, a lighted soft-ball field, an additional restroom facility, a new community center, picnic shelters, trails, basketball court, aquatic facility, concessions stand and tennis courts. The Carrollton Nike Park is a 156-acre park in the northern end of Isle of Wight County. Currently, 42 open acres and seven wooded acres have been developed for park buildings, recreation courts and fields, playgrounds, picnic areas, skateboard park and multi-use trails. The remainder of the park is cultivated or remains natural woodlands and marsh along Jones Creek offering wildlife viewing and birding. A master plan for the park calls for approximately 90 acres of the park to be developed.

56 Stakeholders should maintain **Fort Boykin Historical Park**, a 14-acre facility dating back to 1623, as part of the Captain John Smith Adventures

on the James Water Trail and Driving Tour. The park includes a picnic shelter and picnic area, an informational kiosk, public restrooms, public beach, several gardens and a self-guided walking tour highlighting significant historical and natural features. Improvements needed at this park involve repairs to the erosion control embankment.

57 Isle of Wight County should implement the master plan for the **Heritage Park and Joel C. Bradshaw Fairgrounds**, a 262-acre site with 35 fenced acres, which is designated as fairgrounds, open and wooded space. Fair buildings consist of a headquarters log cabin, three storage sheds and three admissions buildings. The remaining acreage is currently undeveloped. There are plans to develop an engineering and infrastructure design plan that will include a restroom facility, trail system, picnic areas, a playground complex and a soccer complex.

58 Isle of Wight County should implement the master plan for **Hardy District Park**, a 50-acre site with 20 acres planned for development.

59 Stakeholders should implement plans for **Fort Huger**, including an historic interpretative facility and continuation of the boardwalk and interpretive signage for the site. This site is a 22-acre historic facility, once a military installation during the Civil War, and the park is located on the Captain John Smith Adventures on the James Water Trail and Driving Tour.

60 James City County and stakeholders should reconstruct and upgrade various historical structures at **Freedom Park** according to the master plan. Freedom Park is home of the first freed black settlement in Virginia. It offers both hiking and biking trails along with a reconstructed historical site. The park consists of 689 acres in James City County, including an entrance road, open meadow, parking, mountain bike and hiking trails, an 18th century graveyard and the Williamsburg Botanical "Ellipse Garden." Freedom Park has a rich historical background dating back to the 1650s.

61 Stakeholders should connect **Powhatan Creek Park** to other parks and the Captain John Smith Adventures on the James Water Trail. This park is a 1.2-acre facility on the tidal James River with a boat launch, 20 parking spaces and four fishing-observation piers.

62 The City of Virginia Beach should implement improvements according to the master plan for **Stumpy Lake**. This park is a 1,400-acre parcel that

serves as a water supply. The property has surrounding wetlands and wooded areas in addition to a golf course.

Hostels

The Hampton Roads Region should be considered as a location for a gateway hostel convenient to mass transit and amenities of the urban core. Plans for Fort Monroe could include options for a regional hostel facility to be incorporated into public access and recreational opportunities.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector role, see Chapter IX-E: Resource Agencies. Local and regional recommendations include:

- All private sector recommendations for meeting the outdoor recreation and conservation needs in the region should be consistent with local land use plans and environmental constraints.
- The private sector could enhance outdoor recreational opportunities by providing tennis courts, swimming pools and golf courses. Often these types of amenities are provided in new housing developments.
- The Hampton Roads Planning District has an abundance of water and outdoor recreational opportuni-

ties already provided by the private sector. Facilities such as dry storage areas for boats and fishing piers support the public water access existing in the region. Private sector opportunities also exist for rental of water-sports equipment and in development of private water-to-land access points along water trail corridors. Sites that provide boaters and other visitors with eating facilities and overnight accommodations are needed throughout the region.

- 63** Implement trails as well as outreach and programming for outdoor environmental education at the **Chesapeake Arboretum**.

The Chesapeake Arboretum (www.chesapeake-arboretum.com) in Chesapeake, is a nonprofit 47-acre garden dedicated to promoting horticultural and environmental awareness through displays, education and research. The Arboretum was dedicated in November 1996, and boasts one of Virginia's finest trail systems that wanders through a 43-acre mature hardwood forest with many varieties of trees and plants. It also has a number of theme gardens, including fragrance, antique rose, and demonstration gardens. The Chesapeake Arboretum contributes to the region's outdoor recreational resources by providing a resource for the state's 12th highest ranked outdoor activity, visiting gardens and arboreta.



False Cape State Park. Photo by DCR.

Table X-21. Region 23 (Hampton Roads Planning District) Existing and Projected Outdoor Recreation Needs

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Baseball	2,113,085	418	fields	315	103	134
Basketball	4,114,535	976	goals	1,211	-235	-161
Bicycling	5,151,143	367	miles	NI		
Mountain	663,429	47	miles	NI		
Other	4,487,714	319	miles	NI		
Lake, river and bay use (combined)	4,613,701	74,667	water acres	169,969	-95,302	-89,640
Power boating	1,865,894	44,973	water acres	S		
Sailing	287,061	2,484	water acres	S		
Saltwater fishing	1,741,501	9,796	water acres	S		
Jet ski, personal watercraft	326,930	5,122	water acres	S		
Water skiing, towed on water	392,316	12,293	water acres	S		
Camping	1,218,413	7,186	sites	7,853	-667	-123
Tent camping	778,253	4,590	sites	1,684	2,906	3,254
Developed camping	440,160	2,596	sites	6,169	-3,573	-3,376
Fitness trail use	3,215,078	258	mile trails	99	159	179
Fields (combined)	5,562,596	1,169	fields	585	584	673
Football	1,849,946	389	fields	566	-177	-148
Soccer	3,712,650	781	fields	19	762	821
Stream use (combined)	3,128,960	1,821	stream miles	1	1,820	1,958
Freshwater fishing	2,334,759	1,642	stream miles	S		
Human-powered boating	586,879	149	stream miles	S		
Rafting	60,602	11	stream miles	S		
Tubing	146,720	19	stream miles	S		
Golfing	3,516,492	119	courses	950	66	75
Hiking, backpacking	1,483,146	761	trail miles	288	473	530
Horseback riding	438,565	190	miles	106	84	98
In-line skating	1,220,007	87	miles	NI		
Jogging, running	20,333,458	1,629	mile trails	NI		
Nature study, programs	452,918	64	sites	10	54	59

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Table X-21. Region 23 (Hampton Roads Planning District) Existing and Projected Outdoor Recreation Needs – continued

Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	2,065,241	5,362	tables	4,269	1,093	1,499
Skateboarding	1,176,948	362	sites	NI		
Snow skiing or snowboarding	599,638	15	ski lifts	-	15	17
Softball	2,392,172	426	fields	499	-73	-41
Sunbathing, relaxing on beach	5,884,742	422	beach acres	1,886	-1,464	-1,432
Swimming	15,947,810	1,025		NI		
Outdoor Area	7,575,210	776	beach acres	1,886	-1,110	-1,052
Outdoor pools	4,991,665	211	pools	104	107	123
Indoor pools	3,380,936	39	pools	18	21	23
Tennis	2,054,078	1,284	courts	895	389	486
Used a playground	8,037,696	1,144	sites	709	435	522
Visiting gardens	1,076,477	118	sites	NI		
Visiting historic sites	3,616,963	306	sites	NI		
Visiting natural areas	2,813,194	476	sites	NI		
Volleyball	1,052,555	312	courts	19	293	317
Hunting	1,361,943	223,344	acres	47,004	176,340	193,274
Drive for pleasure	12,550,926	NA	NA	NI		
Driving motorcycle off road	215,295	98	miles	10	88	96
Driving 4-wheel-drive off road	580,500	NA	NA	NS		
Walking for pleasure	46,057,275	NA	NA	NI		
Bird watching	438,565	NA		NI		
Other	446,539	NA	NA	NI		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 *Virginia Outdoors Survey* as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NA: not applicable, no standard needed

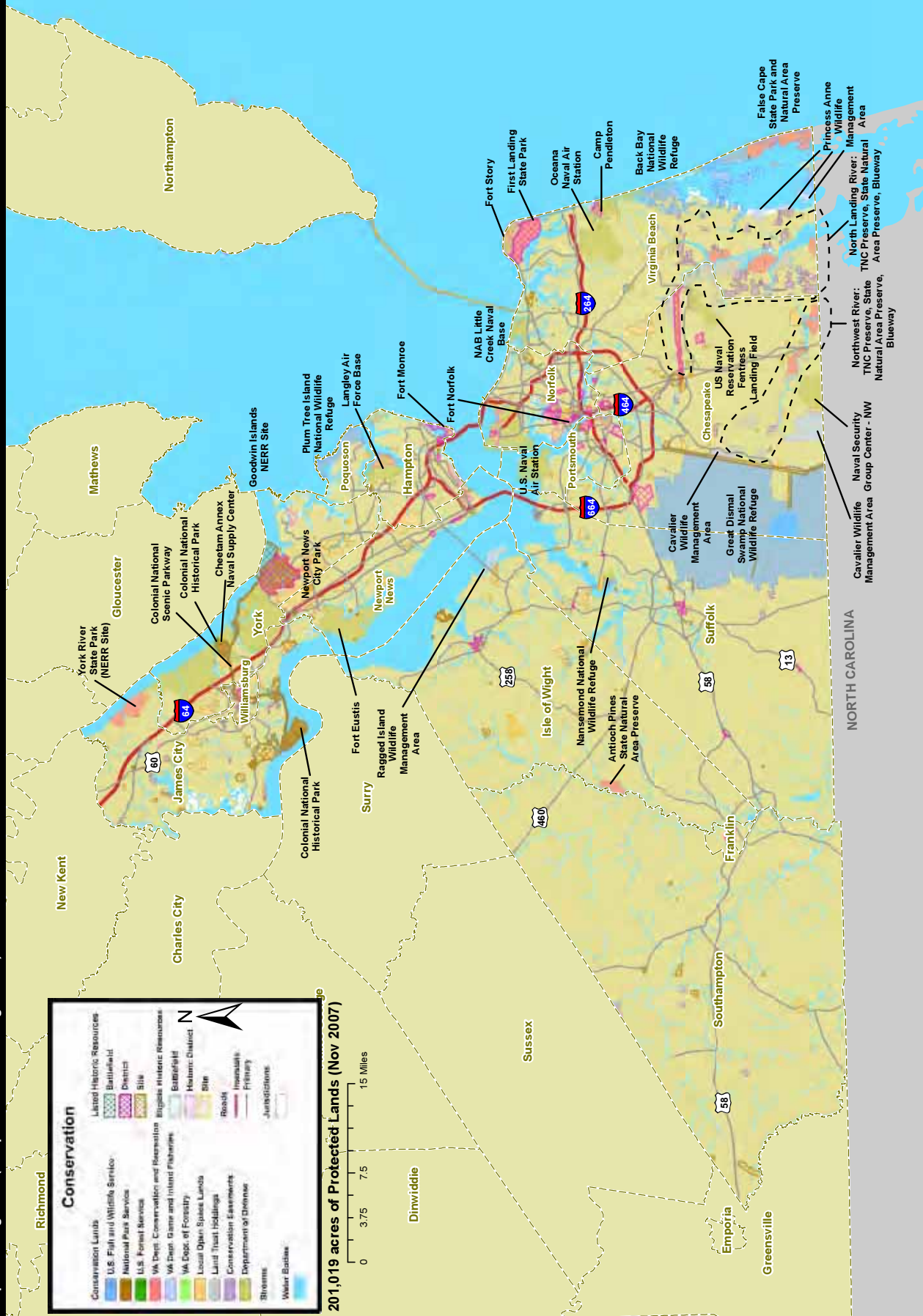
S: same as combined

NS: not inventoried separately

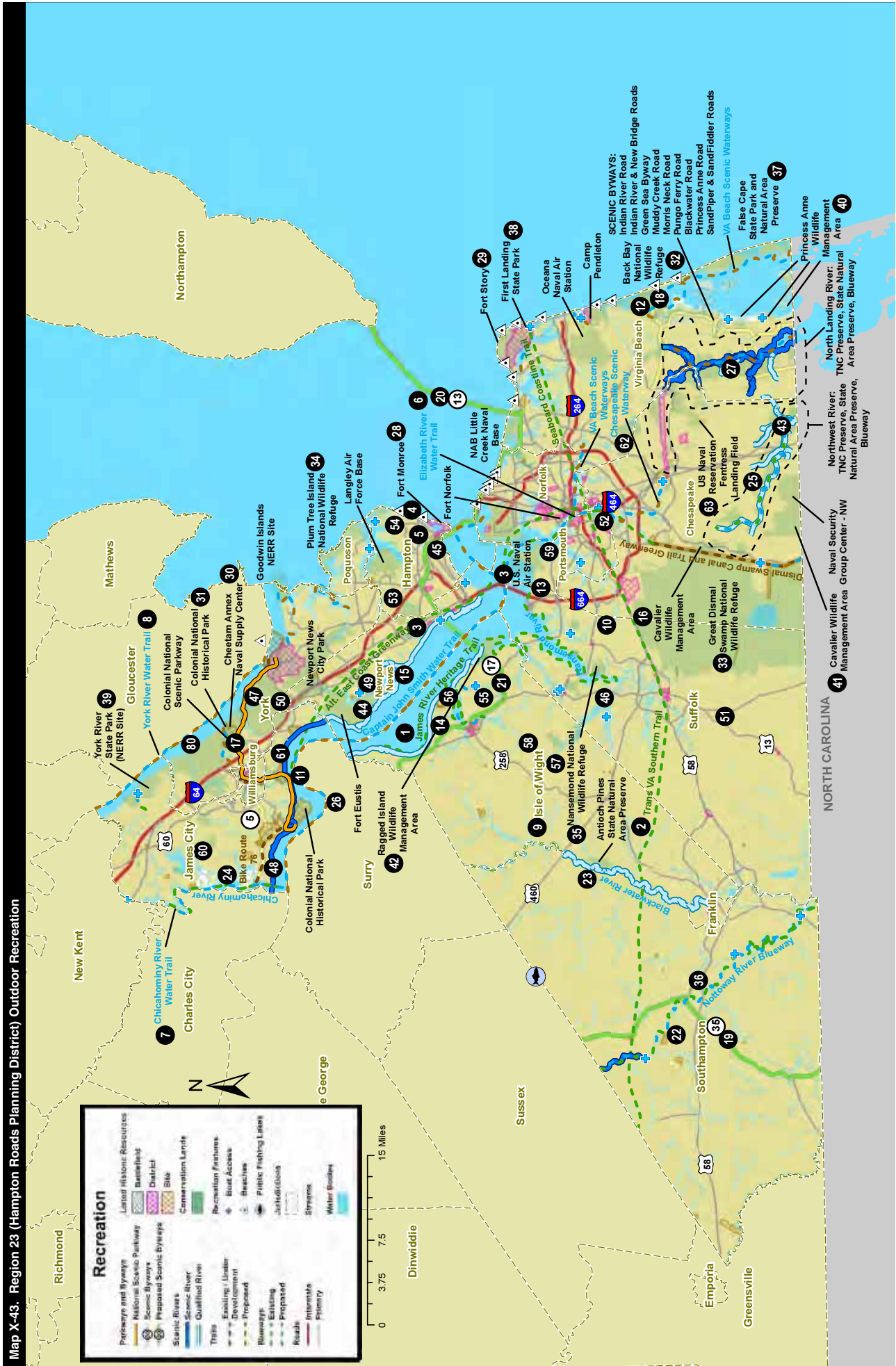
NI: not inventoried

(-) indicates surplus

Map X-42 Region 23 (Hampton Roads Planning District) Conservation Lands



Map X-43. Region 23 (Hampton Roads Planning District) Outdoor Recreation



The *Virginia Outdoors Plan* (VOP) is the state's official conservation, outdoor recreation and open space plan. It is intended to serve as a guide to all levels of government and the private sector in meeting the conservation, outdoor recreation and open space needs of Virginia. Implementing recommendations in this plan can ensure that the rich outdoor heritage for which Virginia is known is passed on to future generations. In addition, the VOP meets the criteria the National Park Service requires for Virginia to participate in the Land and Water Conservation Fund (LWCF) program. This program provides 50% matching funds to state agencies and localities for the acquisition and development of outdoor recreation resources.

The plan also serves as a guidance document for protection of lands through actions of the Virginia Land Conservation Foundation (VLCF). Important natural, cultural and open space resources are identified in each of the 21 planning regions of the state. Identification of these resources in the 2007 VOP is one of the tools that assist VLCF trustees in ranking and selecting projects for funding. It also helps conservation organizations working with VLCF to target those areas and resources that are most important or threatened as they develop land conservation strategies. For the first time, the 2007 VOP will include a conservation lands component designed to meet the needs of the VLCF.

The VOP identifies resources, organizations and partners responsible for managing outdoor recreation, open space and conservation lands. The public does not often distinguish between the levels of government and providers of parks and open space; therefore, the cooperation and interface of the entities responsible for outdoor recreation are essential in providing comprehensive opportunities responsive to the needs of the Commonwealth. The 2007 VOP helps to convey comprehensive information about outdoor resources, thereby facilitating the interface of a number of partners and providers of facilities and services.

Legal authority

The legal authorities for Virginia to develop a broad-based land conservation and recreational usage plan may be found in multiple locations within both federal and state code.

The Federal Land and Water Conservation Fund Act of 1965 (Title 16 U.S.C., Chapter 1, Subchapter LXIX, Part B, 4601-4 et seq.) establishes the Land and Water Conservation Fund. Section 4601-8(d) specifies "[a] comprehensive statewide outdoor recreation plan shall be required prior to the consideration by the Secretary [of Interior] of financial assistance for acquisition or development projects." The plan shall contain "an evaluation of the demand for and supply of outdoor recreation resources and facilities in the State" as well as "a program for the implementation of the plan..." "For fiscal year 1988 and thereafter each comprehensive statewide

outdoor recreation plan shall specifically address wetlands within that State as an important outdoor recreation resource." Payments may be made to the States for outdoor recreation for the following activities: (1) planning, (2) acquisition of land, waters, or interests in land or waters, or (3) development. The Land and Water Conservation Fund program provides 50% matching money to state agencies and localities for the acquisition and development of outdoor recreation areas.

The legal authority for Virginia to participate in the Land and Water Conservation Fund program was originally contained in § 10-21.8(3) of the *Code of Virginia*, which created the Commission of Outdoor Recreation. This authority was transferred to the Department of Conservation and Recreation in July of 1983. Section 10.1-200 of the *Code of Virginia* calls for the department to "establish and implement a long-range plan for acquisition, maintenance, improvement, protection and conservation for public use of those areas of the Commonwealth best adapted to the development of a comprehensive system of outdoor recreational facilities in all fields, including, but not limited to: parks, forests, camping grounds, fishing and hunting grounds, scenic areas, waters and highways, boat landings, beaches and other areas of public access to navigable waters." It also states that the department shall have the power and duty to "[s]tudy and appraise on a continuing basis the outdoor recreational needs of the Commonwealth; assemble and disseminate information on outdoor recreation; and prepare, maintain and keep up-to-date a comprehensive plan for the development of outdoor recreational facilities of the Commonwealth."

The Virginia Department of Conservation and Recreation, through its Division of Planning and Recreation Resources, is the official state office to "create and put into effect a long range plan for the acquisition ... and development of a comprehensive system of outdoor recreation facilities." As this document is the comprehensive outdoor plan for the Commonwealth, § 10.1-207 of the *Code of Virginia* specifies that "[a]ll departments, commissions, boards, agencies, officers, and institutions of the Commonwealth, or any political subdivision thereof and park authorities shall cooperate with the Department in the preparation, revision and implementation of a comprehensive plan for the development of outdoor recreational facilities, and such local and detailed plans as may be adopted pursuant thereto." The VOP constitutes the official State Comprehensive Outdoor Recreation Plan (SCORP) for Virginia.

In addition to the federal and state code authorities outlined above that originally guided the development of the plan from an outdoor recreational perspective, the *Code of Virginia* has provided additional guidance in recent years to expand the scope of this plan, calling for the development of a comprehensive land conservation plan. The essence of this plan is embodied in Title 10.1, Chapter 10.2 of the *Code*

of Virginia entitled “Virginia Land Conservation Foundation” (§§ 10.1-1017 et seq.). The foundation was established to administer a fund for the purpose of “[a]cquiring fee simple title to or other rights, interests or privileges in property for the protection or preservation of ecological, cultural or historical resources, lands for recreational purposes, state forest lands, and lands for threatened or endangered species, fish and wildlife habitat, natural areas, agricultural and forestal lands and open space” and for “[p]roviding grants to state agencies, including the Virginia Outdoors Foundation, and matching grants to other public bodies and holders for acquiring fee simple title to or other rights, interests or privileges in real property for the protection or preservation of ecological, cultural or historical resources, lands for recreational purposes, and lands for threatened or endangered species, fish and wildlife habitat, natural areas, agricultural and forestal lands and open space.”

In an effort to ensure that funds are expended in a guided manner, § 10.1-1021 subsection 1 of the *Code of Virginia* directs the Virginia Land Conservation Foundation to prepare a comprehensive plan “...that recognizes and seeks to implement all of the purposes for which the Foundation is created.” In the process of developing this comprehensive plan, the *Code of Virginia* directs the foundation to:

- 1) develop a strategic plan for the expenditure of unrestricted moneys;
- 2) develop an inventory of those properties in which the Commonwealth holds a legal interest “for the protection or preservation of ecological, cultural or historical resources, lands for recreational purposes, state forest lands, and lands for threatened or endangered species, fish and wildlife habitat, natural areas, agricultural and forestal lands and open space”; and
- 3) develop a needs assessment for the future considering the reports and information listed in subsection 1c. Subsection 1c specifies that “In developing the needs assessment, the Board of Trustees shall consider among others the properties identified in the following: (i) *Virginia Outdoors Plan*, (ii) *Virginia Natural Heritage Plan*, (iii) *Virginia Institute of Marine Science Inventory*, (iv) *Virginia Joint Venture Board of the North American Waterfowl Management Plan*, and (v) *Virginia Board of Historic Resources Inventory*. In addition, the Board shall consider any information submitted by the Department of Agriculture and Consumer Services on farmland preservation priorities and any information submitted by the Department of Forestry on forest land initiatives and inventories.”

The foundation determined that an expanded *Virginia Outdoors Plan* would substantially meet the requirements of the comprehensive plan it is directed to prepare under §10.1-1021 of the *Code of Virginia*. The *Virginia Outdoors Plan*, prepared by the Department of Conservation and Recreation, was therefore selected to become the foundation document for the development of the state's official plan for the protection and conservation of Virginia's important natural, outdoor recreational, and open space resources.

The elements of this plan are developed with assistance from a task force. Section 10.1-1018(E) of the *Code of Virginia* states that “[t]he Board shall seek assistance in developing grant criteria and advice on grant priorities and any other appropriate issues from a task force consisting of the following agency heads or their designees: the Director of the Department of Conservation and Recreation, the Commissioner of Agriculture and Consumer Services, the State Forester, the Director of the Department of Historic Resources, the Director of the Department of Game and Inland Fisheries and the Executive Director of the Virginia Outdoors Foundation. The Board may request any other agency head to serve on or appoint a designee to serve on the task force.” Additionally, § 10.1-1026 of the *Code of Virginia* establishes that “[a]ll state officers, agencies, commissions, boards, departments, institutions and foundations shall cooperate with and assist the Foundation in carrying out its purpose and, to that end, may accept any gift or conveyance of real property or interest therein or other property in the name of the Commonwealth from the Foundation. Such property shall be held in possession or used as provided in the terms of the trust, contract or instrumentality by which it was conveyed.”

In addition to the authorities outlined above for agencies of the Commonwealth to participate in the development of the plan, many of these agencies also have individual land and cultural preservation legislative authorities for implementation of the plan's components.

Beyond the legal authorities to develop this plan, the increasing desire of the citizenry of Virginia to preserve the Commonwealth's natural and historic landscape is a fundamental factor in the development and continued evolution of this document. Virginia's land trusts have called for the development of a land conservation plan to aid them in the planned preservation of land. The 2007 *VOP* meets those growing needs and provides a foundation for statewide cooperative partnerships with these conservation organizations.

This list expands as our partnerships grow. Updated contacts will be posted on the web at www.dcr.virginia.gov.

Federal Agencies

The Bureau of Land Management

1849 C St, Room 406-LS
Washington, D.C. 20240
Phone: (202) 452-5125
Fax: (202) 452-5124
www.blm.gov/nhnp

Environmental Protection Agency

U. S. EPA Region III
1650 Arch St.
Philadelphia, PA 19103-2029
(215) 814-5000
www.epa.gov/region03/

Federal Highway Administration

400 Seventh St, SW
Washington, D.C. 20590
(202) 366-0660
www.fhwa.dot.gov

National Park Service

U. S. Custom House
200 Chestnut St., 3rd Floor
Philadelphia, PA 19106
(215) 597-7385
www.nps.gov

Natural Resource Conservation Service

1606 Santa Rosa Road, Suite 209
Richmond, VA 23229-5014
(804) 287-1691
www.va.nrcs.usda.gov

Tennessee Valley Authority

400 W. Summitt Hill Drive
Knoxville, TN 37902-1499
(865) 632-2101
www.tva.gov

United States Army Corps of Engineers, Baltimore District

10 South Howard St.
Baltimore, MD 21201
410-962-2809
www.nao.usace.army.mil

United States Army Corps of Engineers, Huntington District

502 Eighth St.
Huntington, WV 25701
304-399-5353
www.nao.usace.army.mil

United States Army Corps of Engineers, Nashville District

P. O. Box 1070
Nashville, TN 37202-1070
615-736-7161
www.nao.usace.army.mil

United States Army Corps of Engineers, Norfolk District

803 Front St.
Norfolk, VA 23510-1096
(757) 201-7606
www.nao.usace.army.mil

United States Army Corps of Engineers, Wilmington District

USAED, Wilmington
69 Darlington Ave.
Wilmington, NC 28403
910-251-4625
www.nao.usace.army.mil

United States Department of Commerce

National Oceanic & Atmospheric Administration
1315 East West Highway
Silver Spring, MD 20910-3284
(301) 713-0115
www.noaa.gov

United States Fish & Wildlife Service

Department of the Interior
1849 C St. NW, Room 3359
Washington, D.C. 20240
(202) 208-5634
www.fws.gov

United States Forest Service

1400 Independence Ave., SW
Washington, D.C. 20250-0003
(202) 205-8333
www.fs.fed.us

George Washington and Jefferson National Forest
5162 Valleypointe Parkway
Roanoke, VA 24019
540-265-5100

Virginia Agencies

Virginia Department of Agriculture and Consumer Services

102 Governor St.
Richmond, VA 23219
(804) 786-2373
www.vdacs.virginia.gov

Virginia Department of Conservation and Recreation

203 Governor St., Suite 302
Richmond, VA 23219
(804) 786-6124
www.dcr.virginia.gov

Virginia Department of Environmental Quality

629 East Main St.
Post Office Box 1105
Richmond, VA 23240-0009
(804) 698-4000
www.deq.virginia.gov

Department of Environmental Quality
Virginia Coastal Zone Management Program
629 East Main St.
Richmond, VA 23219
(804) 698-4323
www.deq.virginia.gov/coastal/

Virginia Department of Forestry

Fontaine Research Park
900 Natural Resources Drive, Suite 800
Charlottesville, VA 22903
(434) 977-6555
www.dof.virginia.gov

Virginia Department of Game & Inland Fisheries

4010 W. Broad St.
Richmond, VA 23230
(804) 367-1000
www.dgif.virginia.gov

Virginia Department of Historic Resources

2801 Kensington Ave.
Richmond, VA 23221
(804) 367-2323
www.dhr.virginia.gov

Virginia Department of Health

Post Office Box 2448
 Richmond, VA 23218-2448
 109 Governor St.
 Richmond, VA 23219
 (804) 864-7000
www.vdh.state.va.us

Virginia Department of Housing and Community Development

The Jackson Center
 501 North Second St.
 Richmond, VA 23219-1321
 (804) 371-7000
www.dhcd.virginia.gov

Virginia Department of Transportation

1401 East Broad St.
 Richmond, VA 23219
 (804) 371-6752 (Environmental Programs)
 (804) 786-2264 (Enhancements)
www.vdot.virginia.gov

Virginia Economic Development Partnership

901 East Byrd St.
 Post Office Box 798
 Richmond, VA 23218-0798
 (804) 545-5600
www.yesvirginia.org

Virginia Land Conservation Foundation

203 Governor St., Suite 326
 Richmond, VA 23219
 (804) 225-2048
www.dcr.virginia.gov/vlcf

Virginia Marine Resources Commission

2600 Washington Ave., 3rd Floor
 Newport News, VA 23607
 757-247-2200
www.mrc.virginia.gov

Virginia Outdoors Foundation

101 N 14th St.
 Monroe Building, 17th Floor
 Richmond, VA 23219
www.virginiaoutdoorsfoundation.org
 (804) 225-2147 (Richmond Office)

Virginia Tourism Corporation

901 East Byrd St.
 Richmond, VA 23219
 (804) 545-5500
www.vatc.org

Virginia Organizations**Community Design Assistance Center Virginia Tech**

101 South Main St., Suite 2
 Blacksburg, VA, 24061
 (540) 231-5644
<http://cdac.arch.vt.edu>

Institute for Environmental Negotiation

104 Emmet St.
 Charlottesville, VA 22903
 (434) 924-1970
www.virginia.edu/ien

Old Dominion Appalachian Trail Club

Post Office Box 25283
 Richmond, VA 23260-5283
www.odatc.net/

Potomac Appalachian Trail Club

118 Park St. SE
 Vienna, VA 22180-4608
 (703) 242-0693
www.patc.net

Richmond Audubon Society

Post Office Box 26648
 Richmond, VA 23261
 804-743-1479
www.audubon.org/states

Scenic Virginia

Post Office Box 17606
 Richmond, VA 23226
 Phone: (804) 282-5522
www.scenicva.org

Sierra Club/Virginia Chapter

Chapter and Appalachian Regional
 Office Address:
 422 E Franklin St, Suite 302
 Richmond, VA 23219
 (804) 565-4950
www.virginia.sierraclub.org

Southern Environmental Law Center

201 W. Main St., Suite 14
 Charlottesville, VA 22902
 (804) 977-4090
www.southernenvironment.org

The 500-Year Forest Foundation

1133 Old Abert Road
 Lynchburg, VA 24503-6455
 (434) 384-2324
www.500yearforestfdn.org

Virginia Association for Parks

www.virginiaparks.org

Virginia Association for Wetland Professionals

c/o LandMark Design Group
 5544 Greenwich Road, Suite 200
 Virginia Beach, VA 23462
www.vawp.org

Virginia Association of Counties

1001 East Broad St., Suite LL20
 Richmond, VA 23219
 (804) 788-6652
www.vaco.org

Virginia Association of Planning District Commission

11712C Jefferson Ave. #250
 Newport News, VA 23606
 (757) 412-2664
www.vapdc.org

Virginia Conservation Network

422 E. Franklin St., Suite 303
 Richmond, VA 23219
 (804) 644-0283
www.vcnva.org

Virginia Municipal League

13 E. Franklin St.
 Richmond, VA 23219
 (804) 649-8471
www.vml.org

Virginia Natural Resources Leadership Institute

c/o Institute for Environmental Negotiation
 104 Emmet St.
 Charlottesville, VA 22903
 (434) 924-1970
www.virginia.edu/ien/vnrli/index.html

Virginia Recreation & Park Society

6038 Cold Harbor Road
 Mechanicsville, VA 23111
 (804) 730-9447
www.vrps.com

Virginia's United Land Trusts (VaULT)

4022 Hummer Road
 Annandale, VA 22003
 (703) 354-5093
mnardolilli@nvct.org

Planning District Commissions**PDC 1 – LENOWISCO**

66913 Duff-Pratt Road
Duffield, VA 24244
276-431-2206
www.lenowisco.org

PDC 2 – Cumberland

950 Clydesway Road
Lebanon, VA 24266
276-889-1778
www.cpdpc.org

PDC 3 – Mount Rogers

1021 Terrace Drive
Marion, VA 24354
276-783-5103
www.mrpdc.org

PDC 4 – New River Valley

6580 Valley Center Drive
Radford, VA 24141
540-639-9313
www.nrvpdc.org

PDC 5 – Roanoke Valley-Alleghany

313 Luck Ave., SW
Roanoke, VA 24010
540-343-4417
www.rvarc.org

PDC 6 – Central Shenandoah

112 MacTanley Place
Staunton, VA 24401
540-885-5174
www.cspdc.org

PDC 7 – Northern Shenandoah Valley

103 E Sixth St.
Front Royal, VA 22630
540-636-8800
www.lfpdc7.state.va.us

PDC 8 – Northern Virginia

3060 William Drive, Suite 510
Fairfax, VA 22031
703-642-0700
www.novaregion.org

PDC 9 – Rappahannock – Rapidan

420 Southridge Parkway, Suite 106
Culpeper, VA 22701
540-829-7450
www.rrregion.org

PDC 10 – Thomas Jefferson

401 Water St.
Charlottesville, VA 22902
434-979-7310
www.tjpdpc.org

PDC 11 – Region 2000

915 Main St., Suite 202
Lynchburg, VA 24504
434-845-3491
www.region2000.org

PDC 12 – West Piedmont

1100 Madison St.
Martinsville, VA 24115
276-638-3987
www.wppdc.org

PDC 13 – Southside

200 S. Mecklenburg Ave. S.
South Hill, VA 23970
434-447-7101
www.southsidepdc.org

PDC 14 – Piedmont

102 1/2 High St.
Farmville, VA 23901
434-392-2311
www.wppdc.org

PDC 15 – Richmond Regional

2104 W. Laburnum Ave., Suite 101
Richmond, VA
434-392-2311
www.richmondregional.org

PDC 16 – George Washington

3304 Bourbon St.
Fredericksburg, VA 22408
540-373-2890
www.gwregion.org

PDC 17 – Northern Neck

483 Main St.
Warsaw, VA 22572
804-333-1900
www.nnpdc17.state.va.us

PDC 18 – Middle Peninsula

125 Bowden St.
Saluda, VA 23149
804-758-2311
www.mppdc.com

PDC 19 - Crater

1964 Wakefield St.
Petersburg, VA 23805
804-861-1666
www.craterpdc.state.va.us

PDC 22 – Accomack – Northampton

23372 Front St.
Accomac, VA 23301
757-787-2936
www.a-npdc.org

PDC 23 – Hampton Roads

723 Woodlake Drive
Chesapeake, VA 23320
757-420-8300
www.hrpdc.org

**Parks and Recreation
Departments****TOWNS**

Abingdon
133 W. Main St.
Abingdon, VA 24212
276-623-5279
www.abingdon.com

Appalachia**
344 Roberts St.
Appalachia, VA 24216
276-565-3902

Big Stone Gap
505 E. 5th St., S.
Big Stone Gap, VA 24219
276-523-0115
www.bigstonegap.org

Blacksburg
300 S. Main St.
Blacksburg, VA 24062
540-961-1135
www.blacksburg.gov

Bluefield
1121 Virginia Drive
Bluefield, VA 24605
276-322-4626
www.bluefieldonline.net

Chilhowie
574 Old Airport Road
Chilhowie, VA 24319
276-646-2328
www.chilhowie.org

Christiansburg
1600 N. Franklin St.
Christiansburg, VA 24073
540-382-2349
www.christiansburg.org

Claremont
4115 Spring Grove Ave.
Claremont, VA 23899
757-866-8427
www.claremont-va.org

* No website at this time

** No Parks and Recreation Department

Clifton Forge
547 Main St.
Clifton Forge, VA 24422
540-863-2539
www.cliftonforge.org

Coeburn
403 Second St., NE
Coeburn, VA 24230
540-395-6819
www.coeburnva.org

Colonial Beach
18 North Irving Ave.
Colonial Beach, VA 22443
804-224-7260
www.colonialbeachva.net

Damascus
208 W. Laurel Ave.
Damascus, VA 24236
276-475-3831
www.damascus.org

Elkton
173 W Spotswood Ave.
Elkton, VA 22827
540-298-9860
www.elktonva.gov

Leesburg
26 W. Market St.
Leesburg, VA 20178
703-771-1262
www.leesburgva.gov

Luray
46 E. Main St.
Luray, VA 22835
540-734-6475
www.townofluray.com

Middletown**
7875 Church St.
Middletown, VA 22645
540-869-2226

Narrows
131 Center St.
Narrows, VA 24124
540-726-2961
www.townofnarrows.org

Pearisburg
112 Tazewell St.
Pearisburg, VA 24134
540-921-1755
www.pearisburg.org

Pulaski
143 Third St., NW, Suite 1
Pulaski, VA 24301
540-994-8624
www.pulaskitown.org

Saltville
217 Palmer Ave.
Saltville, VA 24370
276-496-5342
www.saltville.org

South Boston
455 Ferry St.
South Boston, VA 24592
434-575-4230
www.southboston.com

South Hill
211 S. Mecklenburg Ave.
South Hill, VA 23970
434-447-3228
www.southhillva.org

Tazewell
201 Central Ave.
Tazewell, VA 24651
276-988-5404
www.townoftazewell.org

Urbanna
45 Cross St.
Urbanna, VA 23175
804-758-2613
www.urbanna.com

Vienna
17 Center St., South
Vienna Town Hall
Vienna, VA 22180
703-255-6356
www.viennava.gov

Wytheville
150 E. Monroe St.
Wytheville, VA 24382
276-223-3378
www.wytheville.org

CITIES

Alexandria
301 King St.
Alexandria, VA 22314
703-838-4842
www.alexandriava.gov

Bedford
215 East Main St.
Bedford, VA 24523
540-587-6001
www.bedfordva.gov

Bristol
1501 Euclid Ave.
Bristol, VA 24201
276-645-7371
www.bristolva.org

Buena Vista
10th St.
Glen Maury Park
Buena Vista, VA 2416
540-261-7321
www.buenavistavirginia.org

Charlottesville
605 E. Main St.
Room A230 City Hall
Charlottesville, VA 22902
434-970-3250
www.charlottesville.org

Chesapeake
112 Mann Drive
Chesapeake, VA 23322
757-382-6411
www.cityofchesapeake.net

Colonial Heights
Roanoke & Meridian,
Shepherd Stadium
Colonial Heights, VA 23834
804-520-9224
www.colonial-heights.com

Covington
333 Locust St.
Covington, VA 24426
540- 965-6300
www.covington.va.us

Danville
125 Floyd St.
Danville, VA 24541
434-799-5200
www.danville-va.gov

* No website at this time

** No Parks and Recreation Department

Emporia**
201 South Main St.
Emporia, VA 23847
434-634-3332
www.ci.emporia.va.us

Fairfax
3730 Old Lee Highway
Fairfax, VA 22030
703-385-7853
www.fairfaxva.gov

Falls Church
223 Little Falls St.
Falls Church, VA 22046
703-248-5077
www.fallschurchva.gov

Franklin
207 W. Second Ave.
Franklin, VA 23851
757-562-2475
www.franklinva.com

Fredericksburg
408 Canal St.
Fredericksburg, VA 22401
540-372-1086
www.fredericksburgva.gov

Galax
111 E. Grayson St.
Galax, VA 24333
276-236-3218
www.ingalax.net

Hampton
22 Lincoln St.
Hampton, VA 23669
757-727-8311
www.hampton.va.us

Harrisonburg
305 S. Dogwood Drive
Harrisonburg, VA 22801
540-433-9168
www.ci.harrisonburg.va.us

Hopewell
100 W. City Point Road
Hopewell, VA 23860
804-540-2404
www.ci.hopewell.va.us

Lexington
300 East Washington St.
Lexington, VA 24450
540-462-3700
www.ci.lexington.va.us

Lynchburg
301 Grove St.
Lynchburg, VA 24501
434-455-5858
www.lyncburgva.gov

Manassas
9027 Center St.
Manassas, VA 20110
703-257-8237
www.manassascity.org

Manassas Park
99 Adams St.
Manassas Park, VA 20111
703-335-8872
www.cityofmanassaspark.us

Martinsville
55 W. Church St.
Martinsville, VA 24114
276-656-5140
www.ci.martinsville.va.us

Newport News
700 Town Center Drive, Suite 320
Newport News, VA 23607
757-926-1400
www.nngov.com

Norfolk
501 Boush St.
Norfolk, VA 23510
757-441-2400
www.norfolk.gov

Norton
618 Virginia Ave., NW
Norton, VA 24273
276-679-1160
www.nortonva.org

Petersburg
1930 Johnson Road
Petersburg, VA 23805
804-733-2394
www.petersburg-va.org

Poquoson
500 Poquoson Ave.
Poquoson, VA 23662
757-868-3580
www.ci.poquoson.va.us

Portsmouth
801 Crawford St.
Portsmouth, VA 23705
757-393-8481
www.portsmouthva.gov

Radford
619 Second St.
Radford, VA 24141
540-731-3603
www.radford.va.us

Richmond
900 E. Broad St. Suite 210
Richmond, VA 23219
804-780-7970
www.richmondgov.com

Roanoke
210 Reserve Ave.
Roanoke, VA 24016
540-853-2236
www.roanokeva.gov

Salem
216 S. Broad St.
Salem, VA 24153
540-375-3057
www.ci.salem.va.us

Staunton
116 W. Beverley St.
Staunton, VA 24402
540-332-3945
www.staunton.va.us

Suffolk
441 Market St.
Suffolk, VA 23434
757-923-2360
www.suffolk.va.us

Virginia Beach
Municipal Center, Building 21
Virginia Beach, VA 23456
757-563-1100
www.vbgov.com

Waynesboro
503 W. Main St.
Waynesboro, VA 22980
540-942-6735
www.waynesboro.va.us

Williamsburg
202 Quarterpath Road
Williamsburg, VA 23185
757-259-3760
www.williamsburgva.gov

Winchester
1001 E. Cork St.,
War Memorial Bldg
Winchester, VA 22601
540-662-4946
www.winchesterva.gov

* No website at this time

** No Parks and Recreation Department

COUNTIES

Accomack
23296 Courthouse Ave.
Accomac, VA 23301
757-787-3900
www.co.accomack.va.us

Albemarle
401 McIntire Road
Charlottesville, VA 22902
434-296-5844
www.albemarle.org

Alleghany
9212 Winterberry Ave., Suite B
Covington, VA 24426
540-863-6622
www.co.alleghany.va.us

Amelia
16441 Court St.
Amelia, VA 2003
804-561-4100
www.ameliacova.us

Amherst
153 Washington St.
Amherst, VA 24521
434-946-9371
www.countyofamherst.com

Appomattox
175 Morton Lane
Appomattox, VA 24522
434-352-5996
www.appomattox.com

Arlington
2100 Clarendon Blvd., Suite 414
Arlington, VA 22201
703-228-3323
www.arlingtonva.us

Augusta
18 Government Center
Verona, VA 24482
540-245-5727
www.co.augusta.va.us

Bath
Route 619, Courthouse
Hot Springs, VA 24445
540-839-7211
www.bathcountyva.org

Bedford
780 Bedford Ave., Ext
Bedford, VA 24523
434-586-7682
www.co.bedford.va.us

Bland
654 Main St.
Bland, VA 24315
276-688-4622
www.bland.org

Botetourt
30 W. Back St. #4
Fincastle, VA 24090
540-473-8326
www.botetourt.org

Brunswick **
219 N. Main St.
Lawrenceville, VA 23868
434-848-3107
www.brunswickco.com

Buchanan**
Main St., 4th Floor
Grundy, VA 24614
276-935-6506
www.buchanancounty.org

Buckingham
Highway 60, Administration Bldg
Buckingham, VA 23921
434-969-4242
www.buckinghamcountyva.org

Campbell
41 Courthouse Lane
Rustburg, VA 24588
434-332-9570
www.co.campbell.va.us

Caroline
117 Ennis St.
Bowling Green, VA 22427
804-633-7277
www.co.caroline.va.us

Carroll
129 Ballpark Drive
Hillsville, VA 24343
276-728-3631
www.chillsnet.org

Charles City
10900 Courthouse Road
Charles City, VA 23030
804-829-9227
www.charlesciry.org

Charlotte**
250 LeGrande Ave., Suite A
Charlotte Court House, VA 23923
434-542-5117
www.co.charlotte.va.us

Chesterfield
6801 Mimms Loop
Chesterfield, VA 23832
804-748-1623
www.co.chesterfield.va.us

Clarke
225 Al Smith Circle
Berryville, VA 22611
540-955-5140
www.co.clarke.va.us

Craig* / **
Court and Main Streets, 2nd Floor
County Administration Building
New Castle, VA 24127
540-864-5010

Culpeper
306 North Main St.
Culpeper, VA 22701
540-727-3412
www.culpepercounty.gov

Cumberland
1 Courthouse Circle
Cumberland, VA 23040
804-492-5808
www.cumberlandcounty.virginia.gov

Dickenson**
Main St.
Courthouse
Clintwood, VA 24228
276-926-1676
www.dickensonctyva.com

Dinwiddie
7301 Boydton Plank Road
Dinwiddie, VA 23841
804-732-1100
www.dinwiddieva.us

Essex
205 Cross St.
Tappahannock, VA 22560
804-449-2470
www.essex-virginia.org

Fairfax
12011 Government Center Parkway
Suite 1050
Fairfax, VA 22035
703-324-2000
www.fairfaxcounty.gov

* No website at this time

** No Parks and Recreation Department

Fauquier
302 Hospital Drive Suite 6
Warrenton, VA 20186
540-347-6848
www.fauquiercounty.gov

Floyd
120 West Oxford St.
Floyd, VA 24091
540-745-9363
www.floydvirginia.com

Fluvanna
123 Main St.
Palmyra, VA 22963
434-842-3150
www.co.fluvanna.va.us

Franklin
2150 Sontag Road
Rocky Mount, VA 24151
540-483-9293
www.franklincountyva.org

Frederick
107 North Kent St.
Winchester, VA 22601
540-665-5678
www.co.frederick.va.us

Giles**
315 North Main St.
Pearisburg, VA 24134
540-921-2525
www.gilescounty.org

Gloucester
6467 Main St.
Gloucester, VA 23061
804-693-2355
www.gloucesterva.info

Goochland
2938 River Road West
Goochland, VA 23063
804-556-5354
www.co.goochland.va.us

Grayson
129 Davis St.
Independence, VA 24348
276-773-3841
www.graysoncountyva.com

Greene
40 Celt Road
Stanardsville, VA 22973
434-985-5226
www.gcva.us

Greensville**
1781 Greensville County Circle
Emporia, VA 23847
434-348-4205
www.greensvillecountyva.gov

Halifax
139 South Main St.
Halifax, VA 24558
434-476-3300
www.oldhalifax.com/county

Hanover
13017 Taylor Complex Lane
Ashland, VA 23005
804-365-4695
www.co.hanover.va.us

Henrico
4301 East Parham Road
Richmond, VA 23273
804-501-5105
www.co.henrico.va.us

Henry
3301 King's Mountain Road
Martinsville, VA 24112
276-634-4640
www.co.henry.va.us

Highland**
165 W. Main St.
Monterey, VA 24465
540-468-2347
www.highlandcova.org

Isle of Wight
13036 Nike Park Road
Carrollton, VA 23314
757-357-2291
www.co.isle-of-wight.va.us

James City
5249-C Olde Towne Road
Williamsburg, VA 23188
757-259-3234
www.james-city.va.us

King and Queen
83 Richmond Tappahannock Highway
Saint Stephens Church, VA 23148
804-769-2678
www.kingandqueenco.net

King George
10460 Courthouse Drive, Suite 200
King George, VA 22485
540-775-4386
www.king-george.va.us

King William
181 Horse Landing Road
King William, VA 23086
804-769-4280
www.co.king-william.va.us

Lancaster**
8311 Mary Bell Road
Lancaster, VA 22503
804-462-5129
www.lancova.com

Lee
Church & Main Streets
Jonesville, VA 24264
276-346-7708
www.leecountyvirginia.com

Loudoun
215 Depot Court, SE
Leesburg, VA 20177
703-777-0343
www.loudoun.gov

Louisa
2 Woolfolk Ave.
Louisa, VA 23093
540-967-4420
www.louisacounty.com

Lunenburg**
11409 Courthouse Road
Lunenburg, VA 23953
434-696-2142
www.lunenburgva.org

Madison
414 N. Main St.
Administrative Center
Madison, VA 22727
540-948-6887
www.madison-va.com

Mathews
Route 1001
Cobbs Creek, VA 23110
804-725-7171
www.co.mathews.va.us

Mecklenburg**
350 Washington St.
Boydton, VA 23917
434-738-6191
www.mecklenburgva.com

* No website at this time

** No Parks and Recreation Department

Middlesex
877 General Puller Highway
Saluda, VA 23149
804-758-0057
www.co.middlesex.va.us

Montgomery
755 Roanoke St., Suite 1E
Christiansburg, VA 24073
540-382-6975
www.montva.com

Nelson
84 Courthouse Square
Lovingston, VA 22949
434-263-7130
www.nelsoncounty.com

New Kent
12007 Courthouse Circle, Suite 201
New Kent, VA 23124
804-966-8502
www.co.newkent.state.va.us

Northampton
16404 Courthouse Road
Eastville, VA 23347
757-678-0468
www.co.northampton.va.us

Northumberland**
72 Monument Place
Heathsville, VA 22473
803-580-7666
www.co.northumberland.va.us

Nottoway**
344 West Court House Road
Nottoway, VA 23955
434-645-8696
www.nottoway.org

Orange
146 Madison Road, Suite 205
Orange, VA 22960
540-672-5435
www.orangeova.com

Page
117 S. Court St.
Luray, VA 22835
540-743-1180
www.co.page.va.us

Patrick
106 Rucker St. Room 218
Stuart, VA 24171
276-694-3917
www.co.patrick.va.us

Pittsylvania
21 North Main St.
Chatham, VA 24531
434-432-7700
www.pittgov.org

Powhatan**
3834 Old Buckingham Road, Suite A
Powhatan, VA 23139
804-598-5611
www.powhatanva.com

Prince Edward**
111 South St.
Farmville, VA 23901
434-392-8837
www.co.prince-edward.va.us

Prince George
6400 Courthouse Road
Prince George, VA 23875
804-733-2646
www.princegeorgeva.org

Prince William
14421 Bristow Road
Manassas, VA 20112
703-792-7060
www.pwcgov.org

Pulaski
Route 42 First St., NW
Pulaski, VA 24301
540-994-8624
www.pulaskicounty.org

Rappahannock**
290 Gay St.
Washington, VA 22747
540-675-5330
www.rappahannockcountyva.gov

Richmond**
101 Court Circle
Warsaw, VA 22572
804-333-3415
www.co.richmond.va.us

Roanoke
1207 Kessler Mill Road
Salem, VA 24153
540-387-6078
www.roanokecountyva.gov

Rockbridge
106 Lake Robertson Drive
Lexington, VA 24450
540-463-4164
www.co.rockbridge.va.us

Rockingham
20 East Gay St.
Harrisonburg, VA 22803
540-564-3160
www.rockinghamcountyva.gov

Russell* / **
121 East Main St.
Lebanon, VA 24266
276-889-8000

Scott
Route 2, Box 968
Gate City, VA 24252
276-452-4168
www.scottcountyva.com

Shenandoah
509 Piccadilly St.
Edinburg, VA 22824
540-984-3030
www.co.shenandoah.va.us

Smyth**
121 Bagley Circle, Suite 100
Marion, VA 24354
276-783-3298
www.smythcounty.org

Southampton**
26022 Administration Center Drive
Courtland, VA 23837
757-653-3015
www.southamptoncounty.org

Spotsylvania
9105 Courthouse Road
Spotsylvania, VA 22553
540-582-7010
www.spotsylvania.va.us

Stafford
1300 Courthouse Road
Stafford, VA 22555
540-658-4871
www.co.stafford.va.us

Surry
205 Enos Farm Drive
Surry, VA 23883
757-294-3044
www.surrycounty.govoffice2.com

Sussex**
20233 Thornton Square
Sussex, VA 23884
434-246-1000
www.sussexcounty.govoffice.com

* No website at this time

** No Parks and Recreation Department

Tazewell
106 E. Main St.
Tazewell, VA 24651
276-988-5404
www.tazewellcounty.org

Warren
200 East 8th St.
Front Royal, VA 22630
540-635-7750
www.warrencountyva.net

Washington
205 Academy Drive
Abingdon, VA 24210
276-676-6212
www.washcova.com

Westmoreland**
111 Polk St.
Montross, VA 22520
804-493-0130
www.westmoreland-county.org

Wise**
206 East Main St.
Wise, VA 24293
276-428-2321
www.wisecounty.org

Wythe
345 S. Sixth St.
Wytheville, VA 24382
276-223-6022
www.wytheco.org

York
100 County Drive
Yorktown, VA 23690
757-890-3500
www.yorkcounty.gov

Local and Regional Land Conservation Organizations

Accokeek Foundation
3400 Bryan Point Road
Accokeek, MD 20607
(301) 283-2113
www.accokeek.org

Association for Preservation of VA Antiquities (APVA)
204 W. Franklin St.
Richmond, VA 23220
(804) 648-1889
www.apva.org

Brandy Station Foundation
Post Office Box 165
Brandy Station, VA 22714
(540) 727-7718
www.brandystationfoundation.com

Blue Ridge Foothills Conservancy
Post Office Box 116
Hood, VA 22723
540-923-9980 (Madison)
434-985-9815 (Greene)
www.blueridgeconserve.com

Burwell-van Lennep Foundation
Post Office Box 245
Millwood, VA 22646-0245
(540) 837-1353
Area of Operation: Clarke County

Capital Region Land Conservancy
Post Office Box 17306
Richmond, VA 23226
(804) 745-3110
www.capitalregionland.org

Cedar Creek Battlefield Foundation
Post Office Box 229
Middletown, VA 22645
(540) 869-2064
www.cedarcreekbattlefield.org

Central Virginia Battlefields Trust
Post Office Box 3417
Fredericksburg, VA 22402
(540) 907-0527
www.cvbt.org

Central Virginia Land Conservancy
1824 Clayton Ave.
Lynchburg, VA 24503-2320
(434) 384-3785
www.cvalc.org

Chesterfield Conservancy
Post Office Box 35217
Richmond, VA 23235-0217
(804) 601-2870
www.chesterfieldconservancy.org

Civil War Preservation Trust
1331 H St. NW Suite 1000
Washington, D.C. 20005-4745
Phone: (202) 367-1861
www.civilwar.org

Fluvanna Heritage Trail Foundation
14054 James Madison Highway
Palmyra, VA 22963-1001
Phone: (434) 589-4839

Goochland Land Alliance
Post Office Box 1281
Goochland, VA 23063
(804) 556-5999
www.goochlandlandalliance.org

Hampton Land Conservancy
4896 Burnham Road
Richmond, VA 23234
(804) 275-6476
www.dcr.virginia.gov/land_conservation/whereto4.shtml

Historic Green Springs
Post Office Box 1685
Louisa, VA 23093-1685
Phone: (540) 967-1099
Area of Operation: Green Springs
Historic District, Louisa County

Historic Polegreen Church Foundation
Post Office Box 2111
Mechanicsville, VA 23116
www.historicpolegreen.org

Jamestown Compact Land Trust
Post Office Box 2272
Middleburg, VA 20118-2272
Phone: (540) 687-3654
www.jamestowncompact.org

Kernstown Battlefield Association
Post Office Box 1327
Winchester, VA 22604
(540) 662-1824
www.kernstownbattle.org

Land Trust for Southwest Virginia
Post Office Box 635
Abingdon, VA 24212-0635
(276) 676-3600
www.thelandtrustforswva.org

Land Trust of Virginia
Post Office, Box 14
Middleburg, VA 20118
(540) 687-8441
www.landtrustva.org

Mathews County Land Conservancy
Post Office Box 306
Mathews, VA 23109-0306
Phone: (804) 725-9685
Area of Operation: Mathews County

* No website at this time

** No Parks and Recreation Department

McLean Land Conservancy

Post Office Box 224
McLean, VA 22101
(703) 241-1095

Middle Peninsula Land Trust

Post Office Box 585
Mathews, VA 23109
www.mplandtrust.org

Newport News Green Foundation, Inc.

Post Office Box 323
Newport News, VA 23607
(757) 926-8428

New River Land Trust

Post Office Box 11507
Blacksburg, VA 24062-1057
(540) 951-1704
www.newriverlandtrust.org

Northern Neck Land Conservancy

Post Office Box 3
Kilmarnock, VA 22482
(804) 435-2814
www.nnconserve.org

Northern Virginia Conservation Trust

4022 Hummer Road
Annandale, VA 22003
(703) 354-5093A
www.nvct.org

Piedmont Environmental Council

Post Office Box 460
Warrenton, VA 20188-0460
(540) 347-2334
www.pecva.org

Potomac Conservancy

8601 Georgia Ave., Suite 612
Silver Spring, MD 20910
(301) 608-1188
www.potomac.org

Preservation Alliance of Virginia

204 West Franklin St.
Richmond, VA 23220-5012
(804) 648-1889
www.apva.org

Rivanna Conservation Society

Post Office Box 141
Palmyra, VA 22963-0141
Phone: (434) 589-7576
avenue.org/rcs

**Rockbridge Area
Conservation Council**

Post Office Box 564
Lexington, VA 24450
(540) 463-2330
<http://organizations.rockbridge.net/raccl>

**Shenandoah Valley Battlefields
National Historic District Commission**

Post Office Box 897
New Market, VA 22844
(540) 740-4545
www.shenandoahatwar.com

**Trevilian Station Battlefield
Foundation**

Post Office Box 124
Trevilians, VA 23170
(804) 589-8989, (540) 832-2862
www.trevilianbattlefield.org

Valley Conservation Council

17 Barristers Row
Staunton, VA 24401
(540) 886-3541
www.valleyconservation.org

Virginia Eastern Shore Land Trust

Post Office Box 1114
Exmore, VA 23350-1114
(757) 442-5885

Waterford Foundation

Post Office Box 142
Waterford, VA 20197
(540) 882-3018
www.waterfordva.org

Western Virginia Land Trust

722 First St., SW, Suite L
Roanoke, VA 24016-4120
(540) 985-0000
www.westernvirginialandtrust.org

Williamsburg Land Conservancy

5000 New Point Road, Suite 3101
Williamsburg, VA 23188
(757) 565-0343
www.williamsburglandconservancy.org

**National Conservation
and Land Stewardship
Organizations****Alliance for the Chesapeake Bay**

Post Office Box 1981
Richmond, VA 23218
(804) 775-0951
www.alliancechesbay.org

American Farmland Trust

1200 18th St., N.W., Suite 800
Washington, D.C. 20036
(202) 331-7300
www.farmland.org

American Forests

Post Office Box 2000
Washington, D.C. 20013
(202) 737-1944
www.amfor.org

American Institute of Architects

The American Institute of Architects
1735 New York Ave., NW
Washington, D.C. 20006-5292
(800) AIA-3837 or (202) 626-7300
infocentral@aia.org
www.aia.org/adv_sustainability

American Planning Association

122 S. Michigan Ave., Suite 1600
Chicago, IL 60603
(312) 431-9100 (general)
(312) 786-6344 (Planning Advisory
service and Planners Book Service)
www.planning.org

**American Society of
Landscape Architects**

636 Eye St., NW
Washington, D.C. 20001-3736
(202) 898-2444
www.asla.org

The Archeological Conservancy

8 East 2nd St., Suite 200
Frederick, MD 21701
(301) 682-6359
www.americanarchaeology.org/eastern

Appalachian Trail Conservancy

Post Office Box 807
Harpers Ferry, WV 25425-0807
(304) 535-6331
www.appalachiantrail.org

Audubon Society

National Audubon Society
700 Broadway
New York, NY 10003
(212) 979-3000
www.audubon.org

Chesapeake Bay Foundation

Philip Merrill Environmental Center
6 Herndon Ave.
Annapolis, MD 21403
(410) 268-8816
www.cbf.org

Civil War Preservation Trust

1331 H St., N.W. Suite 1001
Washington, D.C. 20005
(202) 367-1861
www.civilwar.org

Coalition for Smarter Growth

4000 Albemarle St., NW
Suite 310
Washington, D.C. 20016
(202) 244-4408
www.smartergrowth.net

Community and Environmental Defense Services

811 Crystal Palace Court
Owings Mills, MD 21117
(800) 773-4571
www.ceds.org

Congress for the New Urbanism

140 S. Dearborn St., Suite 310
Chicago, IL 60603
(312) 551-7300
www.cnu.org

The Conservation Fund

1655 North Fort Myer, Suite 1300
Arlington, VA 22209-2156
(703) 525-6300
www.conservationfund.org

Land Trust Alliance

1331 H St., N.W., Suite 400
Washington, D.C. 20005-1734
(202) 638-4725
www.lta.org

Outdoor Industry Association

4909 Pearl East Circle, Suite 200
Boulder, CO 80301
(303) 444-3353
(303) 444-3284
info@outdoorindustry.org
www.outdoorindustry.org/

National Arbor Day Foundation

100 Arbor Ave.
Nebraska City, NE 68410
1-(888) 448-7337
www.arborday.org

National Estuarine Research Reserve System

Estuarine Reserves Division, N/ORM5
Office of Ocean and Coastal Resource Management
NOAA Ocean Service
1305 East West Highway
Silver Spring, MD 20910
(301) 713-3155
www.nerrs.noaa.gov/welcome.html

National Forestry Land Trust

374 Maple Ave., East, Suite 310
Vienna, VA 22180-4718
(703) 255-2700
www.nationalforest.net

National Main Street Center

c/o National Trust for Historic Preservation
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
(202) 588-6219
www.mainstreet.org

National Recreation and Parks Association

22377 Belmont Ridge Road
Ashburn, VA 20148-4501
(703) 858-0784
www.nrpa.org

National Scenic Byways Resource Center

U.S. Department of Transportation
Federal Highway Administration
National Scenic Byways Program
HEPN-50, Room 3232
400 Seventh St., SW
Washington D.C. 20590
1(800) 4BY-WAYS [429-9297]
www.byways.org

National Trust for Historic Preservation

1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
(202) 588-6000
www.nthp.org

The Nature Conservancy

4245 N. Fairfax Drive, Suite 100
Arlington, VA 22203
(703) 841-5300
www.tnc.org

Scenic America

1634 I (eye) St., NW Suite 510
Washington, D.C. 20006
(202) 638-0500
www.scenic.org

Sierra Club

85 Second St., 2nd Floor
San Francisco, CA 94105
(415) 977-5500
www.sierraclub.org/

Sprawl Watch Clearinghouse

1400 16th St., NW, Suite 225
Washington, D.C. 20036
(202) 332-7000
www.sprawlwatch.org

Surface Transportation Policy Project

1100 17th St., NW, 10th Floor
(202) 466-2636
www.transact.org/stpp.htm

Trust for Public Land

116 New Montgomery St., 4th Floor
San Francisco, CA 94105
(415) 495-4014
www.tpl.org

Urban Land Institute

1025 Thomas Jefferson St., NW, Suite 500 West
Washington, D.C. 20007
(202) 624-7000
www.uli.org

Wilderness Society

1615 M St., NW
Washington, D.C. 20036
1(800)THE-WILD
www.wilderness.org

Green Infrastructure

See Virginia agencies listing above for state contacts.

The Conservation Fund

Post Office Box 271
Chapel Hill, NC 27514
919-967-2223 ext. 24
www.greeninfrastructure.net

Green Infrastructure Center

921 2nd St., SE
Charlottesville, VA 22902
info@greeninfrastructurecenter.org
www.greeninfrastructurecenter.org/BetaIndex.htm

Low Impact Development Center

4600 Powder Mill Road, Suite 200
Beltsville, MD 20705
301-937-3507
www.lowimpactdevelopment.org

**Mid-Atlantic Highlands
Action Program**

Department of Conservation
and Recreation
359 Sherwood Ave.
Staunton, VA 24401
540-280-1473
faye.cooper@dcr.virginia.gov

**Local and Regional Watershed
Organizations****Citizens for a Better Eastern Shore**

16388 Courthouse Road
Post Office Box 882
Eastville, VA 23347
757-678-7157
info@cbes.org
<http://www.cbes.org/>

Dan River Association

Henry County Administration Building
3300 Kings Mountain Road
Collinsville, VA 24078
www.danriver.org

The Elizabeth River Project

Admiral's Landing
475 Water St., Suite 103A
Portsmouth, VA 23704
(757) 399-7487
www.elizabethriver.org

Friends of Chesterfield's Riverfront

Post Office Box 2158
Chesterfield, VA 23832
(804) 796-1703
www.co.chesterfield.va.us/riverfront

Friends of Dragon Run

Post Office Box 882
Gloucester, VA 23061
(804) 462-5608
www.dragonrun.org

**Friends of the Lower
Appomattox River**

Monument Professional Building
1964 Wakefield St.
Post Office. Box 1808
Petersburg, VA 23805
(804) 861-1666
craterpd@cpd.state.va.us
www.craterpdc.state.va.us

Friends of the Rappahannock

Post Office Box 7254
Fredericksburg, VA 22404
(540) 373-3448
www.riverfriends.org

James River Association

Post Office Box 909
Mechanicsville, VA 23111
(804) 730-2898
www.jamesriverassociation.org

James River Advisory Council

Post Office Box 40
Chesterfield, VA 23832
(804) 748-1567
www.jamesriveradvisorycouncil.com

Rivanna Conservation Society

Post Office Box 1501
Charlottesville, VA 22902-1501
(434) 977-4837
www.rivannariver.org

Roanoke River Basin Association

Post Office Box 588
Townsville, NC 27584
www.rriba.org

Virginia Eastern ShoreKeeper

Post Office Box 961
Eastville, VA 23347
757-678-6182
shorekeeper@verizon.net
[www.waterkeeper.org/subsites/
subcontact.aspx?userid=73](http://www.waterkeeper.org/subsites/subcontact.aspx?userid=73)

**Trails and Greenways
Organizations and Agencies****Alliance for Community
Choice in Transportation**

Post Office Box 1582
108 5th St. SE, Suite 206
Charlottesville, VA 22902
434.295.6554
www.transportationchoice.org/

American Hiking Society

1422 Fenwick Lane
Silver Spring, MD 20910
www.americanhiking.org/

American Trails

Post Office Box 491797
Redding, CA 96049-1797
530.547.2060
www.americantrails.org

American Volkssport Association

1001 Pat Booker Road, Suite 101
Universal City, TX 78148
www.ava.org/

Appalachian Trail Conservancy

Post Office Box 807
799 Washington St.
Harpers Ferry, WV 25425-0807
304.535.6331
www.appalachiantrail.org

Back Country Horsemen of America

Post Office Box 1367
Graham WA 98338-1367
www.backcountryhorse.com/

Bikes Belong Coalition

Post Office Box 2359
Boulder, Colorado 80306
303.449.4893
www.bikesbelong.org

Bike Virginia and Bike Walk Virginia

Post Office Box 203
Williamsburg, VA 23187-0203
Phone: (757) 229-0507
www.bikewalkvirginia.org
www.bikevirginia.org

East Coast Greenway

David Brickley
5000 Saratoga Lane
Woodbridge, VA 23005
(703) 590-3569
www.greenway.org/

**Equestrian Land
Conservation Resource**

4037 Iron Works Pike, Suite 120
Lexington, KY 40511
www.elcr.org/

**International Mountain Bicycling
Association (IMBA)**

207 Canyon, Suite 301
Boulder, CO 80302
1.888.442.4622
www.imba.com

League of American Bicyclists

1612 K St., NW, Suite 800
Washington, D.C. 20006
202-822-1333
www.bikeleague.org/

Leave No Trace

Post Office Box 997
Boulder, CO 80306
www.lnt.org/

MORE – Mid-Atlantic Off-Road Enthusiasts
www.more-mtb.org

National Association of Service and Conservation Corps
 666 Eleventh St., NW, Suite 1000
 Washington, D.C. 20001
 202.737.6272
www.nascc.org/

National Park Service's Rivers and Trails Conservation Assistance Program
 410 Severn Ave., Suite 109
 Annapolis, MD 21403
 (410) 267-5787
www.nps.gov/rtca/

National Trails Training Partnership
 American Trails
 Post Office Box 491797
 Redding, CA 96049-1797
 (530) 547-2060
trailhead@americantrails.org
www.AmericanTrails.org
www.nttp.net

National Off-Highway Vehicle Conservation Council
 427 Central Ave. West
 Great Falls, MT 59404
www.nohvcc.org/

National Recreation and Park Association
 22377 Belmont Ridge Road.
 Ashburn, VA 20148
 703.858.0784
www.nrpa.org/

National Transportation Enhancements Clearinghouse
 1100 17th St., NW - 10th Floor
 Washington, D.C. 20036
 888-388-6832
www.enhancements.org/

Partnership for the National Trails System
 214 N. Henry St. #203
 Madison, WI 53703
 608-249-7870
www.nationaltrailpartnership.org/

Potomac Heritage National Scenic Trail
 National Park Service
 Post Office Box B
 Harpers Ferry WV 25245
www.nps.gov/pohe/

Professional Trailbuilders Association
www.trailbuilders.org/

Rails to Trails Conservancy
 1100 17th St., NW 10th Floor
 Washington, D.C. 20036
 1.202.331.9696
www.railtrails.org

Roanoke River Rails to Trails, Inc.
 Post Office Box 150
 South Hill, VA 23970
 (434) 757-7438

Roanoke Valley Greenways
 Post Office Box 29800
 Roanoke, VA 24018 USA
 540-387-6060
www.greenways.org/

Student Conservation Association
 1800 North Kent St., Suite 102
 Arlington, VA 22209
www.thesca.org/

Trails and Greenways Clearinghouse
 1100 17th St., NW, 10th Floor
 Washington, D.C. 20036
 (877) GRN.WAYS (toll-free)
www.trailsandgreenways.org

Tread Lightly!
 298 24th St., Suite 325
 Ogden, UT 84401
 (801) 627-0077
www.treadlightly.org/

United Four Wheel Drive Associations
 7135 S. PR Royal Springs Drive
 Shelbyville, IN 46176
www.ufwda.org/

U.S. Forest Service
 George Washington and Jefferson
 National Forests
 Supervisor's Office
 5162 Valleypointe Parkway
 Roanoke, VA 24019-3050
 (540) 265-5100
www.fs.fed.us/r8/gwj/

Virginia Bicycling Federation
 Post Office Box 5621
 Arlington, VA 22205-562
www.vabike.org/

Virginia Capital Trail Foundation
 Post Office Box 2501
 Williamsburg, VA 23187
<http://www.virginiacapitaltrail.org/>

Virginia Department of Conservation and Recreation
 Trails and Greenways Program
 203 Governor St., Suite 326
 Richmond, VA 23219
www.dcr.virginia.gov/recreational_planning/trails.shtml

Virginia Department of Rails and Public Transportation
 Richmond Office Headquarters
 1313 East Main St., Suite 300
 Richmond, VA 23219
 (804) 786-4440
www.drpt.virginia.gov

Virginia Department of Transportation
 Bicycling and Walking Program
<http://www.virginiadot.org/programs/bk-default.asp>
 Safe Routes to Schools Program
http://www.vdot.virginia.gov/programs/ted_Rt2_school_pro.asp

Transportation Enhancements Program
www.vdot.virginia.gov/programs/pr-environmental.asp

Virginia Horse Council
 Post Office Box 665
 Mineral, VA 23117
www.virginiahorsecouncil.org/

Rivers, Water Access and Blueways Organizations and Agencies

Canoe Cruisers Association of Greater Washington, D.C., Inc.
 11301 Rockville Pike
 Post Office Box 2523
 Kensington, MD 20891
 301-251-2978
www.canoecruisers.org

Captain John Smith Chesapeake National Historic Trail
 National Park Service
 Chesapeake Bay Program Office
 410 Severn Ave., Suite 109
 Annapolis, MD 21403
www.nps.gov/cajo/contacts.htm

Chesapeake Bay Gateways Program

National Park Service
Chesapeake Bay Program Office
410 Severn Ave., Suite 109
Annapolis, MD 21403
<http://www.baygateways.net/>

Coastal Canoeists

www.coastals.org/

Department of Game and Inland Fisheries

Boating Access Program
4010 West Broad St.
Richmond, VA 23230
804-367-1000
www.dgif.virginia.gov/boating/

Friends of the Captain John Smith Chesapeake National Historic Trail

1655 N. Fort Myer Drive, Suite 1300
Arlington, VA 22209
www.friendsofthecaptainjohnsmithtrail.org/

Friends of the Rivers of Virginia

Post Office Box 1750
Roanoke, VA 24008
www.forva.org

Float Fishermen of Virginia

Post Office Box 1895
Hayes, Va. 23072-1895
www.floatfishermen.org/ffvframes.html

Middle Peninsula Chesapeake Bay Public Access Authority

Saluda Professional Center
1256 Bowden St.
Post Office. Box 286
Saluda, VA 23149
804-758-2311
www.mppdc.com/project/access

National Committee for the New River

4 N. Jefferson Ave.
Post Office Box 1480
West Jefferson, NC 28694
(336) 246-4871
www.ncnr.org

Northern Neck Public Access Authority

The Regional Center
457 Main St.
Post Office Box 1600
Warsaw, VA 22572
804-333-1900
www.nnpdc17.state.va.us

Virginia Canals And Navigations Society

c/o Lynn Howlett, Corresponding Secretary
6826 Rosemont Drive
McLean, VA 22101
703-356-4027
www.organizations.rockbridge.net/canal/

Virginia Coastal Access Now!

1356 Pamlico Blvd
Chesapeake, VA 23323
(757) 410-3180
vcan@cox.net
www.vcanaccess.com

Virginia Marine Resources Commission

Recreational Fishing
2600 Washington Ave., 3rd Floor
Newport News, VA 23607
757-247-2200
www.mrc.state.va.us/recreational.shtm

Because each locality has unique resources, conditions, and issues, guidelines for recreational and open space planning must be evaluated in terms of the local situation. Guidelines must be used judiciously as basic norms, subject to modification as local needs arise.

Although it is impossible to settle on just one precise definition for the word “recreation,” most would agree that leisure plays a major role in an individual’s level of life satisfaction. Whether persons choose to define themselves by the sheer rock face they climb with grace and precision or leave behind the turmoil of daily routine with a contemplative walk in the forest, the physical and psychological benefits of recreation are endless. Herein lies the value of parks and open space to communities.

In order to meet the demand for recreational areas and facilities and provide an outlet for healthy recreational opportunities, there must be a plan. The information that follows is one tool that planners and developers and leisure service professionals can use to gain perspective on the factors that must be considered in the design of recreation areas and facilities and the utilization of open space for recreational opportunities. The guidelines stated here will assist in the development of long-range plans for park and recreational needs and resources, while inviting the reader to consider this important question: how much is enough?

The first step in the planning process is to acknowledge that the resources in each locality are unique, as are the needs of the community. For this reason, it is important to realize that the guidelines presented here are meant to help in the planning process but can be modified to tailor the plan to the resources, issues and needs of the locality.

Planning guidelines and considerations

The 2007 *Virginia Outdoors Plan* addresses several basic categorical areas important to the planning process: area guidelines, space guidelines, capacity guidelines, design guidelines, maintenance guidelines, and playground guidelines. These categories were selected based on the experience and observation of professional planners and park and recreation researchers. They represent reasonable and applicable guidelines for conditions within the Commonwealth. In addition, the concept of sustainable design has recently been developed to recognize the relationship of human civilization to the natural world.

Explanations of the categories mentioned above, along with descriptions of other related terms, are provided herein for users of the *Virginia Outdoors Plan*. It is important to note that many states and professional recreation planners are relying less on standards because they have found so many

exceptions to measures used in the past. Every situation is a little different and the user of the following should not consider the information to be the final word on how much of any facility or area a population of any given size should have available. Trends in participation rates can greatly affect demand in any given activity, making standards of questionable value in determining needs.

Quality of the experience

The quality of the visitor’s experience is often overlooked in the planning process, but it is an essential factor in the development and design of recreation facilities, areas and open space. The Recreation Opportunity Spectrum (ROS) devised by the United States Department Agriculture Forest Service addresses the concept of user experience and the correlation to recreation planning as follows: “The basic assumption underlying the Recreation Opportunity Spectrum is that options to realize the number of recreational experiences sought by users are best assured by providing a diverse set of recreation opportunities. A recreation opportunity is a chance for a person to engage in a specific recreation activity within a specific environmental setting to realize a predictable recreation experience. Thus, the ROS conceives the recreation management and planning task as a behaviorally-based production process, with three distinct aspects of demand that must be considered.”

- “First, visitors seek opportunities to participate in certain activities.”
- “Second, visitors seek certain settings in which they can recreate.”
- The third aspect of demand is “desired experiences,” which is a product of providing the second.

“In offering diverse settings where participants can pursue various activities, the broadest range of experiences can be realized. The task of the recreation planner and manager, then, is to formulate various combinations of activity and set opportunities to facilitate the widest possible achievements of desired experiences – or to preserve options for various types of recreation opportunities.” To accomplish this, consider the following points in devising an effective recreation/park plan:

- When possible, go beyond the demand/supply/needs assessment of the locality, and approach the community for input on what opportunities they would like to see developed in their area.
- Think about what kind of experiences you want to provide for users and incorporate that experience into the planning process.
- Conduct a detailed assessment of the natural resources that will be used to put the plan into action, and let the capability/condition of the land dictate the planning goals.

- One consideration that is not addressed by current planning processes is the benefit of large, undeveloped tracts of land being allocated for the “wilderness/primitive experience.” As the Virginia’s population continues to grow and urban development progresses, it is more important than ever to insure that open space free of parking lots and swimming pools is available for future generations. The benefits of wilderness trails and natural settings, particularly in urban/rural areas, are boundless and should be planned for.

While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of providing the opportunities for obtaining these experiences. By managing the natural resource setting, and the activities that occur within it, the manager is providing the opportunities for recreation experiences to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting and the experiences.

For management and conceptual convenience, possible mixes or combinations of activities and settings and probable experience opportunities have been arranged along a spectrum, or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes. The six classes, or portions along the continu-

um, and the accompanying class names have been have been selected and conventionalized because of their descriptiveness and utility in land and resource management planning and other management applications.

Each class is defined in terms of its combination of activity, setting and experience opportunities. Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be further breakdown of “Roaded Natural” into subclasses based on paved, oiled or dirt surfaced roads, which in turn reflects amount of use, or a further breakdown of “Primitive” based upon aircraft or boat use.

Table A-1 describes the general environmental and societal settings that are outlined in the ROS. When a specific activity and desired experience is matched with the appropriate setting, the environmental planner is then able to design an area that will fulfill the expectation of the user.

The Recreation Opportunity Spectrum provides a framework for stratifying and defining classes of outdoor recreation opportunity environments. As conceived, the spectrum has application to all lands regardless of ownership or jurisdiction. Its use in the national forest system will facilitate the consideration, determination and implementation of the recreation management role.

Table A-1. Recreation Opportunity Spectrum (ROS) Setting Characterization

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of others is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions are present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions are present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural appearing environments with moderate evidence of the appearances of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventionalized motorized use is provided for in construction standards and facility design.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans on-site are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

Table A-2. Park Area Standards

Class	Acres/1,000	Service Radius		
		Urban/Suburban	Rural	Minimum Size (Acres)
Neighborhood Park	3	2 Miles	1 – 1½ Miles	5
Playground or Playlot	–	2 Miles	–	–
Community Park	3	1 Mile	3 – 7 Miles	20
District Park	4	5 – 7 Miles	10 – 15 Miles	50
Regional Park	*	25 Miles	25 Miles	100
State Park	10	1 Hour	50 Miles	600

Total Recommended Acres/1,000 Population: 20
** Considered at a variable rate over and above local area standard.*

For more information on the Recreation Opportunity Spectrum (ROS), contact the Forest Service at:

USDA Forest Service
 George Washington and Jefferson National Forests
 5162 Valleypointe Parkway
 Roanoke, VA 24019-3050

Area guidelines

Area guidelines are used to determine the number of acres of recreational and park lands needed by a locality. These guidelines are usually expressed as a minimum number of acres per 1,000 people in the population.

The recommended area guideline for local recreation and park sites in Virginia is 10 acres per 1,000 people, which represents a minimum acreage that should be exceeded when possible. Though this recommendation is sufficient for the inventory and development of parks in rural and less densely populated areas, it is more difficult to meet this standard in an urban setting. Where you have more extensive development, higher population numbers in a small area, and a lack of available and affordable open space, recreational development must be planned to accommodate the needs of as large and diverse a user group as possible. It is important to disperse park opportunities evenly throughout the locality so that each sector has convenient access to parks and open space. The planning and development process should also provide for as many different kinds of activities as the resources will allow.

Another crucial factor that must be incorporated into the demand-supply-needs inventory equation is the existence and accessibility to private facilities such as schools, churches, and clubs. Though these facilities play an important part in accommodating the recreation needs of a community, planners must also note that these facilities are not available to everyone at all times. They are not accessible during normal operating hours, and if a membership is required, the user group is restricted to organization members. If the needs identified by the community are not met

by the existing publicly accessible facilities, then local planners must devise options for meeting those needs.

In meeting the 10 acres per 1,000 people area standard, planners should consider three major local park classifications — the neighborhood park, the community park, and the district park. Each of these park categories has its own unique function and service radius within the locality. Frequently, local government will interchange the names of the park types, but their functions within the locality remain unchanged. Table A-2 summarizes area guidelines for each park type.

Space guidelines

Space guidelines deal with actual site planning and give the amount of land or water necessary for a particular activity, e.g., the number of square feet needed for a tennis court or acres needed for a football field. These guidelines are usually constant and not subject to variation.

Capacity and space guidelines are presented in Tables A-3. These guidelines determine the amount of land or water required to accommodate a particular activity within a park complex and determine how many people can be accommodated during an average day, week or season. To reiterate, an assessment of the existing resources should be conducted, the development plan should be shaped to accommodate as many types of opportunities as possible, and the natural layout of the resources or landscape should be utilized in developing appropriate opportunities. The tables show the capacity and space guidelines for the most popular types of outdoor recreational activities in the Commonwealth.

Capacity guidelines

Capacity guidelines relate to the instant, daily or seasonal capacity of a particular recreational facility. They aid in the development of management plans and/or determinations of facility adequacy to meet local needs. When the capacity standard of a particular facility is known, the planner can

then determine (based on local demand) how many facilities are needed. Capacity guidelines are subject to variations depending on the quality of the facility and its management, e.g., a night-lighted ball field has a greater daily capacity than an unlit field. Many localities are constructing rectangular multi-purpose fields that are lighted and have all weather surfaces. These large fields can be used for multiple activities such as soccer, football, lacrosse, field hockey, rugby, and many other activities. The daily capacity of such a field changes depending on how it is configured and which sports are being played.

Two additional facets of carrying capacity that affect the user's experience and the resources themselves are physical and social carrying capacity. Physical carrying capacity relates to the maximum use that a recreation area can sustain without resource degradation. It correlates also to maintenance guidelines discussed further in this section, and it is imperative to the upkeep and preservation of existing resources. It is possible to increase the physical carrying capacity of an area by hardening defined impact areas for each activity.

Social carrying capacity relates to the user's expectation of the type and quality of recreation experience they are hoping to have. This is a very important consideration in the design and development of recreation and open space resources. In order to maximize satisfaction of the user, it is imperative to design the area or facility so as to provide the most appropriate environment for the activity at hand.

Social interaction level is an aspect of social carrying capacity that can be a determinant of the potential for user conflict in a recreation area. An example of user conflict between two substantially different users might be paddlers and personal watercraft (pwc) users; they are both using the same resources, but in very different ways. Their expectations for the experience, the environment in which they choose to participate, and the atmosphere that they create with respect to their level of presence are all factors that might contribute to user conflict.

For further information on the concept of user expectation, refer to the section above on "Quality of the Experience," as well as the U.S.D.A. Forest Service's Recreation Opportunity Spectrum model.

Design guidelines

The guidelines for designing park and open space areas are as varied and diverse as the resources that will support them. Depending on the kind of experience that is intended and the type of user to be served, there are many different sources for park and open space design guidelines. The schematic sketches in the latter part of this chapter will provide a brief overview of the size, service area, administrative responsibilities, purpose, character, location and potential facilities that might exist on various levels from a neighborhood playground or play lot to a state park.

A few key resources for park and open space are provided below:

The Virginia Greenways and Trails Toolbox – Connecting Our Common Wealth

Department of Conservation and Recreation

203 Governor Street, Suite 326
Richmond, VA 23219
(804) 786-6124
www.dcr.virginia.gov

National Recreation and Park Association

22377 Belmont Ridge Road
Ashburn, VA 20148-4501
Phone: 703-858-0784 Fax: 703-858-0794
E-mail: info@nrpa.org

USDA Forest Service

George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019-3050

National Park Service

U. S. Custom House
200 Chestnut Street, Fifth Floor
Philadelphia, PA 19106
(215) 597-7013
www.nps.gov

Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails (Second Edition)
Charles A. Flink; Kristine Olka; Robert M. Searns

Rails-To-Trails Conservancy

1100 17th Street, 10th Floor, N.W.
Washington, DC 20036
(202) 331-9696
greenways@transact.org

Maintenance guidelines

Maintenance guidelines refer to the desired level of maintenance for recreation facilities and areas within a park system, as well as those activities or individual work elements that support maintenance requirements.

Despite the almost endless variety of tasks and methods associated with the upkeep of any system of outdoor recreational facilities, the National Recreation and Parks Association (NRPA) has established a set of guidelines. *Park Maintenance Guidelines* (1986) was developed from years of research and evaluation. This document covers a multitude of maintenance levels, methods and practices. Due to its length and complexity, there is no attempt to summarize the document within the *Virginia Outdoors Plan*. However, copies may be obtained by writing the National Recreation and Parks Association, 22377 Belmont Ridge Road, Ashburn, VA 20148.

Playground guidelines

Playground guidelines are used to evaluate a playground to identify any features that could lead to an injury to a child. Playground guidelines address issues such as protective surfacing, head entrapment hazards, entanglement hazards and equipment location. These guidelines are designed for persons concerned with public playground safety.

The Consumer Product Safety Commission (CPSC) estimated that more than 70% of injuries on both public and home playground equipment resulted from falls, especially falls to the surface beneath the equipment. Other reasons for injuries included impact from moving equipment (13%), the majority of which involved children under the age of six, running or bumping into stationary equipment (5%), and contact with hazards such as protrusions, pinch points, sharp edges, and hot surfaces (7%). (*Playground Equipment Related Injuries and Deaths*, April 1990, U.S. Consumer Product Safety Commission, Washington, DC 20207)

An average of 15 playground equipment-related deaths are reported each year, according to data from the CPSC, and more than 40% of these involve children under the age of six. Fatal injuries most often involved entanglement in ropes tied to or caught on equipment, falls, impacts from tip-overs or failures of equipment, impact with moving swings, and head entrapment (*Hazard Sketch: Playground Equipment-Related Injuries and Deaths*, October 1996, U.S. Consumer Product Safety Commission, Washington, DC 20207)

In Virginia, more than 400 children under the age of 15 were hospitalized between 1994 and 1997 after falling from playground equipment. Costs associated with these hospitalizations totaled \$1,858, 289, or an average of \$4600 per hospitalization (Center for Injury and Violence Prevention, Virginia Department of Health).

Sustainable design

Sustainable design is a concept that adds a holistic approach to societal growth. This concept proposes that in order to ensure that the well being of the natural world is not compromised in the face of development, it is important to plan communities in a manner that considers the value of natural heritage resources. From the revitalization of existing facilities in lieu of new development to designing neighborhoods so that open space is preserved, sustainable design recognizes the economic, environmental and social value of Virginia's natural resources. For an in-depth presentation on the concept of sustainable design, see *Better Models for Development in Virginia – Ideas for Creating, Maintaining, and Enhancing Livable Communities* by Edward T. McMahon with Sara S. Hollberg and Shelley Mastran.

In 1991, the National Park Service (NPS) developed guidelines and recommendations for incorporating principles of sustainable design regarding natural resources, cultural resources, site planning and design, architectural design, building ecology, interpretation, energy and utilities, waste disposal, and facilities maintenance and operation.

Urban guidelines

One of the greatest challenges that urban planners and natural resource managers face is how to most effectively utilize available resources within an urban area to meet recreational and open space needs. When you consider the diverse activities that make up the recreation/leisure participation of the citizens in any one area, the task of providing resources to support these activities is daunting. From athletic fields that accommodate youth and adult sports to the undeveloped open space resources that are required for even a semi-wilderness experience, providing an outlet for these activities is no easy job. Maintenance and repair of fields and facilities, staffing constraints and budgetary issues are but a few of the barriers that must be overcome when attempting to accommodate the needs of many with limited resources.

In order to most efficiently utilize the a locality's resources, it is essential to adopt a local comprehensive plan that considers demand placed on existing resources and an assessment of how these resources meet current and projected needs. Since available resources are as varied as the activities they support, the objective of the urban guidelines section of the *Virginia Outdoors Plan* is not to present the reader with a formula for comprehensive planning, but to provide sources for obtaining the information needed to effectively design an urban recreation plan.

The Fairfax County Park Authority has developed a planning process that is an exemplary model on how to effectively meet the recreation needs of a densely populated area. Though the plan is specific to the Northern Virginia metropolitan area, it does address the philosophy, considerations and issues that are associated with any successful comprehensive plan. The plan was developed from results of a demand survey directed to the urban population of Fairfax County. Survey feedback resulted in changed participation and space guidelines and the determination of sustainable carrying capacity guidelines to accommodate developed recreational activities. The planning process also developed criteria for identification and protection of significant and sensitive natural and cultural resources. These guidelines can be applicable to other urban areas in the Commonwealth. Contact the Fairfax County Park Authority, Division of Planning and Development, 12055 Government Center Parkway, Fairfax, Virginia 22035, for further information on the methodology and guidelines.

The following additional resources related to urban planning are provided for readers of the 2007 *Virginia Outdoors Plan*:

American Planning Association

122 S. Michigan Ave., Suite 1600
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The following pages contain schematic sketches of various parks and recreational sites and facilities typically found at each.

Neighborhood Playground or Playlot**Size**

1/4 acre and larger

Service area

Approximately five minutes walking time

Administrative responsibility

Local government

Purpose

The primary function is to provide safe play areas for pre-school and school-age children, especially in high-density areas where backyard playgrounds may be unavailable. These parks, however, can sometimes be oriented toward adult needs.

Character

The character is one of intensive use and easy accessibility. Facilities should be designed to meet the needs of local residents. When serving children, these parks should be designed for active play, while those designed for adults should also include opportunities for passive recreation. Maintaining playground equipment is critical and should be considered in the planning stage. These areas are not normally designed for organized activities.

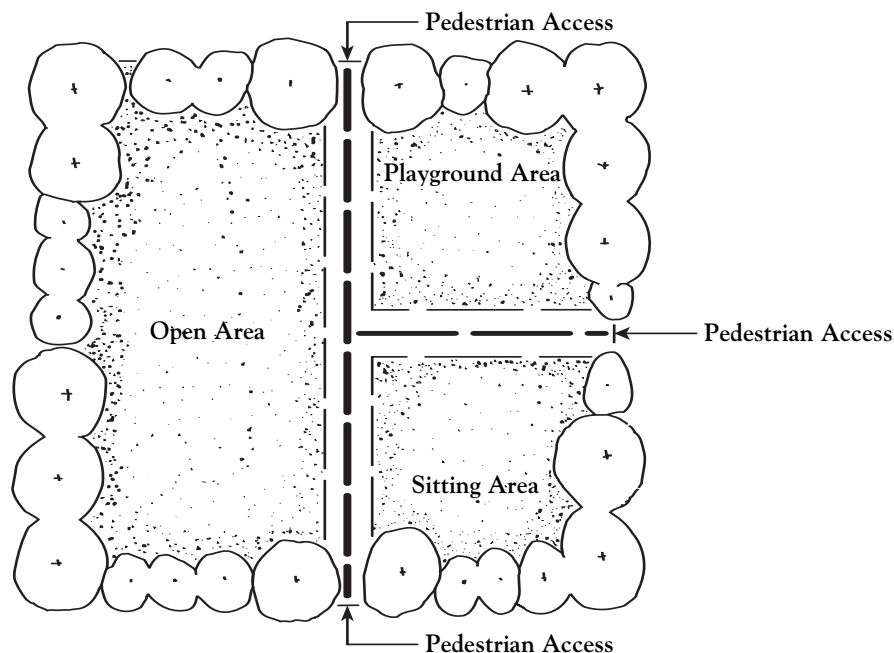
Location

Location is determined more by the availability of land or space than any other factor.

Potential facilities

- playgrounds
- horseshoe courts
- shuffleboard courts
- basketball courts
- volleyball courts
- badminton courts

Figure A-1. Neighborhood Playground or Playlot



Neighborhood Park**Size**

5-20 acres

Plan at 3 acres/1,000 population

Service area

Approximately 5-15 minutes walking distance or under one mile driving distance

Administrative responsibility

Local government

Purpose

The primary function is to provide limited types of recreation for the entire family within easy walking distance. Facilities should be provided for all age groups.

Character

Intensive use and easy access are characteristics of this classification. Ideally, the site should have level-to-gently rolling areas to accommodate intensive use facilities, with shaded areas for passive recreation.

Location

If possible, the neighborhood park should be located near a school and/or the neighborhood center and away from railroads, major streets and other hazardous areas.

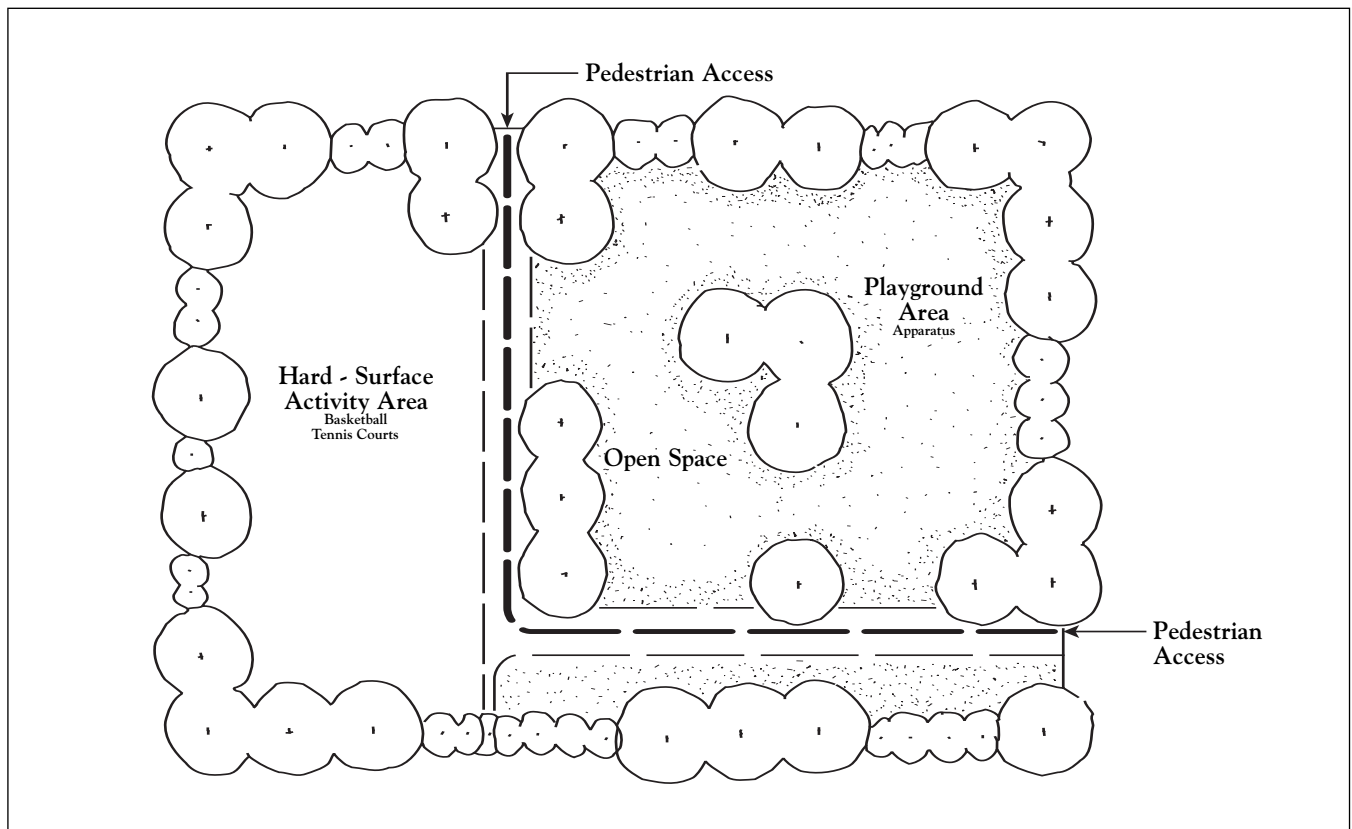
Potential facilities

- playground
- picnic facilities
- tennis courts
- ball diamond
- horseshoe courts
- shuffleboard courts
- basketball courts
- football/soccer fields
- volleyball courts
- badminton courts
- walking trails
- fishing pond
- swimming pool
- bikeway
- recreation center

Playfields are usually dual purpose in this type of facility. They are areas for sports and running games and also serve as open space. Intensive use areas (the playground area and hard surface courts) are buffered from other activities by passive natural areas and pedestrian access corridors. Programmed activities, such as organized athletics, are often suitable in neighborhood parks. Although limited parking is provided, site design should encourage pedestrian access to the greatest extent possible.

Rural communities may want to consider including neighborhood park functions in larger community parks, which could better serve the needs of a widely dispersed local population. From an economic standpoint, it would be more beneficial for a rural locality to have a few strategically located, well-designed, larger facilities than to invest in several small sites and not have the funds to properly develop and maintain them.

Figure A-2. Neighborhood Park



Community Park**Size**

20-50 acres

Plan at 3-acres/1,000 population

Service area

Approximately 15 minutes driving time

Administrative responsibility

Local government

Purpose

Community parks should primarily support active recreational activities and be capable of withstanding intensive use while still containing a fair amount of open space.

Character

The site usually varies from relatively flat open space to moderately sloping wooded areas. Such a park should be adaptable to a wide variety of recreational activities. Access is gained by auto, bicycles or walking.

Location

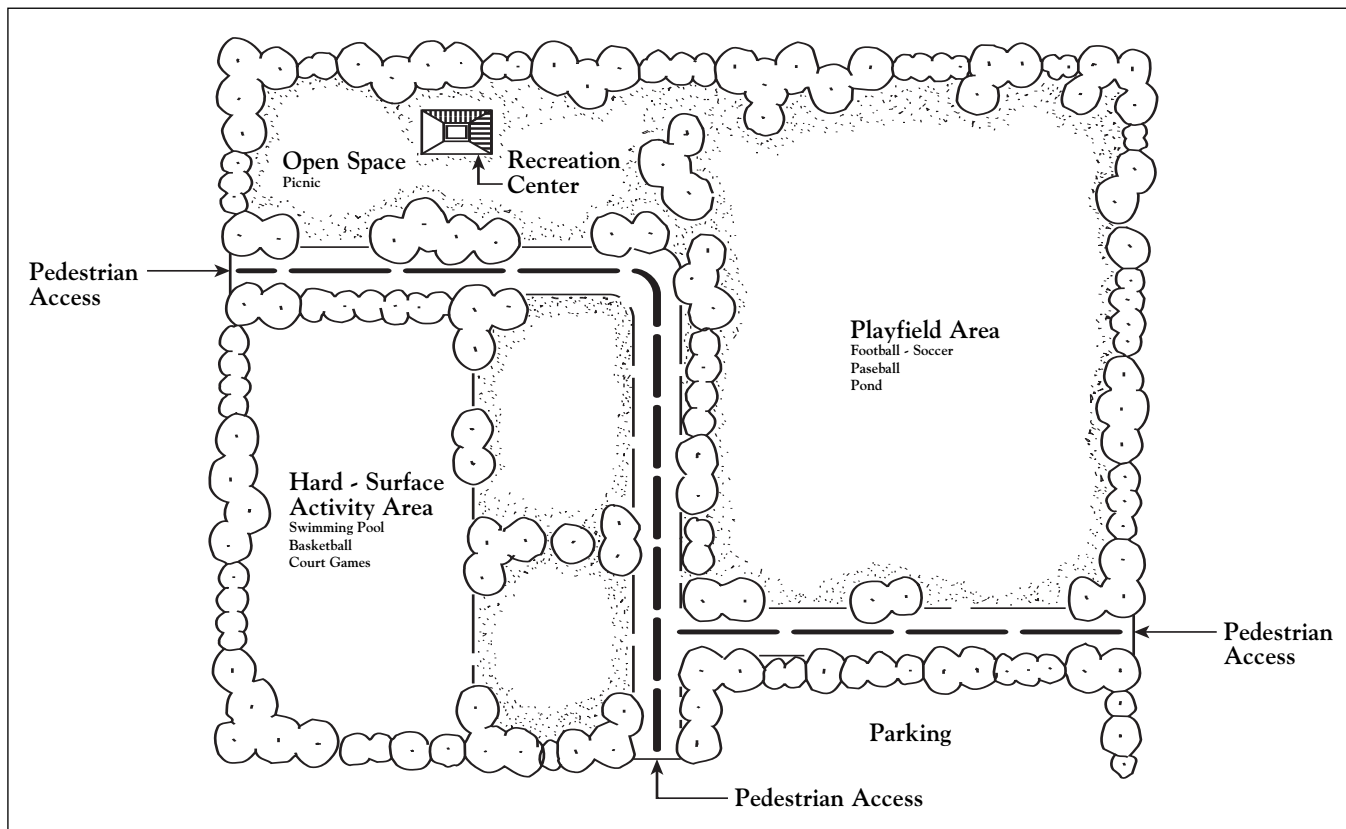
When possible, the community park should be located near the center of community with good access and service by a public transportation system.

Potential facilities

- playgrounds
- picnic facilities
- tennis courts
- ball diamonds
- horseshoe courts
- shuffleboard courts
- basketball courts
- volleyball courts
- football/soccer fields
- trails: walking, hiking, biking, fitness
- natural area
- fishing lake or stream access
- beach and swimming area
- swimming pool
- parking area
- recreation center

A multitude of activities must be provided by this intensive-use recreational facility. The recreation center is often the focal point of the park. Organized activities and supervised play are administered from this point. Other activities are grouped in the surrounding area. Their location depends on the natural terrain, need for control and vehicular access. Any existing natural qualities — topography, water features, trees, etc. — should be preserved as natural buffers between activity areas, as well as to protect the recreational environment from surrounding, incompatible influences. These natural elements also should be used to provide a space for more passive forms of recreation such as nature walks, picnicking and fishing.

In a rural setting, this park category may take the place of the neighborhood park. It can better serve a widely dispersed population than two or three smaller sites. Community parks, along with neighborhood parks (where applicable), usually meet most of the close-to-home recreational needs of most localities.

Figure A-3. Community Park

**District Park
(City or County)****Size**

50-150 acres

Plan at 4-acres/1,000 population

Service area

15-25 minutes driving time

5-15 mile service radius

Administrative responsibility

Local government

Purpose

The district park should serve the recreational needs of large portions of the local population. It should contain a wide variety of intensively developed areas for day-use recreation, while providing ample open space with generous buffers between activity areas.

Character

The site can vary from flat open space to moderately or steeply sloping topography. It should be capable of supporting a wide variety of activities with ample buffer and natural

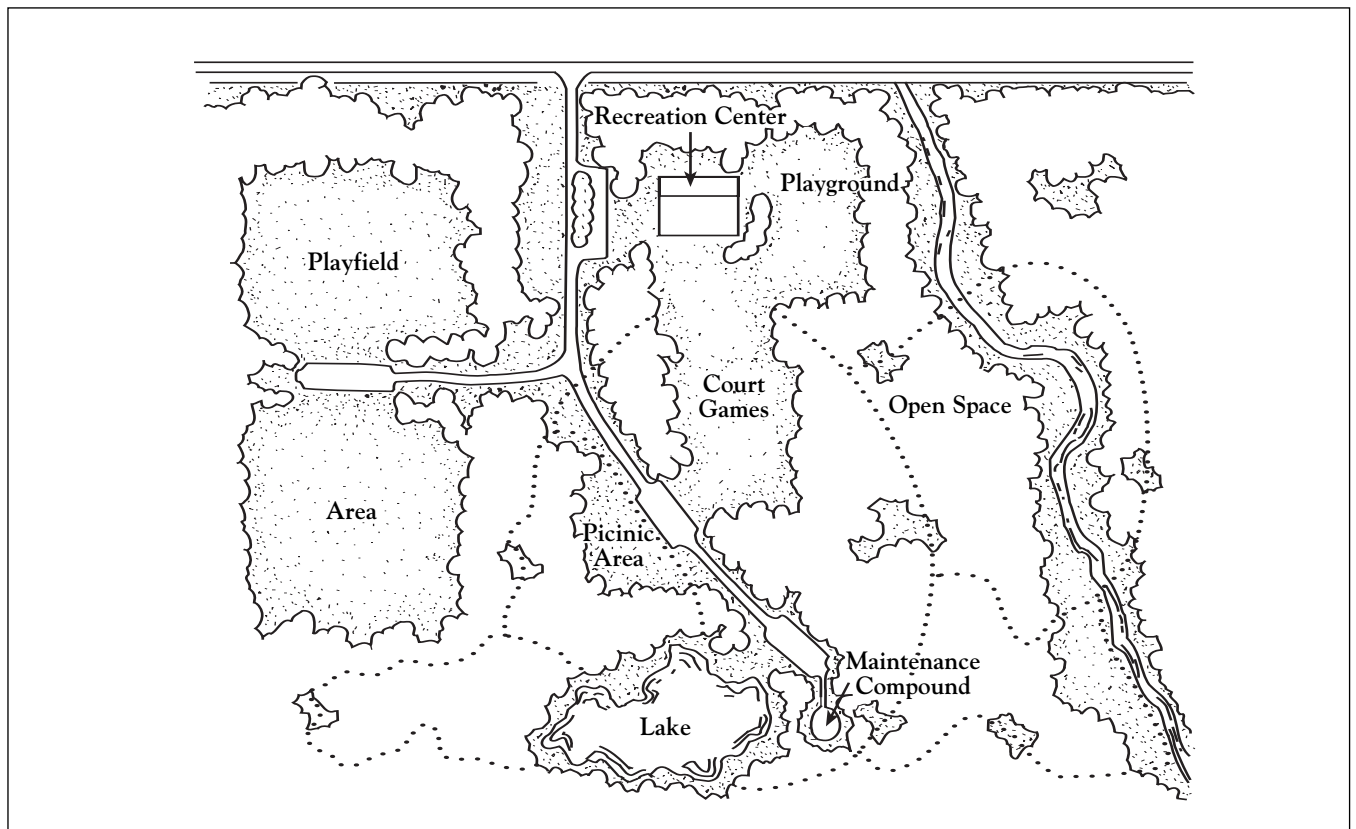
areas. A stream, lake or tidal waterfront site is very desirable. The district park needs to be accessible by automobile, as well as by pedestrians and bicyclists.

Location

When possible, the district park should be located near the center of the service area. It should be on or near a major street that provides good access to the facility. In urban or suburban situations, easy access to mass transit is highly desirable. The site also should be accessible by pedestrians and bicyclists.

Potential facilities

- playgrounds
- picnic facilities
- tennis courts
- ball diamonds
- horseshoe courts
- volleyball courts
- basketball courts
- recreation centers
- golf
- trails
- natural area
- lake or stream
- fishing/boating
- swimming pool and/or beach with a swimming area
- football/soccer fields
- parking areas
- shuffleboard courts

Figure A-4. District Park

Recreation Center

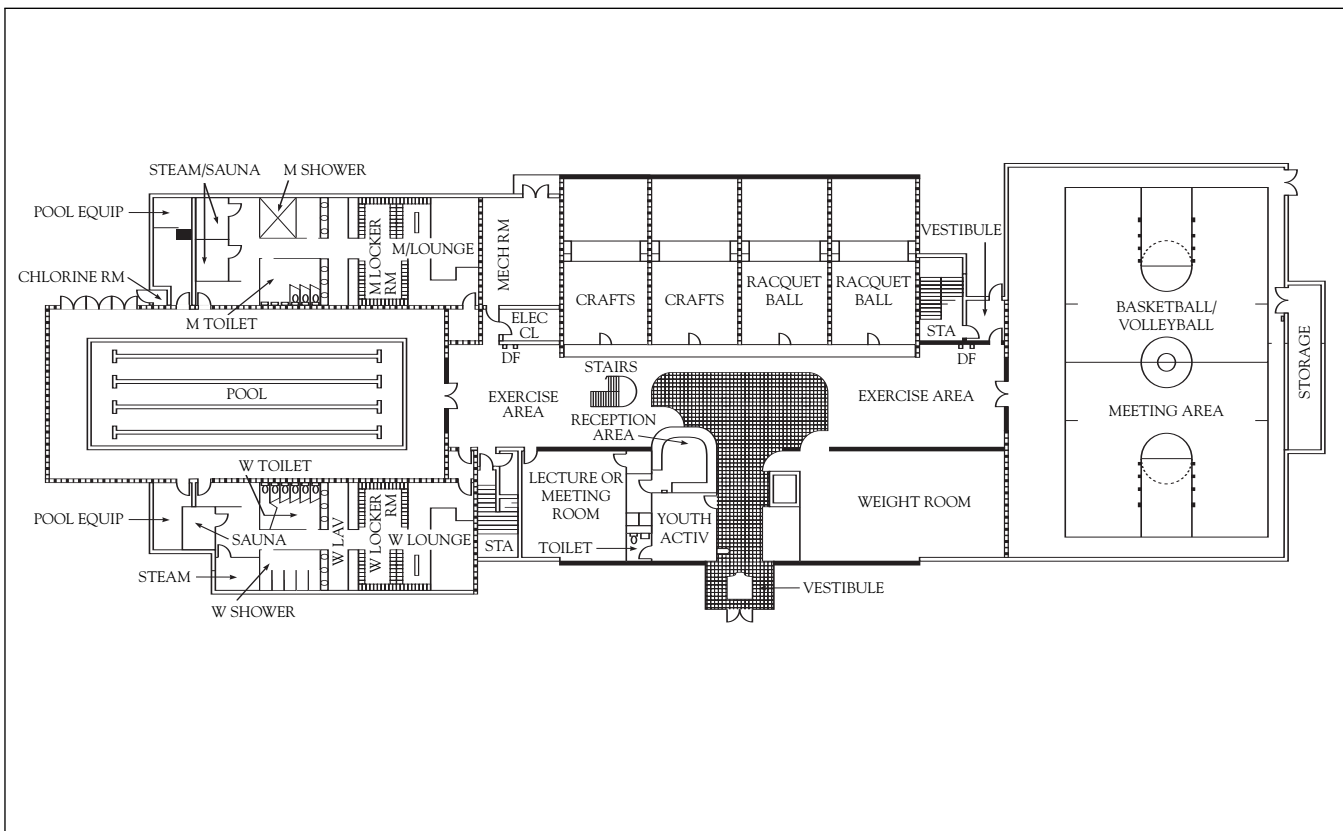
The recreation center may be found at neighborhood, community, district and large urban parks. At neighborhood parks, the center is usually 15,000 to 20,000 square feet. It generally will include multi-purpose rooms, arts and crafts area, game room, kitchen, lounge and lobby, restrooms, and office. If a gymnasium is not available in a neighborhood school, the recreation center also may include a gymnasium and locker room facilities.

The recreation center in a larger park serving a community, district or city will be considerably larger, from 20,000 to 80,000 square feet, and will include several multi-purpose rooms, gymnasium, child care facilities, aerobics room, rac-

quetball courts, shower and locker rooms, game room, arts and craft area, auditorium or areas for performing arts, classrooms, concession stand, kitchen, large meeting room, restrooms, office, lounge or lobby, and some specialized areas such as a ceramics workshop or weight room. Frequently, larger centers have an indoor pool used year-round for recreational, instructional and therapeutic purposes. An important consideration in all recreational facilities is adequate storage space for equipment and supplies.

Most localities that have developed guidelines for indoor facilities have adopted a standard of 0.5 to 0.75 square feet per resident. Small centers may serve 5,000-8,000 neighborhood residents, while larger centers may well serve communities of 50,000-80,000 people.

Figure A-5. Recreation Center



Regional Park**Size**

100-500 acres

No special size/1,000 population

Service area

Approximately 45 minutes driving time

25-mile service radius

Administrative Responsibility

Single or multijurisdiction

Purpose

Regional parks should supplement the community park system with more extensive open space areas and readily accessible passive recreational opportunities.

Character

Varied terrain, scenic views and extensive natural areas are important qualities of regional parks, along with the opportunity for participation in a variety of recreational activities.

Location

The regional park should be located in areas with significant natural characteristics and should serve several communities.

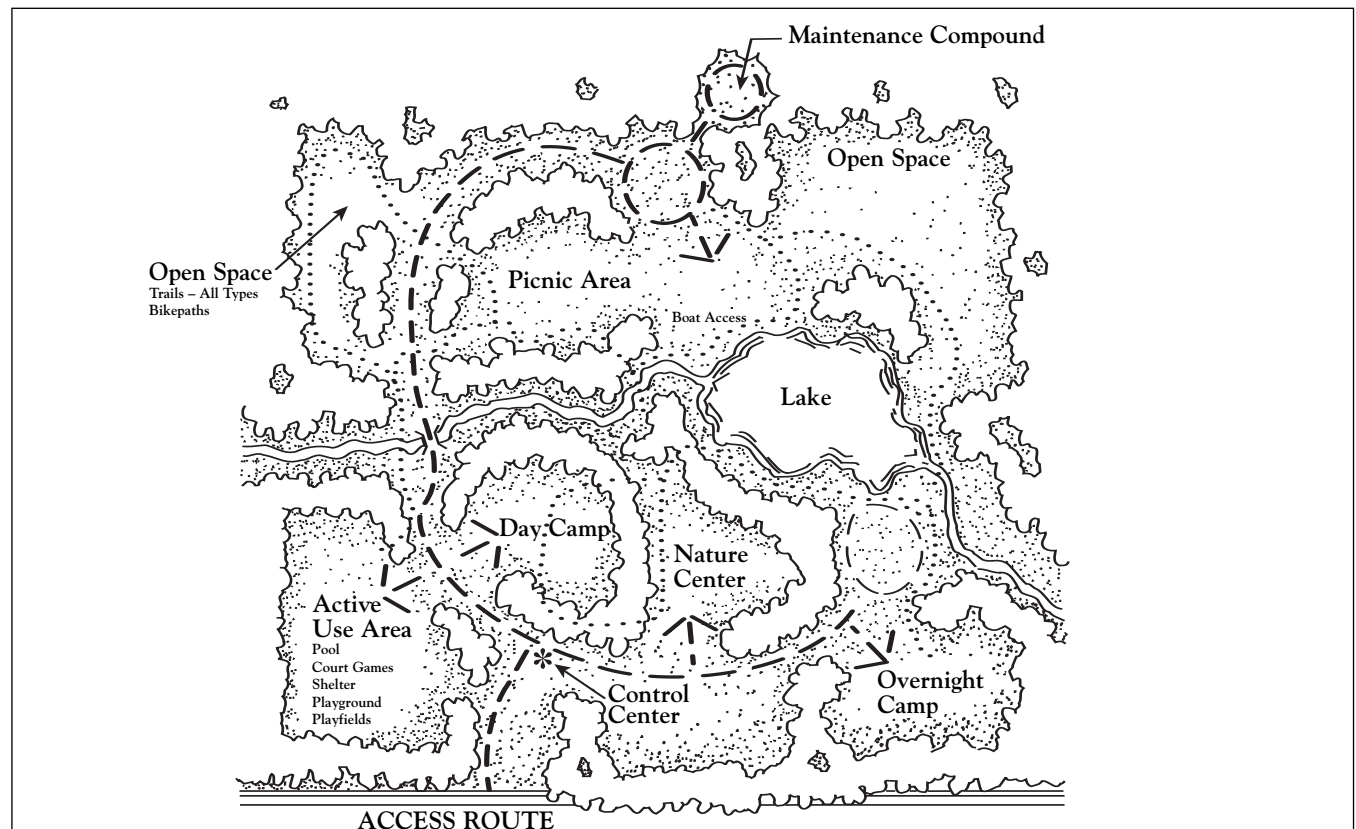
Potential facilities

- day camping
- overnight camping
- natural area
- picnic facilities
- trails (all types)
- playground
- amphitheatre
- athletic fields
- swimming area, (beach and/or pool)
- boating facilities
- golf
- fishing lake

The regional park is designed to provide recreational space for a relatively large population. The road system enables smooth vehicular flow to the various facilities, and a single main access facilitates control and reduces conflicts between use areas. Located conveniently to the circulation system are large, intensive-use areas and picnic grounds. Lakes, streams or other outstanding natural features are desirable assets. As much as 80 percent of the site is undeveloped usable open space to provide opportunities for hiking, nature study and other passive activities. An isolated segment of the site may be reserved for day camps.

The regional park should complement the facilities provided at other parks and is not a substitute for neighborhood, community or district facilities. In addition to the more intensively developed areas, the regional park should also offer an abundance of open space for recreational pursuits such as picnicking, hiking, nature study and enjoying the outdoors.

Figure A-6. Regional Park



Greenway

Size

Any length, preferably longer than one mile
Typically 75-100 feet or wider

Service area

Depends upon the location, size and significance of the corridor

Administrative responsibility

Federal, state, local or public/private partnership

Purpose

Greenways are established to protect, preserve, and maintain existing natural and cultural corridors; to link population centers with recreational, educational and business areas, and other population centers; and to provide recreational

and non-motorized transportation opportunities along these corridors by using natural features (ridgelines, steep slopes), utility rights-of-way, abandoned railroad rights-of-way, and watercourses (streams, rivers, canals).

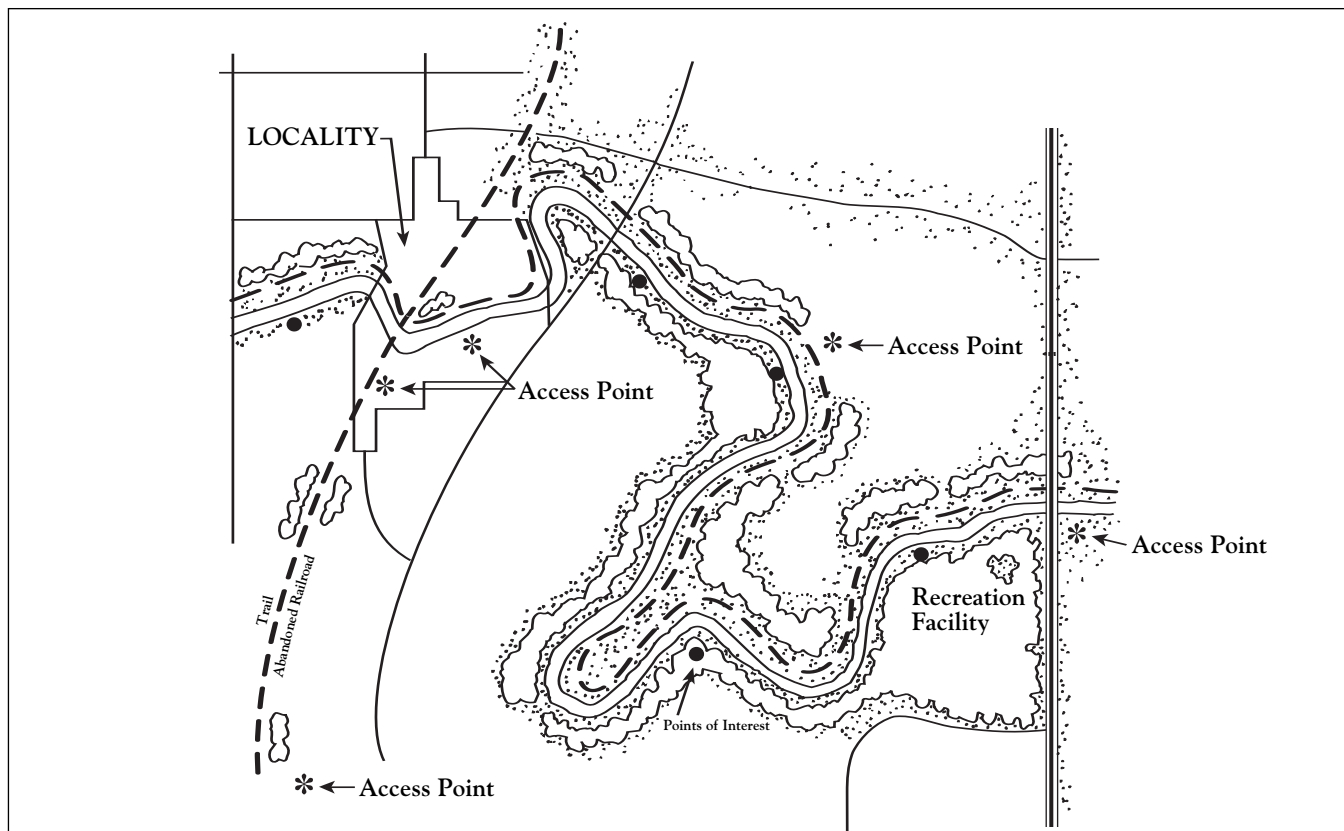
Character

Depending on the location, it can range from rugged terrain with scenic views and extensive vegetation to open level meadows. The greenway can be a separate entity or a portion of any of the other park categories.

Potential facilities

- camping
- picnic facilities
- trails (all types)
- natural area
- winter sports
- fishing
- access points
- canoeing
- parking areas
- boating and facilities
- historic sites

Figure A-7. Greenway



State Park**Size**

600+ acres

Plan at 10-acres/1,000 population

Service area

Entire state

Administrative responsibility

Virginia Department of Conservation and Recreation

Purpose

To provide significant recreational experiences and protect a significant natural resource base or landscape

Character

Extensive open space and/or unique natural features in the form of views, terrain and vegetation are important qualities of the state facility. Compatible recreational uses are a necessity. Access to the ocean, the Chesapeake Bay, major lake, or river is very desirable.

Location

- The location is usually determined by the presence of unique natural features and proximity to population centers.
- The site should meet a variety of the popular outdoor recreational activities identified in the *Virginia Outdoors Plan*.

- The site must be consistent with the mission, goals and objectives of the Department of Conservation and Recreation (DCR).
- The site should preferably be located on a significant water resource offering opportunities for water-based recreation.
- A single access road allows excellent control and monitoring of users to the park and serves as the backbone of the vehicular circulation system. Specialized activities are grouped in intensive-use nodes along the central circulation system to provide areas for camping, picnicking, and water-oriented activities. The remaining area – as much as 80 percent of the total site – can be left as natural, undeveloped, but usable open space for such activities as hiking, horseback riding, nature study and fishing.

Potential facilities

- camping
- picnic facilities
- natural area
- swimming pool and/or swimming area and beach
- trails
- open play fields
- overnight facilities
- natural/historic interpretive facilities
- boating facilities
- fishing lake and/or stream access
- playground
- canoeing
- parking areas
- amphitheatre

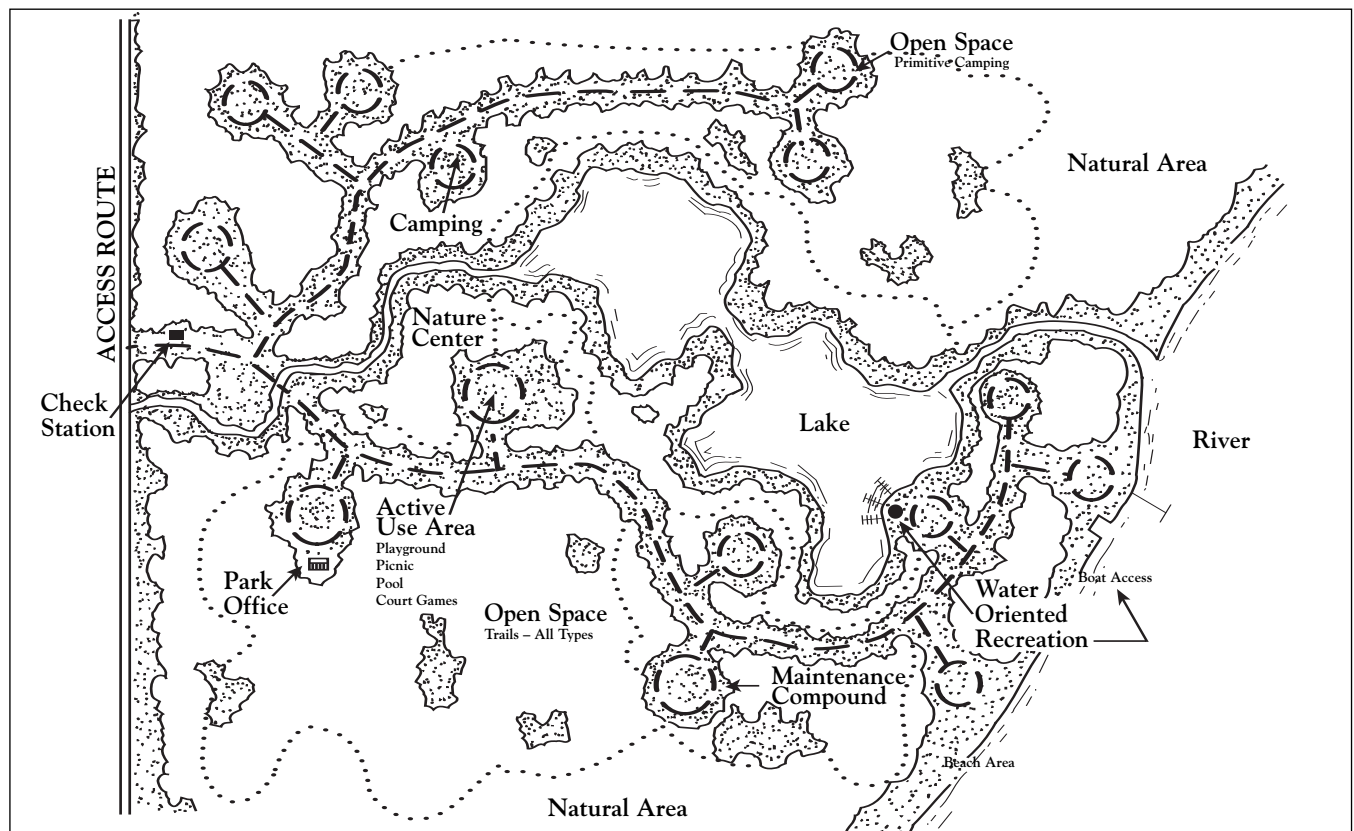
Figure A-8. State Park

Table A-3. Capacity and Space Guidelines

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
Archery (Range)	10' x 300' min. per target	.85	10	1/50,000	Ten positions — with movable targets. Could be per part of a range complex including rifle, pistol, skeet and trap-buffer area required.
Baseball (Diamond)					
Adult	350' x 350' (400' to CF) 200' x 200' (250' to CF)	3.0 1.5	18	1/6,000	Should be included in complex of fields at community district or regional parks — lighting desirable. Check League Guidelines for actual size.
Little League					
Basketball (Court)	60' x 100'	0.15	10	1/5,000	Full court — 1/2 court games would double instant capacity. Should be included in complex of fields at neighborhood, community district or regional parks — lighting desirable — also use as multipurpose court.
Beach (Swimming & Bathing)	Minimum 200' x 600'	3.0 acre	150	25' shore/1,000	Consider at any facility where there is a water body that can support beaches. Swimming unit should contain 100' wide beach with 100' of available swimming water — 30% of people will be in water at one time under normal conditions — support facilities should be shared with other activities.
Boating, (Power) & Water Skiing	Variable to meet conditions	12 ac/boat	3.0/boat	0.5 ac/1,000	Minimum of 100 acres of open water at least 4' in depth desirable — would accommodate eight boats at one time.
Boat Ramp	16' x length to meet 3" depth at low water	2 acres	8 boats/hr	see remarks	Provide one ramp for each 40 boats anticipated to use the facility on a design day. (12-14% slope)
Camping Self-Contained Unit	35' x 45'	0.125/acre	8 units/ac	10 ac/1,000	Consider this density primarily as a destination-type facility — support facilities would be needed to integrate tent camping with self-contained units — two types should be separate when practical — consider at large regional and state facility.
Tent	90' x 100'	0.20 ac/site	5 units/ac	5ac/1,000	This is a low density and should be developed when resource is fragile — consider at regional and state facilities.
Canoeing	Variable	***	8 people/		**Small streams 10 to 40 feet wide, 4 canoes/mile mile— medium stream 40' to 70' wide will support 8 canoes/mile — large streams 75' wide or over will support 12 canoes/mile. Width x 5,280' ÷ 43,560 sq ft = surface acres/mile.
Trails					
Multi-use	minimum 12' width				Connector trails should be used to connect schools, parks, and other facilities. Proper signage and education is needed to minimize user conflicts. Provide off-road bicycle trails where practical to connect schools, businesses, parks.
Bicycle	minimum 10' width				
Equestrian	Minimum 4' tread 8' cleared width				
Hiking/jogging	minimum 4' tread - rural minimum 5' tread - urban				Connector trails should be used to connect facilities.

Table A-3. Capacity and Space Guidelines— continued

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
Firearms (Shooting Range)	Variable	5 ac	20	1/50,000	Ten positions on each range. If possible, develop range complex with rifles, pistol ranges, and skeet and trap fields. — Careful coordination with National Rifle Association and local gun clubs desirable. Provide adequate buffer from other activities.
Fishing					
Bank	8' x 50'	400 sq. ft.	100 mile	1 mile shore/	Consider on any water body that can support fish population — DGIIF suggests 10-acre minimum size where unlimited fishing pressure anticipated. Fishing water is a plus for any community, district, regional or state facility.
Shoreline	1,000				
Boat		4 ac water/boat with 2 people	.50/acre	4 acre/1,000	
Stream	1 mile/four fisherman	4/mile			
Football (Field)	195' x 480' 150' x 360' actual play area	2.25	22	1/10,000	Should be included in complex of fields at community, district or regional park. Lighting desirable — could also serve as field hockey, lacrosse, or soccer field.
Golf	6,500 yards/18 holes average, 7,000 yds. + championship course.	50 acre/9 holes	4/hole x # holes	9 holes/25,000	Eighteen holes for each 50,000 people minimum size 100 acres — 160 acres desirable — can accommodate 500 persons/day.
Hockey					
Field	200' x 350'	1.6	22	1/25,000	Should be included in complex of fields at community park. Lighting desirable. Are considered multipurpose fields. Artificial icemaking required — can adapt paved court areas to hold water in colder parts of state for limited winter use.
Ice Rink	85' x 200'	0.4	12	1/30,000	
Horseshoes (Lanes)	12' x 50'	0.4	4	1/10,000	Include in neighborhood, community, district, or regional park with high percentage of people over 30 —multiple lane best.
Hunting					
Upland		12 acre/hunter/day	.083 hunters/ac		Using a turnover factor of two = 6 acres of resources/hunter.
Waterfowl		12 ac/hunter	.083 hunters/ac		
Lacrosse (Field)	260' x 500'	3.0	20	1/25,000	Football or soccer fields often used — provided at community park.

Table A-3. Capacity and Space Guidelines— continued

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
ORV					
2 Wheel	min. 5' tread width	10 acre min.	4/mile	1 acre/5,000	Carefully planned trails are required to buffer from passive activities. Should be environmentally sensitive.
4 Wheel	min. 7' tread width	15 acre min.	4/mile	2 acre/5,000	
Picnicking	Variable		4/table	10 units/1,00	Tie with other activities — Density higher in urbanized areas.
Sailing	Variable	6 acre/boat	.5 person/acre	1 acre/1,000	Large expanses of open water desirable.
Skateboard Park	Variable	0.25 min.	100	1/25,000	Smooth, level surface required — free from gravels — Concrete preferred; ramp/component materials can vary — steel requires least maintenance; park should be designed to accommodate a variety of vehicles (skateboards, roller blades, bicycles, etc.).
Skiing (Snow)	100' x length		75/lift	1 ac. ski slope/	Requires northeast facing slopes. On site of 1,000 100 acres or more, slopes should be protected by trees. Also requires annual snowfall of 30" or more, or artificial snow-making equipment.
Soccer (Field)	250' x 400'	2.25	22	1/5,000	Provide at community, district, or regional park — football or lacrosse fields often used. Spring and fall seasons may require additional fields if football or baseball fields also used for soccer program.
Softball (Field)	300' x 300'	2.10	20	1/3,000	Provide in complex area neighborhood, community, district, or regional park. Lighting desirable — more than one field per site desirable.
Swimming (Pool)					
Jr. Olympic	45' x 75'	0.5	225	1/10,000	15 sq. ft. of water per person, based on 3% of of population, 100 sq. ft. deck per 35 sq. ft. of water.
Olympic	75' x 150'	0.75	750	1/20,000	
Tennis (Court)	60' x 120'	0.2	4	1/2,000	Provided at neighborhood, community, district, or regional sites — develop in pairs where possible — lighting desirable.
Volleyball	50' x 80'	0.1	12	1/1,000	Provide at neighborhood, community, district, or regional facilities. Consider using basketball courts for multipurpose use.

Appendix D. Demand, Supply and Need for Outdoor Recreation Areas

The purpose of this Appendix is to document the process used in measuring demand, computing supply and determining the need for outdoor recreation areas and facilities in Virginia.

2006 Virginia Outdoors Survey

Every five years, in preparation for the development of a new *Virginia Outdoors Plan*, the Department of Conservation and Recreation (DCR) conducts an outdoor recreation demand survey. The 2006 *Virginia Outdoors Survey* was a cooperative project between the DCR and Virginia Commonwealth University. Its purpose is to measure public demand for outdoor recreation areas and facilities in Virginia each year. In addition to addressing standard questions pertaining to participation in different types of outdoor recreational activities, the survey also asked specific questions about each activity. These questions included how many household members participated and the frequency of participation, how much time it took to reach the site of the activity, whether they participated in Virginia or left the state, and if they usually used a public or private facility. There were more types of recreational activities measured in the 2006 survey than in the 2000 survey; the activity list was expanded in order to develop more data on the types of outdoor recreational activities and resources enjoyed by Virginians.

Survey design and development

The 2006 survey was designed to elicit detailed information regarding major resource-based recreational activities. For example, camping questions sought to determine the type of camp equipment used, whether hookups were preferred, and what other amenities are preferred in a campground. Questions were also asked about the types of facilities and programs that should be provided within Virginia's state parks. Other questions probed for reasons for not using the state park system. Certain questions were designed to gain information about the types of outdoor recreational areas/facilities most in demand and to determine the public's attitudes toward the protection of open space. A summary of the survey, with the questionnaire, can be obtained by contacting the Department of Conservation and Recreation, Division of Planning and Recreation Resources, 203 Governor Street, Suite 326, Richmond, VA 23219.

Survey process

Because of the amount of information covered, the 2006 *Virginia Outdoors Survey* was a mailed questionnaire. To ensure accuracy of results at both the state and regional level, Virginia was divided into four regions for sampling purposes: the Chesapeake region (Planning Districts 17, 18 and 22), the urban corridor (Planning Districts 8, 15, 16, 19 and 23), the Piedmont region (Planning Districts 9 through 14), and the Mountain region (Planning Districts 1 through 7).

Addresses were acquired within each region through a random selection process and questionnaires were mailed. If a household failed to return its questionnaire within two weeks, a postcard reminder was sent. Households not responding within a given time were sent reminder letters, as well as additional survey copies. As a result of these efforts, more than 3,400 valid responses were received.

To help ensure validity of the data, responses were weighted according to 2000 Census data to correspond with population characteristics such as race, income, education, sex, and property ownership for each region. Survey estimates are 95 percent certain to be within a ± 2.0 percent confidence interval of the actual attitudes of the population at the statewide level. This high level of confidence makes the data an excellent source of information regarding Virginians' preferences and attitudes about outdoor recreation and open space resources. Results and trends from the survey are summarized in Chapter II.

Virginia recreation areas and facilities inventory

The Department of Conservation and Recreation maintains an inventory of all recreation areas and facilities in the state. This inventory is maintained by locality and is further subdivided by management agency, organization, or whether it is a public or private entity. Each recreation site, its name, acreage, and attributes are listed and enumerated. This inventory is sent every five years to each locality in the state for their corrections, deletions, and additions. Furthermore, data is updated for all federal and state land managing agencies that have holdings in Virginia.

Computing the need for outdoor recreation areas and facilities

The 2006 Virginia Outdoor Survey results are used to determine the units of recreation facility demand by activity. The Recreation Areas and Facilities Inventory provides us with our current units of supply for each activity. Subtracting "units of demand" from "units of supply" shows "units of need." In cases where supply exceeds demand, a surplus is shown. In many cases this surplus exists only when compared to local demand. When imported demand is added to local demand, many of these surpluses disappear.

To use the 2006 Virginia Outdoor Survey results in our computations, we first convert the findings to activity days.

Activity days are computed by multiplying the percent of the population participating in an activity by the median number of days spent by each participant within the survey region. It should be noted that the median figure results in a conservative estimate of the total number of activity days for each activity.

Table A-4 Capacity of Areas and Facilities by Activities

Activity	Weeks in Seasons	Peak Day Proportion	Instant Capacity	Turnover Factor	Daily Capacity	Units
Baseball	26	0.37	18	4	72	fields
Basketball	26	0.37	10	6	60	goals
Bicycling for pleasure	26	0.37	40	5	200	miles
Camping	26	0.46	3	1	3	sites
Canoeing, Kayaking, Jon Boating	36	0.44	8	6	48	stream miles
Fishing Stream	40	0.45	4	4	16	stream miles
Fishing Lake, Bay	40	0.45	0.5	4	2	water acres
Football	20	0.37	22	6	88	fields
Golf	26	0.39	72	2.5	180	courses
Hiking, Backpacking	26	0.40	10	3	30	trail miles
Horseback Riding	26	0.45	8	5	40	miles
Hunting	18	0.49	0.084	2	0.166	acres
Ice Skating	6	0.42	100	3	300	rinks
Jet Skiing	20	0.47	0.5	3	1.5	water acres
Jogging, Fitness Trail	26	0.15	24	3	72	mile trail
Motorcycling Off-Road	26	0.38	4	8	32	trail miles
Nature Study	26	0.37	2	2	4	acres
Picnicking Away From Home	26	0.54	4	2	8	tables
Pools, Swimming Outdoors	14	0.40	225	3	675	pools
Pools, Swimming Indoors	52	0.40	225	3	675	pools
Power Boating	26	0.47	0.25	3	0.75	water acres
Playground Use	26	0.37	25	4	100	sites
Rafting	26	0.44	16	6	96	stream miles
Sailboarding	26	0.45	1	2	2	water acres
Sailing	26	0.45	0.5	2	1	water acres
Skateboarding	26	0.40	25	2	50	sites
Snow Skiing	14	0.27	75	10	750	ski lifts
Soccer	20	0.37	22	6	88	fields
Softball	26	0.37	20	4	80	fields
Sunbathing, Beach Use	20	0.43	150	2	300	beach acres
Swimming, Outdoor Area	14	0.43	150	2	300	beach acres
Tennis	26	0.39	4	6	24	courts
Tubing	14	0.44	40	6	240	stream miles
Unlicensed All-Terrain Vehicle Use	26	0.38	4	8	32	trail miles
Visiting Gardens	40	0.44	50	2	100	sites
Visiting Historic Sites	52	0.44	50	2	100	sites
Visiting Natural Areas	26	0.44	50	2	100	sites
Volleyball	26	0.37	12	6	48	courts
Water Skiing	20	0.47	0.25	3	0.75	water acres

Appendix D. Demand, Supply and Need for Outdoor Recreation Areas

To convert activity days into units of demand, capacity standards multipliers on Table A-4: Capacity of Areas and Facilities by Activities are used. Activity clusters were developed for some activities, such as water-based recreation, which share the same resources. Current needs based on 2000 Census figures were projected to the year 2020 using official population projections, by locality, obtained from the Virginia Employment Commission.

The geographic level of analysis for estimating demand was the survey region. Statewide needs were obtained by adding regional needs. Planning district demand and local demand were allocated proportionally to the population of each sub-area within each region. Computations for demand are based on the findings for the specific sampling region. For example, demand in the New River Valley is computed using the findings for the Mountain region. Likewise, those for the Richmond area are based on the findings from the Urban Crescent region.

The formula for computing demand is as follows:

$$D = (A/W)P/C$$

Where:

- D** is the demand in units,
- A** is the annual number of activity days spent in the activity,
- W** is the number of weeks the activity is in season,
- P** is the proportion of activity days that occur on the peak day of the week, and
- C** is the daily capacity of the facility or area unit.

The daily capacity, C, is calculated as:

$$C = IT$$

Where:

- I** is the instant capacity, and
- T** is the turnover factor per day.

In estimating area and facility demand, activity clusters were identified. Stream fishing, canoeing, kayaking and jon boating, rafting and tubing all use stream miles. Therefore, demand for these activities was added together to compare with the inventory total for this resource. Lake and bay fishing, sailing, sailboarding, power boating, water skiing and jet skiing were combined to obtain a total need for water acres. Off-road motorcycling and unlicensed all-terrain vehicle use were combined for off-road trail miles. The demand for outdoor swimming at natural areas was estimated in terms of beach acres rather than water acres, and this was combined with sunbathing. Football and soccer demand were added together because they share the same fields.

Alternate estimates of demand can be calculated from the results for two activities using the following conversion factors: large indoor or outdoor swimming pools can accommodate three times the number of users as standard size pools, and demand for ski areas may be estimated as 44 acres per lift, or one acre per 17 skiers per day.

Regional findings of the demand, supply, and needs analysis

A table summarizing the findings of the 2006 *Virginia Outdoors Survey* data for each region is presented at the end of each regional analysis in Chapter X. Table A-5 projects facility needs for 2010 and 2020.

Summarizing results from the 2006 *Virginia Outdoors Survey*

The available supply of recreational areas and facilities forms the link between recreational demand and the need for outdoor recreational opportunities. An updated and current inventory of the outdoor recreational supply is an essential factor for measuring actual needs in the commonwealth.

In 2005, the Department of Conservation and Recreation conducted a statewide inventory of existing outdoor areas and facilities throughout Virginia. This survey was designed to solicit information from all cities, towns, counties, and local parks and recreation agencies. Respondents were provided with an inventory of local recreational sites and facilities and were asked to make additions and/or deletions to existing sites. Respondents were furnished with a form on which to tabulate and record recreation resources not currently listed in the state's supply system. To determine the true supply and subsequent need for outdoor recreational areas and facilities, it was requested that information on all recreational providers — public, quasi-public, and private, be included.

DCR stores and maintains computerized inventory records on the statewide supply of outdoor recreational areas and facilities. The supply data is arranged and stored by locality, recreational region and planning district commission. The availability and use of sites and facilities is categorized as public, quasi-public, or private, and site ownership is identified as local, regional, state or federal. Land and water acreage is indicated, as is specific information on the type and number of facilities. The data system allows DCR to periodically update and add new information into the supply inventory.

The inventory has been expanded to include many private tennis areas, swimming and racquet clubs, hunting clubs and recreational facilities located in housing developments. DCR has the capacity to store more information about private recreational areas and facilities. This feature improves knowledge of available supply and more accurately validates information about outdoor recreational demand and need. Such information about locally available public and private recreational facilities also ensures that real needs are not duplicated in the planning process. Every effort is made to obtain accurate information from survey respondents. However, some large resource areas and facilities serve multiple areas, which can lead to overlapping survey information. It is requested that any discrepancies found in this document be reported to DCR's Division of Planning and Recreation Resources at 804-786-6140.

Table A-5 Projected Statewide Needs

Activity	Activity Days	Demand	Units	Total Supply	Private Supply	2000 Needs	2010 Demand	2010 Needs
Baseball	12,466,080	2,464	fields	1,828	158	2,082	2,695	2,313
Basketball	31,234,301	7,408	goals	3,027	199	4,381	8,135	5,108
Bicycling	67,133,477	4,777	miles	NI	5,247			
Lake, River, Bay Use (combined)	38,736,080	507,854	water acres	1,302,491	-794,637	553,502	-748,989	
Power Boating	11,199,042	269,926	water acres	S	294,328			
Sailing	2,253,110	19,498	water acres	S	20,975			
Lake Fishing	12,240,857	68,855	water acres	S	74,494			
Salt Water Fishing	8,536,764	48,019	water acres	S	52,833			
Jet Ski, Personal Watercraft	2,530,308	39,641	water acres	S	43,309			
Water-Skiing, Towed on Water	1,975,998	61,915	water acres	S	67,562			
Camping (*)	12,775,279	75,341	sites	51,257		24,084	82,188	30,931
Tent camping	4,187,630	24,696	sites	8,942	5066	15,754	27,025	18,083
Developed camping	8,587,649	50,645	sites	42,315	35453	8,330	55,163	12,848
Fitness Trail use	4,852,462	389	mile trails	422	47	-33	430	8
Fields (combined)	38,644,615	8,124	fields	2,185	84	5,939	8,953	6,768
Football	21,158,134	4,448	fields	NS	4,907			
Soccer	17,486,481	3,676	fields	NS	4,047			
Stream Use (combined)	15,743,642	9,006	stream miles	3,175		5,831	9,753	6,578
Stream Fishing	11,481,493	8,073	stream miles	S	8,736			
Human-powered boating	2,827,129	720	stream miles	S	784			
Rafting	568,456	100	stream miles	S	109			
Tubing	866,564	113	stream miles	S	124			
Golfing	22,665,370	765	courses	301	361	464	837	536
Hiking, Backpacking	8,909,287	4,569	trail miles	5,363	612	-794	4,967	-396
Horseback Riding	1,833,529	793	miles	2,103	472	-1,310	861	-1,242
In-Line Skating	14,219,037	1,012	miles	NI	1,119			
Jogging, Running	88,143,668	7,063	mile trails	NI	7,776			

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Note: Demand multipliers used to create this chart are based on the findings of the *Virginia Outdoors Survey* as measured at the regional level. In regions with significant contrasts in population density and demographics, need results may show surpluses where none exist, especially in sparsely populated counties. Additional analysis will be required to adjust these results to local conditions.

Table A-5 Projected Statewide Needs – continued

Activity	Activity Days	Demand	Units	Total Supply	Private Supply	2000 Needs	2010 Demand	2010 Needs
Nature Study, Programs	3,130,303	445	sites	67	378	489	422	
Picnicking Away from Home	9,682,208	25,137	tables	33,035	10,517	-7,898	27,462	-5,573
Skateboarding	4,897,560	1,507	sites	NI	1,665			
Snow-Skiing or Snowboarding	3,090,031	79	ski lifts	22	22	57	87	65
Softball	14,523,040	2,583	fields	1,871	121	712	2,833	962
Sunbathing, Relaxing on Beach	25,564,746	1,832	beach acres	2,047	435	-215	2,013	-34
Swimming, Outdoor Area	19,014,841	1,947	beach acres	2,047	-100	2,141	94	
Swimming, Outdoor pools	22,355,220	946	pools	747	507	199	1,039	292
Swimming, Indoor pools	13,477,237	154	pools	64	20	90	169	105
Tennis	13,009,606	8,131	courts	3,914	1,501	4,217	8,944	5,030
Used a Playground	38,084,653	5,420	sites	2,666	276	2,754	5,962	3,296
Visiting Gardens	3,048,908	335	sites	NI	369			
Visiting Historic Sites	13,141,685	1,112	sites	NI	1,223			
Visiting Natural Areas	7,799,637	1,320	sites	NI	1,444			
Volleyball	3,090,000	916	courts	144	17	772	1,002	858
Went Hunting	10,232,450	1,678,012	acres	2,142,241	-464,229	1,815,697	-326,544	
Went Shooting Total	6,005,147	3,392	fields	NI	3,665			
Target	4,041,035	2,283	fields	NI	2,484			
Skeet or Trap	1,574,402	889	fields	39	850	965	926	
Other	838,768	474	fields	NI	513			
Drive for Pleasure	54,482,683	NA	NA	NI	NA			
Motorcycle, ATV (combined)	4,908,532	2,242	miles	228	5	2,014	2,415	2,187
Driving All-Terrain Vehicle	3,577,252	1,634	miles	NS	1,759			
Driving Motorcycle Off-Road	1,331,281	608	miles	NS	656			
Driving 4-Wheel-Drive Off-Road	3,565,865	NA	NA	NI	NA			
Walking for Pleasure	224,976,112	NA	NA	NI	NA			
Other	3,537,520	NA	NA	NI	NA			

NA: not applicable, no standard needed

S: same as combined

NS: not inventoried separately

NI: not inventoried

(-) indicates surplus

Appendix D. Demand, Supply and Need for Outdoor Recreation Areas

Table A-6. Statewide Supply of Recreational Facilities

Activity	Supply	Activity	Supply
Baseball	1,803 fields	In-Line Skating	NI miles ***
Basketball	2,936 goals	Jogging/Running	NI mile trails**
Bicycling	NI miles ***	Nature Study/ Programs	71 sites
Bicycling – Mountain	NI miles	Picnicking Away from Home	32,439 tables
Bicycling Other	NI miles	Skateboarding	NI sites
Lake, River and Bay Use (combined)	1,302,736 water acres	Snow Skiing or Snowboarding	17 ski lifts
Power Boating	S water acres	Softball	1,821 fields
Sailing	S water acres	Sunbathing, Relaxing on Beach	2,837 beach acres
Salt Water Fishing	S water acres	Swimming	NI
Jet Ski/ Personal Watercraft	S water acres	Swimming Outdoor Area	2,837 beach acres
Water Skiing/Towed on Water	S water acres	Swimming Outdoor pools	727 pools
Camping	50,954 sites	Swimming Indoor pools	63 pools
Tent camping	8,917 sites	Tennis	3,793 courts
Developed camping	42,037 sites	Used a Playground	2,681 sites
Fitness Trail use	417 mile trails	Visiting Gardens	NI sites
Fields (combined)	2,182 fields	Visiting Historic Sites	NI sites
Football	2,149 fields	Visiting Natural Areas	NI sites
Soccer	33 fields	Volleyball	148 courts
Stream Use (combined)	3,057 stream miles	Went Hunting	1,999,631 acres
Fresh Water Fishing	S stream miles	Drive for Pleasure	NI na ***
Human-powered boating	S stream miles	Driving Motorcycle Off Road	218 miles
Rafting	S stream miles	Driving 4-Wheel-Drive Off Road	NI na ****
Tubing	S stream miles	Walking for Pleasure	NI na ***
Golfing	5,399 courses	Bird Watching	NI na
Hiking/ Backpacking	5,218 trail miles	Other	NI na
Horseback Riding	2,057 miles		
NI Not Inventoried <i>* Not added to other similar resources</i> <i>*** Unmeasured, provided on any suitable surface including local streets</i> <i>** Includes only specially constructed trails</i> <i>**** Unmeasured, provided on any suitable surface</i>			

The supply inventory does not measure the quality of available facilities (see Table A-6). However, information on maintenance capability, facility design, lighting, accessibility and other environmental factors usually indicates if the supply of recreational resources has maximum user potential.

The Department of Conservation and Recreation uses information gathered on the existing supply of outdoor recreational areas and facilities as a resource for several in-house initiatives related to planning, grants administration and technical assistance for parks and recreation. DCR also distributes this information to federal agencies and to local and regional political jurisdictions in the Commonwealth.

In order to accurately assess and meet the recreation and open space needs of a locality, it is imperative to consider the following variable during the planning process. When assessing existing and proposed recreational development, consider that even though a region, county or city may show

a surplus of resources (e.g., soccer/football fields, boat ramps, trails, local parks) based on the locality's inventory of recreation resources, not all opportunities are available to all citizens. Barriers like proximity (travel distance) and access (private, member-only facilities) must be taken into consideration to accurately meet needs of the locality.

In 2000, the National Survey on Recreation and the Environment interviewed approximately 5,000 Americans, ages 16 and older, about their participation in twelve categories of outdoor recreation. This survey was also conducted in 1982-83 and in 1994-95. Table A-7 shows a comparison of participation rates by Americans in outdoor recreation activities from 1994-95 to 2000 and the percent of change in participation rates. The findings in this survey show participation rates in many activities increasing dramatically, while the Virginia Outdoor Survey found less dramatic increases in some activities and many activities with declining participation rates.

Appendix D. Demand, Supply and Need for Outdoor Recreation Areas

Table A-7. National Survey on Recreation and the Environment (NSRE)

Activity	Number in 1994-95 (Millions)	Number in 2000 (Millions)	Percent Change
Bicycling	57.4	84.8	+47.7
Horseback riding	14.3	23.6	+65.0
Outdoor team sports	53.0	43.5	-17.9
Boating	58.1	90.9	+56.4
Sailing	9.6	12.4	+29.1
Motor boating	47.0	58.9	+25.3
Water skiing	17.9	18.9	+5.5
Swimming/non-pool	78.1	102.2	+30.8
Fishing	57.8	75.7	+30.9
Hunting	18.6	21.1	+13.4
Hiking	47.8	73.8	+54.3
Walking	133.7	180.6	+35.1
Bird watching	54.1	84.9	+56.9
Picnicking	98.3	124.2	+26.3
Sightseeing	113.4	124.8	+10.0
Off-road driving	27.9	40.2	+44.0
Downhill skiing	16.8	19.7	+17.2
Cross-country skiing	6.5	10.6	+63.1
Snowmobiling	7.1	12.6	+77.4
Camping, Developed area	41.5	56.8	+36.8
Camping, Primitive area	28.0	35.4	+26.4
Backpacking	15.2	24.9	+63.8

Purpose

In February of 2006, a survey was sent to local governments to obtain feedback on trails from the perspective of users, managers and planners. A similar survey was sent to planning district commissions with questions for regional planners. The goal was to determine the most significant problems faced by trail planners, users, and managers and to learn what assistance local governments and regional planners expected from the state.

Methodology

A one-page questionnaire was sent to the parks and recreation director at each local government asking them to rank the top three responses to a series of questions. Sixty-nine Virginia counties have full-time parks and recreation departments, as do 21 incorporated towns and 38 cities. Responses were received from 14 cities, 38 counties, 2 towns, and 2 trail management entities — a response rate of about 44 percent. Local government responses were evaluated based on whether a locality reported itself as urban, rural, or mixed (transitioning from rural to urban).

A similar questionnaire was sent to each planning district commission (PDC). Responses were received from all.

Responses

Regional planners reported that trails most benefit the region by promoting active living with healthier options for everyday

routes. Trail users who get to places on their own power not only reduce their risk for chronic disease, they have less impact on air and water quality, use less fuel reserves, and make lighter demand on congested traffic routes than automobile users. Regional planners also valued trails because they provide recreation alternatives for all ages, incomes and abilities. Other important benefits included attracting businesses; separating hiker, joggers, and bicyclists from roadway traffic and road shoulders; enhancing quality-of-life indicators that serve to attract and keep families/young people in the area; and creating outdoor environmental educational opportunities (see Table A-8).

Trail services to regional and local governments

Survey respondents were also asked to rank the most important way the state can assist with trail-related efforts (outside of funding) through the Trails and Greenways Program. Regional planners ranked providing a clearinghouse for technical documents and other trails-related information at the top, along with maintaining an up-to-date statewide trail inventory and Web site for trail promotion. Respondents also valued on-site trail evaluation and assessment and educational workshops and conferences. Areas of assistance requested in the “other” category include sharing equipment, providing grant writing and environmental compliance workshops, sharing stories and technical assistance at local trail meetings promoting trails to businesses and citizens, and assisting local planners with public relation/educational campaigns and materials on the benefits of trails, greenways, bikeways, etc.

Table A-8. Top Three Ways Trails Benefit the Region

Ranking	Benefit
1	Provide recreation alternatives for all ages, incomes and abilities
2	Promote active living with healthier options for everyday routines
3	Attract businesses and ecotourists

Table A-9. Top Four Ways DCR Can Assist with Trail-related Efforts

PDC Ranking	Local Government Ranking	DCR Assistance
1	1	Provide a clearinghouse for technical documents and other trails-related information and contact data for trail professionals and volunteer groups
2	4	Maintain an up-to-date statewide trail inventory and Web site for trail promotion
3	2	Provide on-site trail evaluation and assessment
4	3	Provide educational workshops and conferences

Table A-10. Top Four Needs for Trails

PDC Ranking	Local Government Ranking	Trail Needs
1	1	Connected regional trail systems (trunkline)
2	4	Trails in residential neighborhoods (spur)
3	2	Upgrade and maintenance of existing trails
4	3	Trails in parks

Table A-11. Top Three Challenges for Trail Planners

PDC Ranking	Local Government Ranking	Challenges
1	1	Lack of funding for trail planning
2	2	Acquiring trail corridors
3	3	Lack of political support

Table A-12. Top Four Challenges for Trail Users

PDC Ranking	Local Government Ranking	Challenges
1	2	No trails close to home or work
2	1	Lack of information on existing trails
3	4	Concerns about their safety on the trail
4	3	Poorly maintained trails

For local governments, providing a clearinghouse was again ranked the top way the Department of Conservation and Recreation (DCR) could help, but on-site evaluation and assessment ranked second, followed by educational workshops and conferences. An up-to-date inventory is probably less important to local governments because they are not as involved with trail linkages across jurisdictional lines. Local governments would also like DCR to host public meetings about trail benefits and liabilities and provide developers with economic justification for making private trails accessible to the public (see Table A-9).

Connecting through regional trail systems

Asked to rank their organization's top need for trails, both regional planners and local governments responded that connected regional trail systems (trunkline trails) were most important (see Table A-10).

Challenges for trail planners

Regional planners and local governments agree that a lack of funding and difficulty in acquiring a trail corridor are the two major problems for trail planners. Rural and transitioning localities were more likely to report that regulatory hurdles were a problem, which may reflect a lack of experience dealing with regulatory agencies on trail projects. Urban localities were more likely to rank lack of information as a problem. All local governments responding reported a lack of political support for trails (see Table A-11).

Challenges for trail users

Regional planners identified the need for more trails close to home as foremost in response to the survey (see Table A-12). Communities built after the advent of the automobile often lack bike/pedestrian infrastructure such as sidewalks or roads with speeds conducive to bicycling. Trails and greenways on public lands may not be easily accessible to local communities. Easy access to trails depends both on proximity and awareness of the trail. Many communities do not have the funds to properly sign and promote existing trails. In fact, lack of information about trails was ranked the number one problem for trail users by local governments. In rural areas with smaller tax bases, the need for marketing is more acute. Respondents to a 2006 survey by BikeWalk Virginia also reported that there was inadequate sharing of trail-related information, and the most sought-after user information was trail maps.

Due to the sale of farm and timberlands and other development pressures, existing trails on private lands are disappearing. This was ranked the number one problem for trail users in Hanover, Lancaster, Rappahannock and Buchanan counties. Five out of six respondents in rural southwestern Virginia were also concerned about this issue. In rural areas, the public relies on the use of large farms or timberlands to walk, bicycle, hunt or ride horses. Unless the state or federal government has significant land holdings, there is often little public land available.

Table A-13. Top Four Challenges for Trail Managers

Local Government Ranking	Challenges
1	Lack of funding for trail maintenance
2	Conflicts between different kinds of users
3	Lack of user etiquette/environmental ethics
4	Decreasing volunteer support

Local governments ranked safety as less of a problem for users than the maintenance of trails. Localities that were transitioning from rural to urban communities were more likely to express concerns about safety. This may reflect a problem with perception as these areas make this transition or reflect that trails in urban areas seem safer because they get more use. In urban areas, trail maintenance becomes more of an issue, presumably because activity on the trail increases the wear-and-tear. This may also be a reflection of a larger pool of users reporting maintenance problems.

Conflicts between user groups was ranked a significant problem for trail managers in Northern Virginia and Hampton Roads, where there is more demand on existing trails. User conflict was also an issue in rural areas like the Shenandoah Valley and Southwest Virginia, where trails in National Forests serve hikers, mountain bikers, and equestrians.

Maintenance of trails was ranked a problem in five out of seven responses from the Shenandoah Valley region, and in two-thirds of the responses from Northern Virginia. At least

half of the responses from Central Virginia, the Roanoke Valley and Southwest Virginia ranked maintenance as a problem for users and managers.

Challenges for trail managers

In urban areas where trails get the most use, localities report that maintenance of existing trails is more important than new trail construction. Half of these urban respondents felt that upgrading and maintenance of existing trails outranked the need for new trails. Lack of funding for trail maintenance was clearly the number one problem for trail managers across the state (see Table A-13).

Rural localities report that decreasing volunteer support is a problem for trail managers. Many trail user groups report a lack of younger, newer members. This could be the result of an aging population and also indicative of a less active younger generation. As these new members replace retiring ranks of volunteers, there is a growing concern that their numbers may be lower in future years.

Public and private land-disturbing projects may impact a variety of natural, cultural and recreational resources, requiring a permit application or another enabling instrument. The permit application must describe potential impacts and outline methods for avoiding and/or mitigating these potential impacts. Depending on the resources that may be impacted, review and approval from several government agencies may be required. For many proposed projects, approval at the local level is sufficient; other activities are directly regulated by state or federal agencies.

The Department of Environmental Quality (DEQ), www.deq.virginia.gov, is the coordinating agency for statewide review of most environmental review documents in Virginia. The DEQ distributes submitted project documents to state agencies for review and response according to each agency's area of responsibility and expertise. Furthermore, in accordance with the *Code of Virginia* § 15.2-2202, DEQ invites review and comment by affected localities and planning district commissions to determine consistency with the locality's comprehensive plan and ordinances. DEQ completes the process with coordination and analysis of all responses.

Applicable DEQ review authorities

The *Code of Virginia* § 10.1-1188 requires state agencies to prepare and submit an Environmental Impact Report (EIR) for each major state project. "Major state project" constitutes the acquisition of an interest in land for construction of any state facility, or the construction of any state facility or expansion of an existing state facility costing more than \$100,000. Projects undertaken by federal agencies are required to have an environmental assessment (EA) or an environmental impact statement (EIS) submitted in accordance with the National Environmental Policy Act (NEPA) — *Code of Virginia* §10.1-1183 (9).

Content of an Environmental Impact Report (EIR)

The purpose of the environmental review is to ascertain the environmental effects of proposed projects and allow for project modifications to avoid, reduce or mitigate for those impacts. The environmental review process should begin in the early planning stages of a project so that site and design procedures can best be determined. It is recommended that the DEQ office of Environmental Impact Review be contacted for assistance in the EIR process.

To assure timely project review, the EIR must address five subjects specified by §10.1-1188:

- The environmental impact of the project including the impact on wildlife habitat; (additionally the environmental impact of the project on farm and forest lands pursuant to *Code of Virginia* § 3.1-18.4 through § 3.1-18.8);

- Adverse effects that cannot be avoided if the project is undertaken;
- Measures proposed to minimize the impact of the project;
- Alternatives to the proposed construction; and
- Irreversible environmental changes which would be involved in the project.

The document must identify and describe the resources present on sites of interest, and it should evaluate how the planned use of the site may affect the resources listed below.

- Endangered, threatened, or rare plants, animals, or insects;
- Significant habitat for terrestrial wildlife and birds, e.g., habitat for rare species, important breeding sites, migratory stopovers;
- Other unique or important terrestrial vegetation, e.g., foraging areas, stands of mature forest, wilderness study areas;
- Aquatic life: fisheries, vegetation (including submerged aquatic vegetation), benthic organisms, shell growing area. If a shell growing area is involved, it should be indicated whether the Virginia Department of Health has issued a shellfish condemnation notice for the subject waters;
- Historic sites, structures and/or landscapes – indicate potential for direct or indirect effects ;
- Agricultural land, either prime or important (as defined by the Natural Resources Conservation Service, the Virginia Department of Agriculture and Consumer Services, or local ordinance), or farming operations;
- Forest land, including predominant tree species and any endangered, threatened, or rare tree species;
- Tidal and nontidal wetlands (delineation may be required). The review of National Wetland Inventory (NWI) maps should be used in conjunction with field observations for determining whether wetlands or other surface waters are present, and a wetland delineation may also be required;
- Streams, rivers, lakes and ponds on or near the site. The EIR should include information about flow volumes (available at the Richmond office of the U. S. Geological Survey Water Resources Division or DEQ's Charlottesville Field Office) and water quality (available from DEQ's most recent biennial Section 305(b) Water Quality Assessment Report to the U.S. EPA). Stream segments with water quality problems can also be identified from DEQ's Section 303(d) list of impaired waters. Also, the EIR should indicate whether stream segments at the site are protected by designated DEQ Special Water Quality Standards, or are

located within identified trout waters. Any record of prior fish kills or petroleum releases in the project vicinity should be reported. The status of the waterbody under DCR's Nonpoint Source Assessment should be documented;

- Watersheds of significant importance for public water supplies (such as wellhead protection zones or watershed protection zones designated by local ordinance);
- Chesapeake Bay Resource Protection Areas and Chesapeake Bay Management Areas;
- Virginia Coastal Resources Management Area (Tidewater);
- The 100-year floodplain;
- Ground water – The EIR should identify the types of aquifers present and wells on or near the property that draw water from the aquifer. If groundwater withdrawal is proposed, it should be indicated whether the project site is located within a State Water Control Board designated Ground Water Management Area and if anticipated withdrawal will exceed 300,000 gallons of water in any month. The total volume of water to be withdrawn, both monthly and annually, should be clearly documented. Identification should be made of parks and recreation areas (federal, local, state, or private); and recreation and open space resources identified by the *Virginia Outdoors Plan* (Department of Conservation and Recreation);
- Public access to the shoreline and waterways (if applicable);
- Important natural areas, e.g., wildlife refuges and wilderness areas, important natural areas identified by public agencies and important private conservation areas;
- Important scenery and scenic resources, for instance views of important landmarks or natural features;
- Air quality – If applicable, possible impacts that need to be addressed in the EIR include: will construction or operation of the facility cause air pollution emissions; is open burning proposed; how will fugitive dust be controlled, is the project site located within a (i) non-attainment area for criteria pollutants such as ozone, (ii) a State designated Volatile Organic Compound and/or Nitrogen Oxides Emissions Control area, or (iii) Prevention of Significant Deterioration Area (iv) 10 kilometers of a federally designated Class 1 (pristine) area;
- Geology and Mineral Resources, caves, and sinkholes. The discussion should include identification of site-specific geologic and mineral resources from data and maps at an appropriate scale;
- Other important resources such as designated scenic rivers, Virginia Byways, and important natural communities.

State Environmental Review Process (SERP)

In 1991, Virginia's Secretaries of Natural Resources and Transportation agreed that state historic and natural resource agencies would have the opportunity to comment on all state-funded highway projects at the earliest stage of development. As a result of this agreement, the State Environmental Review Process was established. Such review allows relevant agencies to address potential impacts of proposed projects, suggest mitigation measures to minimize impact and explore possible alternatives to the proposed construction.

Activities and applicable regulatory authorities

In addition to the above, the following proposed activities are reviewed by state agencies for environmental impact as well as compliance with associated laws, regulations and permit requirements and approval of funding and/or grants:

- Airport construction and expansion projects; *Code of Virginia* § 5.1-7
- Dredging and filling of waters of the United States, including wetlands; *Section 404, Clean Water Act*
- Projects within the Virginia Coastal Resource Management Area for compliance with the Chesapeake Bay Preservation Act; *Code of Virginia* § 10.1- 2114
- Encroachments in, on or over state-owned bottomlands or wetlands; *Code of Virginia* § 62.1-1 through § 62.1-13;
- Projects that require Erosion and Sediment Control and Stormwater Management plan approval; *Code of Virginia* § 10.1-560 and § 10.1-603
- Projects that propose extraction of minerals on state-owned lands; *Code of Virginia* §2.1-512.1
- Projects within the coastal zone to be reviewed for federal consistency with the Virginia Coastal Resource Management Program; *Executive Order Number 15 (90)*
- Projects involving permitting hazardous materials which may effect a solid waste disposal facility; *Code of Virginia* §10.1-1400 et seq
- Hydropower projects; *Code of Virginia* §10.1-1186 (8)
- Projects that may obstruct navigable waterways; *Section 10, Rivers and Harbors Act*
- Oil and gas drilling projects in Tidewater, Virginia; *Code of Virginia* § 62.1-195.1
- Projects that require State Water Control Board-administered permits; *Section 402 of the Clean Water Act* and *Code of Virginia* § 62.1-44.2 through § 62.1-44.34:23
- Projects that may negatively impact minimum instream flow; *Code of Virginia* §62.1-11 F

Resource information

Through the environmental review process, information is disseminated about natural resources and how the resources can be conserved and enhanced. The commonwealth's goal is twofold – providing opportunities for Virginians to use these valuable resources while conserving and enhancing them for future generations.

The following publications offer assistance regarding compliance with Virginia's environmental laws: *A General Guide to Environmental Regulations in Virginia*, and *Business and Industry Guide to Environmental Permits in Virginia*. These guides are available at:

Virginia Department of Environmental Quality (DEQ)

629 E. Main Street, Suite 900
Richmond, VA 23219
(804) 698-4000
or toll free in Virginia, (800) 592-5482
www.deq.virginia.gov

For help with erosion and sediment control and stormwater management regulations contact:

Virginia Department of Conservation and Recreation (DCR)

Soil and Water Conservation Division
203 Governor Street, Suite 206
Richmond, VA 23219
(804) 786-2064
www.dcr.virginia.gov

For information on the impact of land use on the water that feeds the Chesapeake Bay, contact:

Chesapeake Bay Local Assistance Division

101 North 14th Street, 17th Floor
Richmond, VA 23219
Toll Free/TDD (800) CHESBAY
www.dcr.virginia.gov

What is a Wildlife Action Plan?

Congress asked each state to develop a wildlife action plan, known technically as a comprehensive wildlife conservation strategy. These proactive plans examine the health of wildlife and prescribe actions to conserve wildlife and vital habitat before they become too rare and costly to protect. The Virginia Wildlife Action Plan is the Commonwealth's tool for keeping common species common and sustaining our rich and diverse wildlife resources.

Planning approach

Virginia's Wildlife Action Plan united its natural resource agencies and citizens through a common vision and concept for the conservation of the Commonwealth's wildlife and the habitats in which they live. It also provides a means for prioritizing actions and spending for the greatest return.

Led by personnel from the Virginia Department of Game and Inland Fisheries (DGIF), the Virginia Wildlife Action Plan was developed with input from a wide array of public and private agencies and organizations. A steering committee composed of representatives of state and federal agencies, private conservation organizations and land management entities provided guidance throughout the development of the plan. Technical committees comprised of more than 50 scientific experts from around Virginia provided input into the development of the list of species of greatest conserva-

tion need, the identification of the habitats that support them, the problems these resources face and important conservation actions needed to address these threats.

An important component of the development of the Virginia Wildlife Action Plan was the participation of citizens from around the state. Efforts to involve Virginians included numerous presentations to groups throughout Virginia, news releases, periodic mailings, fact sheets, radio and newspaper interviews, and a dedicated project Web site. In fact, the Wildlife Action Plan project Web site was used as the primary tool for soliciting comments from the public. Twenty-two meetings were held across the Commonwealth. Nearly 200 people attended — some were there as individual citizens and others were representatives of more than 100 agencies and organizations. At these meetings, participants were asked to identify what, in their opinion, was working well in Virginia in wildlife conservation and what improvements could be made. They were also asked to identify and rank the top issues facing wildlife and habitats in their communities now and in the next decade, along with local solutions to address those problems.

Wildlife highlights

The Action Plan identifies 925 species of greatest conservation need, representing a broad array of wildlife, and focuses on the habitats that support them, such as caves, high elevation forests, coastal marshes and barrier islands. A full

Table A-14. Imperiled Aquatic Species in the Clinch, Holston and Powell Watersheds

Wildlife	Total number	Species of conservation concern*	Threatened/ endangered
Mussels	89	63	36
Snails	?	96	7
Crayfish	?	14	0
Insects	20,000+	290	9
Fish	210	97	20
Amphibians	74	32	4
Reptiles	61	28	8
Birds	374**	96	12
Mammals	85	24	10
Other Invertebrates	?	185	5
Totals	20,893++	925	111

* Each state used its own criteria for this category. Virginia focused on species that demonstrated some level of rarity or risk of imperilment, e.g., subject to habitat loss, impacted by pollution, currently at low population levels. These species were further grouped into four tiers of relative imperilment, with the top tier including those of "critical conservation need" and the fourth tier including those of "moderate conservation need." The list does include some wildlife officially listed as threatened or endangered within the Commonwealth.

** Includes breeding and most migratory birds.

70 percent of the species on this list of greatest conservation need are invertebrates (insects, mussels, snails, crayfish, etc.), about which very little is known. Sixty percent of the species on the list are found in aquatic habitats. The species are grouped into four tiers of relative imperilment, based on the level and degree of immediate conservation action needed. The Clinch, Holston, and Powell watersheds in southwestern Virginia contain many of our most imperiled aquatic species (see Table A-14).

Primary challenges for conserving wildlife in Virginia

Habitat destruction and fragmentation dominate the list of problems facing terrestrial wildlife in the Commonwealth. For Virginia's aquatic wildlife, the Action Plan identifies certain agricultural and forestry practices that have greatly affected water and habitat quality. Pollution and habitat changes from industry and municipal development are also critical issues for aquatic species.

Many grassland wildlife species are experiencing dramatic declines in populations because of the loss of grassland and savannah habitats across the Commonwealth. These important habitats are being converted to other agricultural crops (including cool season grasses), are lost as farms are converted for municipal uses, and are replaced by other habitats when farmlands are abandoned and allowed to mature into forested lands.

Habitat degradation in the rivers of southwestern Virginia resulting from certain mineral extraction and agricultural practices and from the impoundment of these rivers downstream in Tennessee, has significantly impacted this biologically diverse "hot spot" in the United States. Over one-half of the freshwater mussel species found in this watershed are now listed as threatened or endangered. These species, which are important food sources for other wildlife and which serve as filterers in these rivers, are highly dependent on good water quality.

Recommended actions to conserve Virginia's wildlife

Perhaps most importantly, the Action Plan identifies the actions needed to conserve these species on a regional basis. All of the conservation actions fit into one of eight categories: coordination, education and outreach, species management, habitat management, regulations/policy/law, land protection, enforcement, and planning. Effective conservation does not mean just managing the species and their habitats. Examples of conservation actions from the Virginia Wildlife Action Plan are shown in Table A-15.

In addition to identifying actions that address problems facing wildlife, a number of key themes regarding conservation in Virginia recurred throughout the development meetings. These themes include:

- Better coordination with private landowners, public agencies, and all levels of government regarding critical conservation issues;
- Improved communication with and education of policy makers at all levels of government;
- Increased funding for and participation in conservation programs;
- Review and revision of existing regulations and standards;
- Establishment of dedicated permanent funding for conservation of all wildlife; and
- Encouragement of counties and municipalities to more comprehensively consider wildlife and habitats in planning and development

Many research and monitoring needs for the species of greatest conservation need were identified. In fact, for many species, one of the first conservation actions will be research to identify distribution, habitat needs, and threats. Future monitoring of the species and their habitats is necessary to measure our success during implementation.

Implementation and success of Virginia's Wildlife Action Plan

As throughout the development of the Action Plan, implementation of the recommendations involves a wide range of partners. This is a plan for all of Virginia, not just the DGIF. Working groups are being organized to facilitate putting the recommendations into action.

The success of the implementation of the Action Plan will be monitored, and changes will be made as needed. The completion of the document certainly does not mark the end of the learning process. In many cases, it is only the beginning. While the work of conserving wildlife can be challenging, it is possible — as seen from the successful return of the bald eagle and the white-tailed deer. And, this Action Plan provides the needed direction.

The entire Virginia Wildlife Action Plan may be found online at the VDGIIF Web site (www.dgif.virginia.gov). For more information, a CD copy of the Action Plan, or for assistance integrating the Action Plan into other planning and conservation efforts, contact the VDGIIF at 804.367.4335 or at WildlifePlan@dgif.virginia.gov.

Table A-15. Virginia Wildlife Action Plan Conservation Initiatives

Highlighted Habitats	Wildlife (examples)	Issue (examples)	Action (examples)
Barrier Islands Ownership: mix of public/private	Piping plover (bird) American oyster-catcher (bird) Northern diamond-backed terrapin	<ul style="list-style-type: none"> • Recreational use • Predation by introduced species 	<ul style="list-style-type: none"> • Work with partners and local communities to provide greater outreach to beach users about the need to minimize impacts. • Remove introduced predators, particularly foxes and raccoons, on public and private lands as necessary to reduce impacts.
Upper Tennessee watershed (Clinch, Powell, and Holston Rivers) Ownership: mix of public/private	Birdwing pearly mussel (freshwater mussel) Wounded darter (fish) Eastern hellbender (amphibian) Clinch River crayfish (crayfish)	<ul style="list-style-type: none"> • Sedimentation • Channel and shoreline alteration • Organic pollutants 	<ul style="list-style-type: none"> • Provide incentives to private landowners to restore and maintain shoreline and stream habitats • Protect vegetated stream buffers to limit sedimentation • Work with government agencies and industries on strategies to reduce contaminant discharges.
Grassland Ownership: mix of public/private	Grasshopper sparrow (bird) Upland sandpiper (bird) Eastern slender glass lizard (reptile)	<ul style="list-style-type: none"> • Habitat fragmentation and degradation • Exotic species 	<ul style="list-style-type: none"> • Improve incentives to private landowners to restore and maintain large patches of grassland habitats • Restore warm season grasses and reduce the use of cool season grasses

It shall be the policy of the Commonwealth to conserve, develop and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands and waters from pollution, impairment, or destruction for the benefit, enjoyment, and general welfare of the people of the Commonwealth.

– Virginia Constitution, Article XI, 1950

In November 2000, with funding support from the Virginia Environmental Endowment, Virginia's United Land Trusts (VaULT) was organized to foster greater coordination and communications between land trusts in Virginia, build land trust capacity, and promote high professional standards and to support statewide land conservation efforts.

In its first year VaULT joined forces with the Department of Forestry (DOF) and the Department of Conservation and Recreation (DCR) to broaden the base for collaborative land conservation initiatives. The DOF conducted a public input process in 2000 with seven public hearings. The comments gathered during that process provided strong impetus for a comprehensive statewide land conservation strategic plan. Summarizing the findings of DOF's final report in September 2000 noted:

Over and above all other suggestions and concerns was the strong message that conservation easement organizations need to find a way to coordinate and collaborate in their efforts.

Following up on that public input, the Virginia Department of Forestry and VaULT, with assistance from the University of Virginia Institute of Environmental Negotiation, cosponsored a conference in June 2001 to bring together public and private easement-holding organizations operating in Virginia. Four recurring themes emerged during conference discussions:

- Funding for Land Conservation Programs
- Enhanced Information Management
- New Partnerships for Multiple Purposes
- Planning

In October 2001, the Virginia Department of Forestry, with funding from the U.S. Forest Service Chesapeake Bay Office, awarded a contract to VaULT for the development of the recommended statewide Land Conservation Plan. In December 2001, the Department of Conservation and Recreation established the Office of Land Conservation to serve as the information clearinghouse. Shortly thereafter, a

DCR-VaULT Memorandum of Agreement was signed to further support collaborative efforts.

VaULT's Linking Lands Project

With assistance from the Department of Forestry and the Department of Conservation and Recreation, VaULT presented six regional workshops throughout the state in the spring of 2002 to facilitate cooperative public-private projects and identify regional priorities for land conservation. These workshops were a joint effort of Virginia's United Land Trusts and numerous conservation partners including: Virginia Department of Forestry, Virginia Department of Conservation and Recreation, Virginia Outdoors Foundation, Virginia Department of Game & Inland Fisheries, Virginia Department of Historic Resources, Scenic Virginia, and Preservation Alliance of Virginia. Additionally, representatives of the Virginia Farm Bureau Federation attended every workshop and provided valuable input.

The six *Linking Lands Regional Workshops* produced specific measurable results in the form of prioritized recommendations for regional and local land conservation actions by land trusts and/or public agencies. These recommendations provide a regional database layer upon which Virginia's green infrastructure can be built, and it is described below. The recommendations will also assist land trusts in setting their own organization's land protection priorities.

Setting priorities

The *Linking Lands Workshops*, which included recommendations of the 2002 Virginia Outdoors Plan, developed priority recommendations for regional and local land conservation actions by land trusts and/or public agencies. Using the regional information, a picture of statewide priorities emerged that made it possible to prepare comprehensive strategies for land conservation actions and the linkages between local, regional and statewide initiatives. The priority resources are briefly described below.

1. Natural areas

Protection of Virginia's extraordinary wealth of globally, nationally and regionally significant natural areas ranked highest among all priorities identified by workshop participants, garnering almost twice the votes of the next highest priority.

2. Farms and forests

In all of the regions the protection and retention of private agricultural and forested lands were considered important. In all but the most urbanized areas they were among the top priorities. Many participants saw these lands as integral to the character of their community. They were not satisfied with the prospect that the farms and forests would become museum pieces, but sought to identify ways and means to make them economically viable components of their communities.

3. Water corridors: greenways, blueways, riparian buffers and scenic rivers

From the perspective of the private land trusts, acquiring easements and employing other land conservation practices adds value to the Commonwealth's efforts to protect the quality of state waters. The critical need to protect and improve the Commonwealth's water quality and supply was consistently cited as a high priority by workshop participants.

4. Parks and trails

Workshop participants frequently mentioned the value of public parklands --not only as repositories for important natural and cultural resources, but also as places to provide environmental education and outdoor recreation opportunities such as camping, boating, fishing, swimming, hiking, sports and general active play. The trails discussion focused mostly on the longer state or region-wide trails such as the Appalachian Trail, the Potomac National Heritage Scenic Trail, the Washington and Old Dominion Trail and The New River Trail and Blueway. Local trails such as the Difficult Run Stream Valley Trail and the Rivanna Heritage Trail provide valuable recreational opportunities in local and regional parklands.

5. Scenic resources

Participants focused on three varied aspects of the scenic highways and byways. First was the need to designate existing highways as scenic and protect the travel corridors for their scenic value. Second was an interest in obtaining easements and using other conservation practices to protect scenic vistas. Third interest was the protection of the roads from additional development that would significantly change their character and add to sprawl in the communities.

6. Historic resources

As with the natural areas, workshop participants consistently identified significant historic places, events, personages, landscapes and archeological sites as being important to protect from loss to the community. Efforts were envisioned where the land trusts would use conservation measures to buffer the existing historical properties as well as recognizing the need to set aside additional properties that are currently unprotected.

Virginia's land trusts: strategies and action recommendations

When Virginia's United Land Trusts set out to develop a strategic plan for achieving the Commonwealth's statewide land conservation goals, it did so with the support and encouragement of conservation partners in state and local government agencies as well as land trusts operating at national, state and local levels. The recommended strategies, therefore, reach beyond the private land trust community to embrace the unique strengths and capabilities of both the private and public sectors. These strategies represent a consensus of what resources are needed to achieve the land conservation goals to which the land trust community is committed.

The strategies are grounded in three basic premises:

1. Land conservation practices are consistent with economic stability goals and are integral to ensuring the kinds of communities in which all Virginians wish to live, work and play.
2. Existing land conservation tools and practices, state statutes, and local planning and zoning processes --when effectively applied -- provide a significant opportunity to conserve and protect important natural, historical and recreational resources.
3. Adequate funding in support of land conservation goals is essential for success, and it is clear that the funding will generate additional dollars in value for the dollars invested. Funding sources can be leveraged to a significant degree by providing a stimulus to private, local and federal sources.

Five interrelated strategies are proposed, with accompanying action recommendations for The Virginia General Assembly, state and local government agencies, and private conservation organizations. The strategies cover (A) building a Virginia Land Conservation System, (B) education, (C) strengthening land trusts, (D) creating partnerships, and (E) funding.

Strategy A. Build a Virginia land conservation system

There is currently no systematic method or protocol for determining where available resources should be focused or distributed. A Virginia Land Conservation System (VLCS) would identify priorities and provide opportunities for land trusts and other conservation partners to use their resources in the most efficient ways. Such a statewide framework for land conservation would also enable the Commonwealth to allocate its fiscal resources most effectively and to maximize coordination and shared priorities while empowering and supporting regional and local leaders to work toward their own goals as well as the statewide system goals.

The framework and goals for a Virginia Land Conservation System should include, at a minimum, the following:

1. All natural, cultural, historical and recreational resources and their functional roles, such as biological research, protection of water quality or commercial uses;
2. Plan for participation by all stakeholders. This would include public, private, non-profit and individuals at all levels; and
3. Focus on resources made available for this initiative toward an explicit set of priorities that are set forth in the land conservation system.

The proposed three-tiered framework for a Virginia Land Conservation System is designed to maximize the resources and implementation capabilities found at the state, regional and local levels. It is comprised of a statewide level -- Green Infrastructure; a regional level -- Heritage Areas; and a local

level – Community Framework. These are briefly described below.

Green infrastructure (statewide level)

Green infrastructure planning is the foundation of a Virginia Land Conservation System, underlying, and scalable to state, regional and local land conservation efforts. Typically, a Green Infrastructure system is comprised of hubs and corridors. Hubs are large areas – hundreds or thousands of acres in size – that are vital to maintaining the state's ecology (see Chapter IV. Green Infrastructure, Figure IV-1). They serve to prevent the shrinking and fragmentation of undeveloped open space and maximize the ecological potential of Virginia's landscape. Corridors provide protection for the movement of wildlife and plant life across the landscape (ecological corridors), recreational access for rural and urban populations (trails,) and enhancement or restoration of water quality (riparian corridors.)

Heritage areas (regional level)

The Heritage component of the proposed Virginia Land Conservation System functions at the regional level. One of the key precepts of this element is that the culture of an area is derived from the natural resources that were the foundation of its growth and development.

While emphasizing the importance of conserving unique and significant natural resources, the regional Heritage component places an equal emphasis on conserving the cultural landscape. The Shenandoah Valley, with its small villages interspersed with broad expanses of farmland and Civil War battlefields, is a prime example of a Heritage Area. Heritage Areas also connect resource protection efforts to tourism and economic development. Through regional partnerships and public grassroots planning strategies, these resources can be identified, protected, enhanced and promoted to strengthen regional economies through increased tourism, creation of new jobs and stimulation of public-private partnerships for new investment opportunities. This holistic approach to planning ensures that the industrial legacy of a region – and the cultural, educational and recreational values inherent to it – are preserved for future generations.

Community framework (local level)

The third tier of the proposed Virginia Land Conservation System is grounded in local communities. In this approach the state becomes a major source of technical knowledge and assistance and enables the local communities to address the conservation of natural and cultural resources in the context of state and regional priorities. Issues such as economic viability and sustainability can be tied to efforts to protect the community's natural and cultural resources and quality of life. For example, the popular and successful Living Towns program sponsored by the Virginia Department of Historic Resources, the Virginia Main Street Program of the Virginia Department of Housing and Community Development, and the Heritage Tourism initiative of the Virginia Tourism Corporation demonstrate how historic preservation and economic development can be integrated to sustain the character and viability of community.

Watershed planning for drinking water protection combines land conservation with public health and economic development benefits. Communities may take action within their own boundaries to ensure that their uniquely characteristic resources are protected. They may band with other communities to conserve regionally significant natural and cultural resources.

Strategy A. Recommendations for Establishing a Virginia Land Conservation System

Virginia's land trusts, localities, and the Commonwealth should work together to:

1. Build a Virginia Land Conservation System that integrates Green Infrastructure, Heritage and Community components; assume responsibility for its implementation.
2. Set the goal of 1 million conserved acres by 2007 to include properties protected by private land trusts as well as state agencies.
3. Expand the Virginia Conservation Land Assessment (VCLA) to complete coverage of the entire state.
4. Distribute the VCLA and Conservation Lands Data Base (CLDB) GIS mapping and data base to all Planning District Commissions and Local Jurisdictions
5. Update the VCLA and CLDB on a continual basis.
6. Integrate planning and documentation of the Virginia Land Conservation System through design of a baseline template for use by public agencies and land trusts
7. Appoint VaULT representative to the Virginia Land Conservation Foundation Board and Technical Committee
8. Protect and manage Virginia's Green Infrastructure as a core government service at state and local levels
9. Support local land use planning and zoning that incorporates Green Infrastructure principles along with social and economic development considerations.
10. Coordinate all federal funding sources to focus on priority land conservation projects Increase land conservation and land use planning technical capacity of rural Planning District Commissions

Strategy B: Educate the stakeholders

There was consensus among Linking Lands Regional Workshop participants that **IE**: landowners fully understood the land conservation options available to them; legislators and the general public were knowledgeable about the eco-

nomic, social and cost benefits of land conservation; and appointed and elected officials responsible for local land use and zoning decisions understood the value of green infrastructure to their constituents and community character, THEN land conservation practices would become the standard rather than the exception in community and state planning and funding priorities.

Smart conservation is smart growth

A basic premise of this Plan is that land conservation practices are consistent with economic stability goals and are integral to ensuring the kinds of communities in which all Virginians wish to live, work and play. Old ideas that pit "conservationists" against "developers" should be discarded in favor of a new paradigm that more accurately reflects economic realities, i.e., that (1) the three top generators of revenue and jobs in the Commonwealth – agriculture, forestry and tourism – all depend on the conservation of Virginia's natural and cultural resources and "working lands," and (2) studies consistently show that open space and agricultural lands require only \$0.30 - \$0.75 in public services for every \$1 of tax revenue collected, whereas residential development requires between \$1.19 - \$1.75 in public services for every \$1 of taxes paid.

Strategy B. Recommendations for educating the stakeholders

Virginia's land trusts, localities and the Commonwealth should work together to:

1. Appoint a Task Force to plan, design and implement an Educational/Marketing Campaign for Land Conservation to include VaULT, DCR, DOF, VDACS, DHR, Virginia Tourism Corporation, Farm Bureau agencies and private sector experts.
2. Create a basic, standardized multi-media "Conservation Tool Kit" for broad distribution throughout the state and use by all Virginia land trusts and the state.
3. Initiate transfer of Natural Heritage Program database information to qualified organizations and governmental units.
4. Fund the Virginia Natural Resources Leadership Institute as a continuing program.
5. Create a complementary Land Conservation Institute to teach the principles of green infrastructure and other economic and land-use planning tools to foster community solutions that support state conservation goals.
6. Sponsor local workshops on land conservation options.
7. Design software for a simplified generic "build out analysis" and other economic cost-benefit tools for use by private and public planners.

Strategy C: Strengthen the capacity of land trusts

Approximately 80 percent of permanently conserved lands over the past decade have resulted from private land conservation actions, and more than half of the private nonprofit land trusts now operating in the Commonwealth have been chartered in the same period. These two facts speak volumes about the effectiveness of private land conservation efforts and the major role that land trusts are taking in protecting the Commonwealth's significant natural, cultural, scenic and recreational resources and in conserving working farm and forest lands.

Strategy C. Recommendations to strengthen land trust capacity

Virginia's land trusts, localities and the Commonwealth should work together to:

1. Schedule local and regional training for land trust Boards, staff and members for improved operations.
2. Require adoption of Land Trust Alliance Standards and Practices as a prerequisite for VLCF funding or co-holding of easements with state agencies.
3. Ensure that all conservation easements negotiated comply with IRS 501(c) 3 standards.
4. Establish a protocol to provide land trusts with access to state agency databases to strengthen local planning efforts.
5. Provide technical assistance, including access to GIS mapping and other land use planning tools, to local land trusts, particularly in rural areas.
6. Design a template for documentation of significant conservation values for use by land trusts and public agencies to benchmark progress in building the Green Infrastructure.
7. Establish VaULT as the organizational element for collaboration between land trusts.
8. Encourage state agencies to co-hold conservation easements with private land trusts.

Strategy D: Build partnerships

Creating partnerships for effective land conservation and resource protection is a core principle underlying the establishment of Virginia's United Land Trusts. A key element of that principle is to build a continuum of public and private organizations, each working on their own priorities, that link together local, regional and state land conservation efforts. Partnerships may focus on a particular natural resource, education or a regional interest.

Strategy D: Recommendations for building land conservation partnerships

Virginia's land trusts, localities and the Commonwealth should work together to:

1. Implement the regional priorities identified at the Linking Lands Workshops.
2. Appoint VaULT to be a partner in the Governor's Natural Resources Summit Partnership.
3. Initiate partnerships with local Farm Bureaus and forestry organizations to conserve working lands.
4. Participate in Watershed Roundtables to develop local watershed plans that include the full array of land conservation options.
5. Generate partnerships between land trusts and major business and industry leaders.
6. Include local and regional land trusts in Regional Economic Partnerships and Rural Prosperity Program initiatives.

Strategy E: Funding

First, last, and always, funding is everyone's most urgent land conservation strategy. Funding is the commodity in greatest demand and least supply in the Commonwealth. Virginia ranks very low among the nation's states in per capita funding for parks, open space and the protection of significant natural and cultural resources. The other side of the coin is that the Commonwealth's tax incentives for land protection are among the very best in the nation. The gains in land protection statewide over the past decade have come primarily through private land conservation efforts rather than through the investment of public funds, but these efforts alone cannot keep pace with the rate at which open space is being converted to other more intensive land uses. Funding is urgently needed for:

- Meeting our Chesapeake Bay commitment of permanently protecting 20 percent of the watershed by 2010.
- Preservation of threatened and endangered wildlife habitats.
- Purchase of Development Rights on working lands.
- Water quality improvement in Virginia's rivers and the Chesapeake Bay.
- Protection of irreplaceable archaeological and historic resources.
- Virginia Outdoors Foundation.
- Management of state parks, forests and wildlife management areas that provide recreational opportunities for a growing population.

This recommended strategy focuses on new sources or mixes of funding that will enable the available monies to be used to greatest effect. Proposed funding mechanisms include (1) general taxes and fees, (2) resource related taxes, and (3) specific tax incentives. Each type is discussed below.

1. General taxes and fees

State and local General Obligation Bonds – In November 2002 the State Parks and Natural Areas Bond Referendum was approved by 69 percent of voters. Citizens have demonstrated a willingness to use bond funds to support initiatives that they perceive are managed effectively and have positive benefits for their communities. A state bond that offers matching funds to land trusts and local jurisdictions, and is predicated on an equitable distribution system can engender support for local bond referenda to support land conservation efforts.

Real Estate Transfer and Recordation Taxes or Fees – At the state level, the portion of these taxes returned to the General Fund is seen as the most logical and consistent means to create a dedicated source of funding for land conservation. Since most Virginia localities are funded primarily through property taxes, the opportunity also exists to allow local governments to use a small percentage of real estate transfer taxes or property recordation taxes to fund local land conservation priorities.

License Plate Sales – This initiative has been institutionalized with the increase in license plate fees beginning in July 2002 to fund the Quadracentennial for Jamestown, with additional funds going to conservation funding. The program should be continued after the 2007 event with all funds going for land conservation purposes.

Tax Check Off – Taxpayers receiving refunds are currently given the option of allocating a certain portion of the refund to a variety of programs. Programs related to land conservation could be consolidated to a single "line item" on the tax form with taxpayers given the option of designating funding for statewide or local programs. Alternatively, as part of collecting income tax from citizens, an option could be provided to indicate up to a certain amount of taxes to be spent on land conservation.

Tipping Fees – This involves a fee for each ton of solid waste that is deposited in the landfills of Virginia. The three-fold objective of imposing such a fee would be to 1) encourage recycling and thereby reduce the amount of solid waste entering Virginia's landfills; 2) provide funding to localities to close hazardous landfills and mitigate their environmental impact; and 3) thereafter, provide additional funding for land conservation activities in the locality where it is collected or for statewide purposes.

Gas Taxes – A tax collected from the sale of each gallon of gas could be used in a manner similar to the Federal TEA 21 program. A small percentage could be collected and dedicated to the overall land conservation effort. Other options include a tax on marine or diesel fuels.

Sales Tax Revenue – Although not currently a practice in Virginia, other states have allowed communities to dedicate a portion of their sales taxes revenues to land conservation efforts. Variations on this idea include allowing two or more counties to share the sales revenues between them or working through the Planning District Commissions on regional priorities.

Alternative Energy Taxes – As alternative energy sources continue to grow they can be taxed at the exchange point. For example, closed landfills that are mined for methane gas production could be taxed for each cubic foot of gas generated. Similarly a solid waste incinerator that is generating electric power could be taxed for its output, and utilities that buy back externally produced power from non-traditional sources such as solar, steam or wind-powered generators could pay a tax accordingly.

2. Resource-related taxes and initiatives

Virginia Conservation Passport – A Virginia Conservation passport that would function like a National Park Service Golden Eagle Passport could be sold to citizens who would pay a determined amount for the passport, which would authorize them to gain free access to fee areas at State Parks and participating local parks. Funds would be used to support land conservation programs for state and local land conservation and resource enhancement projects much as the hunting and fishing licenses do now.

Sales Taxes on Recreation-Related Equipment – An additional sales tax on selected recreation-related equipment associated with biking, camping, hiking, hunting, fishing, sports, and perhaps even such items as boats, sport utility vehicles (SUVs), recreational vehicles (RVs) and off-road vehicles (ORVs) could be imposed. These funds would be used for land conservation, resource enhancement and other outdoor recreation facilities.

Tourism Taxes – This category of taxes would include hotels, restaurants, car rentals and similar use taxes. A small percentage of these taxes could be dedicated to the land conservation priorities, which are integral to supporting the tourism industry in Virginia.

Cell Phone Tax – A tax, similar to the one imposed on land line telephones to fund implementation of the E911 phone system, could be imposed on cell phone usage. The City of Virginia Beach currently funds its Agricultural Reserve Purchase of Development Rights Programs through a cell phone tax.

Toll Dollars for Conservation – On roads and bridges that open up previously rural areas to more intensive development, the toll amount could be increased to fund land conservation activities in that region to balance growth pressures.

Water and Sewer Fees – Given the value of land conservation practices in protecting drinking water supplies and general water quality, a tax could be levied on water and sewer bills by the local water and sewer agencies. These funds could be used to protect watersheds and riparian resources.

3. Specific tax incentives

Property Tax Abatements for Conservation – Amend the current “use value” property tax to provide for permanent land use valuation of properties under conservation easement, regardless of county ordinances.

Implement tax breaks for performance of BMPs – Allow developers and businesses that initiate and maintain Best Management Practices (BMPs) on their lands to receive a tax abatement.

Increase Rental/Lease or Permit Fees for the Virginia Marine Resources Commission (VMRC) and the Department of Game and Inland Fisheries (DGIF) – Establish a small percentage increase in the VMRC and DGIF fees for use in conservation of land and water resources.

There are many opportunities in Virginia for most citizens to enjoy a wide variety of outdoor recreational experiences, including boating, hunting, fishing, hiking, bicycling, horseback riding, swimming, picnicking, camping, nature observation and sightseeing. However, many citizens with disabilities lack opportunities to participate in such activities. It's important for recreation planners and providers to understand some of the barriers persons with disabilities might face that may limit their participation. Physical, social, emotional, transportation and financial barriers can then be addressed during the planning and implementation phases of recreational program and facility development.

One of the biggest obstacles that persons with disabilities (i.e., physical, sensory and mental impairments) might face is an attitudinal barrier. Today's society is more conscious of the need for greater accessibility for everyone. Attitudes are slowly changing, and many positive steps are being taken to help create better access. Although many barriers to participation still exist, they frequently can be eliminated by educating staff about the abilities and needs of persons with disabilities. Once staff members are aware of the barriers, the necessary program or facility modifications can be made to increase accessibility. Often, only minor adjustments are needed. Some examples of program modification include: modifying rules, regulations, equipment and methods of communicating. Facility modification includes removing environmental or architectural barriers.

It is important for recreation providers to recognize that citizens with disabilities have the same varied personalities, experiences, capabilities and leisure interests as the general population. They expect to have the opportunity to participate in a wide variety of outdoor recreational experiences and enjoy the same satisfactions and benefits from these activities as everyone else. They also expect to participate in integrated leisure activities with their families, friends and other park visitors.

It is estimated that approximately 12percent of Virginians have disabilities that significantly impact their daily living, including their leisure lifestyle. The total number of people impacted increases significantly when the many family members and friends who recreate with them are added. This number is expected to increase as baby boomers age and life spans increase because senior adults can be expected to develop some of the disabilities often accompanying the normal aging process. In addition, modern medicine is saving more lives and individuals may live many years with major disabilities.

Often programs and facilities may be accessible to persons with disabilities without special adaptations or modifications. But to ensure access, various aspects of accessibility should be incorporated into planning, developing and designing all recreational facilities and programs.

Incorporating accessibility initially into facility design and construction can be relatively inexpensive.

Maintenance is important when ensuring accessibility. Well-designed, but poorly maintained facilities are often inaccessible. During construction, renovation or the installation of equipment, it is important to ensure that specifications for accessibility are followed. For example, relatively accessible playground equipment, when installed incorrectly or completely surrounded by landscape timbers without a cut-away, can be virtually inaccessible to children or parents with disabilities.

It is not acceptable to merely design accessible facilities when the programs themselves are not accessible or available to everyone. For example, a beautifully designed and fully accessible visitor center at a park is of little value to a person who can enter the facility and navigate around it but not actually experience the programs offered. A few illustrations of programmatic barriers are listed below:

- Display cases too high for a wheelchair user to view.
- Printed information on exhibits or in park brochures that is not presented audibly, in Braille, large print or through other methods usable to persons with visual impairments.
- Environmental interpretation without an interpreter for hearing-impaired persons.
- Slide presentations without closed captioning for persons with hearing impairments.
- A reservation system for campsites, picnic shelters, cabins, etc. that doesn't include a TDD/TTY/TT telephone number for persons with hearing impairments.
- Attitudinal barriers created by staff who limit disabled visitors by not allowing a person with a disability to participate in an activity due to extreme caution or lack of knowledge about equipment or programs.

Park and recreation agencies should be committed to serving everyone in the population. Agency policies should clearly indicate the commitment to providing barrier-free or accessible recreational programs and facilities. Developing a policy on accessibility is not enough. Specific procedures also should be established for implementing and enforcing this policy.

Staff training also needs to be provided to ensure that employees are aware of specific policies related to accessibility and the agency's commitment to follow them. Staff must have necessary technical information to implement these policies, e.g., facility design standards and guidelines for removing programmatic barriers. In addition, the staff should understand and appreciate the possibility that persons with disabilities may have special needs.

Representation and involvement of persons with disabilities on committees, advisory boards, etc. is recommended to provide valuable insight into planning and providing accessible services, programs and facilities.

Legislative requirements

Various federal and state legislation has been passed to provide facility and programmatic accessibility to persons with disabilities. The most far-reaching legislation that potentially impacts many is the Americans With Disabilities Act (ADA), signed into law July of 1990.

The Americans with Disabilities Act of 1990 (PL101-336)/ADA is intended to create broad protection for an estimated 43 million Americans with disabilities with respect to employment, state and local government services, public accommodations, transportation and telecommunications throughout the nation. It gives civil rights protection to qualified individuals with disabilities that are similar to those provided to individuals on the basis of race, sex, national origin and religion.

There are various themes in this legislation that directly affect the way agencies provide leisure services. First, leisure service agency programs, services and activities should be available to persons with disabilities in the most integrated setting possible, i.e., that which is most like the setting in which people without disabilities receive the same service. Public entities may not provide services or benefits to individuals with disabilities through programs that are separate or different, unless the separate programs are necessary to ensure that the benefits and services are equally effective. Even when separate programs are permitted, an individual with a disability still has the right to choose to participate in the regular program. State and local governments may not require an individual with a disability to accept a special accommodation or benefit if the individual chooses not to accept it. Also, there should be consumer involvement/input by persons with disabilities.

The ADA places an emphasis on providing accessibility to programs, services and activities. The ADA includes requirements for new facilities and improvements to existing facilities. Public entities shall operate their programs so that when viewed in their entirety, they are readily accessible to and usable by individuals with disabilities. Reference is made in the ADA to requirements for providing reasonable accommodations. These can include, but are not limited to, changes in rules, policies, and practices; removal of architectural, communication, and transportation barriers; and the provision of auxiliary aids and services.

Another reason the ADA is having a major impact is the amount of publicity it has received, and is continuing to receive, nationwide. The general public and service providers are becoming much more aware of the needs and concerns of persons with disabilities. Also, consumers with disabilities are becoming much more aware of their rights to access with respect to employment, public services and places of public accommodation. Consumers are also

becoming much more knowledgeable of specific legislative requirements for agencies and businesses and are more assertive in ensuring that true access is provided to them through available legal remedies.

Parks and recreation planners and service providers have a responsibility to increase their knowledge about accessibility requirements and the ADA. Related information and technical assistance are available from various federal and private agencies. Finally, they have a responsibility to comply with required regulations and do whatever is necessary and reasonable to provide high quality recreational choices accessible to all citizens, including those with disabilities.

Adherence to legislative requirements increases the accessibility of recreational facilities for most persons who have physical disabilities. However, there are still many situations where the requirements do not guarantee accessibility. Recreational providers need to be aware of these situations in order to develop provisions in their policies to compensate for some of these shortcomings. Some of these problems and related recommendations are outlined below.

Recommendations

- Existing standards only outline the minimum specifications that must be met for general "handicapped accessibility" or universal design. In many instances, exceeding these standards is desirable to help make facilities more usable to everyone. For example, there are specific slope requirements for the maximum allowable grade on a ramp. These requirements are to ensure the minimum acceptable standards for accessibility. Complying with these standards can still result in a ramp with a slope that is too steep for many persons to negotiate. In this situation, exceeding these standards by lowering the grade on a ramp even further would actually help make it accessible to more persons.
- In the past many agencies were not required to meet these standards. Therefore, it was imperative that every outdoor recreational provider took responsibility above and beyond what was required for adopting barrier-free site design standards and setting forth policies for enforcing compliance. There are many instances where this did not occur, and facilities are still in use today that are inaccessible to a large number of people.
- Many buildings and facilities constructed prior to 1968 are not generally accessible unless planners/managers of the facility had the foresight to plan for accessibility or upgrade the facility to make it accessible.
- At this time there are no final requirements published for some of the key park and recreational facilities such as campgrounds, picnic areas, trails, swimming and fishing areas, and playgrounds. Since standards for these types of facilities are still being developed, persons with disabilities are often denied the opportunity to participate in outdoor recreational experiences with their non-disabled family members and friends.

- Until specific outdoor recreational standards are finalized and incorporated into the ADA standards, it is critical that outdoor recreational providers seek other sources of information that provide guidelines for making these types of facilities accessible to everyone. These sources include: draft standards put out by The Access Board, various technical assistance publications on the subject, experts working in disability-related professions, and persons with disabilities. People with disabilities should be directly involved with facility design to help increase the functionality of the facility. (The Access Board is a federal entity which oversees development and implementation of standards for the ADA).

Senior adults

The senior adult population is another rapidly growing segment of society with special needs that should be considered in planning recreational programs, services and facilities. Some senior adults have disabilities, and many of the issues and concerns addressed in the previous section apply to them. Many senior adults do not have disabilities, but may have unique leisure needs or situations. Some of these needs may be attributed to changes related to the aging process, e.g., physical or mental changes such as reduced vision, hearing, poor balance, low stamina; changes in their living environment, e.g., moving from a private residence to a planned retirement community, life care setting/adult home, nursing home; accident safety concerns related to reduced agility and poor balance; or crime safety worries, such as the fear of leaving home because of crime targeted at senior adults.

Any modifications made to improve accessibility to recreational programs, services and facilities for persons with disabilities will also improve access for the senior adult population. In addition to the accessibility issues identified earlier, there are other areas that should be taken into consideration in recreational planning for this population. Some of these are outlined below.

- The senior adult segment of society is rapidly growing. Therefore, concerns or needs of this population have an even greater significance to recreational planners.
- This population generally has large amounts of leisure time.
- Most seniors have a better than average amount of discretionary income to spend on leisure pursuits.
- Senior adults are living longer than ever before, which means that they represent a larger segment of the population that will be living with even more years of forced retirement/leisure.
- The vast majority of senior adults (estimated at 95percent) reside in the community. However, some live in adult homes, nursing homes or life care settings. The life care setting concept is growing in popularity. It provides a continuum of care for residents progressing from an independent to a more dependent living situation.

New ADA guidelines being developed by The Access Board

Outdoor developed areas

In the near future, the Access Board plans to propose new guidelines for outdoor developed areas, including trails, beach access routes, and picnic and camping sites. The guidelines will be responsive to the need for greater guidance in this area since issues of terrain and limited levels of site development have raised many questions on how, and to what extent, access is to be achieved. The upcoming proposal will focus specifically on outdoor developed areas owned or managed by the federal government. Once drafted, it will be available for public comment.

The proposed guidelines will include detailed criteria for newly constructed and altered trails that will cover running slope or grade, cross slope, width, surface, passing space, edge protection, and signs. Provisions will also address beach access routes and elements of picnic and camping sites, including picnic tables, fire rings, cooking surfaces and grills. The specifications will be based on consensus recommendations from an advisory body the Access Board had previously chartered, the Outdoor Developed Areas Regulatory Negotiation Committee.

In developing new guidelines, the Board typically must complete a comprehensive assessment of estimated costs and impacts. This necessary step can be challenging in rule-making that breaks new ground by covering access to areas not previously addressed by an accessibility guideline or standard. This has been especially true in the case of guidelines for outdoor developed areas, which have been delayed due to work involved on completing a cost assessment. Determining the number and range of outdoor sites across the country that would be impacted by new guidelines when developed or redeveloped has been particularly challenging.

The Board intends to build on this work with follow-up rule-making devoted to non-federal sites owned or operated by state and local governments or private entities subject to the Americans with Disabilities Act (ADA). Information collected during and through the rulemaking on federal lands will be used to advance the follow-up effort on ADA-covered sites. For further information, contact the Access Board.

The U.S. Forest Service is in the process of implementing a directive that would address access to lands under its management. In a notice published in the Federal Register on February 17th, the Forest Service outlined its plan to apply guidelines based on recommendations from the Access Board's Outdoor Developed Areas Regulatory Negotiation Committee and supplemented by the Forest Service to ensure the agency's continued application of universal design, as well as agency terminology and processes. The Board intends to work cooperatively with the Forest Service so that the guidelines for federal outdoor developed areas, including the Forest Service's guidelines, can be completed and finalized jointly in the near future. For further information

on the Forest Service's proposed guidelines visit its website at www.fs.fed.us/recreation/programs/accessibility

National Trails Surface Study

In 2004, the National Center on Accessibility (NCA) adopted protocols for a National Trails Surface Study, and the research is currently underway. The study is primarily the result of questions that the NCA has received for many years (and continues to receive) from organizations, agencies and individuals who want to make their trails accessible; are interested in an unobtrusive surface that blends with and is friendly to the environment; and who want to provide a quality trail experience for people with and without disabilities. In the past, there have been a number of studies that have looked at alternatives to asphalt and concrete as suitable materials for making trails accessible to people with disabilities. Most notably, the USDA Forest Service and the U.S. Department of Transportation, Federal Highway Administration, have been conducting research for years on various stabilization products and have been investigating other methods to lessen trail deterioration.

Recreation facilities

This rulemaking covers various recreation facilities, including amusement rides, boating facilities, fishing piers and platforms, golf courses, miniature golf, sports facilities, swimming pools and spas. It provides both scoping requirements, which specify what has to be accessible, and technical requirements, which spell out how access is to be achieved. These guidelines will supplement ADAAG (ADA Accessibility Guidelines), which addresses a wide range of facilities but does not cover these types of recreation facilities in any particular detail.

Play areas

In May 2001, The Access Board published the Guide to ADA Accessibility Guidelines for Play Areas. These guidelines establish minimum accessibility requirements for newly constructed or altered play areas under the Americans with Disabilities Act. The guide is one of the first to provide a comprehensive set of criteria for access to play areas. It covers the number of play components required to be accessible, accessible surfacing in play areas, ramp access and transfer system access to elevated structures, and access to soft contained play structures. The guidelines address play areas at schools, parks, childcare facilities and other facilities subject to the ADA. Exemptions are allowed for those play areas in a care operator's home, in amusement attractions or those associated with religious entities.

Summary of new ADA guidelines being developed by the access board

The ADA is a major civil rights law prohibiting discrimination on the basis of disability. It establishes design requirements

for the construction or alteration of facilities. It covers facilities in the private sector (places of public accommodation and commercial facilities) and the public sector (state and local government facilities). Under the ADA, the Access Board is responsible for accessibility guidelines covering newly built and altered facilities. In 1991, the Board published the ADA Accessibility Guidelines (ADAAG), which serves as the basis for standards used to enforce the law. The proposed new guidelines will overhaul the original ADAAG. The requirements for recreation facilities will become mandatory as the Department of Justice (DOJ) incorporates them into its ADA standards. In the interim, the public may consult the new guidelines as a reference in providing access to recreation areas.

The Access Board

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Washington, DC 20004-1111
(202) 272-5434 (v) – (202) 272-5449 (tty) – (202) 272-5447 (fax)
(800) 872-2253 (v) – (800) 993-2822 (tty)
website: www.access-board.gov
e-mail: info@access-board.gov

The National Center on Accessibility is a global leader promoting the full inclusion of people with disabilities in parks, recreation and tourism. Since 1992, NCA has conducted training, provided technical assistance and conducted research to increase awareness and promote inclusion of people with disabilities in all aspects of recreation. Contact information follows:

National Center on Accessibility

Indiana University Research Park
501 N Morton Street, Suite 109
Bloomington, Indiana 47404-3732
(812) 856-4422 (v) (812) 856-4421 (TTY)
(812) 856-4480 (Fax) (812) 856-4427 (technical assistance)
website: www.ncaonline.org
email: nca@indiana.edu

National Center on Physical Activity and Disability

1640 West Roosevelt Road
Chicago, Illinois 60608-6904
1-800-900-8086 (v/tty) (312) 355-4058 (fax)
Website: ncaonline.org/ncpad/index.shtml

Other web resources of interest:

For a list of disability related resources in Virginia, try the following Web site: www.disabilityresources.org/VIRGINIA.html

Department of Justice www.usdoj.gov/ has an entire section of their Web site devoted to legislation related to people with disabilities and various policy issues.

University of Illinois at Chicago, Institute on Disability and Human Development, www.uic.edu/orgs/ihdh/ is a good example of a creative Web site devoted to providing a comprehensive list of resources to assist persons with disabilities.

Wetlands as defined by the United States Fish and Wildlife Service (USFWS): “Land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances does support, hydrophytic vegetation adapted for saturated soil conditions.”

Wetlands are among the most important natural resources found in Virginia's landscape. Most people think of wetlands as marshes, swamps and bogs, but wetland types are varied and not always easily identified. The broadest categories of wetlands are known as tidal and non-tidal, and they share many of the same functions.

Virginia's tidal wetlands are found along the shorelines of the Atlantic Ocean, the Chesapeake Bay, and the tidal portions of rivers and creeks. Vital to commercial and sport fisheries, they provide food and habitat to innumerable species that comprise Virginia's annual harvest of fish from tidal waters. The amount of plant food produced by these wetlands ranges between one and six tons per acre per year, rivaling the production level of intensively farmed agricultural areas.

These wetlands are important to the Atlantic Coast Flyway, serving as wintering and stopover grounds for migratory waterfowl including tundra swans and numerous varieties of ducks. They are home to herons, egrets, rails, snipe and others that depend on the food and shelter provided there. Freshwater tidal marshes in particular exhibit high diversity and provide habitat for many and varied birds, mammals and aquatic species.

Non-tidal wetlands are being recognized for their value to the environment and the economy. They are located in flood-plains and adjacent to non-tidal rivers and streams. Non-tidal wetlands are located throughout all watersheds; they can be difficult to define because they are often fully forested and the ground is dry except in the winter months when the soil is saturated with groundwater and rainwater. These wetlands develop naturally in low areas that collect and cleanse water flowing through a watershed. They provide a first line of defense for water quality protection as stormwater runoff flows toward streams, rivers and bays. Where non-tidal wetlands are destroyed, increased stormwater runoff and silt from developing watersheds inundate the streams and rivers, which leads to the decline of water quality.

Wetlands function as the transitional feature between uplands and the aquatic environment. Due to their position in the landscape, they protect water quality through slowing the erosive force of stormwater released during rain events, providing flood control through storage of stormwater — thereby protecting life and property. They slowly release stored stormwater and groundwater to the surrounding

streams and rivers; this function has particular value during times of drought.

Another very important wetland function is the filtering of nutrient enrichment and other pollutants in the stormwater that wetlands capture; therefore, wetlands protect local water supply through the filtering of both surface waters and groundwater. Dense wetland plants baffle flowing water, allowing suspended silt to be settled onto the wetland where it's captured by the growth of the root system. The silt particles carry pollutants such as phosphorus, which, in great quantities, can be harmful to the aquatic environment. Wetlands also are effective in capturing dissolved pollutants such as nitrogen; excess nitrogen can lead to algae overgrowth and eutrophication in the aquatic environment.

Wetlands offer critical habitat essential for the life-cycle of many species of wildlife, fish and aquatic organisms. Approximately thirty-five percent of the nation's rare and endangered species are found in wetland habitats; wetlands often contain unique plant communities and typically have high biodiversity. (Virginia Cooperative Extension, “Status of Wetlands Management,” Broomhall and Kerns, Publication number 448-106)

A brief history of Virginia's wetland status

The USFWS has been mapping wetlands since the mid-1970s throughout the United States; this is known as the National Wetlands Inventory (NWI). Between 1956 and 1977 the USFWS estimates that Virginia lost more than 63,000 acres of coastal and inland wetlands. These losses were mainly in the coastal plain and averaged about 3,000 acres per year. The USFWS also determined that urban development was responsible for 43 percent of tidal wetlands loss during this period. Tidal wetlands were also lost to dredging projects, impoundments and sea level rise. Agriculture was cited as the principal source of non-tidal wetlands loss during this time, accounting for 45 percent of the total.

From 1982 to 1989, the U.S. Fish and Wildlife Service (USFWS) conducted a detailed study of wetland loss within the Virginia portion of the Chesapeake Bay Watershed, which encompasses 54 percent of Virginia. The study found that Virginia had a net loss in all wetland types and a net gain in ponds. Forested and scrub/shrub wetlands experienced the greatest loss during this time, totaling 19,284 acres. Most of these losses were due to reservoir construction, urban and rural development, and pond construction.

More recently, from 1994 to 2000, the USFWS studied rapidly developing southeastern Virginia (the study area was 811 square miles), and concluded that forested wetlands continued to experience the greatest losses (more than 3,300 acres) during the study period. This was mostly due to residential development.

Over the past three decades, a number of governmental programs have been established to reduce the destruction of wetlands. In adopting the Wetlands Act of 1972, the Virginia General Assembly established the policy to “preserve the wetlands and to prevent their despoliation and destruction.” As a signatory to the Chesapeake Bay Agreement of 2000, Virginia adheres to a goal of no net loss of wetlands, with a long-term goal of gaining wetlands acreage and function.

Regulatory programs for wetlands management

Virginia's state agencies have responded to the heightened interest in protecting the value of wetlands by developing or implementing strategies to improve the conservation of wetlands through appropriate programs and activities. Wetlands are specifically managed by a variety of programs at each level of government. Wetlands regulatory programs have the most widespread effect on determining whether they are protected or lost. Other governmental programs substantially overlap with wetlands management. Examples include programs such as endangered species and those that manage specific activities, e.g. mining, agriculture, or road construction. These other programs are at times responsible for wetlands alteration.

Most wetland disturbing activities (usually associated with development of some kind) are regulated by federal, state, or local governments. Federal law has regulated activities in both tidal and non-tidal wetlands under Section 404 of the Clean Water Act (CWA). In Virginia, this task falls to the Norfolk District of the Army Corps of Engineers (Corps). This office has worked with the Virginia Marine Resources Commission and local wetlands boards to coordinate the 404 program with Virginia's tidal wetlands program. This coordination has allowed the development of consistent and predictable standards for compliance with tidal wetlands regulations.

Since 1989, the Virginia Department of Environmental Quality (DEQ) has managed the protection of non-tidal wetlands based on combined state and federal authority, providing stability to federal non-tidal wetlands regulations in Virginia. In 2001 the Corps issued a Section 404 of the Clean Water Act State Programmatic General Permit (SPGP) allowing the DEQ to assume a portion of the wetland impact permitting process from the Corps. Both agencies have regulatory authority over stream channels (waters of the US); therefore, impacts to stream features are brought into review under the SPGP as well.

According to state regulation *9 VAC 25-210-45*: All wetland delineations shall be conducted in accordance with the “Wetland Delineation Manual, Technical Report Y-87-1, January 1987, Final Report” (Federal Manual). The Federal Manual shall be interpreted in a manner consistent with the Corps.

It is the responsibility of the person seeking a permit for wetland impacts (permittee) to conduct a delineation; a Corps

representative then confirms the wetland boundaries established by the delineation. It is important to note that all land disturbing activities should be initiated with a wetland scoping to determine if wetlands of any type exist within the project limits.

Any persons choosing to initiate development activity should contact an engineering or environmental firm that performs wetland delineations.

Non-regulatory programs: agriculture and forestry wetlands management

Under the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's Field Office Guide, best management practices (BMP) have been developed that discourage clearing or draining wetlands and encourage compliance with Section 404 and 401 of the CWA. The federal 1985 Food Security Act and 1990 Food, Agriculture, Conservation and Trade Act (FACTA) include financial disincentives for farmers receiving any federal subsidy to clear or drain wetlands for agricultural purposes. The Wetlands Reserve Program, established by the 1990 FACTA, can reimburse Virginia's farmers for their efforts to protect non-tidal wetlands.

The 1993 Forestry Water Quality Law gives the Virginia Department of Forestry (DOF) authority to stop work and impose civil fines for silvicultural operations that are causing, or could potentially cause, water quality problems. This law has increased department foresters' responsibility to provide sound recommendations to loggers for on-site BMP application. It also has led to increased requests from loggers for pre-harvest BMP consultations with department staff. DOF has a coastal forestry engineer who specializes in wetlands protection and on-site recommendations for wetlands BMP application.

Mitigation of wetland losses

State mitigation non-tidal wetland requirements can be found under *9 VAC 25-670-70*. The regulations require compensation for wetland impacts. The type of mitigation can be either wetland creation or restoration. If neither creation nor restoration is an option, the permittee may purchase wetland credits from an established wetlands bank or pay into an approved in-lieu fee fund.

Compensation for wetland impacts is determined by the kind of wetland impacted. The compensation ratios are based upon wetland values and the degree of difficulty for creating the wetlands destroyed. Forested wetlands are very hard to successfully create and have significant benefit to water quality; therefore, they are mitigated at a 2:1 ratio of replacement to loss. Scrub/shrub wetlands are mitigated at a 1.5:1 ratio and emergent wetlands at a 1:1 ratio. Open water impacts (ponds and lakes) are 1:1.

State mitigation requirements for tidal wetlands can be found at *4 VAC 20-390-10*. The criteria for mitigation requires that wetlands be preserved on-site in their natural state as

much as possible and to consider appropriate requirements for compensation only after it has been proven that the loss of the resource is unavoidable and that the project will have the highest public good and private benefit. Tidal wetland losses must be mitigated for at a 1:1 ratio.

Stream mitigation is more complex; a stream assessment must be conducted within the project area to determine the extent of the mitigation that will be required for impacts to both intermittent and perennial streams.

Wetland priorities for protection

In 1986, the U.S. Congress passed the Emergency Wetlands Resources Act, mandating the U.S. Fish and Wildlife Service and state agencies receiving Land and Water Conservation Funds to prioritize wetlands within each state. Information about this list may be found in the *Regional Wetlands Concept Plan, Emergency Wetlands Resources Act, Northeast Region*, 1990. U.S. Fish and Wildlife Service, Northeast Region. Hadley, Massachusetts.

Based on the findings of the USFWS through the NWI, tidal wetlands experienced the highest losses from the 1950s through the 1970s due to urbanization of the coastal plain; however, the regulatory programs for tidal wetland protection appear to have been effective and recent trends show a net gain in most tidal wetland types.

In more recent decades, Virginia has experienced significant population growth in many regions outside the coastal plain. Because of the population trends, forested and scrub/shrub non-tidal wetlands have been destroyed or converted to other wetland types at a 12-fold increase from the mid 1970s through the 1990s. This trend shows that Virginia is losing these wetland types faster than any other kind. As our knowledge of wetland function and value has improved, it has become apparent that both forested and scrub/shrub wetlands have immense value to the protection of Virginia's water quality and that the restoration or creation of these wetland types is the most challenging and costly.

For these reasons, non-tidal forested and scrub/shrub wetlands should have the highest priority for protection at this time.

Private efforts for wetland protection

As regulatory activities for wetland impacts evolved over the last 30 years, the concept of wetland banks and in-lieu fee funds developed to create a process that would allow wetlands to be replaced when lost to development activities.

Wetland banking became a reality in the 1990s when the Corps created guidelines for wetland bank creation in response to the requirements of federal and state mitigation for wetland impacts. Often it is not possible to create wetlands replacing those impacted within project limits, so steps were taken to establish a system where the permittee could purchase credits from an established bank and satisfy the permit requirement of wetland replacement. Since

Virginia follows a "no net loss" directive, guidelines for wetland bank creation are as follows: wetlands are first restored, then created, enhanced, and in exceptional circumstances, preserved.

Banking is beneficial for several reasons: larger contiguous wetlands have improved function; wetland credits are purchased prior to the wetland impacts occurring; permit review timeframes are often reduced because compensation is readily available; and monitoring for wetland creation success is easier and success of creation higher in larger tracts.

The most successful wetland banks are created from prior converted croplands. Low floodplain areas that were once forested wetlands, which were converted to cropland for farming, are restored to their original condition; ground elevations are restored; seasonal flooding is allowed; and the floodplain is planted with appropriate vegetation. The area is then allowed to mature into functioning forested wetlands. Banks are created to restore tidal and non-tidal wetlands. The wetland types that are restored depend on the previous land use, topography, and available water from adjacent rivers, streams, and groundwater.

Wetland banking has become good business; landowners can now create banks on their farms, if they allow the bank to be placed within an easement. Landowners sell the available credits, thereby earning additional income and help protect water quality at the same time. The entire wetland bank is protected in perpetuity once all wetland credits are sold.

Another wetland compensation tool is the In-Lieu Fee Fund. This differs somewhat from a wetlands bank because these funds are managed by a public natural resource agency (the Corps in Virginia) or non-government organization that collects fees from the permittee for unavoidable wetland impacts. The collected fees are put into a fund that is used to purchase lands where the wetland/stream resources can be restored, enhanced or protected.

In 1995, the Corps and The Nature Conservancy (TNC) partnered to create the Virginia Aquatic Resources Trust Fund. This fund has been important in Virginia because stream restoration credits can also be purchased if other alternative compensation is not available. The Corps has final authority to commit to projects that the TNC proposes.

TNC devotes its resources to protecting unique and ecologically valuable areas. It has made a significant contribution to the preservation of Virginia wetlands. Two of its most notable preserves are the Great Dismal Swamp, managed by USFWS, and the Virginia Coast Reserve, a chain of 13 barrier islands located along the Eastern Shore of Virginia and managed by TNC. TNC continue to be a strong force in Virginia for the protection of all its valuable and rare natural resources

Ducks Unlimited, Inc. is another nonprofit organization interested in preserving critical habitats, specifically wetlands.

Although most of its acquisition efforts have been focused in Canada, Mexico and the northern midwestern states, a program initiated in 1985 called MARSH (Matching Aid to Restore States' Habitat) offers funds to all states for acquisition, preservation, protection and enhancement of wetlands. Ducks Unlimited works in Virginia with the Department of Game and Inland Fisheries to improve habitats throughout Virginia.

Virginia wetlands also may be preserved through conservation easements to state, county or city governments and to regional park authorities and, under the 1988 Conservation Easement Act, to certain qualified nonprofit organizations (for more on conservation easements, see Chapter III). The Department of Conservation and Recreation (DCR) Natural Heritage Program has acquired numerous natural area preserves that contain significant wetlands. Furthermore, many of the sites identified in the Natural Heritage Plan as priorities for protection include wetland acres.

Future protection efforts

DCR will pursue enhanced management of the Commonwealth's wetland resources. DCR is working to expand the natural areas registry program, which provides voluntary non-binding protection of exemplary natural areas to include many wetland systems. DCR also will continue to provide and expand appropriate ecological management of wetlands by coordinating multi-agency exotic species eradication programs, detailed hydrologic mapping and monitoring programs, prescribed burn research and restoration of endangered ecosystems and species.

DCR will continue to identify significant wetlands and other natural resources in western and southwestern Virginia. These areas are the most biologically diverse in the state, but have the fewest resources to identify and conserve natural areas. Lastly, DCR will provide management-planning data to localities to aid in protection of these resources.

Wetlands scientists from the Virginia Institute of Marine Science estimate implementing Virginia's tidal wetlands program in recent years has dramatically reduced the state's tidal wetlands loss. Virginia's "no net loss" policy continues to lower other wetland losses as well. The development of wetland banks and the in-lieu-fee program is moving Virginia towards balancing wetlands annual loss with wetlands gained.

Coordination among all levels of government will continue to be important for managing all wetlands. Coordination between state and federal wetlands regulatory programs is important to ensure efficient, predictable and consistent regulation. Coordination with local governments is important because local land-use decisions have a significant effect on the planned locations of development. If these decisions consider the values and locations of wetlands, they can reduce conflicts between landowner expectations and requirements of wetlands regulatory programs.

For further information about wetland programs in Virginia contact:

Department of Environmental Quality

P. O. Box 10009
Richmond, VA 23240-0009
www.deq.virginia.gov

Virginia Marine Resources Commission

2600 Washington Avenue
Newport News, VA 23607
www.mrc.virginia.gov

Department of Conservation and Recreation

Division of Soil and Water Conservation and
Chesapeake Bay Local Assistance Division
203 Governor Street
Richmond, VA 23219
www.dcr.virginia.gov

U.S. Army Corps of Engineers

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The Rivers, Trails and Conservation Assistance Program (RTCA) works with community groups and local, State, and federal government agencies to conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the National Park Service natural resource conservation and outdoor recreation mission in communities across America.

RTCA works in urban, rural, and suburban communities with the goal of helping communities achieve on-the-ground conservation project successes. The RTCA focus is on helping communities help themselves by providing expertise and experience from around the nation. From urban promenades to trails along abandoned railroad rights-of-way to wildlife corridors, our assistance in greenway efforts is wide ranging. Similarly, RTCA assistance in river conservation spans downtown riverfronts to regional water trails to stream restoration. RTCA has assisted over 50 projects, conferences, trainings, and research initiatives in Virginia.

Glossary

Active recreation – Activity that is usually more strenuous or organized and generally requires more developed facilities than passive recreation.

All-Terrain Vehicles (ATV) – A three- or four-wheel vehicle that is 50 inches or less in width, intended for off-road high-way use. Not licensed in Virginia.

Atlantic Coastal Flyway – The eastern migratory route taken by birds as they migrate in the fall and spring.

Bargain sale – A sale to a land trust or other conservation organization at less than fair market value. The difference between the sale price and the appraised fair market value qualifies as a tax deductible, charitable contribution.

Bayside – The Chesapeake Bay side of the Eastern Shore.

Bequest – A gift of land or other asset through a person's will.

Biodiversity – The variety of living things, including variability within and among living populations and the ecosystems within which they occur. Biodiversity is often a measure of the health of biological systems.

Blueway – For the purposes of this *Virginia Outdoors Plan*, the term blueway and water trail are used synonymously. Blueways and water trails are managed systems of access points and support facilities that allow trail users to plan multi-day trips with assurances that access points, camping sites, rest stops and re-supply sites are clearly identified on maps and on signs visible from the water.

Buffer zones – The inclusion of natural area or open space along edges of lands to protect ecological integrity and minimize conflicting land use adjacent to lands vulnerable to change.

Car top boat launch – A facility also known as a hand carry launch that provides appropriate water access to watercraft, such as canoes and kayaks, that may be transported on top of a car. A car top boat launch may also provide access for small boats transported by trailer; however, car top boat launches may be designed to prohibit access for boats transported by a trailer.

Carrying capacity – A wildlife management term for an equilibrium expressed by the availability of habitat components and the number of animals in a given area. In general ecological usage, carrying capacity is the dynamic equilibrium established between a life form and its environment. It is frequently expressed as a number indicating the population of any animal a given area can support. Carrying capacity varies throughout the year and from year to year, depending upon conditions within the habitat such as rainfall. There may be a difference between the ecological carrying capacity of a given area and the cultural carrying capacity of an area (see definition for recreational carrying capacity).

Complete street – Streets designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.

Comprehensive statewide trails plan – A plan created through feedback from users and all levels of government that inventories existing trails, details specific proposed routes for future trails and suggests policies for consistent development, maintenance and management of trails throughout the state.

Connector – A trail that leads to or links one or more parks or greenways.

Conservation – The stewardship of valued natural and cultural resources through preservation, management and care to protect the resources from loss, damage or deleterious change. Planned management of a natural resource to prevent misuse, destruction or neglect.

Conservation easement – A legally binding agreement between a landowner and a conservation organization or government agency (the easement holder), in which the landowner relinquishes specific land use rights, and the easement holder agrees to enforce the terms of the easement for public benefit.

Core area – A large area within a reserve network that is managed solely or primarily as an ecological reserve for the conservation of biological diversity. Such areas will often be the central units within the network and may include several ecosystems.

Corridor – A narrow, linear segment of land that connects ecosystems, water bodies or human activity. Examples would be biological corridors, hydrological corridors, wildlife corridors and resource-based outdoor recreational corridors. Corridors provide protection for the movement of wildlife and plant life across the landscape (ecological corridors), recreational access for rural and urban populations (trails), and enhancement or restoration of water quality (riparian corridors).

Designated – When a resource such as a trail, byway or river has received regional, statewide or federal recognition for outstanding qualities.

Ecosystem – A community of plants, animals and their environment that interacts and functions together as a unit.

Ecotourism – As defined by the Nature Conservancy and the World Conservation Union. "Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples."

Edge – The portion of an ecosystem or habitat near the perimeter. The edge is most often subject to impact from surrounding land uses.

EIC (Environment as Integrating Context) – A school's surroundings and the community are used as a framework within which students can construct their own learning. Teachers and administrators who implement and integrate proven educational practices into the learning process guide the process.

Emergent wetlands – Wetlands that retain ponded water year-round and are most often associated with swamps and marshes or fringe wetland areas along open water

Environmental education – Education related to the natural and built environment within a real-world context that links the classroom to the students' community. Students are engaged in hands-on, active learning that increases their knowledge and awareness about the environment. Because environmental education encourages inquiry and investigation, students develop critical thinking, problem solving and effective decision-making skills. Quality, standards-based environmental education improves everyday life by protecting human health and encouraging stewardship of natural resources.

Environmental literacy – Fluency in the principles of ecology that includes a working knowledge of the basic vocabulary and understanding needed for wise stewardship decisions.

Fair market value (FMV) – The value of property offered on the open market for a reasonable period of time with both buyer and seller knowing all the uses to which the property could be put and with neither party being under pressure to buy or sell.

Fastlands – Seemingly stable lands, which are often vulnerable to erosion from storms and development, that lie above the tide line in coastal areas.

Fee simple – Absolute title to land, free of any other claims against the title, that one can sell or pass to another by will or inheritance.

Geotourism – Like ecotourism, geotourism promotes a virtuous circle whereby tourism revenues provide a local incentive to protect what tourists are coming to see. However, geotourism extends the principle beyond nature and ecology to incorporate all characteristics that contribute to sense of place, such as historic structures, living and traditional culture, landscapes, cuisine, arts and artisanry, as well as local flora and fauna. Geotourism sustains, or even enhances, the geographical character of a place, such as its culture, environment, heritage and the well-being of its residents.

Gray infrastructure – Man-made systems that support communities, including roads, utilities and buildings and other impervious surfaces.

Green infrastructure – A broad concept of the ecological and human life support system that incorporates “an interconnected network of waterways, wetlands, woodlands, wildlife habitats and other natural areas; greenways, parks and other conservation lands; working farms, ranches and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources, and contribute to the health and quality of life for communities and people” (Benedict and McMahon, 2006).

Green space – Lands with minimal impervious surface area that are not highly developed, including parks, natural areas, trails, greenways, forestlands, agricultural properties and other types of open space.

Greenway – A linear open space established along either a natural corridor, such as a riverfront, stream valley or ridge-line, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road or other route. Any natural or landscaped course for pedestrian, equestrian or bicycle passage. An open space connector linking parks, nature reserves, cultural features or historic sites with each other and with populated areas. Locally, certain strip or linear parks designated as a parkway or greenbelt. (Adapted from Charles Little, *Greenways for America*. 1990. The Johns Hopkins Press).

Habitat – The area, environment or landscape where a plant or animal normally lives that provides all that plant or animal needs for survival.

Habitat fragmentation – Habitat separated into smaller parcels usually as a result of human land use associated with forestry, agriculture or development creating stressful living environments that impacts the health and viability of native flora and fauna.

Habitat patch areas – A relatively homogenous habitat area that is surrounded by different land use and separated from similar habitat.

High impact recreation facilities – High impact recreation facilities require landscape alterations to accommodate such activities. Alteration examples are buildings or structures, golf courses, community gardens, athletic playing fields, courts, children's play areas, dog parks, camp areas, equestrian facilities, swimming pools and pavement.

Highest and best use – That use of land, from among reasonably probable and adequately supported alternative uses, which is legally permissible, physically possible, financially feasible and maximally productive. The highest and best use must occur within the reasonable near future and can't be remote or speculative.

Hub – A large block of land that contains and buffers one or more core areas and anchors a green infrastructure network.

Glossary

Hydric soils – Soils that are saturated with ground water during the winter and most of the growing season.

Hydrophytic vegetation – Plants that grow in soils that are wet during the growing season.

Impervious surface – A surface, including pavement, buildings and compacted soil areas, that does not permit the absorption of stormwater.

Interpreter – A person at a site such as a park or museum who translates the ‘languages’ of natural or cultural history to visitors at that site. Interpretation is an educational method that aims to reveal meanings and relationships – such as ecological concepts – through the use of original objects, by firsthand experience and by illustrative media. It is a way of communicating that strives to make information enjoyable and relevant to the visitor.

Invasive species – Non-native plant, animal, or microbial species that cause, or are likely to cause, economic or ecological harm or harm to human health. “Non-native” (or “alien,” “exotic” or “nonindigenous”) means that they have been introduced by human action, intentionally or accidentally, into a region outside their natural geographic range.

Landscape – A large heterogeneous land area that includes a mosaic of ecosystems or land use having common characteristics.

Land trust – Local, regional or statewide nonprofit conservation organizations directly involved in helping protect natural, scenic, recreational, agricultural, historic or cultural property.

Link – Land connecting resources, recreational areas and ecosystems that provide sustainability for plants and animals.

Loop trail – A trail that starts and stops at the same point.

Local trail – A trail within one jurisdiction and generally contained within a local recreation area.

Low impact recreation – Recreation facilities with a mix of uses on undeveloped land or minimally improved lands. These uses may include wildlife viewing, nature study, fishing and non-motorized boating. In most cases, support facilities like restrooms, parking areas, trails, water access and signage are needed to support low impact recreational uses that do not require major landscape alterations.

Meaningful watershed education experience – This terminology refers to a commitment by the Chesapeake Bay Program Education Workgroup to formally engage schools as integral partners to undertake initiatives in helping to meet the Chesapeake Bay Agreement. The meaningful watershed education experience goal promotes individual stewardship and assists individuals, community-based organizations, businesses, local governments and schools

to undertake initiatives, including opportunities to participate in local restoration and protection projects, and to support stewardship efforts in schools and on school property.

Minimum instream flow – The minimum flow rate required to sustain the health of the flora and fauna living in a stream.

Minimum instream flow for recreation – The minimum flow rate required to support a quality recreational boating experience.

National trail – A trail that has received special designation from Congress.

National Historic Trail – Extended trails that closely follow the original trails or routes of travel of national historic significance.

National Scenic Trail – Extended trails so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural or cultural qualities of the areas through which such trails may pass.

National Recreation Trail – Trails that provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

Naturalist – A person, often a scientist or writer, who studies and promotes nature.

Nature-deficit disorder – Many people, particularly children, are not experiencing the out-of-doors and have a disconnect with nature. The social, psychological, physiological and even spiritual ramifications of a dearth of outdoors experience for a generation raised on electronic, rather than natural, stimulation and entertainment.

Nonformal educator – A person who provides educational programs outside the framework of a formal school setting.

Nontidal wetlands – Wetlands not affected by the tide.

Nongame wildlife – Species that are not actively sought by hunters, trappers or anglers.

Obligate species – Plants that require wet soils and typically standing water in which to grow.

Off-Highway Vehicle (OHV) – Any motorized vehicle specifically designed for travel off of paved highways. OHV's include off-highway motorcycles, dune buggies, four-wheel drive vehicles, snowmobiles and all-terrain vehicles.

Open space – Minimally developed land that is public or privately owned, including scenic rural landscapes, urban greenspace, greenways, trails, undeveloped riparian lands and floodplains, historic landscapes, parkland and undeveloped recreation areas, forests, farmland, and undisturbed natural environments and wildlife habitat.

Passive recreation – Activity that is initiated by individuals that can be less strenuous and generally requires less developed facilities than active recreation.

Primary contact recreation – This refers to a recreational activity requiring direct contact with the resource, most often referring to contact with natural water bodies. For example swimming, snorkeling, tubing, surfing and diving require direct contact with water, while boating and fishing may not require immediate and direct contact with the water.

Purchase of development rights (PDR) – Also known as agricultural conservation easements (ACE). A voluntary, non-regulatory program through which a government agency (in Virginia, a locality) pays a landowner for the development rights on the land, in exchange for limiting development on the land in the future. This tool has been used most frequently to preserve agricultural lands. The deed restriction serves to protect valuable agricultural resources, including soils, water quality, wildlife habitat, historic sites and scenic views.

Rails-To-Trails – Paths constructed on or along abandoned railroad rights-of-way.

Rails-with-Trails – Trails constructed on or adjacent to an active railroad right-of-way.

Recreational carrying capacity – A measure of the amount of activity days of recreational use a given area or facility can provide without damage to the resource or excessive conflicts between users. The user's expectations for the type of recreational experience they are seeking dictates the amount of social interaction, man-made improvements and structured programming considered as acceptable.

Reforestation – Restoration of native forests using indigenous plants and trees.

Regional trail – Any trail of significant length that crosses jurisdictional boundaries.

Remainder interest, Reserved life estate – An agreement that allows a landowner to convey the land to a land trust or other conservation organization, while continuing to live on or use the land until their death. The "remainder interest" in the property then reverts to the conservation organization. This approach provides limited income tax benefits, but full estate tax benefits.

Riparian – Lands located along banks of a natural course of water and associated with riverine environments.

Riparian forest – The forested area of land adjacent to a body of water such as a river, stream, pond, lake, marshland, estuary, canal or reservoir.

Scenic byway – The National Scenic Byways Program was established under the Intermodal Surface Transportation Efficiency Act of 1991. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational and scenic qualities.

Scenic highway – A road, designated as such by the Commonwealth Transportation Board, within a protected scenic corridor located, designed and constructed so as to preserve and enhance the natural beauty and cultural value of the countryside. (*Code of Virginia* §33.1-64)

Scenic River Advisory Committee – Local or regional committees of not less than three members, appointed by the director of the Department of Conservation and Recreation to consider and manage scenic river interests and issues. The committees shall assist and advise the director and the local governing body with advice regarding the protection or management of the scenic river segment in their jurisdiction. The committees may consider and comment to the director on any federal, state or local governmental plans to approve, license, fund or construct facilities that would alter any of the assets that qualified the river for scenic designation. Active committees are: Goose Creek Committee and Historic Falls of the James. (*Code of Virginia* § 10.1-401.4 and see Scenic River Board)

Scenic river evaluation program – Rivers considered for designation must be evaluated following the established criteria of the Virginia Scenic River Program. The evaluation point of reference is from the surface of the river during the year when the foliage is in leaf. The criteria includes: stream corridor vegetation; streambed and stream flow modifications; human development of visual corridor; historic features; landscape; quality of fishery; rare, threatened or endangered species; water quality; parallel roads; crossings; and special features affecting aesthetics. More can be found at: www.dcr.virginia.gov/recreational_planning/srmain.shtml.

Scenic roads – All road corridors that have been identified as having scenic qualities, including designated Virginia Byways, National Scenic Byways and All American Roads, as well as roads found to qualify for the state program that have not been officially designated.

Scrub/shrub wetlands – The intermediate stage of wetland plant growth when the plants are predominantly shrubs or small trees. These wetland types are not typically wet year-round.

Seaside – The Atlantic Ocean side of the Eastern Shore.

Sense of place – A component of cultural identity and human orientation in the landscape based on a personal response to the environment. In the larger landscape context, sense of place may be an individual's perception of the whole region, state or nation.

Site – Within the context of green infrastructure, site refers to the smaller parcels of land that provide habitat that are linked to other larger system components.

Small woodlot – A segment of a woodland or forest capable of small-scale production of forest products, such as wood fuel and sawlogs, as well as recreational uses, such as bird watching, wildlife watching and hiking.

Glossary

Smart growth – Strategies for planning economically sound development creating walkable, livable communities offering a high quality of life. Smart growth promotes revitalization, redevelopment and infill in urban and suburban areas and encourages development around established community centers already served by utilities and other public facilities. Smart growth links sustainable development with the availability of infrastructure, water and land based resources to support the community.

Social marketing – The application of marketing technologies developed in the commercial sector to solve social problems where behavior change is required.

Stakeholder – A broad grouping of individuals, groups or organizations with an interest in, or influence over, the program or project.

Standards of Learning (SOL) – The Standards of Learning for Virginia Public Schools describe the Commonwealth's expectations for student learning and achievement in grades K-12 in English, mathematics, science, history/social science, technology, the fine arts, foreign language, health and physical education, and driver education.

State Land Evaluation and Advisory Council (SLEAC) – The State Land Evaluation and Advisory Council (SLEAC) was created in 1973 with the mandate to estimate the use value of eligible land for each jurisdiction participating in the use-value taxation program. The SLEAC contracts annually with the 1) Department of Agricultural and Applied Economics at Virginia Tech to develop an objective methodology for estimating the use value of land in agricultural and horticultural uses, 2) the Virginia Department of Forestry for the use value of land in forestry, and 3) the Department of Conservation and Recreation for the use value of land in open space.

State strategic trails plan – A plan created by DCR staff and a task force to set the vision and mission for the State Trails Program, along with specific goals and objectives for achieving that vision.

Stewardship – Being responsible for taking care of natural resources.

Sustainable forestry – The stewardship and use of forests and forestlands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and potential to fulfill, now and in the future, relevant ecological, economic and social functions at local, national and global levels, and that does not cause damage to other ecosystems (Ministerial Conference on the Protection of Forests in Europe, Helsinki, 1993).

Sustainability – The ability of an activity to be maintained over time without depleting the natural resource base. Sustainable activities do not reduce options or otherwise impoverish future generations.

Tax benefits – Income and estate tax deductions derived from qualified charitable donations.

Thematic trails – Driving routes that follow a particular historic event or display a particular set of sites that have common resources. Examples are: Captain John Smith Driving and Water Trail, DGIF Birding and Wildlife Trails, Civil War Trails and Crooked Road Heritage Music Trail.

Tidal wetlands – Wetlands within tidal areas where water levels change with the tide.

Timber stumpage – Standing timber and its value.

Title – Indicates position of lawful ownership and right to property. Combination of all elements constituting proof of ownership.

TMDL (total maximum daily load) – A term that represents the total pollutant a waterbody can assimilate and still meet water quality standards.

Trail – The treadway and shoulders of a cleared or improved path.

Trunkline trail – A generally long-distance trail designed to accommodate multiple uses that is a key component of the state trail system. A major trail to which connector trails link.

Urban crescent – The populated and increasingly developed land spanning along the I-95 corridor from Washington, DC and Northern Virginia to the Richmond metropolitan area and southeast to Hampton Roads and the coastline.

Viewshed – The area that can be seen from a particular place where landform, not vegetation, determines its extents.

Virginia byway – A road, designated as such by the Commonwealth Transportation Board, having relatively high aesthetic or cultural value, leading to or within areas of historical, natural or recreational significance. Preference is given to corridors controlled by zoning or otherwise, so as to reasonably protect the aesthetic or cultural value of the highway. (*Code of Virginia* §33.1-63)

Virginia Outdoors Survey (VOS) – A survey of a percentage of Virginia households that reports citizen opinions on numerous natural resource and outdoor recreation topics.

Virginia Scenic River Board – An advisory board, appointed by the governor, composed of the DCR director and 15 members-at-large. The board has no regulatory authority and advises the governor and the director concerning the protection or management of the Virginia Scenic Rivers System, including, but not limited to, appointments of Scenic River Advisory Committees; providing recommendations concerning scenic river designations; commenting on any federal, state or local governmental plans regarding the

impacts to potential or designated rivers; assisting in preserving and protecting the natural beauty of the scenic rivers; and assistance to local governments in solving problems associated with the Virginia Scenic Rivers System. (*Code of Virginia* § 10.1-406 and see Scenic River Advisory Committee)

Visioning – A strategic planning process that provides an opportunity for citizens to come together and discuss their hope for the future and identify and establish shared goals to achieve the desired community outcome.

Water-access facility – Any facility that provides direct recreational access to the water.

Water quality – The chemical, physical and biological characteristics of water, usually in respect to its suitability for recreation, fishing or consumption.

Watershed – All the land that drains into a given body of water.

Water trail – For the purposes of this *Virginia Outdoors Plan*, the term blueway and water trail are used synonymously. Blueways and water trails are managed systems of access points and support facilities that allow trail users to plan multi-day trips with assurances that access points, camping sites, rest stops and re-supply sites are clearly identified on maps and on signs visible from the water.

Wayfinding – 1) The ways in which people and animals orient themselves in physical space and navigate from place to place. 2) The art and craft of providing signs and symbols that help travelers find their way from place to place.

Wetland banking – Wetland areas that are created or enhanced to compensate for the loss of wetlands in other areas due to development of some form.

Wetland function – Wetlands function as a natural pollutant filter to reduce sediment and chemical contaminants from reaching other water bodies, such as streams, rivers, lakes and oceans.

Wetland loss mitigation – Any action taken that offsets the loss of the wetland function for the removal of pollutants before they contaminate other bodies of water. This can include wetland preservation and upland reforestation of areas that buffer existing wetlands, but typically wetland mitigation refers to wetland bank creation.

Working lands or working landscapes – Land that has been modified by humans to produce food, fiber or other materials including working lands used for agriculture, forestry, ranching and mining.

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