Outdoor Recreation Management Program

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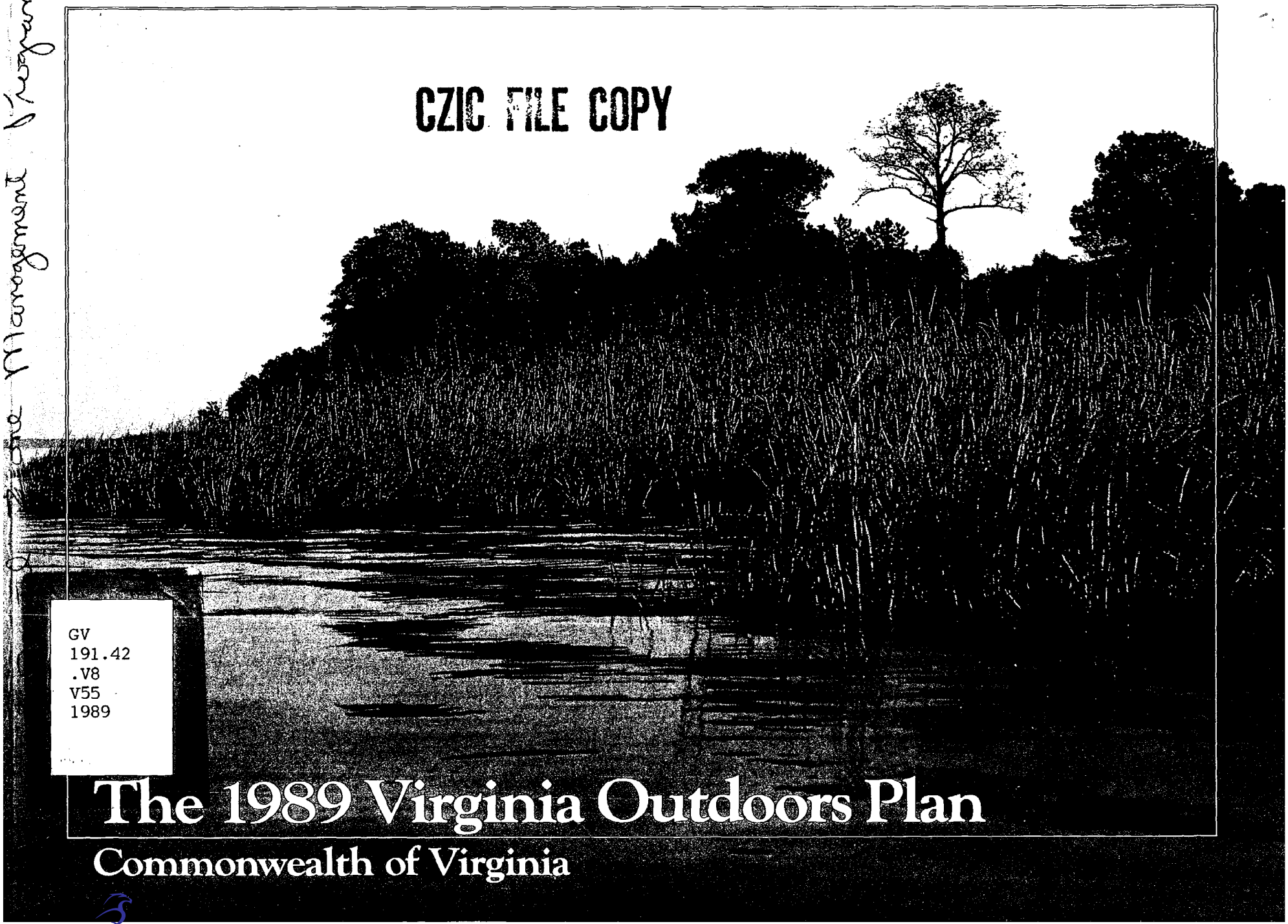

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The 1989 Virginia Outdoors Plan

Commonwealth of Virginia

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THE 1989 VIRGINIA OUTDOORS PLAN

A Plan for Meeting Virginia's Outdoor Recreational Needs and Conserving the Environment

Department of Conservation and Recreation

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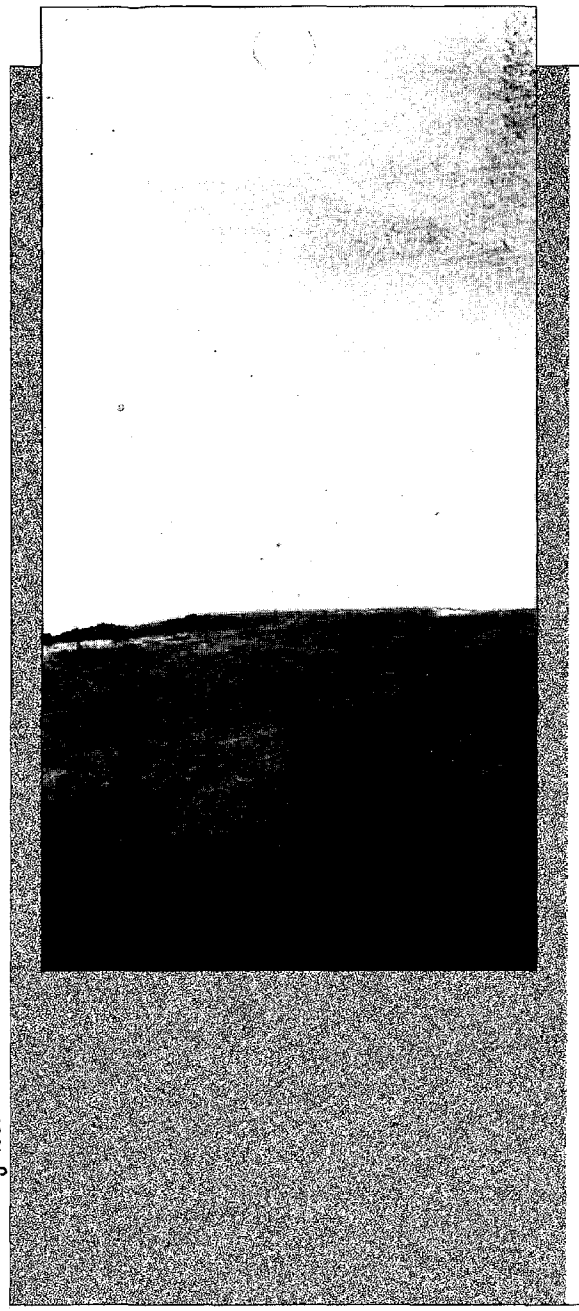

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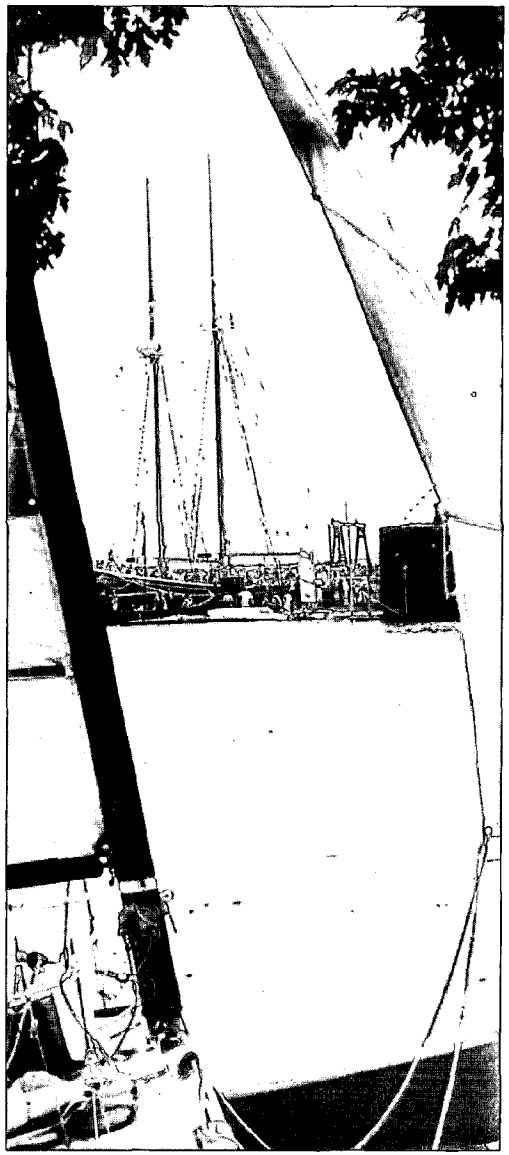

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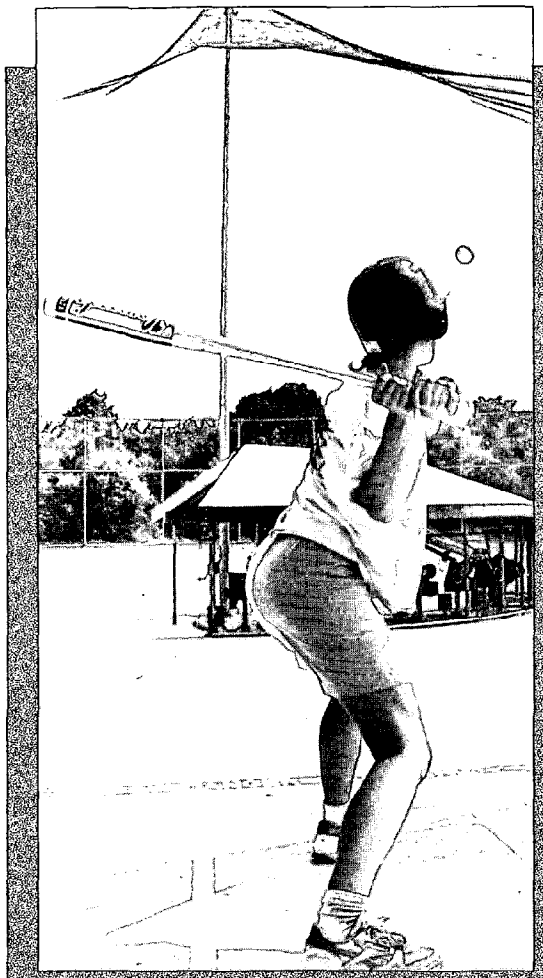


INTRODUCTION

The 1989 Virginia Outdoors Plan is Virginia's sixth State Comprehensive Outdoor Recreation Plan. The first plan, titled **Virginia's Common Wealth,** was prepared in 1965 by the Virginia Outdoor Recreation Study Commission at the request of the 1964 General Assembly. That report launched the state into a broad program of open space conservation, recreational planning, and development. Subsequent plans under the title of **The Virginia Outdoors Plan** have been published by the Commission of Outdoor Recreation in 1970, 1974, 1979, and by the Division of Parks and Recreation in 1984.

The preparation of the 1989 **Plan** *by the Department of Conservation and Recreation's Division of Planning and Recreation Resources staff was aided by invaluable contributions from state, federal, regional, local, and private agencies and individuals, to whom the Department expresses its gratitude. Special acknowledgement is given* to Dr. Robert D. Rugg of Virginia Commonwealth University, Center for Public Affairs, for his efforts in updating and analyzing the demand and supply data, and to Virginia's local governments, parks and recreation departments, and the Planning District Commissions for their help in inventorying existing recreational areas and facilities and in conducting the review of the **Plan** at the local level.

The purpose of the **Plan** is to provide guidance to federal, state, and local units of government, as well as the private sector in acquiring, protecting, and developing outdoor recreation and open space resources. The **Plan** is designed to be readable and useable by both professionals and laymen interested in outdoor recreation in Virginia. The recommendations and specific actions should be implemented over the next five years to meet the state's recreational needs.

The **Plan** provides guidance through the provision of information on the demand, supply, and needs for various types of outdoor recreation areas and facilities, as well as delineating the roles and responsibilities of both the public and private sector in meeting these needs. It reflects the issues which the citizens and government feel *are important to the maintenance of a quality* environment and the provision of adequate recreation opportunities now and for the future.

The following principles guided the preparation of **The Virginia Outdoors Plan:**

Parks, recreation, and open space are essential to the health, general welfare, comfort, and well being of all segments of the public; their provision is a public necessity and in the public interest.

The demand for outdoor recreation opportunities is increasing faster than the population.

Multiple use of existing resources along with private/public partnerships is imperative.

Each level of government, as well as the private sector, has a role and responsibility in providing *a variety of recreation opportunities and a* balanced outdoor recreation system for all citizens.

Conservation Policy

The official position of the Commonwealth of Virginia, with respect to its natural resources, its public lands, and its historic sites is clearly expressed in the State Constitution. Article XI, Conservation, was adopted by the people in 1970 as recommended in the first **Virginia Outdoors Plan.**

ARTICLE XI-Section 1
Constitution of Virginia

"To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public land, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public land, 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."

Article XI is a strong statement of Virginia's public policy to protect air, water, and other natural resources of the Commonwealth for the benefit of the people and it provides direction to the courts to construe state statutes and administrative acts in light of this constitutional postulate.

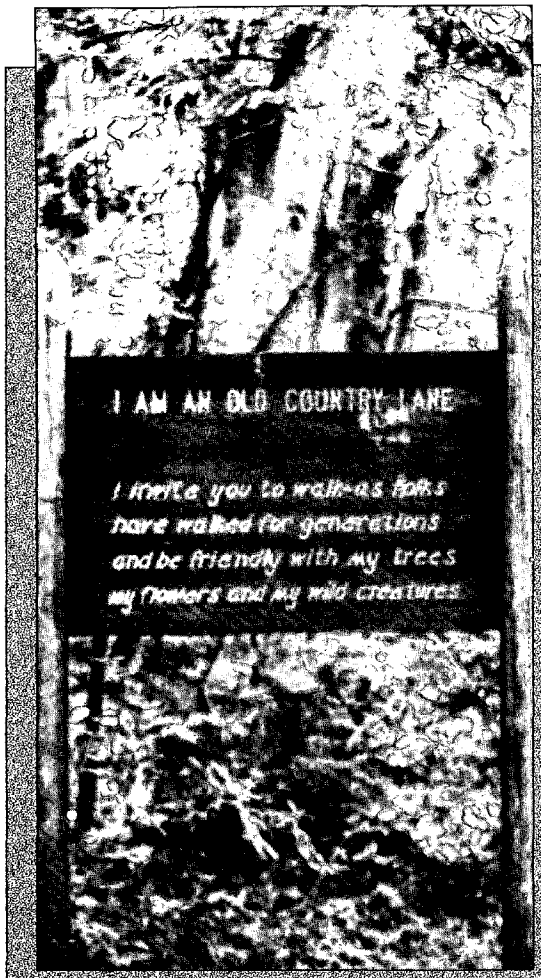
It is the objective of this article to insure that the people of Virginia have the opportunity to live in, utilize, and enjoy a natural environment which can be passed on to future generations with satisfaction and pride.

Legal Authority

The legal authority of Virginia to participate in the Land and Water Conservation Fund program is contained in Section 10-21.8(3) of the Act which created the Commission of Outdoor Recreation. This authority was transferred to the Department of Conservation and Recreation in July of 1983. The program provides 50 percent matching money to state agencies and localities for the acquisition and development of outdoor recreation areas. The 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 . . ." Other provisions in the act spell out the nature of the statewide recreation plan. **The Virginia Outdoors Plan** constitutes the official State Comprehensive Outdoor Recreation Plan for Virginia.

The 1989 **Plan** is a product of input received from numerous agencies, individuals, and organizations. The information was received during the statewide hearings of the 204 legislative subcommittee created by the General Assembly to assess recreation in Virginia, as well as presentations at twenty meetings held across the state. These issues, goals, objectives, and recommendations represent the ideas and aspirations of the people of the Commonwealth with regard to the protection of the state's resource base, Virginia's Common Wealth, and the provision of recreation services to meet the needs of the citizens and visitors.

The 1989 Virginia Outdoors Plan is the Peoples Plan providing guidance and direction to the public and private sector in Virginia.



CHAPTER I:
Goals and Objectives

Goals

Over the past twenty years, Virginia has developed a set of goals that describe the state's intent toward the protection, acquisition, and development of its outdoor recreation resources. These goals form the basic policy of the Commonwealth with respect to meeting the challenge of providing adequate recreational opportunities for residents as well as visitors. Working towards the attainment of these goals is both desirable and necessary if the state is to develop the quality of life desired by its residents. The goals are:

- To provide for needed development and material progress without the needless sacrifice of natural, open space, or recreational resources.
- To identify those resources which have special recreational, historical, cultural, natural, and scientific significance and take necessary steps to protect and conserve them.
- To insure, for this and future generations of Virginians, the provision of an adequate supply of outdoor recreational opportunities.
- To create a widespread understanding and appreciation of the value of our natural and recreational resources.
- To promote the coordination of efforts among the providers of outdoor recreational opportunities, both public and private, in meeting the recreational needs of all Virginians.

Objectives

In conjunction with these general goals, specific objectives have been developed for **The Virginia Outdoors Plan.** These objectives have been established on the contention that Virginia's natural and recreational resources are indeed a "Common Wealth" that should be utilized, protected, and conserved in such a manner that they can be passed on to future generations with satisfaction and pride. Following is a summary of the objectives of the **Plan.**

Relating to Federal Agencies

- To work with federal land and resource managing agencies in implementing specific recommendations contained in **The Virginia Outdoors Plan.**
- To provide assistance to federal agencies in developing and implementing plans which could contribute to the provision of additional recreation opportunity in Virginia.

Relating to State Agencies

- To promote, with supplemental funds when available, the multiple use of state owned lands, such as wildlife management areas, public fishing lakes, and state forests, in order to increase their recreational potential.
- To promote and assist in the provision of additional public water access sites and water based recreational facilities on both

tidal and nontidal waters.

- To encourage the continued expansion of the Natural Areas System.
- To increase the state's supply of lands available for public hunting, with special emphasis on lands east of the Blue Ridge, when available.
- To increase the state's supply of needed recreational facilities.
- To facilitate recreation program and facility accessibility to all segments of the population including persons with disabilities.
- To manage the state park system to meet the leisure needs of Virginia's residents and visitors and provide recreational facilities for camping, picnicking, playfields, hiking, swimming, fishing, boating, and other leisure activities while at the same time providing natural outdoor experiences and protecting significant state natural, historical, and cultural resources.
- To increase the environmental awareness and interpretive programs at all appropriate state owned areas.
- To develop each state park to its optimum capacity.
- To promote the development and use of limited portions of certain State Wildlife Management Areas for compatible outdoor recreational opportunities.
- To encourage localities to insure that their residents' leisure service needs are being met.

Relating to Localities

- To insure the future of valuable open space areas through the implementation of sound land use planning.
- To promote and assist action by cities, towns, and counties to plan for and provide complete systems of outdoor recreation and open space areas, with special emphasis toward the provision of recreation systems in urban areas.
- To encourage the participation of localities in regional park authorities in order to cooperatively provide systems of major regional facilities that would supplement nearby local park and recreation systems.
- To encourage localities to take advantage of underutilized public lands for outdoor recreation purposes.
- To encourage local park and recreation departments to coordinate with their school systems to ensure optimal utilization of recreation facilities.
- To facilitate recreation program and facility accessibility to all segments of the population including persons with disabilities.

Relating to the Private Sector

- To encourage individuals, organizations, and private enterprise to fulfill their role in meeting the recreational needs of Virginians and out-of-state visitors.
- To encourage the private sector to develop service facilities, i.e., food and overnight accommodations, needed in conjunction with publicly owned recreational areas.
- To promote cooperative ventures for private development of public lands when such development is in harmony with the resource and site's master plan.

Relating to Scenic Highways and Virginia Byways

- To identify those roads that have special natural, historical, scenic, or cultural values and encourage their enhancement, protection, and use as components of Virginia's byway system.

Relating to Greenways

- To encourage the development of a statewide system of greenways which would provide an entire spectrum of trail related activities linking together major resources throughout the state.
- To promote the linking of existing recreation areas with biking, hiking, and jogging trails.

Relating to the Seashore

- To protect and preserve to the greatest extent possible the remaining unspoiled coastal beaches, wetlands, and forests.
- To increase public access, including handicapped access, to and use of desirable beach areas with particular emphasis on those already in public ownership.

Relating to Lakes, Rivers, and Bays

- To protect and maintain the scenic, natural, and recreational values of the Chesapeake Bay.
- To develop and/or retain for the public's enjoyment, a reasonable portion of the recreational and scenic values created by all water resource projects.
- To expand the state's scenic river system to include a representative portion of the Commonwealth's outstanding riverine diversity.
- To develop additional public access to the lakes, rivers, and bays of the Commonwealth, including handicapped access.

CHAPTER II:
History and Progress

The first **Virginia Outdoors Plan,** prepared for the Governor and the General Assembly by the Virginia Outdoor Recreation Study Commission in 1965, was published under the title **Virginia's Common Wealth** and was adopted by the 1966 General Assembly. The **Plan** was first updated in 1970 and revised again in 1974, 1979, and 1984.

The implementation of these five plans was accomplished in part by the following actions:

(1) In 1966, the **Commission of Outdoor Recreation** was established as the state's official outdoor recreation planning and coordinating agency. The Commission had responsibility for developing and updating **The Virginia Outdoors Plan**; maintaining the state's continuing comprehensive open space planning process; administering the Virginia Outdoors Fund, a grant program consisting of both state and federal appropriations; and offering technical assistance to agencies, localities, and the private sector in matters pertaining to outdoor recreation.

During its 17 years of existence, the Commission approved some 286 local and regional park projects and allocated over $103,000,000 of Virginia Outdoors Funds. Of this total, approximately $41,700,000 were allocated to the Division of State Parks, resulting in the doubling of both the number of parks and the total acreage in the state park system. Over $3,000,000 were also allocated to the Commission of Game and Inland Fisheries for aid in acquiring and developing wildlife management areas, public fishing lakes, and boating access sites. Several technical assistance bulletins dealing with project funding and administration were also developed. The remainder of these funds went to local projects.

The Commission also provided technical assistance and expertise to local, regional and state entities involved in the development and delivery of public recreation services. The Commission assisted in the establishment of 65 full-time park and recreation departments, conducted over 120 professional inservice training seminars and workshops, and produced 18 technical assistance publications for use in developing effective recreation service delivery systems. Assistance was also given to the State Department of Corrections, the Department of Mental Health and Mental Retardation, the Office on Aging, and Virginia Commonwealth University in a variety of projects related to recreation.

One of the single most important functions of

the Commission was producing and periodically updating **The Virginia Outdoors Plan.** Crucial elements of the **Plan** included the **Outdoor Recreation Demand, Supply and Needs Analysis** and the **Outdoor Recreation Areas and Facilities Inventory.** In addition to producing the **Outdoors Plan**, the Commission had primary responsibility for implementing the Virginia Scenic Rivers Program and joint responsibility with the Department of Transportation for the Scenic Highways and Virginia Byways program. Scenic river designations currently provide protection for outstanding sections of 14 rivers, totalling 300 miles in length, while the Virginia Byways System includes some 500 miles of 30 scenic road segments.

During 1980-82, a series of general informational brochures on hiking, horseback riding, crabbing, canoeing, and bicycling in Virginia was produced. A bicycle route trip map, two Virginia Byway tour guides and three river trip guides were also published. In addition to these recreational trip planning aids, several technical assistance brochures dealing with scenic river designation, fitness trail construction, and bicycle route mapping were completed and made available.

In July 1983, the Commission of Outdoor Recreation was merged with the Division of Parks, Department of Conservation and Economic Development. This merger served to combine all state park and recreation functions into one division which could best serve the needs of the Commonwealth. The Division of Parks and Recreation had the responsibility of developing, operating, and maintaining the state park system; defining state interests in matters pertaining to outdoor recreation and open space; providing technical assistance to agencies, localities, and the private sector in recreation matters; maintaining the State Comprehensive Outdoor

Recreation Plan and planning process; and providing grants-in-aid to localities for the acquisition and development of park and recreation facilities.

(2) **The Virginia Outdoors Foundation** was established in 1966 for the purpose of promoting the preservation of open space lands and encouraging private philanthropic efforts to protect areas of natural, scenic, historic, scientific, and recreational significance. The Foundation consists of the State Treasurer, six citizen trustees appointed by the Governor, and a full-time Executive Director. Over 40,000 acres of open space easements have been acquired by the Foundation. In addition to its easement acquisitions, the Foundation protects over 6,000 acres through fee simple ownership, including the 3,000-acre Bull Run Mountain tract.

(3) **The Virginia Historic Landmarks Commission** (now the Department of Historic Resources) was created in 1966. Since its establishment, this division's professional staff has investigated and documented thousands of historic sites and structures, placing 1,250 individual properties on the **Virginia Landmarks Register.** They have designated 140 State Historic Districts, and added 1,225 sites to the **National Register of Historic Places.** In July of 1989 the Division became an independent department under the Secretary of Natural Resources.

(4) **The Recreational Area Access Road Act** was passed in 1966 for the purpose of authorizing the expenditure of highway funds for the construction or improvement of roads providing access to public recreation areas. One hundred and twenty-six projects, involving the obligation

of over $15,765,958, have been initiated since passage of the Act.

(5) **The Scenic Rivers Act** was passed in 1970 for the purpose of establishing a Scenic River System. It provided for the identification, evaluation, protection, and preservation of certain rivers or sections of rivers which possess natural or pastoral beauty of high quality.

Since 1970, 19 river sections have been studied and found to be worthy of Scenic River status. Thirteen of the nineteen have become components of the system. One is in a Historic River category. Additional segments are being evaluated.

(6) In 1970, the **Governor's Council on the Environment** was established as a coordinating body to advise the Governor on environmental policy matters. The Council became an operative state agency with the passage of the Environmental Quality Act in 1972 and now functions as the central coordinating agency for the state on environmental issues.

(7) In 1971, the General Assembly enacted the **Land Use Assessment Law,** which authorized localities to adopt a program of special real estate tax assessments for agriculture, horticulture, forest and open space lands. Sixty-three localities are presently participating in the program which is aimed in part at the preservation and proper use of open space lands in and near urbanizing areas.

(8) Passage of the **Wetlands Act** in 1972 set forth a clear declaration of policy to preserve the State's vegetated wetlands and prevent their despoliation and destruction. The Act authorized localities to establish wetland boards with authority and responsibility to review and act on wetland project permit applications. In 1982, the General Assembly amended this statute to provide the same measure of protection for nonvegetated wetlands, greatly enhancing efforts to conserve our valuable wetlands ecosystem.

(9) A 1972 amendment to the **Appalachian Trail Protection Act** provided for the establishment of a statewide trail system. At that time, the Virginia **Outdoor Recreation Areas and Facilities Inventory** indicated a supply of 1,777 miles of *hiking and walking trails. The 1987* ***Inventory*** update shows over 3,710 miles of hiking trails, an increase of 109% over 1972.

(10) A 1976 joint policy statement by the Commission of Outdoor Recreation and the State Highways and Transportation Commission authorized the expenditure of recreational access road funds for the construction of bicycle trails and facilities. To date, some $444,800 has been spent on nine bikeway development projects.

(11) In 1977, the Commission of Outdoor Recreation, the Commission of Game and Inland Fisheries, and the Department of Highways entered into a cooperative agreement to increase public access to rivers, streams, and estuaries. Construction permit applications are now reviewed by the Department of Conservation and Recreation's Division of Planning and Recreation Resources in order to determine the feasibility and desirability of utilizing a portion of the state owned highway right-of-way for recreational access to the rivers.

(12) During 1982, the Commission of Outdoor Recreation and the WESTVACO Corporation formulated and entered into a cooperative agreement which has resulted in an increased public private interface in the provision of outdoor recreation opportunities for citizens of the Commonwealth. This unique agreement provides for public canoeing, fishing, hiking, picnicking and primitive camping on two privately owned islands in the James River east of Lynchburg. Great potential exists for similar use agreements on other privately and publicly owned lands.

(13) The 1986 General Assembly established a cabinet level Secretary of Natural Resources and reorganized the departments formerly under the Secretary of Commerce and Resources. Most programs and offices with responsibility for land and resource management now are organized under the Secretary of Natural Resources. The Department of Conservation and Historic Resources (DCHR) was formed from elements of the Department of Conservation and Economic Development and contained the Divisions of Historic Landmarks, Soil and Water Conservation, Parks and Recreation, and the Natural Heritage Program. The 1989 General Assembly will make the Division of Historic Landmarks an independent department. The DCHR will become the Department of Conservation and Recreation.

(14) During the summer of 1986, a survey of state park visitors was conducted to assist in marketing state parks and to assess visitor profiles, expenditure rates, and travel distances. Used in conjunction with a telephone survey, a marketing plan for state parks was developed. During the summer of 1988, a state park visitors survey was conducted to determine user preferences and to identify ways in which our state parks can better meet the needs of the users.

(15) In January 1985, President Ronald Reagan issued Executive Order 12503, creating an advisory commission to review outdoor recreation. The Commission was charged with reviewing public and private outdoor recreation opportunities, policies, and programs, and making recommendations to ensure the future availability of outdoor recreation for the American people. The report of the Commission was completed in

January 1987, and published under the title, **Americans Outdoors, the Legacy, the Challenge.**

The Commission found a need for continuation of a secure funding assistance program at the federal level to encourage state and local recreation development and open space acquisition. Secondly, the Commission recommended that the impetus for action start at the local level with a "prairie fire" of citizen action encouraging investment in outdoor recreation opportunities and rededication to the protection of our natural heritage. The third recommendation of the Commission called for the establishment of a network of greenways, created by local action, linking private and public recreation areas in linear corridors of land and water close to where people live and work.

(16) **The 1984 Virginia Outdoors Plan** called for the establishment of a state Heritage Program to identify significant natural areas, and rare and endangered plant and animal species in the Commonwealth. In 1987, the Department of Conservation and Historic Resources entered into an agreement with The Nature Conservancy which led to the establishment of a Heritage Program housed within the Department. The General Assembly approved full funding of the program with the 1988-90 budget.

(17) In 1986 the Commonwealth received approval of its Coastal Zone Management Program. The central feature of this program is a core of regulatory programs which ensure that critical land and water uses are subject to regulation by the Commonwealth. These core programs include:

- Fisheries Management, administered by the Marine Resources Commission and the Department of Game and Inland Fisheries
- Subaqueous Lands Management, administered by the Marine Resources Commission

- Wetlands Management, administered by the Marine Resources Commission
- Dunes Management, administered by the Marine Resources Commission
- Nonpoint Source Pollution Control, enforced by the Department of Conservation and Recreation
- Point Source Pollution Control, enforced by the State Water Control Board
- Shoreline Sanitation, administered by the Department of Health
- Air Pollution Control, enforced by the Air Pollution Control Board

An approved Coastal Zone Management Program entitles the Commonwealth to receive program funding and ensures federal consistency with state programs.

(18) In 1986, the President signed the Emergency Wetlands Resources Act, which authorized use of Land and Water Conservation Funds for the acquisition of wetlands and also required a wetlands component in the State Comprehensive Outdoor Recreation Plan. In 1987, the Department of Conservation and Historic Resources met with all wetland resource related agencies and developed a wetlands component as an addendum to **The 1984 Virginia Outdoors Plan.**

(19) The 1987 General Assembly, in House Joint Resolution 204, established a joint subcommittee to study outdoor recreation needs of the Commonwealth. The subcommittee was directed to assess the long-term needs of both state and local recreation acquisition, development, and operational programs, and to recommend stable long-term funding sources to meet these needs. The subcommittee was composed of eight members, representing the House Committees on Conservation and Natural Resources, the Senate Committees on Agriculture, Conservation and Natural Resources, and on Finance, and two citizen members of the Outdoor Recreation Advisory Board.

The Joint Subcommittee held five meetings at locations throughout the state. At each site, the agenda included a business meeting followed by a public hearing. Over 350 persons attended the hearings and approximately 250 persons provided testimony. Representatives of a wide variety of interest and advocacy groups, park users, and local government officials documented the need for additional recreational opportunities at both the state and the local level. The findings of the subcommittee resulted in the development of 12 recommendations addressed in Chapter III.

(20) In November of 1988, the Department of Conservation and Historic Resources reorganized its divisions to include the Division of Planning and Recreation Resources, the Division of State Parks, the Division of Administration, the Division of Soil and Water Conservation, the Division of Historic Landmarks, and the Division of Natural Areas Conservation. All divisions are designed to meet the natural resource planning and protection, and technical service requests of federal, state, and local agencies.

(21) The 1989 session of the General Assembly reorganized the secretariat of Natural Resources by dividing the Department of Conservation and Historic Resources into two separate departments. The new Department of Historic Resources will contain the former Division of Historic Landmarks. The remainder of the old Department will be called the Department of Conservation and Recreation.

CHAPTER III: Current Issues

One of the attributes of sound planning is the identification of issues and the development of a plan and program to resolve them. **The Virginia Outdoors Plan** is the Commonwealth's attempt to do both. This document defines issues and the action program complete with system recommendations which provide direction to meet them. This direction is provided to federal, state, regional, and local governments, as well as the private sector. Three sources of information were used to identify and develop the issues confronting the Commonwealth: **The President's Commission on American Outdoors**, Virginia's 204 Joint Recreation Subcommittee, and the input gathered from governmental agencies and conservation organizations throughout the state. The President's Commission work is described in detail in Chapter 2.

The issues and recommendations found in this chapter and throughout the **Plan** are important and their resolutions should be considered within the five year scope of this **Plan**. Rank priorities are defined as follows:

Priority One (P1) — Requires immediate action and relates to governmental policy, goals, and objectives.

Priority Two (P2) — Requires continued action to insure that concepts are placed in policy or action formats.

Issues are identified using P1 or P2 and a letter, for example [P1-A]. These will be found after each of the recommendations in this document.

The President's Commission in January of 1987 identified the following issues which have relevance in the Commonwealth:

Priority One Issues
Recreation resource funding
Natural systems protection
Facility development needs
Special population needs
General environmental quality
Historic and cultural resource protection

Priority Two Issues
Institutions and partnerships
Better planning, information management, and greater recognition of recreation values in public policy
Conservation ethic
Recreation work force

These issues are addressed in the report, **Americans Outdoors, The Legacy, The Challenge,** and also in later chapters of this document.

The President's Commission called for the governors of all states to form commissions or advisory groups to examine their own outdoor recreation needs, opportunities, and problems. Officials from 32 states and at least 2,000 individuals testified at hearings or participated in meetings. Under the auspices of the National Association of State Outdoor Recreation Liaison Offices (NASORLO), all 50 states also submitted summaries of priority needs and problems identified in their latest Statewide Recreation Plan (SCORP).

In 1987, Virginia responded to the need to assess recreation through the establishment by the General Assembly (House Joint Resolution 204) of a joint subcommittee to study the outdoor recreation needs of the Commonwealth. This committee and its work is described in detail in Chapter 2, page 13.

The following are the state-wide issues which emerged from citizen input and subcommittee hearings:

Priority One Issues

*A. Stable source of funding for local park acquisition and development projects.

*B. State park system capital improvements, and management and operation.

*C. Park and Natural Area acquisition, protection, and development, to include increased water access.

*D. Railroad right-of-way conversion to trails.

*E. Senior adult recreation opportunities.

*F. Program and facility accessibility to all segments of the population, including persons with disabilities.

*G. State park staff competitive salaries and enhanced technical assistance capabilities.

*H. Technical assistance needs of localities.

*I. Funding for operation and maintenance of recreation facilities.

*J. Standards for urban recreation areas.

Priority Two Issues

*A. Public/private partnerships.

*B. Efficiency of capital outlay process for state park development.

*C. Cooperative use of school facilities.

*D. State Park fees re-evaluated.

E. Conflicting uses — balancing use and preservation.

F. Economic values of recreation — real dollars and support industries.

G. Facility identification and marketing.

H. Public education — land ethic.

*Represents recommendations from the General Assembly HJR 204 Subcommittee Report.

The issues identified above occur in all regions of the state. Some are more important in one region than in another. The recommendations related to these issues are found in the following *state-wide issues and recommendations summary.*

State-Wide Issues and Recommendations

Priority One Issues (P1)

P1-A. Stable source of funding:

- Funding for enforcement of Uniform Federal Accessibility Standards — page 47
- Special funds for Virginia Byway maintenance and enhancement — page 132
- Funding source for renting lands for public use — page 144

P1-B. State park system needs:

- Land exchange at False Cape — page 106
- State park acquisition needs — page 113
- Master planning — page 113
- Operation and maintenance needs — page 113
- Facility development and renovation — page 114
- Conservation easements for buffers — page 123
- Byway linkage to state parks — page 141
- Bay or river state park acquisition — page 154
- Maximize use of state park beaches — page 174
- Public beach acquisition — page 174
- Regional recommendations — Chapter 20

P1-C. Park and Natural Area protection, acquisition, and development needs:

- Chesapeake Bay program goals — page 24
- A.T. corridor — page 101
- Blue Ridge Parkway recreation areas — page 101
- Shenandoah National Park — facility upgrade — page 101
- Manassas National Battlefield Park resources protection — page 101
- National Park loop trail construction — page 101
- National Seashore policy considerations — page 101
- Lexington and Roanoke horse trail development — page 101
- National Forest provision of water access — page 105
- Mount Rogers National Recreation Area development — page 105
- A.T. designation and protection on U.S. Forest Service lands — page 105
- ORV trail system — page 105, 147
- Presquile National Wildlife Refuge ferry service improvements — page 106
- Increased accessibility to National Wildlife Refuges for recreation — page 106
- Land exchange at False Cape State Park — page 106
- Public recreational use of Assateaque National Seashore — page 106
- Dismal Swamp improvements — page 106
- Increased Department of Defense land availability for recreation — page 108
- Greater emphasis on Public Law 90-465 — page 108
- TVA stream access — page 108
- State park acquisition - page 113
- DGIF increased water access — page 117
- DGIF trail expansion — page 117
- DGIF hunting land acquisition — page 117
- DGIF Greenway recreation needs — page 117
- DGIF protection of trout streams — page 117
- DGIF development of urban fishing program — page 117
- Department of Forestry development of trails - page 118
- Department of Forestry acquisition of inholdings — page 118
- DHL priority evaluations — page 120
- DHL evaluate properties for recreation use — page 120
- Use of conservation easements — page 123
- Conservation easements as buffers — page 123
- Natural Areas Priorities Map — page 129
- Coordinate bicycle facility planning — page 141
- Develop river access areas — page 144
- Registration of all motorized vehicles — page 146
- Expand river information base — page 150
- Encourage Scenic River designation of qualifying rivers — page 150
- Review development permits on Scenic Rivers — page 150
- Development of local planning tools for rivers — page 150
- Private development of boating facilities — page 154
- DGIF development of high capacity boat access sites — page 154
- DGIF priority for existing access facility improvements — page 154
- Pedestrian walkways beneath bridges — page 154
- Water and waste water facilities at water access points — page 154
- Wetland acquisition and conservation — page 162
- Wetland protection policy — page 162
- State nontidal wetland policy — page 162
- DGIF continued acquisition of access points — page 171
- USF&WS beach resource availability — page 174
- Department of Defense beach resource availability — page 174
- Norfolk/Virginia Beach improved beach access — page 174
- Recreation use of surplus property and under-utilized lands — page 176
- Coordination of property sales with recrea-

tion providers — page 176
- Local programs for open space preservation — page 178
- School board participation in developing park and recreation facilities — page 178
- Development of special tax assessment ordinances — page 178
- Regional recommendations — Chapter 20

P1-D. Railroad Right-of-Way Conversion to Trails:
- Manage abandoned rights-of-way — page 105
- Regional recommendations — Chapter 20

P1-E. Senior Adult Recreation Opportunities:
- Senior adult involvement in planning programs, services, and facilities — page 49
- Institutional revision of outdoor facilities — page 49
- Planning considerations for senior's facilities — page 49
- Design considerations for senior's facilities — page 49
- Increased accessibility at local parks — page 178
- Regional recommendations — Chapter 20

P1-F. Program and Facility Accessibility:
- UFAS standards application — page 46
- Upgrading old facilities — page 47
- Accessibility to outdoor recreation facilities — page 47
- Programmatic policy statement — page 48
- TVA stream access — page 108
- DGIF increased water access — page 117
- Tidewater localities boating access — page 154
- Pedestrian walkways under bridges — page 154
- Norfolk/Virginia Beach improved beach access — page 174
- Access using public transportation — page 178
- Increased accessibility at local parks — page 178
- Institutional provision of outtdoor facilities — page 49
- Regional recommendations — Chapter 20

P1-G. State Park Staff Needs:
- Operations and maintenance — page 113
- Technical staff for capital outlay projects — page 114
- Facility development and renovation — page 114
- Surveillance and regulation enforcement staffing — page 162

P1-H. Technical Assistance Needs of Localities/ Agencies:
- Chesapeake Bay program goals — page 24
- Accessibility assistance — page 47
- Senior adult program assistance — page 49
- Urban standards workshop — page 63
- Virginia Byway designation — U.S. Forest Service roads — page 105
- U.S. Forest Service data for local planning and interpretation — page 105
- Department of Defense inventory data — page 108
- Department of Defense facility maps and property descriptions — page 108
- Maintenance and management assistance by DHL — page 120
- Potential Virginia Byway evaluations — page 132
- Virginia Byway system-wide designation — page 132
- Bicycle/motorist education improvements — page 141
- River level reporting system improvements — page 144
- ORV information — page 147
- Local planning for hostels — page 147
- Scenic River designation of qualifying rivers — page 150
- Water management considerations for recreation use — page 150
- Development of local planning tools — page 150
- Water access development opportunities — page 154
- Planning assistance to improve tidal water access — page 154
- Comprehensive land use planning and zoning ordinances — page 162
- Development of tax incentive and educational programs — page 162
- Use of state technical assistance programs — page 178
- Development of special tax assessment ordinances — page 178
- Regional recommendations — Chapter 20

P1-I. Funding for Operation and Maintenance of Recreation Facilities:
- State park M&O needs — page 113
- State park master planning needs — page 113
- Special funds for Virginia Byway maintenance — page 132
- Special funds to reduce roadway hazards for bicyclists — page 141
- Local commitment to maintenance and management budgets — page 178

P1-J. Standards for Urban Recreation Areas:
- Urban standards workshop — page 63

Priority Two Issues (P2)

P2-A. Public/Private Partnerships:
- Chesapeake Bay program goals — page 24
- DGIF/ATC cooperative agreements — page 117
- DGIF cooperative agreements for information sharing — page 117

- DGIF joint management of facilities — page 117
- Trail and map development by Department of Forestry — page 118
- Data base development by Department of Forestry — page 118
- Department of Forestry/ATC cooperative agreements — page 118
- Property evaluation for recreation use by DHL — page 120
- Conservation easements — page 123
- Conservation easements as buffers — page 123
- Public use of river front property — page 144
- Comprehensive land use planning and zoning ordinances — page 162
- Public/private programs for river access — page 171
- Coordinated use of under-utilized lands — page 176
- Evaluation of existing systems to meet regional demand — page 178
- Regional park authorities — page 178
- Development of cooperative agreements — page 178
- Private/public partnerships — page 180
- Regional recommendations — Chapter 20

P2-B. Efficiency of Capital Outlay Process for State Park Development:
- Technical staff for capital outlay projects — page 113

P2-C. Cooperative Use of School Facilities:
- Implementation of school park concept — page 178
- Development of school board/recreation department agreements — page 178

P2-D. State Park Fees:
- Fees re-examined — page 114

P2-E. Conflicting Uses — Balancing Use and Preservation:
- Chesapeake Bay program goals — page 24
- Shenandoah National Park adjacent development — page 101
- Policy considerations for National Seashores — page 101
- Best Management Practices — Department of Forestry — page 118
- Identification of compatible recreation uses — DHL — page 120
- Marine resource regulation coordination — page 154
- Comprehensive land use planning and zoning ordinances — page 162
- Development of river management plans — page 171
- Development of local/regional open space plans — page 178
- Development of local tax assessment ordinances — page 178
- Regional recommendations — Chapter 20

P2-F. Economic Values of Recreation:
- Virginia Visitor Survey — page 52
- Economic Impact Assessment — page 52
- Virginians visit Virginia promotion — page 52
- Virginia Byway brochure development — page 52
- Virginia Byway designation — U.S. Forest Service roads — page 105
- DGIF resource impact assessment — page 117
- Virginia Byway promotion — page 132
- Private development of boating facilities — page 154

P2-G. Facility Identification and Marketing:
- Chesapeake Bay goals — page 24
- Virginia Byway brochure development — page 52
- Loop trail brochures in National Parks — page 101
- National Forests opportunities publicized — page 105
- Department of Defense inventory information — page 108
- Department of Defense facility maps and property descriptions — page 108
- Department of Forestry trail map development — page 118
- Virginia Byway promotion — page 132
- Bicycle events sponsorship — page 141
- Major bike route identification — county highway map — page 141
- River recreational use brochures — page 144
- ORV areas information brochure — page 147
- Hostel locations identified on public lands — page 147
- Boating access opportunities on federal properties identified by NPS and the state — page 154
- Governmental survey of holdings to identify potential river access — page 171
- Local park resources awareness program — page 178

P2-H. Public Education — Land Ethic:
- DGIF support OPERATION RESPECT — page 117
- Department of Forestry promote OPERATION RESPECT — page 118
- Virginia Association of Marine Industries assist marina operators — page 154

These issues and the related recommendations are addressed in more detail in specific chapters and the action plans of each recreation region.

CHAPTER IV:
Participation and Coordination

The Department of Conservation and Recreation's Division of Planning and Recreation Resources is responsible for the preparation of the State Comprehensive Outdoors Recreation Plan, the coordination of matters which relate to open space recreation, and the implementation of **The Virginia Outdoors Plan** through a grants-in-aid program. Its location within the Department of Conservation and Recreation under the Secretary of Natural Resources allows easy access to and coordination with other agencies most likely to be involved with open space recreational resources in Virginia. In addition, a special Advisory Board on Outdoor Recreation, consisting of citizens appointed by the Governor, advises the Department Director on matters pertaining to outdoor recreation in the state. This Board helps ensure citizen involvement in the Department's programs and activities.

The Department is well situated to promote coordination in the recreation planning and plan implementation processes. Its statutory authority makes it the one state agency with the responsibility for overall outdoor recreation planning and coordination in Virginia.

The Planning Participation Process

The Division staff sought the advice and assistance of agencies interested in outdoor recreation in Virginia. All agencies affected directly by proposals made in **The Virginia Outdoors Plan** were contacted with a specific request for comments related to their area of interest. Altogether 95 counties, 41 cities, 105 park and recreation departments, 22 planning district commissions, 15 state agencies, and 25 federal offices in 13 federal agencies were contacted with requests for input into the 1989 Plan. Once data was gathered, a preliminary draft was prepared and distributed to the local, regional, state, and federal agencies previously contacted for their comments. Of special importance were the combined comments of the planning districts and their localities.

Numerous private groups, conservation organizations, and special interest groups provided input into the various sections of the **Plan** in which they had a specific interest. Included in

this group are the Virginia Trails Association, the Virginia Recreation and Park Society, The Nature Conservancy, and the Appalachian Trail Conference. This input was most helpful in bringing out many of the concerns of the private sector with respect to recreation planning in Virginia.

The **1987 Outdoor Recreation Inventory,** a critical part of **The Virginia Outdoors Plan,** was completed with the assistance of most local units of government. A copy of the last inventory was mailed to each locality with a letter requesting that the data be checked for accuracy and completeness. New sites were added, acreage and facilities adjusted and area names corrected to provide the best set of data available to date. The inventory data was then compared to the updated demand data to produce the "Demand, Supply and Needs Analysis, 1990, 2000, 2010," which is available to each regional planning district for their use.

Coordination and the Continuing Planning Process

The Department of Conservation and Recreation's Division of Planning and Recreation Resources works with federal, state, and local agencies on a regular basis in its role as coordinator for all matters relating to comprehensive outdoor recreation planning in the Commonwealth. One important aspect of this coordination is the numerous special studies and standing committees to which the Division provides valuable input.

Federal Agencies

At the federal level, the Fish and Wildlife Service, Soil Conservation Service, Forest Service, National Park Service, Federal Highway Administration, and the U.S. Army Corps of Engineers all play a significant role in the implementation of **The Virginia Outdoors Plan.** The Forest Service, operating in two National Forests, provides almost 47% of the total public outdoor recreation acreage in the Commonwealth. The Corps of Engineers' impoundments provide a major contribution toward meeting the needs for water enhanced recreational facilities in the nontidal areas. The U.S. Fish and Wildlife Service's National Wildlife Refuges provide important wildlife habitat and protect valuable fragile ecosystems in the tidal regions of the state. Direct lines of communication at the staff level have been established between the Department of Conservation and Recreation's Division of Planning and Recreation Resources and these federal land managing agencies, and each was invited to provide input into the draft of **The 1989 Virginia Outdoors Plan.** In turn, the Division is afforded opportunities for timely comment on and input into the development of federal area master plans and unit plans.

During the last several years the U.S. Forest Service has been developing updated Land and Resource Management Plans for all National Forests. The Division of Planning and Recreation Resources has played an active role in developing these plans and in ensuring that recreational uses of the national forests in Virginia receive full attention in the planning process. The Division continues to work with the Forest Service staff in monitoring progress on plan implementation.

The Division of Planning and Recreation Resources works closely with the U.S. Fish and Wildlife Service in the development of plans and programs for the operation and development of wildlife refuges in the Commonwealth. Also, the U.S. Fish and Wildlife Service has been charged by Congress to develop a National Wetlands Priority Protection Plan. The Division has participated throughout this process.

The U.S. Army Corps of Engineers administers several water impoundments in the Commonwealth and provides recreational facilities in conjunction with them. The Division comments on the plans and programs for managing and developing these facilities. The Corps also administers a permit program under the Rivers and Harbors Act of 1899. The Division reviews these permit applications for their impact on state, natural, and recreational resources.

The Division of Planning and Recreation Resources works with the National Park Service and the General Services Administration in implementing Public Law 91-485, the surplus property transfer program for parks. When a federal agency has property that is surplus to its needs, state and local land managing agencies and recreation providers are offered an opportunity to acquire the property for development as a recreation facility or park. Many parks in the eastern part of Virginia have been acquired from surplus military bases.

The National Park Service is charged with the responsibility of providing data related to recreation in connection with most federal studies. The staff of the Division of Planning and Recreation Resources works closely with the National Park Service's regional office in developing studies, providing demand/supply/needs data, and serving on special committees and task forces as needed. One such project involved river inventory programs conducted by the Park Service. Division personnel assisted the study team in the evaluation of rivers in Virginia. The Division also participates in the National Recreation Trail studies.

The Federal Highway Administration (FHWA) administers several programs which benefit recreation in the Commonwealth. The Federal Highway Administration is responsible for the

preparation of environmental impact documents related to construction on roads in the state's Federal Aid Highway System.

State Agencies

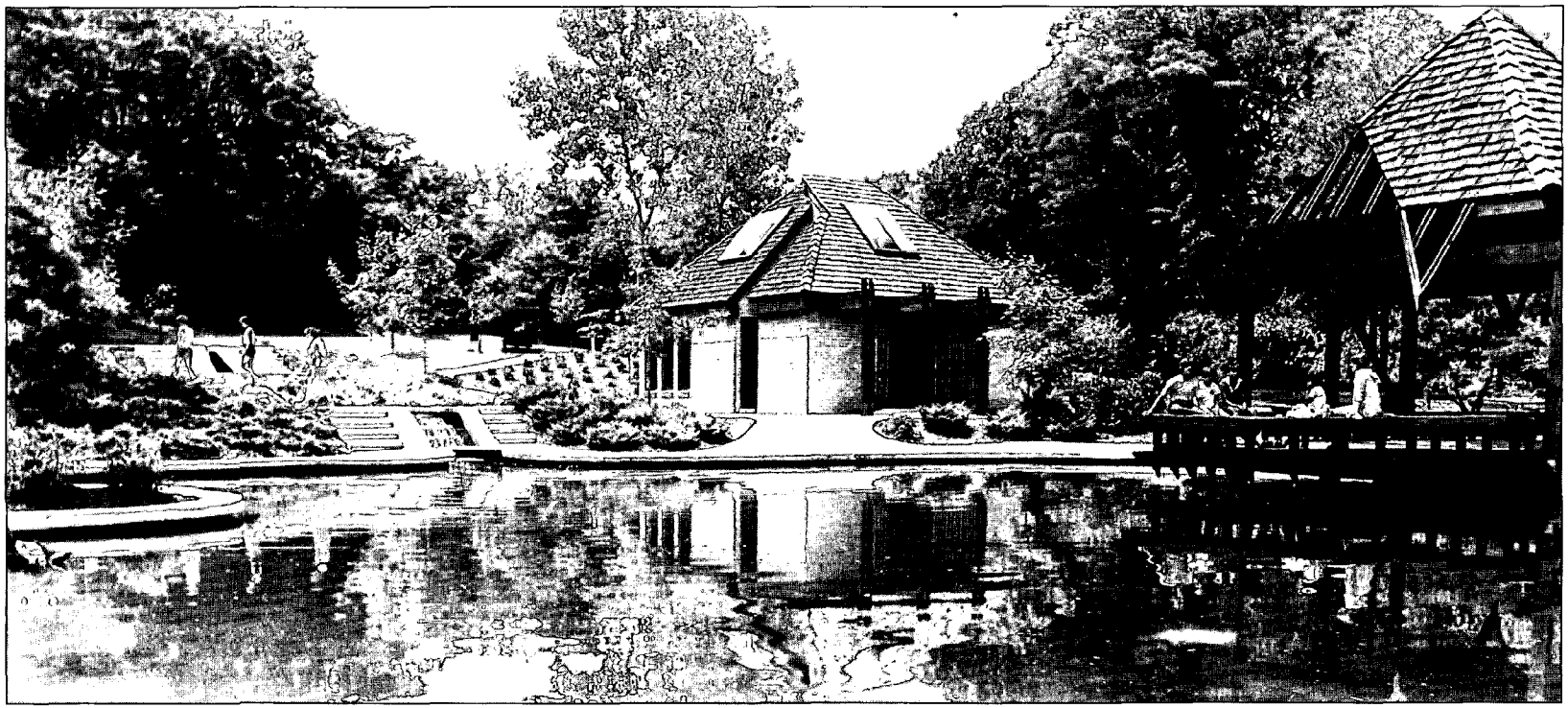
The Council on the Environment was created in 1970 by the General Assembly and became operational in 1972 for the purpose of implementing the environmental policy of the Commonwealth, including the initiation, improvement, and coordination of environmental plans, programs, and functions of the state. The Council's duties include the review, evaluation, and comment upon environmental impact statements. The Department of Conservation and Recreation is one of the state agencies providing regular input into the impact statement review process of the Council. The Department also provides comments and input into reports relating to Virginia's environment, which are coordinated by the Council on the Environment.

The Department of Game and Inland Fisheries has played a major role in the implementation of **The Virginia Outdoors Plan.** The Department hasresponsibility for the operation and management of the Commonwealth's wildlife and inland fisheries resources, and boating access and boating safety programs. The Department of Conservation and Recreation participates with the Game Department in funding the acquisition and development of boat landings, public fishing lakes and wildlife management areas. In addition to the normal project functions associated with these acquisitions, the Department's Division of Planning and Recreation Resources reviews potential Game Department facilities to be sure they are compatible with **The Virginia Outdoors Plan,** and provides planning assistance to the Game Department in the location of boat access facilities.

The Department of Game and Inland Fisheries also works cooperatively with the Department of Transportation and the Department of Conservation and Recreation in developing boat launching areas in conjunction with bridge replacement or development projects. The Tennessee Valley Authority cooperates with the Virginia Department of Transportation and the Game Department to obtain additional access points on the Holston, Powell, and Clinch Rivers in southwest Virginia.

In projects undertaken with the Virginia Nongame Wildlife Fund, the Department of Conservation and Recreation's Division of Planning and Recreation Resources will be working with the Game Department to provide assistance in making any properties acquired or managed under this program accessible for recreational use where practical.

The Marine Resources Commission has the responsibility for managing marine fisheries and state owned subaqueous land, and administering the Tidal Wetlands Protection Act, which was enacted to prevent the destruction or despoliation of tidal wetlands. The Department of Conservation and Recreation through its Division of Planning and Recreation Resources reviews and comments on planned dredging or other activities which have the potential for impacting



recreational resources of the state. This is accomplished through the wetlands alteration permit system established by the Marine Resources Commission.

The Department of Transportation works closely with the Division of Planning and Recreation Resources on a number of projects annually. The Division reviews the Department of Transportation's proposals for road improvements during the environmental assessment period prior to the public hearings. This routine review procedure is most helpful in assuring the coordination of highway planning with **The Virginia Outdoors Plan** regarding potential parks, scenic rivers, scenic roads, trails and other sensitive areas. This process also aids in identifying potential access to streams and rivers of the Commonwealth.

The Department of Conservation and Recreation and the Department of Transportation share responsibilities in the implementation of the Scenic Highways and Virginia Byways Act and the Recreational Area Access Road Act. Both programs are important elements of **The Virginia Outdoors Plan.** Under the Scenic Highways Act, the Transportation Board is authorized to designate a Scenic Highway or Virginia Byway in cooperation with the Department of Conservation and Recreation. To date, over 500 miles of road in 24 localities have been designated as byways.

The Recreational Area Access Road Fund, administered by the Department of Transportation, provides monies for the development of access roads and trails to public recreation areas. A recreation area must be officially recognized by the Department of Conservation and Recreation before an access road is approved. A joint policy statement between the Department of Transportation and the Department of Conservation and Recreation has been formulated to implement this program and 101 projects have been initiated.

The Virginia Water Control Board has the responsibility for regulating the use of groundwater and improving overall water quality within the state. The Board administers the 401 Water Quality Certification Program, which ensures that no proposed project will adversely affect water quality. The Division of Planning and Recreation Resources should review and comment on any permit application which deals with any river in the Scenic River System and any river identified in **The Virginia Outdoors Plan** as potential scenic rivers.

The Department of Housing and Community Development coordinates federal and state planning efforts with localities, provides substantial matching monies for operation of planning district commissions and administers the Planning Assistance Program (701) under the Federal Department of Housing and Urban Development. Much of Virginia's local and regional planning is done through this program. The Division of Planning and Recreation Resources provides advisory assistance and reviews drafts of comprehensive plans and recreation and open space plans.

Coordination mechanisms through the Department of Planning and Budget include the circular A-95 review process which requires the review of numerous types of permit applications for public improvement projects, including all projects utilizing federal funds. The Department of Historic Resources is the state agency responsible for all matters relating to the identification and recording of significant archaeological and historic resources of the state and is the state's coordinating agency for the National Historic Preservation Act, which established the National Register of Historic Places. The Department also coordinates with federal, state, and local agencies to minimize adverse impacts upon archaeological and historic sites. The Department of Conservation and Recreation works closely with the Department of Historic Resources to ensure appropriate use of historic or archaeological resources that are identified on public recreation lands, as well as those associated with Scenic Rivers and Virginia Byways.

The Division of Planning and Recreation Resources works in conjunction with the Division of Industrial Development of the Department of Economic Development in evaluating localities for certification under the Industrial Development Community Certification Program. The Division reviews the leisure services and quality of life components of each application and makes recommendations on the adequacy of the locality's program.

The Department of Conservation and Recreation's Heritage Program maintains an extensive data base of plant, animal, and habitat types by location throughout the Commonwealth. Division staff consult with Heritage staff in commenting on permit applications, plans, and programs, and on land management and planning issues.

The Virginia Outdoors Foundation was created in 1966 to preserve open space land and encourage more desirable and economic development of natural resources through the use of easements, gifts, acquisition, and other means deemed necessary. The Division of Planning and Recreation Resources serves to advise the Foundation staff in matters pertaining to outdoor recreation, scenic rivers, and natural areas. The identification of important scenic, natural, and recreational areas in **The Virginia Outdoors Plan** is one criteria utilized by the Foundation in determining the acceptance of an easement.

The staff of the Division of Planning and Recreation Resources participates in a variety of projects conducted by major universities in the Commonwealth. The Division's staff conducts seminars and group discussions related to the environment, recreation planning, and the development of **The Virginia Outdoors Plan.** Its files are open to students doing research on almost any aspect of outdoor recreation. The Division is working with researchers at Virginia Tech to produce a local parks and recreation assessment program that can be used to tailor programs and development to local needs. The Division of Planning and Recreation Resources has worked with the Landscape Architecture Department of the University of Virginia and Virginia Tech to develop Scenic River Management Plans and Comprehensive Open Space Plans for localities.

The Division of Planning and Recreation Resources also works closely with the Division of State Parks in the development of park master plans and in identifying potential sites for acquisition. In addition, information collected as the result of special studies or ongoing reports is used by park staff in determining types of facilities to be provided at state parks and in making other management decisions.

The Department of Conservation and Recreation's Division of Planning and Recreation Resources, working with other state agencies which manage land resources, has identified underutilized state lands which may be suitable for recreational use. The Division is now in the process of identifying those properties with the most recreational potential. Attempts will be made through the use of cooperative agreements and memorandums of understanding to gain additional public use of the targeted areas.

In 1985, a study of Virginia's boating access to tidal waters was completed. With the publication of the "Tidewater Virginia Recreational Boating Access Inventory" and the "Virginia Marina Inventory," a complete picture of Tidewater

boating activity and launch capacity was developed.

The Chesapeake Bay Local Assistance Department was formed during the 1988 session of the General Assembly. This Department is charged with the responsibility to assist localities in the development and implementation of land use plans and effective zoning regulations that will protect the Bay and its tributaries from the impacts of development.

Local and Regional Units of Government

The Division of Planning and Recreation Resources' coordination with local governments and planning district commissions is achieved in a number of ways. The planning district commissions use **The Virginia Outdoors Plan** as a base upon which to develop regional recreation and open space plans. Localities use the general guidance, demand/supply/needs data and recreation planning standards provided in the **Plan** in the preparation of local recreation and open space plans. The Division also provides advisory assistance to local governments. In many cases, drafts of local and regional plans are reviewed by the Division's planning staff. Division staff works with localities to perform facilities appraisals and to identify state and local park sites.

Other Coordination

The Department of Conservation and Recreation's Division of Planning and Recreation Resources participates in numerous other planning studies relating to major reservoir developments, transportation and utility corridors, small hydroprojects, and critical environmental areas. The Division's primary involvement in these studies is through staff level contacts and the objective is to secure a full exchange of information early in the planning of a project.

Direct communication exists with many agencies and interests. In addition to the local, state and federal agencies already mentioned, there are important contacts with such nongovernmental organizations as The Nature Conservancy, Izaak Walton League, Sierra Club, Float Fisherman of Virginia, Coastal Canoeists, the Appalachian Trail Conference, Virginia Campground Owners Association, and the Virginia Forestry Association. In addition, the Division coordinates comments and seeks input from 16 citizens advisory boards dealing with a range of issues. These contacts have proven to be valuable in the implementation of **The Virginia Outdoors Plan.**

The Division also works with private land management corporations to identify lands which might be used for public recreation. A cooperative agreement with the WESTVACO Corporation opened the Smith Islands on the James River in Nelson County to the public for recreational use. The Division continues to pursue similar opportunities throughout the Commonwealth.

Virginia's Chesapeake Bay Program

In 1987, the Governors of Virginia, Maryland, and Pennsylvania, the mayor of the District of Columbia, the Environmental Protection Agency, and the Chesapeake Bay Commission signed the Chesapeake Bay Agreement. The agreement recognizes the Bay as a national treasure whose ecological, economic, and cultural importance is felt far beyond its shores. The decline of the quality and productivity of the Bay is to be reversed through a coordinated program set forth in the agreement and summarized in the following major goals:

- Provide for the restoration and protection of the living resources, their habitats, and ecological relationships. [P1-C]
- Reduce and control point and nonpoint sources of pollution to attain the water quality condition necessary to support the living resources of the Bay. [P1-C, P2-E]
- Plan for and manage the adverse environmental effects of human population growth and land development in the Chesapeake Bay watershed. [P2-E]
- Promote greater understanding among citizens about the Chesapeake Bay System, the problems facing it, and policies and programs designed to help it, and to foster individual responsibility and stewardship of the Bay's resources. [P2-A]
- Provide increased opportunities for citizens to participate in decisions and programs affecting the Bay. [P2-A]
- Promote increased opportunities for public appreciation and enjoyment of the Bay and its tributaries. [P2-G]
- Support and enhance the present comprehensive, cooperative, and coordinated approach towards management of the Chesapeake Bay System. [P2-A]

The Department of Conservation and Recreation is an active participant in this program. The Department has participated in the development of a Chesapeake Bay Access Guide which will provide recreational users of the Bay with information on access areas and facilities. The purpose of the guide is to promote increased opportunities for public appreciation and enjoyment of the Bay and its tributaries.

The Department of Conservation and Recreation is also involved in reducing nonpoint source pollution in the Bay, expanding educational programs about the Bay, and increasing interpretive programs and facilities, to help foster stewardship towards the Chesapeake Bay.

CHAPTER V:
Roles and Responsibilities

Appropriate action by all levels of government and the private sector is necessary for Virginia to provide her citizenry with adequate recreational opportunities while protecting the quality of the environment. **The Virginia Outdoors Plan** is an effective tool for promoting the orderly development of recreation resources. The guidance given in the **Plan** will also help the public and private sectors assume complimentary roles. Cooperation and coordination must be continuing objectives.

The recommendations included here are based on an evaluation of current programs, policies, responsibilities, and laws of the federal, state, and local governments, and are intended to cover the broader aspects of roles and responsibilities in the provision of outdoor recreation opportunities. More detailed recommendations are discussed in the "Recreation Systems" and the "Regional Analysis and Recommendations" chapters of this plan.

Federal

The 1980s have seen the emergence of a new federal policy, the primary thrust of which is to reduce federal government fiscal and regulatory involvement at the state and local level. However, the federal government should continue to be concerned with the preservation, wise use, and quality development of those natural and recreational resources, as well as historic resources of national significance.

In 1985, President Reagan created an advisory commission to review outdoor recreation. The report, completed in January 1987, reviewed public and private outdoor recreation opportunities and made recommendations to ensure the future availability of outdoor recreation for the American people. The recommendations of this report form the basis for new studies and initiatives at the federal level, as well as other governmental levels, and the private sector.

Federal agencies presently control approximately 60% of all public recreational lands in Virginia; thus, their roles and responsibilities relating to outdoor recreation and the environment cannot be over emphasized. It is imperative that federal agencies maintain close liaison with the Department of Conservation and Recreation to assure that acquisition of land and development of recreational facilities are coordinated with **The Virginia Outdoors Plan.** Many of the recreation needs of Virginians and out-of-state visitors, which are expressed in the Plan, can be met through increased and improved utilization of federal lands.

The federal government provides numerous

types of outdoor recreation resources in Virginia: parks, forests, reservoirs, parkways, wildlife refuges, historic areas, recreation areas, wilderness areas, and special interest areas.

In its outdoor recreation related roles, the federal government should continue to:

- Provide protection for resources of national significance.
- Provide, through the Land and Water Conservation Fund, matching monies for state and local acquisition and development programs.
- Preserve outstanding natural areas on federal lands.
- Increase outdoor recreation opportunities on federal lands and waters.
- Except where previously coordinated, use **The Virginia Outdoors Plan** as a guide for all federal activities which would affect recreation resources in Virginia.
- Provide technical assistance to land and water planning and management agencies as it relates to protection, management, and utilization of the state's natural resource base.

State

The Department of Conservation and Recreation has a number of significant responsibilities with respect to the provision of outdoor recreation opportunities. The first of these responsibilities is planning and coordination through the development and implementation of a statewide comprehensive outdoor recreation plan. One component of this plan is a regularly updated inventory of outdoor recreation areas and facilities. This enables the state to compute accurate demand, supply, and needs data. The availability of this data allows the state to effectively coordinate federal, state, regional, and local as well as private sector activities aimed at improving recreational opportunities. This planning and coordinating function helps ensure proper and efficient use of limited fiscal resources available to public recreation providers.

A second major area of state responsibility lies in acquiring, protecting, and/or developing a system of outdoor recreation resources and facilities that, when taken as a whole, are of statewide significance. This system should include:

- State Parks
- State Forests
- Natural Areas
- Wildlife Management Areas and Public Fishing Lakes
- Reservoirs
- Historic Landmarks
- Trails
- Scenic Rivers
- Public Beach and Water Access Areas
- Virginia Byways
- Hostels
- Easements
- Wetlands
- Greenways

The state's third major area of responsibility is providing assistance to localities. In addition to providing information on planning, demand, supply, and needs, the state should continue to fund a grants-in-aid program which provides localities with acquisition and development monies for recreation projects on a matching basis. The Department of Conservation and Recreation should also continue to provide technical assistance for the development and administration of local park and recreation systems.

While carrying out its responsibility to perpetuate and enhance outdoor recreation resources

and values, the state should assist local governments in the development of the park and open space elements of their land use plans. The Department should continue to develop standards and review the open space element of the Department of Economic Development's Community Certification Program.

The Commonwealth also has an obligation to assist nongovernmental providers of recreation. The state should continue to provide the private sector with demand, supply, and needs data, including information on where people go to participate in various activities, participation rates and trends, and projections. The state's policy of avoiding facility development which would unfairly compete with private enterprise should be maintained and the development of human service facilities should be considered by private enterprise on government owned lands.

Local

One of the most important functions of local government is to provide its citizenry with adequate close-to-home park, recreation, and open space resources. This function is best facilitated through the development of a comprehensive community recreation and open space plan. The Department of Conservation and Recreation should provide planning, standards, guidance, and support for this local plan. This plan should reflect the specific needs of the locality and should take advantage of the information and recommendations contained in **The Virginia Outdoors Plan.**

Local units of government have a duty to provide playgrounds, playfields, neighborhood parks, recreation centers, city parks, trails, and other close-to-home recreation areas and facilities in order to meet the daily leisure needs of

their populations. For unincorporated urban areas on the outskirts of major cities, this responsibility rests with the county government. In addition to providing opportunities for recreation activities, local governments may have the opportunity to protect natural, cultural, and historic resources of local significance. Interested citizens and organizations should take the initiative in promoting responsible recreation action by local officials.

Not only do localities have the responsibility to provide neighborhood and close-to-home recreational facilities such as those mentioned above, but they should also provide larger outlying park and open-space areas to serve local and regional needs. Local governmental units should consider joining together under provisions of the Park Authorities Act of 1950 in order to provide these areas on a regional cost-sharing basis.

Local governments, through the administration of zoning regulations, should protect wetlands, floodplains, and environmentally sensitive areas as open space. Flood plains in particular provide opportunities for water access, greenways, and low cost recreational facilities such as playing fields and open park land. The setting aside of these floodplains will also serve to protect private property from flood damage, protect water quality, and provide wildlife habitat.

Finally, local governments should encourage the donation of private lands or capital for park acquisition and development projects and should encourage development by private recreation enterprise in conjunction with public acquisition and development.

The Private Sector

The private sector plays a vital role in meeting the recreation needs in Virginia. From statewide conservation organizations to large industrial corporations and from civic clubs to resort owners, the citizens of the Commonwealth have a responsibility to work toward the improvement of recreational opportunity.

There are numerous public and private organizations throughout the state which have a major interest and involvement in the preservation, protection, and use of our natural resources. The list of representative groups includes: The Nature Conservancy, Sierra Club, Izaak Walton League, Boy Scouts, Girl Scouts, 4-H Clubs, Rails-to-Trails Conservancy, and other trail organizations, Virginia Recreation and Park Society, sportsmen's and civic clubs. These organizations involve people in a variety of social, civic, and recreational activities which will enable them to make informed decisions on resource issues.

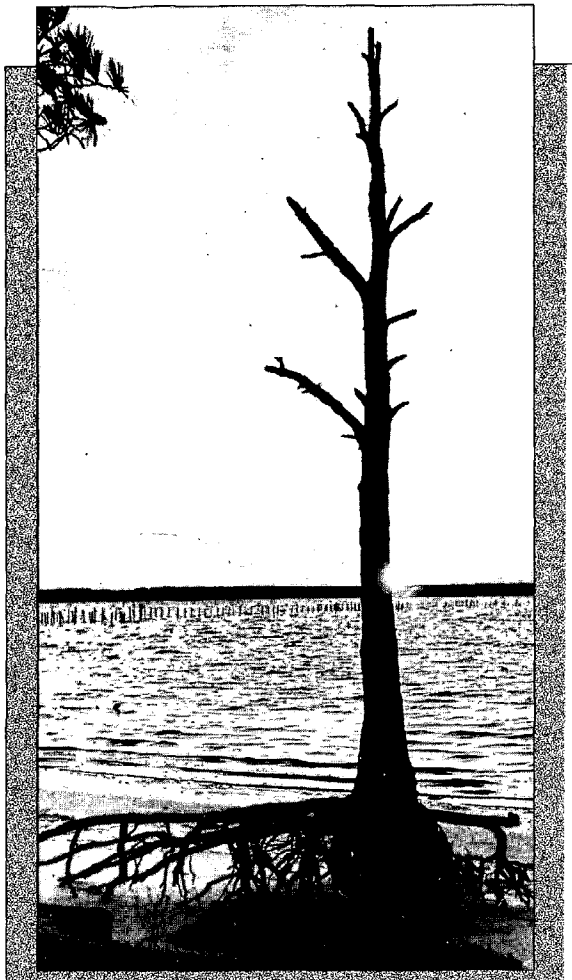
Many citizen groups and conservation organizations are instrumental in initiating and supporting legislation necessary to enhance and/or protect Virginia's outdoor recreation resources. Their activities at the local level often provide the foundation necessary for major state actions. In addition to promoting needed legislative measures, citizen groups often help provide both the impetus and financing for the acquisition, development, and management of outdoor recreation resources.

Private enterprise today plays an increasingly important role in meeting recreational needs in Virginia. Because of its role as a major provider of recreational opportunity, Virginia's corporate citizenry has a responsibility to be familiar with the needs identified and recommendations made in **The Virginia Outdoors Plan.**

There are two basic types of corporations which create outdoor recreational opportunity. The first of these is the recreation enterprise that provides facilities, such as campgrounds, golf courses, swim and racquet clubs, and theme parks. The second type of corporate provider is the enterprise which, as a result of their primary economic endeavor, owns large tracts of land, which to one degree or another may be made available for game management, hunting, fishing, trail development, water access, primitive camping, or other unstructured activities. By working with various elements of local and state government, private enterprise can provide needed recreation areas and facilities, alert public agencies to opportunities for public/private cooperation, and help prevent needless public competition with private recreation developments. Private enterprise has an obligation to work with the government and to create responsible, reasonable, and comprehensive measures to safeguard our natural resource base.

Individual citizens of the Commonwealth also have a major responsibility in the satisfaction of recreation need. This responsibility can be met through involvement in the planning process at the state and local level. By familiarizing themselves with state and local recreation programs, citizens can guide and support governmental efforts to acquire and develop facilities and to protect and conserve valuable natural resources. The Code of Virginia has been amended to allow citizens a tax check off to help protect the state's recreation resources. Thus every individual has the opportunity to make their own financial commitment to establishing and developing state recreation facilities.

It is only through the efforts of a concerned, well informed, involved citizenry that the Commonwealth can hope to realize the full potential of its human and natural resources in the satisfaction of recreational needs.



CHAPTER VI:
A Summary of Major Findings and Recommendations

The following is a general summarization of the major findings and recommendations contained in **The 1989 Virginia Outdoors Plan.** This summary is intended to provide the reader with a general overview of the state's recreational needs and the efforts needed to meet those needs. The table on page 96 provides a listing of statewide facility needs for the 26 measured recreation activities for the years 1990, 2000, and 2010.

Major Findings

Recreation Demand

- The average Virginian engages in about 86 activity days of outdoor recreation.
- Approximately 60% of all outdoor recreation demand in Virginia is for activities within 30 minutes of home.
- One of out every three activity days involves a water based activity.
- The ten most popular outdoor recreation activities and the percentage of the population that participates in each are: pool swimming — 46.46%, swimming outdoors — 44.34%, picnicking — 42.78%, beach use, sunning — 36.56%, bicycling for pleasure — 33.52%, jogging — 30.77%, fishing — 27.64%, softball/baseball — 24.26%, basketball — 21.95%, and camping — 21.80%.
- Participation in most outdoor recreation activities is increasing at a faster rate than the population as a whole.
- The greatest demands are for close-to-home recreation areas and facilities.

Recreation Supply

- The 1990 Outdoor Recreation Areas and Facility Inventory identifies over 6,391 sites, including 2,843,205 acres of land and 1,410,932 acres of water.
- Of the total land acres inventoried, some 78% are owned and managed by the federal government, 11% by state agencies, and 4% by local and regional governments.

- Although Virginia is rich in water resources and the demand for water based recreation is great, public access to our beaches, lakes, and rivers is inadequate and constitutes a significant limiting factor to the use and enjoyment of the resources.
- While the supply of many outdoor recreation areas and facilities is sufficient on a statewide basis, there are many instances where significant shortages exist at the local, state, or regional level.

Recreation Needs

- The greatest need expressed by respondents to the 1990 Outdoor Recreation Demand Survey was for close-to-home recreation opportunities.
- Although additional recreation areas are needed in some instances, one of the most pressing needs is for facility development and improved access to existing resources.
- Virginians cited a lack of information on available opportunities as one of the major deterrents to participation in outdoor recreation activities.
- Maintenance and refurbishing of older facilities is critical to many urban delivery systems.

Major Recommendations

State Parks

- The top priorities of the state park system over the next five years are the funding for maintenance and operation, new facility development, and renovation of facilities at existing parks; acquisition of new state park sites; and development of master plans for each park unit.

Beaches

- Although Virginia has high quality publicly owned beaches, many of them are either inaccessible, unavailable, or lack adequate support facilities for public use, thus creating a significant shortage of usable beach. Federal, state, and local agencies should work cooperatively toward increasing the accessibility of suitable beaches in the public estate. Reasonable access to False Cape State Park, as well as cooperative agreements with the various military installations and U.S. Fish & Wildlife Service areas in Tidewater would be particularly helpful in this regard.

Water Resources

- Each locality should carefully evaluate waterfront parcels to determine their potential for public access. They should also encourage private enterprise to develop quality marina and dry storage facilities.
- Any lands acquired by state or federal agencies which abut water resources should include areas for public access.
- The Department of Game and Inland Fisheries should accelerate its program of providing boat access sites with special emphasis on high capacity facilities in tidewater areas and at major reservoirs across the state.
- Expanded coordination between all units of government is necessary to ensure that the best possible use is made of opportunity for increased public access.
- Worthy components should be added to the Virginia Scenic Rivers System.

Assistance to Localities

- The state should continue to assist localities in the acquisition and development of recreation areas and facilities through the administration of the Virginia Outdoors Fund.
- The state should continue its technical assistance and informational services to localities.

Greenways

- Localities, agencies, and the private sector should work together to establish linear corridors (greenways) which provide access to open space and recreational areas and link urban and rural areas to the natural and recreational resource base of the Commonwealth.
- Rivers, utility corridors, scenic roads, abandoned railroad rights-of-way, and other resources should be examined and utilized effectively in the development of a greenway system.
- Liability protection must be provided to those private landowners who make a corridor through their property available to the public in support of a greenway system.
- Incentives need to be developed to encourage landowners to participate.
- Adequate protection and management must be provided to existing and future components of the system.

Natural Areas

- Data developed by the state's new Natural Heritage Program should be considered in all major planning and development projects in Virginia.
- Special emphasis should be placed on providing adequate protection of especially important sensitive areas.

Virginia Byways

- In addition to bringing new road segments into the system, promotional brochures encouraging self-guided tours along existing Byways should be developed to help promote tourism and enhance the enjoyment of Virginia's natural and cultural heritage.

Fish and Wildlife Resources

- The Department of Game and Inland Fisheries should seriously consider expanding the access to and use of State Wildlife Management Areas.
- The Department should continue to emphasize the provision of recreation access to the state's water resources.
- Additional hunting lands should be acquired, with emphasis on areas east of the Blue Ridge.

Wetlands

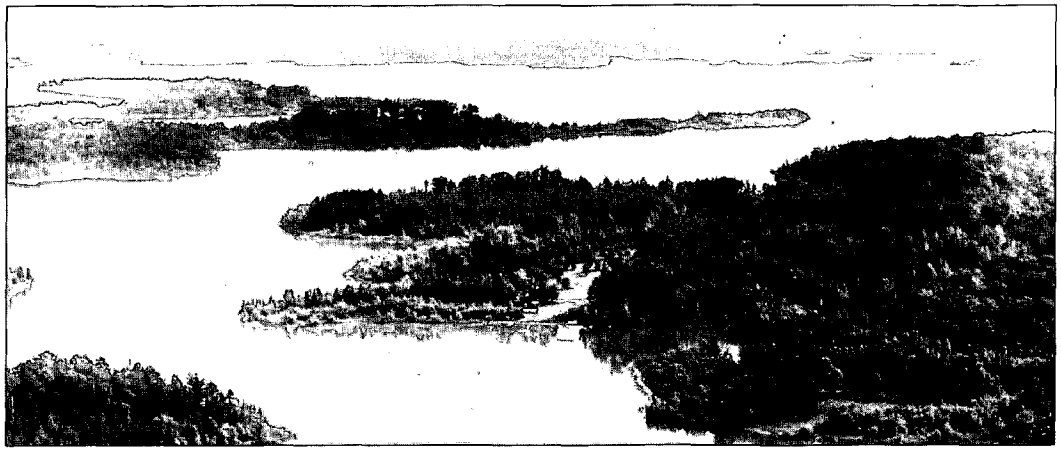
- Virginia should establish a nontidal wetlands policy with the necessary mechanisms to provide protection and wise stewardship of these areas.
- Incentives, educational programs, easements, etc., should be developed/utilized in the protection of unique or vulnerable wetland areas.

State Forests

- The Department of Forestry should expand trail development and publish trail maps for each state forest.

Historic Resources

- Historic properties administered by public or quasi-public agencies should be evaluated to determine the feasibility of providing compatible recreation facilities, such as picnic tables and trails.



Conservation Easements

- State agencies should make greater use of conservation easements in their resource protection programs.

Local and Regional Parks

- Recreation providers should make an effort to increase public awareness of the facilities and programs they offer.
- Localities should work toward a fuller utilization of all available resources in the implementation of their programs.
- Emphasis needs to be placed on the development of adequate facilities at those areas already in public ownership.
- Localities should strive to achieve a balance of both indoor and outdoor programs and facilities.
- Emphasis should be placed on utilizing flood plains for recreational purposes and protecting them from inappropriate development.

Federal Agencies

- Federal agencies should work closely with the Commonwealth in the provision of recreational opportunities and in the protection of recreation and natural resources identified in the **Plan.** Particular emphasis should be placed on the provision of water and beach access and on the expansion of opportunities for water oriented recreation.

It should be noted that this summary addresses only the statewide recreation picture. More detailed information and site-specific recommendations are found in the "Recreation Systems" chapter, which identifies and makes recommendations for each of the 21 systems that collectively provide most of the public recreation opportunities in Virginia, and in the "Regional Analysis and Recommendations" chapter, which discusses recreation demand, supply, and needs in each of the state's eleven Recreation Planning Regions.

CHAPTER VII:
Implementing the Virginia Outdoors Plan

Cooperation and coordination between public agencies and the private sector is paramount to the successful implementation of **The Virginia Outdoors Plan.** Adequate levels of capital outlay and operations/maintenance funds are also necessary to provide an adequate recreation delivery system for the citizens of the Commonwealth.

Although sufficient public funds are essential to the success of the **Plan's** implementation, total needs within the state cannot be met without the involvement of private enterprise and individuals. Commercial recreation facilities, donations of money and land by individuals, and public use of private land, all play an important part in the total picture.

The following pages will examine programs and methods that will play a significant role in implementation of **The 1989 Virginia Outdoors Plan.**

Federal Programs

Historically, a part of **The Virginia Outdoors Plan** has been achieved through the programs of various federal agencies. In addition to the direct provision of public parks and recreation resources, federal agencies have provided financial assistance and advisory services. Monetary credit assistance for recreation purposes has been available to both public and private borrowers and outright grants to state and local governments for recreational purposes were made available under a number of federal programs.

The federal government has eliminated some programs that had previously been available to assist state and local governments in the provision of public recreational facilities and services. Other programs have been reduced by budget cutbacks. However, there are still some federal funds to assist public recreation providers. The

Land and Water Conservation Fund, currently administered by the National Park Service, Department of Interior, is still available, although at only a fraction of the levels of a decade ago. In most cases, the financing of federal programs depends on annual appropriations by Congress which has steadily declined for the last several years. The uncertainties and delays from year to year inhibit systematic programming. It would be of considerable help in land acquisition, facilities planning, scheduling, and development, to have a long-range stable funding source.

State Programs

There are a variety of programs helpful in implementing **The Virginia Outdoors Plan** at the state level. In addition to money and the direct provision of parks and open spaces, there are programs offering information, guidance, planning, and research.

Most state programs are financed with legislative appropriations. During the period of 1966 through 1987, $26,150,500 in state general funds and $82,879,989 in federal funds were made available through the Commission of Outdoor Recreation (1966-1983) and the Department of Conservation and Historic Resources (1983-1987) for planning, acquisition, and development of local, regional, and state parks, and the Department of Game and Inland Fisheries' facilities. Although federal funds are decreasing, in 1988 the General Assembly increased its commitment to assisting local parks and recreation departments by implementing a $2.7 million grant/loan program, for the 1988-90 biennium.

Grant and Local Governments Revolving Loan

The political subdivisions of the state have the legal power to provide comprehensive systems of public outdoor recreation areas and open spaces. They can acquire, develop, and operate sites, secure scenic easements, zone flood plains and other sensitive lands against intensive development, and encourage the preservation of open spaces through preferential taxation. Localities may provide park systems individually or cooperatively through a regional park authority (Chapter 27, Title 15.1, **Code of Virginia**). Chapter VIII of this **Plan** discusses in detail the above mentioned techniques. Localities should use this information when developing their outdoor recreation systems.

Local governments finance park and recreation activities out of local general funds, supplemented by grants-in-aid, special revenues, or by borrowing. Private donations of lands and monies also provide a significant tool for assisting local and regional units in the development of parks and recreational facilities.

Preliminary results of the 1988 Municipal Survey, conducted by the Division of Planning and

Recreation Resources, indicate that local park and recreation departments in fiscal year 1986-87 had general fund budgets that approached 159 million dollars. Of this, over 34 million dollars were obligated for acquisition and development of sites and facilities. The projected expenditures from local park and recreation budgets for fiscal year 1986-87 are expected to exceed $176 million. These monies may reach $186 million when special appropriations, grants, gifts, and donations are added. This local commitment constitutes a major portion of the public sector's efforts in implementing **The Virginia Outdoors Plan.**

Substantial amounts of public park and open space land have been acquired by some of the heavily populated urban areas in the Commonwealth by employing a land use control mechanism commonly referred to as "alternate density zoning." Under this program, a subdivider may reduce lot size and/or consolidate lot layout in exchange for the provision of compensating amounts of open space within the subdivision. Although no increase in the number of lots is allowed, consolidation of layout can save the developer utility costs and the locality acquires significant open space at no cost. This mechanism may be a viable alternative to the suggested mandatory dedication amendment to the Land Subdivision Act.

Land contracting is another open space acquisition technique which has been used effectively on a limited basis. This technique allows a locality to purchase park and open space land by paying for it over a protracted period of time. The advantage to the locality is one of being able to buy needed open space at today's prices without the necessity of raising the entire purchase price at one time. Annual payments to the person from whom the land is purchased, as opposed to a lump sum payment, creates certain tax advantages for that person. Local governments should give both alternate density ordinances and land contracting serious consideration when planning for the future provision of park and open space lands.

Private Sector

Activities of nonprofit groups and individuals contribute much to the total effort of preserving natural and historical resources, as well as providing outdoor recreational opportunities. Among such groups are The Nature Conservancy, National Audubon Society, Izaak Walton League, the Boy Scouts and Girl Scouts, service clubs, country clubs, swimming and tennis clubs, and many others. Historic preservation organizations, such as the Colonial Williamsburg Foundation and the Association for the Preservation of Virginia Antiquities, also contribute to recreational enjoyment. Indeed, in Virginia, there are many places like Historic Williamsburg or Monticello where historical interpretation and education are forms of recreation, and the two cannot be separated.

Much of the recreational demand in Virginia is met by private enterprise. Hundreds of millions of dollars have been invested in the expansion of campgrounds, ski resorts, and family amusement parks. Fishing lakes, marinas, charter fishing boats, beach resort accommodations, and tourist attractions, such as caves and public park concessions, are well established parts of the total state recreation delivery system. **The Virginia Outdoors Plan** notes, as a matter of policy, that private investment should be encouraged and be given a fair opportunity to provide quality services. The 1988 General Assembly passed legislation authorizing the Department of Conservation and Historic Resources to enter into long-term contracts for the purpose of developing privately owned recreational facilities on Department lands. This legislation will allow increased public/private cooperation in the development of recreational opportunities in the Commonwealth. Tourism, history, and recreation are interrelated areas that together have helped create a billion dollar/year industry in Virginia.

Cooperative Agreements

Cooperative agreements, as the name implies, are agreements among two or more entities to work together to accomplish a specific task. These agreements can take many forms and cover almost any situation, but they generally state rather specifically what is to be accomplished and the responsibilities of each involved party. Parks and recreation administrators can use cooperative agreements to gain short or long-term use of a piece of land for park purposes. Another example might be for two or more localities to take advantage of a special bulk purchase of supplies or equipment.

Another opportunity exists in using land set aside by developers within planned residential developments for future schools. If the parks and recreation department has need for recreational land in the area, it could enter into a cooperative agreement with the school board to develop recreational facilities on a part of the property. The site for the school itself could be held as open space until the locality is ready to construct the buildings. Often there is a lag time of several years between the time that land is made available to the school board and the actual construction is started. If parks and recreation departments are able to develop sections of this property, the burden of land acquisition for park purposes may be lessened.

Cooperative agreements with paper and timber companies have been used to make selected corporate lands available for recreational use. Thousands of acres are available for public hunting through agreements reached between the Department of Game and Inland Fisheries and the timber companies. An agreement was reached between WESTVACO and the state which enabled the Smith Islands in the James River to be made available for picnicking, primitive camping, and fishing.

There are other instances where public agencies hold land that is not in use, but has potential for recreation. As an example, the City of Virginia Beach and the U.S. Army have an agreement that permits public day use of a section of beach within Fort Story. The city has a similar agreement with the Virginia National Guard which enables the public to use other beaches owned by the military. In both cases, the limitations of use and responsibilities of the military and the city are spelled out in the agreement. Virginia Beach now has about 2,000 additional feet of beach available for sunbathers that formerly was closed to the public. The military still has title to the properties and uses the beaches for their purposes during specified times.

Land Use Controls

The need for intelligent regulation of the use and development of land is in the interest of the public. Historically, this has been done by zoning. Experience has shown that this system does not always work to the best interest of the people when a resource lies within two or more political subdivisions or is of greater than local significance. Therefore, the larger state interest, and even the national interest, should be recognized in the implementation of local land use controls.

One method of controlling land use is through tax incentives. The Land Use Assessment Law, is designed to encourage and assist private property owners in maintaining their lands in agricultural, horticultural, forestry, and open space uses. The law allows land to be taxed at a rate based on its current use rather than its best or potential use. This legislation offers incentives for lands adjacent to designated Historic Districts, Virginia Byways, and Scenic Rivers.

Real estate transfer tax is a program where a percentage of the transfer tax levied against each real estate transaction is set aside for specific uses. Often, these funds are earmarked for acquisition and/or development of local open space and parks. Although not in effect in Virginia at this time, this type of program was considered by the 1988 session of the General Assembly. It was carried over to the 1989 session where the proposal was defeated. Other states and localities that use real estate transfer taxes to help pay the cost of parks and recreation have found the program to be extremely effective.

Some localities in Virginia have required that developers set aside a certain percentage of the land within a proposed development for public open space. Usually the land is conveyed to the locality for the specific purpose of providing outdoor recreation opportunities within the development. The program goes under various titles, but is most often referred to as mandatory dedication or set aside regulations.

In some cases, the locality prefers to have the flexibility of determining the appropriateness of land donated for public use. Local ordinances may authorize the assessment of money in lieu of land. The ordinance prescribes the circumstances that surround the payment of fees and delineates the amount of the developer's payment per unit, i.e., acre or housing unit built. This method permits the developer to utilize all his land plus it gives the locality the option of using the fees to acquire lands and develop facilities which will be more in line with the needs of the total community.

Easements are another land use control mechanism worthy of consideration. Scenic, historic, and open space easements offer a way for private landowners to preserve their property for future generations without giving up ownership. An open space easement is simply a dedication of land to the public with restrictions on the future use and development of a property. The Virginia Outdoors Foundation was created by the legislature to encourage the donation of easements. The owners and their heirs retain the right of continued ownership and use, not inconsistent with the restrictions, and are eligible for a one time deduction in federal and state income taxes and in the inheritance taxes on the estate. The owners and their heirs may also receive a continuing tax benefit through the Land Use Assessment Law, or the Open Space Land Act, depending on local circumstance. (An easement is similar to writing a will for the future of your land.)

Technical Assistance

The Department of Conservation and Recreation employs recreation consultants to assist public and private agencies in the provision of leisure services. The Department's recreation consultants hold regular workshops and offer suggestions to localities to streamline their operation and develop more efficient and effective departments. These workshops, often held in cooperation with other agencies, are designed to increase the knowledge of local park and recreation administrators, as well as interested citizens in the best methods of developing, operating, and maintaining park and recreation programs. The techniques learned have been a contributing factor to the increase in recreational opportunities throughout the Commonwealth.

The Department also urges localities to consider the establishment of regional park and recreation agencies to provide leisure service delivery systems for their residents. The cooperative funding of regional park and recreation agencies can provide localities with management and administrative experience at much less cost than would otherwise be possible. Cooperative agreements between leisure service agencies and local school districts is also encouraged. The cooperative use of existing facilities can be very beneficial in the delivery of services to a community.

The Virginia Outdoors Fund

The Virginia Outdoors Fund, administered by the Department of Conservation and Recreation's Division of Planning and Recreation Resources, is a supplemental source of money for the acquisition and development of recreational lands at the state and local level. It has consisted of state funds appropriated by the General Assembly and funds allocated to the state from the Federal Land and Water Conservation Fund. Money is allocated by the Division for specific qualifying projects at the state, regional, and local level. From the establishment of the Virginia Outdoors Fund in July 1966 through December 1987, approximately $103 million of the state's Land and Water Conservation Funds have been committed to projects in Virginia. Federal funds are almost gone, but the General Assembly has seen fit to increase the state's share through the revolving loan/grant program which is still administered as a matching fund for localities.

Volunteerism

The involvement of volunteers in local government is widespread and is not a new phenomenon. Existing fiscal constraints, as well as reduced federal aid, have underscored the need for local governments to consider alternative service delivery mechanisms, including the involvement of volunteers. Many localities throughout the country are engaging in a fundamental rethinking of public services which includes renewed appreciation of volunteers.

Volunteers often are perceived as being a potential resource for enhancing or maintaining local government services as well as to aid in reducing costs. The attractiveness of volunteers to local government can be enhanced by addressing several management and organizational structure issues. The involvement of volunteers in the delivery of local government services provides a critical link between the community and government in contemporary society.

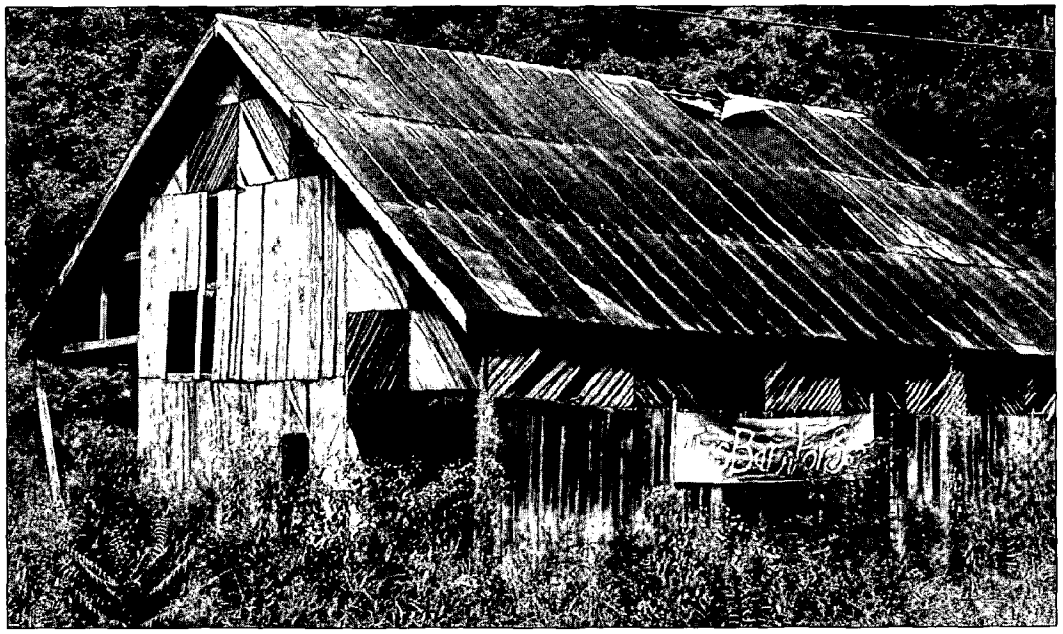
Most public park and recreation agencies and organizations have used volunteers in some way in the past. The volunteers can be of all ages and from all ethnic and racial groups, some with education and skills and some without. In public and voluntary agencies, volunteers may serve in many capacities from the traditional role of chairman of the board to a candy striper, volunteer coach, Big Brother, or scout leader. As the use of volunteers increases and volunteer systems become more sophisticated and complex, the agency must be well prepared before putting a volunteer program into action. The task must be approached thoughtfully with an open mind and open eyes. It is important to think through the total process before determining your agency's capabilities to handle volunteers and how they might best be employed.

A properly orchestrated volunteer program can be an asset to a leisure service agency or organization, a valuable experience for the volunteer, and an opportunity for direct involvement of the community.

All principal characters benefit from the use of volunteers: the agency, the community, and of course, the volunteer. The agency can expect an increase in manpower at minimal cost. Volunteers supplement paid staff and often allow for the expansion of services that would otherwise not be possible. Volunteers also provide a wealth of knowledge, skills, and abilities that can offset shortcomings caused by lack of personnel or decreased funding.

The community benefits from citizen involvement and the multiple spinoffs associated with it. As volunteers experience the inner workings of the agency, they come face to face with the problems and rewards associated with community park and recreation work. Volunteers also provide a foundation for programs and services that can benefit the community. They bring to the job the needs and desires of the community served and are often effective in helping community officials improve and expand the public park and recreation facilities.

Volunteers can benefit directly from experience gained on the job. The work itself can be a form of recreation or career development. When properly reported, the volunteer work experience can be legitimate job experience just as if it were a paid position. This provides job incentive for the volunteers as well as increases his/her experience level.



CHAPTER VIII:
Priorities in the Use of the Virginia Outdoors Fund

Unlike **The 1979 Virginia Outdoors Plan,** when significant funds were available for the acquisition and development of park and recreation areas, implementation of **The 1984 Virginia Outdoors Plan** was affected by a dramatic downturn in financial resources. The Virginia Outdoors Fund (VOF), a grant-in-aid program administered by DCHR's, Division of Planning and Recreation Resources (DPRR), experienced sharp reductions in federal program dollars. Historically, the source of these federal dollars had been the Land and Water Conservation Fund (LWCF), and like other national programs, these funds showed a steady annual decline in the mid-1980s. For example, the total LWCF appropriations to the Commonwealth during the VOF period of 1984-89 of $5,284,135 was less than the single year appropriation in 1980 of $6,106,488.

State funding support for the VOF remained somewhat in place during the 1984-89 period, but these limited dollars were only addenda funds for a VOF assistance program built and sustained with federal pass-through monies from the LWCF.

Future VOF Financing

The Act which created the Land and Water Conservation Fund was scheduled to expire in September 1989. Future prospects for federal grant assistance funds received important impetus in 1987 when the U.S. Congress extended the program for an additional twenty years. Congress is studying various funding proposals for the new extended program; however, most knowledgeable observers believe that significant quantities of federal funds will not be available to the states before the latter part of 1990.

Concern for the lack of VOF funding prompted the Virginia General Assembly to pass House Joint Resolution 204 in 1987, which established a joint subcommittee to study the outdoor recreational needs of the Commonwealth and to recommend stable long-term funding sources. In 1988, the subcommittee in their report (House Document No. 40) provided several recommendations to Virginia's Executive and Legislative branches of government for future review and action.

Financial assistance for public outdoor recreation areas was considered a high priority by the 1988 session of the Virginia General Assembly.

In recognizing the public outdoor leisure needs of Virginia and the backlog of requested assistance to the VOF, the General Assembly appropriated 4.2 million dollars in the 1988-90 biennium for the VOF Grant Program. In addition to these grant funds, the General Assembly appropriated 2.8 million dollars in the 1988-90 biennium for a new revolving loan program. All of these funds will be available to Virginia localities only. The combined results of these General Assembly actions will make available both grant and/or loan assistance to Virginia localities for public outdoor recreation.

Funding Philosophy of the Division of Planning and Recreation Resources

Priorities in the use of the available Virginia Outdoors Funds must reflect the Division's funding philosophy. That philosophy is:

- Virginia Outdoors Fund monies should be obligated to projects which emphasize the greatest participation by the maximum number of people.
- Local and regional comprehensive planning is encouraged. Priority will be given to projects that are included in a local comprehensive park and open space plan or land use plan.
- The utilization of existing resources is an important conservation and economic concept. The development of existing park lands will take priority over the acquisition of additional park acreage except in areas where there is an identified shortage of park lands or an exceptional resource is available.
- The utilization of private capital in providing recreational facilities is encouraged.
- Prior funding levels for a political subdivision or region will be taken under advisement and special consideration given to those participants who have not previously received funds.
- Gifts of land, or interest in lands, for the purpose of obtaining VOF assistance is encouraged.
- The rehabilitation of older parks and facilities.
- Priority will be given to those project proposals that appear best able to meet the recreational needs identified in this document.

Criteria and Rationale

Local and Regional Projects

The funding of community parks will be emphasized. A community park will provide a complex of facilities, not just a ball field or other single type of development. Community parks will serve more than a single neighborhood within a political jurisdiction. Single facility applications will be considered if the facility completes or compliments an existing recreation site or system.

Urbanization creates the necessity for comprehensive planning. The Division urges localities to engage in comprehensive park open space planning and will give priority to those projects included in plans of this type.

The acquisition of usable recreational resources remains a high priority in many localities throughout Virginia. However, development of existing public lands which can meet the recreational needs of an area should be given priority over buying additional land. By developing existing recreational lands and under-utilized recreational resources, VOF assistance can have an immediate impact on meeting the recreational needs of Virginia.

Many political jurisdictions are unable to generate the local funds needed to match a 50% DPRR grant. In consideration of this, the Division encourages local decision makers to apply for VOF grant and/or loan funds to finance part of the sponsor's cost share.

Development projects will be approved only if the locality has demonstrated a willingness and capability to maintain existing recreational facilities within the political jurisdiction. If there are no existing facilities, a realistic plan for operating and maintaining the facility must be prepared and endorsed by the local governing body.

Because of budgetary constraints, few localities can provide the supply of recreational facilities needed to meet the full demand. Therefore, localities are encouraged to seek the private sector's involvement in the financing and operation of revenue producing facilities such as golf courses, swimming pools, marinas, etc. Special consideration will be given to applications that involve this type of cooperative effort.

The Division prefers to work with localities that manage funded projects with a minimum of administrative difficulties. The fair and equitable distribution of available Virginia Outdoors Funds precludes the continual obligation of an imbalance of funds to any one political jurisdiction or region of the state.

A fair distribution of funds involves the serving of all Virginia residents. Therefore, applications from agencies that have not previously received DPRR's assistance will be given special consideration. These agencies must give assurances that the locality has the intention and ability to maintain and operate the facility. Although not mandatory, a park and recreation agency should exist within the local government or be in the planning stage.

State Projects

Division of State Parks

The amount of federal Virginia Outdoors Fund monies to be allocated to the Division of State Parks for state park open space acquisition and development is determined by the General Assembly. These monies are then obligated on a project by project basis according to the following priorities.

(A) Facility development of 1) state parks acquired, but not yet opened to the public, and 2) of existing state parks which are not fully developed or are in need of additional facilities.

(B) Acquisition of 1) inholdings within state parks, 2) donated lands that meet minimum criteria, as discussed in the state parks system section, and which will not place a financial burden on the state, and 3) new parks through purchases, should funds become available.

Department of Game and Inland Fisheries

As with the Division of State Parks, the amount of money to be allocated to the Department of Game and Inland Fisheries is determined by the General Assembly. The Department then obligates these funds on a project by project basis according to the following priorities:

(A) Acquisition and development of access sites to the waters of the Commonwealth for fishing and boating.

(B) Acquisition and development of hunting and wildlife management areas and facilities.

(C) Acquisition and development of public fishing lakes and fisheries management facilities.

Open Project Selection

To assist agencies to participate in the Virginia Outdoors Fund, DPRR maintains an open project selection process designed to encourage public participation in project development.

Applications or inquiries for VOF assistance are forwarded to the Division of Planning and Recreation Resources. They may be submitted at any time during the year. This approach provides maximum latitude to potential project sponsors permitting them to initiate actions when conditions are politically and monetarily favorable within the locality. The initial step towards receiving VOF assistance is an inquiry, written or verbal, concerning project eligibility and availability of grant and/or loan funds.

The initial inquiry is analyzed by Division Recreation Planners. If the information is insufficient to determine eligibility, additional data is requested. If the project is determined to be noneligible or of low priority, DPRR will provide recommendations on how to revise the project.

Upon receipt of sufficient evidence, DPRR makes a preliminary determination of eligibility and arranges an on-site visit to discuss the project. In the company of a sponsoring agency representative, the DPRR staff member will evaluate:

- Suitability of the site in relation to the intended facilities.
- Desirability of the location in relation to other potential locations and existing facilities.
- Absence or presence of environmental intrusions.
- Adequacy of access.
- Evidence of local support for the project.
- Evidence of citizen involvement in the project.
- Acceptable operation and maintenance of existing recreation facilities.
- Accessibility of public recreational facilities to all segments of the public.
- Evidence of the locality's ability to complete the project satisfactorily.
- Suitability of site for future expansion.

Subsequent to the site visit and determination that available data is acceptable, the sponsoring agency is encouraged to proceed with completion of the application, including A-95 review, archaeology survey, environmental assessment, and a resolution from the governing board. Adoption of the resolution should take place in an advertised public meeting.

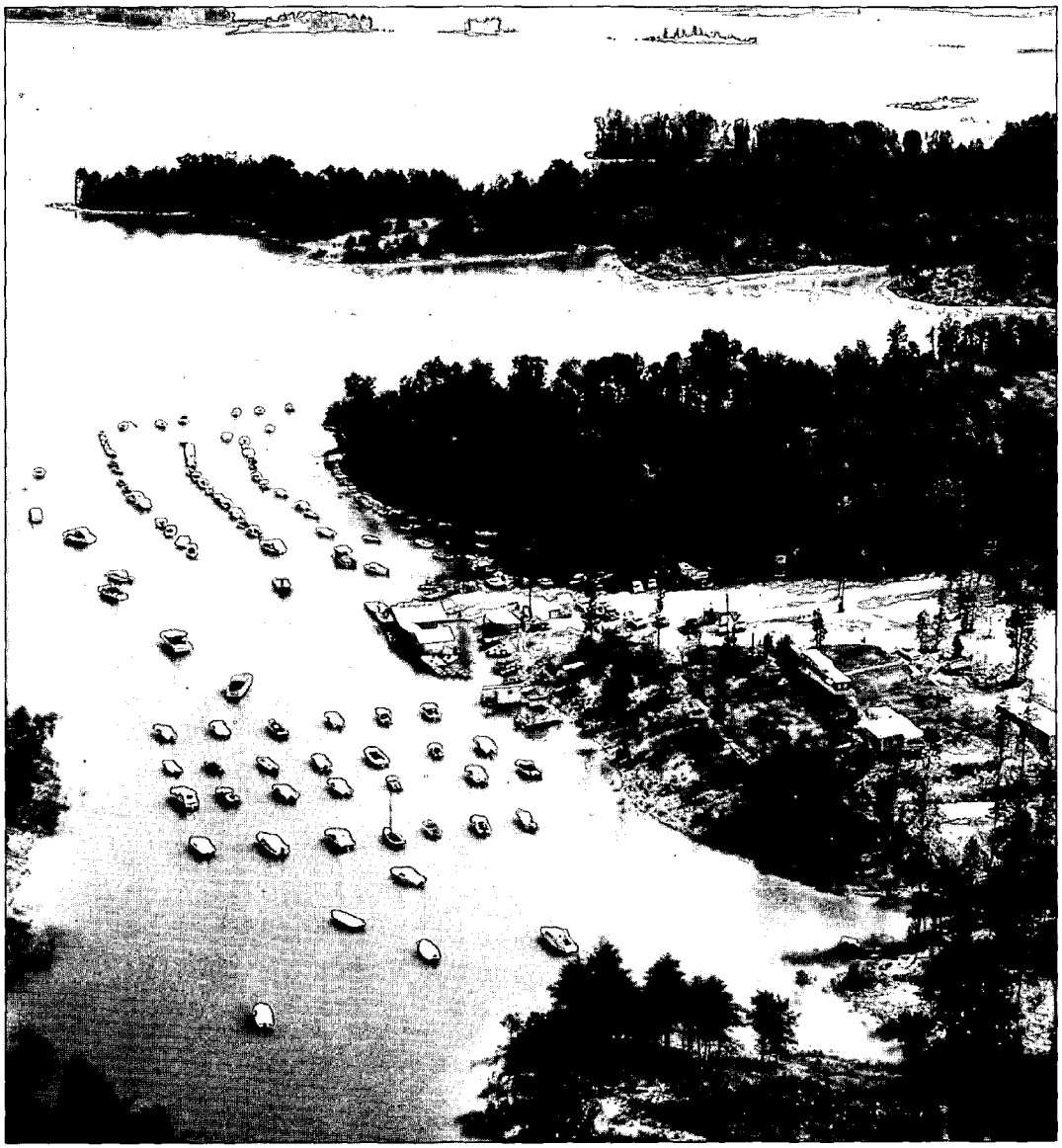
Four to six weeks prior to a Recreation Advisory Board meeting, known project sponsors will be notified that projects for the agenda will be selected from a list of completed applications available on a date at least two weeks prior to the DPRR meeting.

The DPRR staff reviews and evaluates completed project applications to determine compatibility with the objectives and recommendations identified in the **Virginia Outdoors Plan,** regulations established for administration of the Vir-

ginia Outdoors Fund Program, and the funding criteria presented earlier in this chapter. Various factors considered at this time include the following:

- Share of VOF received by potential sponsor in past 12 months.
- Project cost in relation to current balances of funds.
- Compliance with Division criteria.
- Total funds received by sponsor since beginning or program. (Emphasis is placed on projects sponsored by agencies that have previously received little or no VOF assistance.)
- Completeness of application.
- Information (observations) obtained from field trip.
- Information included in application documentation.
- Urgency to proceed with project.
- Greatest participation by the maximum number of people.
- Inclusion of proposal in a local comprehensive park plan or land use plan.
- Use of private capital and community involvement, donation of lands.
- Compliance with applicable program regulations and **The Virginia Outdoors Plan**

After a discussion of all applicable evaluation criteria, projects are selected for presentation to the five member Recreation Advisory Board. Representatives from the sponsoring agencies personally appear before the Board, summarize the scope of the project, and request a formal commitment of Virginia Outdoor Funds. The public is advised in advance of the meeting



through the Virginia Register. Any individual who requests to be heard at the funding meeting will be permitted to speak.

The Board reviews the project as presented by the sponsoring agency, and if consistent with Division policies, recommends project funding to the Director of the Department of Conservation and Recreation. Following the Director's concurrence, funds are obligated and DPRR staff is authorized to proceed with finalization of the application process and to work with the project sponsor toward successful completion of the proposed project.

State sponsored projects are also considered at this time. However, these projects are not compared to local projects since the Virginia General Assembly determines the amount of federal Virginia Outdoor Funds to be obligated to the Division of State Parks and the Department of Game and Inland Fisheries' projects.

Applications not placed on the Board agenda may be considered in the next funding cycle.

The Chesapeake Bay Youth Conservation Corps

The Chesapeake Bay Youth Conservation Corps Program (CBYCC) is a grants program also administered by the Division of Planning and Recreation Resources.

In 1983, following a seven year study, the Environmental Protection Agency released a report which documented alarming trends in the decline of marine life in the Chesapeake Bay. Recognizing the enormous value of this unique natural resource, Virginia entered in an agreement with Pennsylvania, Maryland, the District of Columbia, and the federal government in a coordinated long term effort to restore the Bay and protect it from further deterioration. Utilizing the resources of nine separate agencies, Virginia has implemented and reinforced a wide range of programs, termed The Chesapeake Bay Initiatives, which are designed to achieve this goal. The Chesapeake Bay Youth Conservation Corps was created as part of these Initiatives.

Operating with an annual budget of $300,000 in state revenues, the CBYCC awards grants to state and local government agencies who sponsor environmental projects that employ youths sixteen to twenty-one years of age. The program is labor intensive, requiring that 75% of all grant monies be expended in wages, and a strong emphasis is placed upon educating the youth participants in the environmental problems they are addressing.

A wide variety of projects are eligible for funding, provided they contribute to the restoration of the Bay, either directly or indirectly. Projects must be located within the region designated by the General Assembly as "Tidewater," and physical improvements are restricted to publicly owned lands.

In response to the current success of the CBYCC, and the growing interest in youth corps programs — within Virginia, as well as nationwide — the Division of Planning and Recreation Resources will explore avenues for expanding this program to better utilize its demonstrated potentials.

CHAPTER IX:
Persons with Disabilities and Senior Adults

Persons with Disabilities

There are many opportunities in Virginia for most citizens to enjoy a wide variety of outdoor recreational experiences. These include boating, hunting, fishing, hiking, bicycling, horseback riding, swimming, picnicking, camping, nature observation, and sightseeing. However, there are many citizens with disabilities who have very limited opportunities to participate in these activities. It is important for recreation planners and providers to understand some of the barriers persons with disabilities might face which may limit their participation. These physical, social, emotional, transportation, and financial barriers can then be addressed during the planning and implementation phases of recreation program and facility development.

One of the biggest problems or barriers that persons with disabilities (i.e., physical, sensory, and mental impairments) may face are attitudinal barriers. These include the attitudes that society, recreation planners, providers, and even participants themselves may have that often are more limiting to persons with disabilities than any physical barriers that they might encounter. Overall, 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. However, many barriers to participation still exist. These barriers can frequently be eliminated by educating staff about the abilities and needs of persons with disabilities. If staff is aware of some of the barriers persons with disabilities face, they can make the necessary program or facility

modifications needed to increase accessibility. Often these adjustments are minor. Some examples of program modification include: changes in rules, regulations, equipment, and methods of communicating information. Facility modification includes the removal of environmental or architectural barriers.

There are other major factors which may limit participation in outdoor recreational activities for persons with disabilities. These include inadequate, unaffordable, and inaccessible transportation to programs and facilities and inadequate financial resources to pay entry fees or purchase recreational equipment. Although these specific concerns will not be addressed in this document, recreation providers should be aware of them when planning programs and facilities.

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 to enjoy the same satisfactions and benefits from these activities that everyone else does. They also expect to participate in integrated leisure activities with their families, friends, and other nondisabled park visitors. They do not prefer to participate in separate, segregated, or "special" activities, nor do they prefer to use facilities designated exclusively for individuals with disabilities. Therefore, all efforts should be made to mainstream individuals with disabilities into programs and facilities with nondisabled people.

Scope of Impact

Current estimates indicate that approximately 12% of Virginians have disabilities which significantly impact their daily living including their leisure lifestyle. The total number of people impacted increases significantly when you add the number of family members and friends who recreate with them. This number is expected to increase as the baby boom population ages and life spans grow because senior adults can be expected to develop some of the disabilities which often accompany the normal aging process. In addition, modern medicine is saving more lives and individuals may live many years with major disabilities (i.e., brain injury, disabilities present at birth).

Types of Disabilities and Implications for Planners

Physical Impairments: People with disabilities include those with temporary or permanent physical disabilities who have limited mobility and require a more barrier free environment. They generally use a mobility aid such as crutches, canes, wheelchairs, three-wheeled vehicles (Omega), walkers, or use artificial limbs or braces. They may lack full use of their arms and hands, or lack coordination. People with physical disabilities also include those with less visible impairments such as respiratory ailments, cardiac complications, and arthritis. These impairments may be present at birth, result from an illness or accident, or from the normal process of aging. Some examples of the latter are arthritis, impaired eyesight, and hearing loss. Some persons also have multiple impairments.

Some environmental barriers of concern to people with walking difficulties include: steps or steep slopes; uneven surfaces; raised or uneven expansion joints; slippery surfaces such as highly polished floors or wet shower rooms; walks filled with debris; and areas that collect standing water, sand, and/or ice. Having to stand or walk for extended periods of time presents a problem for many people. Reduced agility, reduced speed of movement, reduced endurance, difficulty with balance, or a combination of these things may contribute to impaired mobility.

Some additional environmental concerns which particularly apply to persons using wheelchairs or three-wheeled vehicles (Omega) include: the presence of steps or curbs; maneuvering through narrow spaces; going up and down steep paths; moving over uneven or slippery surfaces; making use of conventional restrooms and drinking water facilities; and reaching and viewing things placed at conventional heights.

It is important to remember that persons with upper limb impairments may have difficulty with heavy doors and certain styles of knobs, buttons, door handles, drinking fountains, coin operated machines, telephones, and elevator controls. Persons with upper limb impairments may also have some difficulty with balance, especially when climbing stairs, or walking on inclines.

Visual Impairments: There are many kinds of visual impairments, each with a wide range of disability and limitation. A legally blind person may be able to read large print and walk without a mobility aid in many or all situations. They may also be able to perceive lightness and darkness and perhaps even some colors. On the other hand, someone else who may also be legally blind may not have any of these skills. The individual's vision may be better one day over another.

Some environmental elements of concern to persons with visual impairments include: maneuvering around obstacles placed in the path of travel; avoiding collisions with objects protruding from walls; going up or down steps; reading signs or printed materials; understanding exhibits that require visual perception; and obtaining directions to orient them to their surroundings.

It is estimated that less than 10% of the people who are blind or who have severe visual impairments are able to read braille. Many persons choose to receive information by audio cassettes, large print, or through oral presentations. This is not to say braille should not be provided. People who use braille appreciate its availability. However, this should not be the only method used to present information (i.e., on signs, maps, interpretive displays, program offerings) to people who are blind or visually impaired.

Hearing Impairments: Hearing impairment is the most common disability among Americans. Persons with hearing impairments include those who are totally deaf and the larger numbers of persons with seriously limited hearing. People with seriously limited hearing have difficulty hearing sounds or other people's speech, but can often understand it with some sort of amplification technique or device. People who are deaf can not hear sounds or speech well enough to understand it, even with amplification. A person who is deaf may also have impaired speech, since he may not be able to hear well enough to correct phonetic errors in his own speech.

A wide variety of communication methods are used by persons with hearing impairments including the use of sign language, reading and writing, mime and gesture, lip reading, or a combination of these methods. The two most commonly used methods are writing and the use of sign language. Some people also have keyboard devices called TTYs or TDDs, which enable them to communicate over the telephone. Recreation providers should consider purchasing one of these relatively inexpensive units to assist in communicating with those persons who have a hearing impairment.

Mental Retardation: Just as there are different levels of normal intelligence, there are different levels or categories of mental retardation. Though

a specific category of mental retardation may give you a general idea about the intellectual level and adaptive behavior of a person, it does not mean that all people within that category share the same characteristics or abilities.

For most people with mental retardation, it is not the ability to learn that is missing, but the speed and ease at which things are learned. Reasoning and judgement capabilities may also develop at a slower pace. Therefore, applying the safety precautions and supervisory methods necessary for all ages will meet the needs of most persons with mental retardation. Some people may have problems with communication, but most can generally communicate without modification. Written information, instructions, and directions in particular may present problems, therefore alternative methods of conveying messages should be considered. For example, signs with pictures or well known symbols can often more effectively convey messages than written words (i.e., pictures for women's and men's restrooms). Some individuals with mental retardation may have accompanying physical disabilities.

Learning Disabilities: Persons with learning disabilities are defined as persons exhibiting a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. Obviously this definition covers a wide spectrum of potential obstacles a person with a learning disability may encounter when attempting to receive or process information. A learning disability is generally specific and confined to one aspect of learning. This disability usually occurs in people with average or above average intelligence.

A person with a learning disability can experience poor spatial orientation or have a poor sense of direction, or have severe difficulty in reading. Modifications or adjustments needed for these individuals are usually programmatic and will

largely depend on sensitive and alert staff who can identify them and adjust communications, programs, or presentations to meet their individual needs.

Emotional Disorders: The number of people experiencing emotional disorders is very high. Estimates vary according to the nature, severity, and duration of the disability considered. Persons with emotional disturbance may include those with disabilities ranging from relatively short-lived depression to severe psychosis that may last for years.

Like other mental disabilities, emotional disturbance is not easy to specifically define. In general, persons with emotional disabilities may display an inability to concentrate, an inability to build or maintain satisfactory interpersonal relationships; they may exhibit inappropriate behavior or feelings under normal conditions and, frequently, a general, pervasive mood of unhappiness. As with persons who have a learning disability, most modifications will be programmatic and based on individual needs.

Additional Implications for Recreation Planning

Often programs and facilities may be accessible to persons with disabilities without having special adaptations or modifications. But to ensure this, various aspects of accessibility should be incorporated into planning, developing, and designing all recreational facilities and programs. Incorporating accessibility into the design and construction of facilities can be relatively inexpensive.

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. Merely developing a policy on accessibility is not enough. Specific procedures should also 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 need to be provided with the necessary technical information to implement these policies (i.e., facility design standards, guidelines for removing programmatic barriers). In addition, it is helpful to have staff understand and appreciate the possible special needs persons with disabilities may have. This understanding is likely to increase the agency's commitment of access to everyone.

Legislative Requirements

In 1970, the State of Virginia passed Chapter 539 of the Acts of Assembly. This legislation requires that buildings and facilities constructed or altered with public funds, except for school buildings, adhere to certain design standards which were established by the Division of Engineering and Buildings to make them accessible to and usable by persons with physical disabilities.

Federal legislation has been passed which mandates facility and programmatic accessibility requirements for localities and agencies receiving federal financial assistance. Highlighted below are two of the most important pieces of federal legislation relating to accessibility.

Facility Access: Congress passed the Architectural Barriers Act of 1968. This act requires that certain buildings and facilities, built in whole or in part with federal funds, be accessible to and usable by physically disabled persons. This law resulted in the development of specific standards for making buildings and facilities accessible in new construction and in renovation projects. It promotes the concept of providing buildings and facilities that are usable by all citizens, including those with a disability. These standards also improve the design of buildings and facilities to benefit everyone (i.e., a person with a baby stroller, a child with a wagon, a pregnant woman, a delivery man with an armful of packages, or a high school football player with a broken leg).

The first set of these federal standards were known as the **ANSI** (American National Standards Institute) **Standards, A117.1 Standards for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped, 1980.** These standards outlined criteria for door widths, ramps, toilet facilities, stairs, handrails, parking lots, and provided information on site design, interior design, building products and materials, and more. On August 7, 1984 the **Uniform Federal Accessibility Standards** (UFAS) were adopted to replace the **ANSI** Standards. These are currently the guidelines that federal agencies or those receiving federal funds for construction and renovation projects should now comply with.

Adherence to these federal requirements helps to increase the accessibility of recreational facilities for most persons who have a physical disability, but there are many situations where following these is still not enough and does not guarantee accessibility. Recreation providers need to be aware of these situations and the problems they present so that they can develop provisions in their policies which compensate for some of these shortcomings. Some of these problems and related recommendations are outlined below:

Recommendations

- **UFAS** standards only outline the minimum specifications that must be met for general handicapped accessibility. 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 set up 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 some persons to negotiate. In this situation, exceeding these standards by lowering the grade on a ramp even further would actually help to make it accessible to even more persons. [P1-F]

- Adherence to **UFAS** standards is only enforced when agencies receive federal funds. Since all agencies don't receive these funds, many are not required to meet these standards. Therefore, it is imperative that every outdoor recreation provider take responsibility above and beyond what is required for adopting barrier free site design standards and setting forth policies for enforcing compliance. [P1-A]
- Compliance with federally mandated standards is not retroactive. Consequently, buildings and facilities constructed prior to 1968 are not generally accessible, unless the managers of the facility have taken it upon themselves to upgrade the facility. [P1-F]
- Another major concern with the **UFAS** is that accessibility requirements are only included for buildings and a few related facilities. There are no requirements for some of the key park and recreation facilities such as campgrounds, picnic areas, trails, swimming and fishing areas, and playgrounds. Since existing standards do not include requirements or guidelines for these types of facilities, many are still being developed that are not accessible and which in fact, deny people with disabilities the opportunity to participate in outdoor recreational experiences with their nondisabled family and friends. [P1-F]

  It is therefore critical that outdoor recreation providers seek other sources of information which provide standards and guidelines for making these types of facilities accessible to everyone. These sources include: various technical assistance publications on the subject; experts working in disability related professions; and persons with disabilities. People with disabilities and recreation programmers should also be directly involved with facility design to help increase the functionalism of the facility. In addition, the Virginia Department of Conservation and Recreation has an Environmental Program Planner available to provide expertise on facility and programmatic accessibility to localities and agencies in Virginia. [P1-H]

Programmatic Access: The other significant piece of legislation affecting all park and recreation providers was signed into law by Congress in 1977. This legislation known as section 504 of the Rehabilitation Act of 1973, as amended in 1978, states in part that:

> "No otherwise qualified handicapped individual in the United States . . . shall solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance."

The term handicapped individual in the Act is defined as:

> "Any person who (a) has a physical or mental impairment which substantially limits one or more of such person's major life activities, (b) has a record of such an impairment, or (c) is regarded as having such an impairment."

This is often referred to as the "civil rights act for handicapped persons." Section 504 essentially means that any program or service provided to the general public must be made accessible to, and usable by persons with disabilities to the highest extent possible and feasible. Failure to comply with this law can also result in the withholding and withdrawal of federal financial assistance.

Again, 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's 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 that are too high for a wheelchair user to view.
- Printed information on exhibits or in park brochures that is not presented auditorially, or in braille, or large print, or through other methods usable to persons with visual impairments.
- Environmental interpretation done without an interpreter for a person with a hearing impairment.
- Slide presentations given without closed captioning for persons with hearing impairments.
- A telephone reservation system for campsites, picnic shelters, cabins, etc., that does not include a TDD or TTY telephone number for persons with hearing impairments.
- Perhaps the biggest barriers are attitudinal

barriers that are created by unenlightened staff who limit the visitor with a disability (i.e., by not allowing a person with a particular type of disability to participate in an activity or use a facility available to everyone else because of the staff person's own personal fears and concerns about liability which may be unfounded; by not being aware of available adaptive equipment or not knowing how to operate it; or not being familiar with accessible programs or facilities available).

Recommendation

- Park and recreation agencies should be as committed to programmatic accessibility as they should be to facility accessibility, regardless of whether they receive federal monies which mandate requirements for these. This commitment should also be reflected through the agency's policy statement which should be worded specifically enough to provide guidance and direction to agency staff who will be responsible for implementing it. [P1-F]

House Joint Resolution 204: In 1988, the "Report of the Joint Subcommittee Studying the Outdoor Recreation Needs of the Commonwealth to the Governor and the General Assembly of Virginia" (House Document No. 40) was released. This report recognized the value of recreation to everyone. Recommendation 9 of this report stated, "That the Division of Planning and Recreation Resources [now the Division of State Parks] increase its efforts to make state park facilities and programs accessible to handicapped and disabled persons." Since this study was initiated, the Division has taken the following steps to help promote greater accessibility for persons with disabilities:

- Developed a "Statement of Policy on Accessibility to Persons with Disabilities."
- Provided disability awareness training to Division staff.
- Developed a training program and manual on disability awareness for seasonal and part-time personnel.
- Initiated a survey of state park sites to determine the current status of facility and programmatic accessibility to persons with disabilities. This information will be used to provide accessibility information to the public and to help with establishing priorities for improving access.
- Continued to make improvements on park facilities and programs to increase accessibility.

Senior Adults

The senior adult population is another rapidly growing segment of society. This population also has special needs that should be considered in planning recreational programs, services, and facilities, along with the normal planning process.

Some senior adults do have disabilities and many of the issues and concerns addressed in the previous section also apply to them. Most senior adults, however, 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 (i.e., physical or mental changes, such as reduced vision, hearing, poor balance, low stamina); changes in their living

environment (i.e., 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 concerns, such as the fear of leaving home because of crime targeted at senior adults.

Any modifications made to improve accessibility of 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 recreation planning for this population. Some of these are highlighted below:

- The senior adult segment of society is rapidly growing. Therefore, concerns or needs of this population take on an even greater significance to recreation planners.
- This population has large amounts of leisure time available to them.
- Most seniors have a better than average amount of discretionary income that is available to spend on leisure pursuits.
- Senior adults are living longer life spans than ever before, which means they may be living with even more years of forced leisure/retirement. This also means that the population of older senior adults is growing and they may have some of the disabling conditions that can result from the normal process of aging.
- The construction of planned retirement communities is on the increase. Many of the housing developers for these communities recognize the importance of including high quality recreational areas with these developments because they know that these are key components in attracting senior adults to their complexes. These developments are providing a variety of areas for active/passive recreation and organized/unstructured activities and programs.
- Many senior adults are extremely active in their leisure pursuits and want facilities and programs available to them which are challenging and adventurous. They do not want to be limited to participating only in passive or inactive leisure opportunities.
- The vast majority of senior adults (estimated at 95%) reside in the community. However, some do 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 living situation to a less independent living situation.

Recommendations

Institutional settings should include provisions for residents to participate in outdoor recreation since many of these residents will rarely, if ever, leave the facility where they reside. Therefore, it is even more important that a variety of readily accessible resources and opportunities to enjoy the outdoors are available on site to them, and their families and friends who visit them (i.e., walking/trail areas, shaded comfortable seating areas, picnic areas, multipurpose and active use areas for organized and unstructured recreational activities and sports).

Outdoor recreational facilities are also needed for other types of health, medical, and residential institutions where persons who have temporary or permanent disabilities may be staying or living. Today it is mandatory in facility planning and development to include these recreational facilities and programs if institutions want to market their facilities competitively in the community. In most cases, licensing regulations require recreational programs. [P1-E, P1-F]

- There are specific planning aspects that should be considered when developing recreational facilities for seniors. The need for physical accessibility has already been addressed. Other areas such as safety considerations are equally important to seniors. Safety is important in terms of accidents and falls and in terms of specific crime free design considerations (i.e., adequate lighting; convenient, nearby parking; geographic location in a low crime area of town/city/county; good visibility of entrances/exits and recreational use areas). The location is also important in terms of being centrally located near expected users and public transportation. [P1-E]
- In addition, other specific design considerations should be incorporated in planning and designing indoor and outdoor recreational facilities so that they will be safe and attractive for seniors. Some examples of this are: providing adequate lighting which is glare free; using contrasting colors, which promote good visibility; using smooth, nonslip floor surfaces; providing seating with backrests in shaded areas along paths and trails; elevating the seat of some chairs/benches higher than the standard height used; locating restrooms and parking near recreational use areas such as picnic sites. [P1-E]
- It is highly recommended that recreation providers involve senior adults in planning recreational programs, services, and facilities. The Virginia Department of Conservation and Recreation has a specialist available who can provide technical assistance with recreation program and facility planning. [P1-E, P1-H]

CHAPTER X:
Tourism and Recreation Economics

In 1987, travelers in Virginia spent some $6.1 billion, making tourism the state's largest industry. This industry involved over 29 million person trips and supported more than 158,000 jobs for Virginians. The $6.1 million in expenditures can be broken out in the following manner: $3.8 billion by out-of-state visitors; $1.0 billion by Virginians to Virginia destinations; and $1.2 billion by Virginians to out-of-state destinations. Opportunities to enhance revenue from tourism lie in the development of programs for which Virginians normally travel out-of-state. In 1988, the citizens approved the development of horse racing facilities in the Commonwealth. This will be another attraction in a diversified industry and should result in additional general fund monies. Of particular importance to the Commonwealth and the localities is the fact that the travel expenditures resulted in $305,970,000 of state and local taxes. This is up nearly $22 million from 1985. Cities and counties collected $104 million in local taxes on approximately 34% of the contributions made by travelers.

One of the major reasons for Virginia's popularity as a vacation destination is her blend of recreational and historic sites, natural areas, beaches, and mountains; all of which offer opportunities for various forms of outdoor recreation. Many of these opportunities are the result of resources made available to the public through the efforts of federal, state, and local agencies which have developed a variety of recreational areas. Included are the national parks and forests which provide hundreds of thousands of acres

for everything from walking on a scenic mountain trail, to swimming at a national seashore, or visiting a historic site. Federal sites in Virginia rank third in the nation for recreation attendance, reaching over 26 million visits during 1987.

Virginia's State Park System has sites distributed throughout the state, providing facilities for many of the most popular types of outdoor recreation. Thirty-six facilities are available with an annual attendance of just under four million. Many state parks host festivals each year which attract hundreds of thousands of visitors. Major events occur at Chippokes, Hungry Mother, Claytor Lake, and others.

The impact of state parks on Virginia's economy is significant. It was determined that out-of-state visitors accounted for approximately 20% of state park visitation. The average visitor will spend money for lodging, food and drink, transportation, activities, and miscellaneous items as part of the park visit. The average day use visitor will spend approximately $16.00 per day. The average overnight visitor will spend approximately $55.00 per day. This is money spent in the park, the local community, and at points along the travel route. Thus the revenue generated by day use visitors to state parks was estimated to be in excess of $54 million. In addition, overnight visitors to state parks spent over $25 million. Therefore, Virginia's State Park System alone is currently generating about $80 million dollars annually for the state travel industry; this is only one segment of the total public park and recreation system.

In addition to the Commonwealth's many park and recreation facilities, the Department of Game and Inland Fisheries manages over four million acres of public lands, through cooperative management agreements or direct ownership. These lands are available to Virginia residents and out-

of-state visitors for hunting and fishing. The Department of Game and Inland Fisheries also owns Wildlife Management Areas in which hunting, fishing, and trapping opportunities are offered. Trails are available for naturalists and hikers. Boat ramps are available for launching of private boats. It is estimated that hunters and fishermen generate over $1.0 billion in revenue annually. Nongame activities generate an additional one billion dollars each year.

Virginia has a system of local and regional parks which provide opportunities for all types of recreational activities. This system includes sports complexes for softball, tennis, basketball, and swimming, as well as a variety of programs to meet other recreational needs. These complexes often generate revenues for local economies when used for tournaments or special functions. The softball complexes provided in the Richmond area are used each year for one of the largest softball tournaments in the nation, attracting teams from all over the East Coast.

In addition to the tourist revenues, it has been determined that a major open space unit such as a state, regional, or county park results in a substantial long-term local economic value. The

parks do this in the following ways:

- Through taxes as a result of goods and services sold in the park.
- Through taxes as a result of services and industries being developed outside the park.
- Through the taxes resulting from higher quality residential development around the park.
- Through increased employment in the area. (It is estimated that a typical water oriented state park results in 23+ permanent jobs.)
- Short-term and long-term expenditures for goods and services in the development and operational phases of a park.
- Through expenditures of over $150 per day spent by the average out-of-town visitor in the host community.

These benefits accrue at little cost to the locality in so much as the parks are generally self sufficient in terms of water and waste water services. They generally provide their own law enforcement personnel. Finally, the park provides a resource base for local educational programs. Many times park personnel interpret the resource base and train users of the park facility.

In fiscal year 1986-87, Virginia localities committed over $125 million to public parks and recreation services. Ninety-one percent of the funding came from local sources, 7% came from state sources, and 2% came from federal sources. Statewide, parks and recreation expenditures represented 2.2% of total spending for local services, yet after education and public works, Parks and Recreation Departments returned more revenues to localities' general funds than did all other local services.

Local parks and recreation agencies collected over $20 million in fees and charges, recouping almost 17% of their total expenditures. In addition, parks and recreation agencies reported noncollected revenues of over $3 million in fiscal year 1986-87, spawned by activities facilitated by the agencies.

In 1987, over 34% of Virginia's localities and 13 state parks contracted with the private sector for concession and maintenance services providing tremendous employment and business opportunities within the state. In addition, state and local parks provided seasonal employment for over 9,000 people. State and regional parks are often responsible for increased revenues at nearby retail stores, restaurants, attractions, hotels, and motels.

All of the facilities, acting in concert, are an integral part of tourism and economic growth in Virginia. The need for better promotion of the Commonwealth's recreational resources applies to out-of-state as well as in-state markets, and should be a high priority. When addressing the question of why Virginia residents did not use public recreational resources more often, 53% of the population said they lacked information on these facilities. The travel industry needs to increase its efforts to promote recreational resources in-state. Each Virginian that vacations in-state, and each out-of-state visitor attracted, means significant dollars to the state's economy. Therefore, a concerted effort to assure the development, maintenance, and promotion of this important segment of our tourist industry must be made.

Recreation is big business. In 1984, according to the report of the President's Commission on Americans Outdoors, the American public spent $262 billion. Seventy-six percent of the U.S. adult population participates in spectator activities such as sightseeing, visiting historic sites, zoos, festivals, and attending outdoor concerts and dramas. It is easy to see how these types of activities can positively impact a community's economy. Recreational opportunities were found to influence the location of business, the creation of jobs, and expenditure levels nationally and locally.

Recommendations

- The Department of Transportation should conduct a new Virginia Visitor Survey to provide data on types, destinations, and expenditures trends of the Virginia traveler. This will enable the public and private sectors to develop plans and programs to meet changing needs. [P2-F]
- The Department of Conservation and Recreation should complete an economic impact assessment of outdoor recreation and leisure services for Virginia showing state and local economic impact data. It will provide additional justification for capital investments and programming to meet client needs. [P2-F]
- The Division of Tourism should expand their program to encourage Virginians to travel and visit Virginia attractions. This will increase awareness of the resource base and capture a portion of the recreation expenditures made in areas outside of the Commonwealth. [P2-F]
- The Division of Tourism, the Departments of Conservation and Recreation, Transportation, and Agriculture should develop a series of Virginia Byway brochures to highlight the state's recreational, historic, cultural, and natural features. [P2-F, P2-G]

CHAPTER XI:
Incentives for Open Space Preservation

It has been pointed out throughout **The Virginia Outdoors Plan** that satisfactorily meeting the recreational and open space needs of the citizens of the Commonwealth is not solely the responsibility of government. Rather, it requires a public/private partnership, based on coordination and cooperation. Obviously, government cannot be expected to acquire fee-simple interest in the amount of park and open space land necessary to preserve the natural and scenic heritage, nor can it single-handedly provide the recreational opportunities so essential to the quality of life historically enjoyed by Virginians. Government can, however, encourage private open space preservation and park land dedication efforts through a variety of institutional mechanisms. It is not the purpose of **The Virginia Outdoors Plan** to discuss these mechanisms in detail, but to outline several of the more successful ones.

Possibly the most widely used open space preservation mechanism is zoning. Estate, conservation, flood plain, and agricultural zoning classifications have long protected open space amenities, largely as a byproduct of their primary intended purpose. In several counties, overlay zoning for special resources, (*i.e.*, Scenic Rivers and Virginia Byways) provided added protection to the traditional categories. One rather innovative type of zoning, with provision of park and open space as one of its primary aims, is known as alternate density zoning. This particular mechanism offers an incentive to developers by allowing them to reduce lot size and consolidate lot layout on the more buildable portions of a tract, in exchange for the provision of compensating amounts of open space. This particular zoning option, in concert with a well conceived stream valley conservation program, has been particularly successful in Northern Virginia and has provided thousands of acres of much needed park and open space land.

In recognition of Virginia's expanding population and a corresponding reduction in the quantity and quality of real estate devoted to agriculture, horticulture, forest and open space uses, the General Assembly in 1971, established a special tax assessment program aimed at preserving such land uses. Under the provisions of the "Land Use Assessment Law" (Title 58, Chapter 15, Article 1.1, **Code of Virginia**), a locality may, at its

own option, adopt a program of preferential assessment for lands devoted to agriculture, horticulture, forestry, and open space uses. If the program is adopted, real estate which meets qualification standards formulated by the State Land Evaluation Advisory Committee, is assessed by local officials according to its "use value" as opposed to its fair market value. Such assessments promote the preservation of open space by ameliorating pressures which might otherwise force a property's conversion to more intensive use. There are currently 78 taxing jurisdictions participating in this program. The 1988 General Assembly amended the **Code of Virginia** to provide additional incentives to protect open space systems identified in **The Virginia Outdoors Plan.** The changes include a reduction of the acreage to qualify and a requirement to execute an agreement between the owner and the locality to maintain the property in its current open space condition for a time period of ten years.

In 1966, the Virginia Outdoors Foundation was established by the General Assembly for the purpose of assisting landowners in their efforts to protect and preserve open space. The Foundation is authorized to solicit and accept gifts and bequests of money, securities, or other property or rights in property for the purpose of preserving natural, scenic, historic, scientific, and recreational areas of the state. Under certain conditions, the value of such gifts is tax deductible under both state and federal law, providing a considerable incentive for the donor. Since its creation, the Foundation has accepted 206 scenic easements on over 40,000 acres of land and has acquired another 6,000 acres in fee-simple. It is anticipated that scenic and conservation easements will continue to play an increasingly important role in the preservation of open space land in the future.

The Agricultural and Forestal District Act of 1977 (Title 15.1, Chapter 36, Sections 15.1-1506 through 15.1-1513, Code of Virginia) is yet another institutional mechanism, the implementation of which results in the protection of open space. This program was established in order to provide a means by which agricultural and forestal lands may be protected and enhanced as viable economic and environmental resources of major importance to the Commonwealth. Districts are formed voluntarily by landowners, with the sanction of local governments, in order to relieve unwanted land use conversion pressures through the imposition of development restraints. Although the primary impetus for the Agricultural and Forestal District Act was economic, its implementation is doing much to preserve the pastoral character of the Virginia countryside.

The 1988 General Assembly passed the Conservation Easement Act which enables landowners to record conservation easements with qualified nonprofit organizations. The five institutional mechanisms discussed above provide a variety of incentives for the preservation of Virginia's valuable open space resources. As development pressures continue to increase, it is anticipated that their contribution to the maintenance of the quality of life in the Commonwealth will be even more significant.

CHAPTER XII: Continuing Planning

This chapter identifies the major elements of the Commonwealth's continuing planning process as it relates to the preparation and implementation of **The Virginia Outdoors Plan.** It should be noted that the planning, coordination, and implementation programs outlined in this chapter are either necessary for updating **The Virginia Outdoors Plan** or are major functions in the implementation process. It does not address the more routine planning and coordinating processes discussed in other portions of this document.

(1) **The Virginia Outdoors Plan** is updated on a five-year cycle and is intended to provide specific guidance over a five-year period, with general guidance and long-range projections for 10-15 years. Upon the completion and approval of the **Plan,** a process is initiated to implement its recommendations and begin the collection of data which will lead to the development of the next **Plan.** Table 1 on page 57 depicts the schedule which has been set for the preparation of **The 1994 Virginia Outdoors Plan.**

(2) **Inventory** — A major responsibility of the Department of Conservation and Recreation is the maintenance of an inventory of public and private outdoor recreation resources and facilities in Virginia. This inventory is a critical element in the planning process and is updated inhouse, with major revisions and new computer summaries produced every five years.

(3) **Demand** — Information on the current and future demand for recreation resources and facilities is most important in any recreation planning process. Recreation demand information was collected during the preparation of this **Plan.** Over the next five years, a survey will be initiated and the data collected during that survey will be reevaluated with respect to changes in socioeconomic conditions. This will enable the Department to maintain accurate information on the needs of Virginians with respect to recreation resources and facilities. A new facility demand bulletin will be produced in 1993.

(4) **Water Access** — Water related recreation accounts for nearly 60% of the outdoor recreation activity which takes place in Virginia. Although, for the most part, there are adequate resources to meet this demand, accessibility is a significant problem. Difficulties exist in gaining reasonable access to the many miles of fine beach, tidal waters and rivers. The Chesapeake Bay Program

along with other initiatives over the next five years will involve improving the accessibility to these important recreational resources. Specific activities will include updating existing access information, working out use agreements with private landowners, initiating cooperative programs with public entities, and identifying areas where acquisition and development with public funds is most important.

(5) **Fishing** — Fishing from boats, the shoreline, and piers, is one of the most popular activities in Virginia. Improving water access, particularly for nonboaters, is important. The Department's Division of Planning and Recreation Resources staff will cooperate with the Virginia Department of Game and Inland Fisheries and the Virginia Marine Resources Commission to identify areas where access is most needed and work to expand fishing opportunities.

The 1988 General Assembly created a committee to study **Greenways.** (For a more complete discussion, see page 130.) These are designed to be long distance open space corridors along the state's streams, utility alignments, and other linear features. Within these corridors, you will find the next three elements of the State Outdoor Recreation System.

(6) **Trails** — Trail activities, such as hiking, bicycling, horseback riding, and off-road vehicle use, continue to be popular throughout the state. **The Virginia Outdoors Plan** notes that there is still a shortage of trail opportunities, particularly in or near the major population centers. Through agreements with clubs and organizations, trails may be constructed and maintained at little or no cost to the Commonwealth. Over the next five years, emphasis will be placed on working with trail clubs and other organizations in order to increase trail opportunities on publicly owned lands. Attempts will also be made to negotiate hiking trail construction and use agreements on large privately owned tracts of land, such as those managed by timber corporations. Abandoned railroad rights-of-way and power line corridors will be considered for trail use with management being accomplished through cooperative agreements among private, local, state and federal agencies, as well as private organizations. In addition, the Department will continue its work with other state agencies, localities, and clubs in the development of shared-lane bicycle route maps. Efforts will also be made to locate and open sites for off-road vehicle use.

(7) **Byways** — Virginia's Byway Program continues to grow in popularity. To reach its full potential, the statewide system needs to be designated and appropriate self-guiding tour maps developed. An examination of this approach and the benefits to the state will be undertaken.

(8) **Scenic Rivers** — Virginia's rivers constitute one of her most important recreation resources. Efforts will continue in the evaluation of rivers for inclusion in the scenic river system and in working with the public and private sectors on methods of river protection and utilization. The Department will also continue its program of producing resource plans and recommendations for inland rivers and in acquiring use agreements for canoeing and camping.

(9) **Natural Areas** — Virginia is blessed with a variety of natural resources, many of which are of state and national significance. The Department's Division of Natural Areas Conservation will continue with its efforts to develop a system for identifying and classifying natural areas. In addition, the merits of a landowner notification and natural area registration program as a method of protecting key sites will be considered and implemented if deemed important to the

protection of these areas. Monies will be allocated for the acquisition of significant areas.

(10) **Local Planning** — Good park and recreation plans at the local level are a key element in meeting the outdoor recreation needs of Virginians. **The Virginia Outdoors Plan** is designed to serve as a guide and information base from which localities can draw in developing more specific plans. The Department will encourage the development of local open space and recreation plans and continue to offer technical assistance to localities in the development of these plans. The assistance is based on data generated by the Division of Planning and Recreation Resources, as part of the state's comprehensive recreation planning process.

(11) One of the major reasons listed by Virginians for not utilizing existing recreation resources was lack of information about where or how to use them. The Department will continue its program of developing informational brochures on Virginia's recreation resources and in working with other agencies, localities, and organizations in promoting recreational opportunities in the Commonwealth. It will continue to work with the Division of Tourism to develop programs which will encourage Virginians to visit state attractions.

(12) The Department will continue to monitor trends in the field of recreation and prepare technical assistance reports to assist in providing desired recreational opportunities.

(13) The Department will sponsor workshops, conferences, symposiums, and other meetings to provide a variety of management and resource based assistance. It will work closely with other organizations and agencies to provide advice on technical data needs and to support a coordinated approach to the dissemination of information.

Table 1

Time Schedule Virginia Outdoors Plan

	89	90	91	92	93	94
Publish Virginia Outdoors Plan	X					X
Update Demand Data				X		
Print Demand Bulletin					X	
In-house Inventory Update	X	X	X	X	X	X
Major Inventory Update (Field Check)				X		
Distribute Inventory Printout and Summary					X	
Completed Demand Survey and Analysis		X	X	X		
Initiate Plan Revisions				X		
Compute Updated Needs Analysis					X	
Select Format, Complete Draft of Plan					X	

CHAPTER XIII:
Recreation Planning Regions

To facilitate outdoor recreation planning at the state level, the Commonwealth is divided into 11 recreation planning regions, as depicted on the map on page 60. The regions are based on Virginia's 22 planning districts, and their boundaries coincide with those of the planning districts found within them.

When establishing the boundaries of the 11 planning regions, several factors were considered. First, because **The Virginia Outdoors Plan** is a general plan, it was felt that the regions should be kept fairly large. To make the recreation regions smaller would require more detailed planning and this is the responsibility of the planning commissions in each of the planning districts.

Second, it was felt that the regions should reflect the state's urban and rural distinctions. Regions 1, 2, and 3 are pedominantly urban areas and Region 4 contains the Roanoke/Lynchburg metropolitan areas. The other regions, while including some substantial cities and towns, are, and probably will continue to be, predominantly open and rural. The final factor influencing regional boundaries was the state's physiographic divisions.

Regions are used in outdoor recreation planning to facilitate the analysis of all data on recreation demand, supply, and needs. Although these regions have demands which may be met internally, regions should not be considered as independent of one another. They are highly interdependent in terms of people (demand and needs) and resources (supply). Thus, to meet some of the demand in the urban regions, recreational areas often have to be acquired and developed in nearby rural regions.

Following is the composition of each outdoor recreation planning region:

REGION 1 — NORTHERN VIRGINIA

Planning District 8 (Northern Virginia)

Counties —
Arlington, Fairfax, Loudoun, Prince William

Cities — Alexandria, Fairfax, Falls Church, Manassas, Manassas Park

Planning District 16 (RADCO)

Counties —
Caroline, King George, Stafford, Spotsylvania

Cities — Fredericksburg

REGION 2 — RICHMOND

Planning District 15 (Richmond Regional)

Counties —
Charles City, Chesterfield, Goochland, Hanover, Henrico, New Kent, Powhatan

Cities — Richmond

REGION 3 — HAMPTON ROADS

Planning District 20 (Southeastern Virginia)
Counties —
Isle of Wight, Southampton
Cities —
Chesapeake, Franklin, Norfolk, Portsmouth, Suffolk, Virginia Beach

Planning District 21 (Peninsula)
Counties —
James City, York
Cities —
Hampton, Newport News, Williamsburg, Poquoson

REGION 4 — ROANOKE/LYNCHBURG

Planning District 5 (Fifth)
Counties —
Alleghany, Botetourt, Craig, Roanoke
Cities —
Clifton Forge, Covington, Roanoke, Salem

Planning District 11 (Central Virginia)
Counties —
Amherst, Appomattox, Bedford, Campbell
Cities — Bedford, Lynchburg

REGION 5 — SOUTHWEST VIRGINIA

Planning District 1 (LENOWISCO)
Counties —
Lee, Scott, Wise
Cities — Norton

Planning District 2 (Cumberland Plateau)
Counties —
Buchanan, Dickenson, Russell, Tazewell

Planning District 3 (Mount Rogers)
Counties —
Bland, Carroll, Grayson, Smyth, Washington, Wythe
Cities — Bristol, Galax

Planning District 4 (New River Valley)
Counties —
Floyd, Giles, Montgomery, Pulaski
Cities — Radford

REGION 6 — SHENANDOAH VALLEY

Planning District 6 (Central Shenandoah)
Counties —
Augusta, Bath, Highland, Rockbridge, Rockingham
Cities —
Buena Vista, Harrisonburg, Lexington, Staunton, Waynesboro

Planning District 7 (Lord Fairfax)
Counties —
Clarke, Frederick, Page, Shenandoah, Warren
Cities — Winchester

REGION 7 — NORTHERN PIEDMONT

Planning District 9 (Rappahannock-Rapidan)
Counties —
Culpepper, Madison, Orange, Rappahannock, Fauquier

Planning District 10 (Thomas Jefferson)
Counties —
Albemarle, Fluvanna, Greene, Louisa, Nelson
Cities — Charlottesville

Planning District 14 (Piedmont)
Counties —
Amelia, Buckingham, Charlotte, Cumberland, Lunenburg, Nottoway, Prince Edward

REGION 8 — TIDEWATER

Planning District 17 (Northern Neck)
Counties —
Lancaster, Northumberland, Richmond, Westmoreland

Planning District 18 (Middle Peninsula)
Counties —
Essex, Gloucester, King and Queen, King William, Mathews, Middlesex

REGION 9 — PETERSBURG/HOPEWELL

Planning District 19 (Crater)
Counties —
Dinwiddie, Greensville, Prince George, Sussex, Surry*
Cities —
Colonial Heights, Emporia, Hopewell, Petersburg

REGION 10 — EASTERN SHORE

Planning District 22 (Accomack/ Northampton)
Counties —
Accomack, Northampton

REGION 11 — SOUTHERN PIEDMONT

Planning District 12 (West Piedmont)
Counties —
Franklin, Henry, Patrick, Pittsylvania
Cities —
Danville, Martinsville

Planning District 13 (Southside)
Counties —
Brunswick, Halifax, Mecklenburg
Cities — South Boston

*Chesterfield County, located in Region 2, carries a dual membership.

OUTDOOR RECREATION PLANNING REGIONS

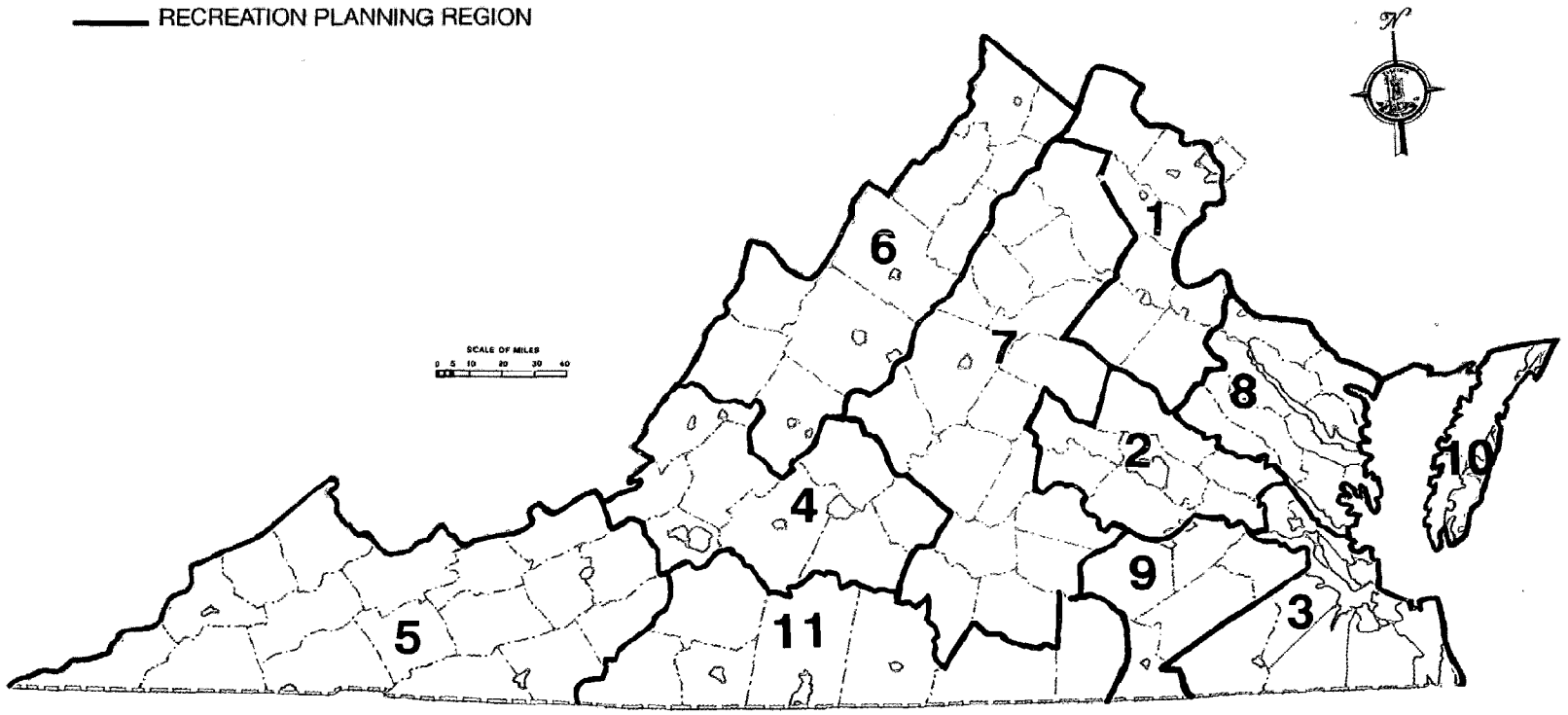
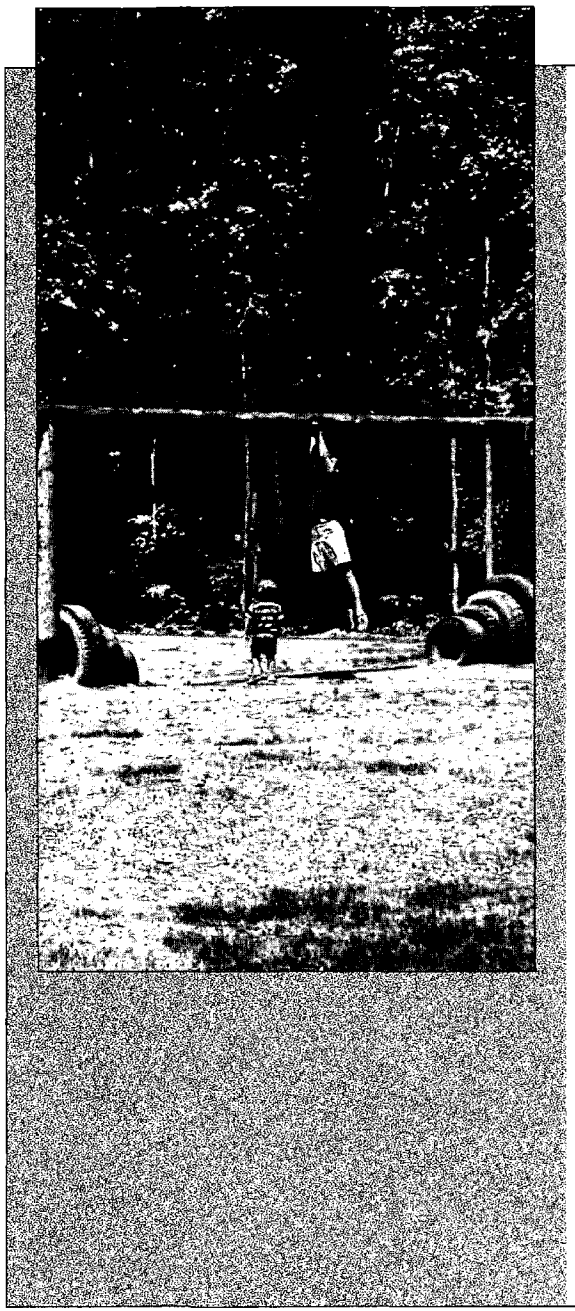


Plate 1



CHAPTER XIV:
Standards for Outdoor Recreation Planning

Introduction

Available recreation areas and facilities determine to a large extent the activities in which people engage. It is not possible for most individuals to acquire or develop recreation areas. Consequently, it has become necessary for localities to assume the lead role in acquiring and developing ample recreation resources.

Before this century, little attention was given to the acquisition and development of areas to serve certain functions. However, the establishment and expansion of recreation programs in many localities made apparent the need for areas and facilities to serve specific uses. In time, the demand for recreation areas and facilities of different types focused on the need for developing suitable space standards.

In the field of planning, the use of area or space standards is basic. It is impossible to develop a long-range plan of recreation and park needs and resources without the use of such a guide. Furthermore, only through standards can proposals for recreation development be evaluated.

The purpose for which standards have been established has been stated by many planning bodies. All such statements have in common the checking of areas and facilities against a working measure or ideal that has been widely recognized at all governmental levels. The dictionary definition of standard, "something established by authority, custom, or general consent, as a model or example," implies that a standard is a model or exact measurement, but most definitions used by agencies and organizations have in common the goal of reaching a desirable level of operation.

Because each locality has unique resources, conditions, and issues, standards must be evaluated in terms of the local situation. Standards must be used judiciously as basic norms, subject to modification as the local needs arise.

Types of Standards

There are four basic types of standards addressed in the **Plan**; these include **Area Standards, Space Standards, Capacity Standards, and**

Maintenance Standards. These standards were selected based on the experience and observation of professional planners and park and recreation authorities and represent reasonable and applicable guidelines for conditions within the Commonwealth. Their definitions, along with descriptions of other related terms, are provided to aid the user of **The Virginia Outdoors Plan.**

Definitions

Area Standards are utilized to determine the number of acres of recreation and park lands needed by a locality. These standards are usually expressed as a minimum number of acres per thousand population.

Space Standards deal with actual site planning and give the amount of land or water necessary for a particular activity, i.e., the number of square feet needed for a tennis court or acres needed for a football field. These standards are usually constants and are not subject to variation.

Capacity Standards relate to the instant, daily, or seasonal capacity of a particular recreational facility. They are used as aids in developing management plans and/or determining the adequacy of facilities to meet local desires. When the capacity standard of a particular facility is known, the planner can then determine (based on local demand) how many facilities are needed. The capacity standards are subject to variations depending on the quality of the facility and its management, i.e., a ball field which is night lighted has a greater daily capacity than one that is not.

Turnover refers to the number of times that a particular facility may be used by different individuals or groups during a day. For example, a baseball field might have a turnover factor of four games per day, since the average warm up and game will last almost two hours. Thus, the planner can reasonably expect to accommodate up to eight teams per field, per day.

An Activity Day is the participation by one person in any recreation activity during any part of one day. If an individual swims, picnics, and plays baseball during the day, that individual has generated three activity days (occasions) of recreation, one each for swimming, picnicking, and baseball.

For the purposes of this document, outdoor recreation activities are divided into active and passive and are defined as follows:

Passive — Activities that allow an individual or group to listen, watch, or enjoy quiet relaxation. Physical activity is at a minimum.

Active — Activities that allow physical participation by an individual or group.

The Application of Standards

Area Standards

The suggested area standard for local recreation and park sites in Virginia is ten acres per thousand population. This standard represents a minimum acreage which should be exceeded whenever possible. The satisfactory application of this standard is contingent on two very important points. First, there are several different types of parks which should be provided and second, these parks must be equitably distributed throughout the locality. Meeting the acreage requirement alone, without proper park type and distribution, does not mean adequate recreational opportunity is being provided.

In meeting the ten acres per thousand 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 units of government will interchange the names of the park types, but their function within the locality remains unchanged.

Space and Capacity Standards

Space and capacity standards are presented in table form on pages 78 through 82. They are utilized to determine the amount of land or water required to accommodate a particular activity within a park complex and to determine how many people can be accommodated during an average day, week, or season. The tables will show the capacity and space standards for the most popular types of outdoor recreational activities in the Commonwealth.

Maintenance Standards

The subject of maintenance standards has been left out of the discussions in **The Virginia Outdoors Plan** in the past. The difficulty with developing a maintenance standard classification is in devising a system that is comprehensive enough to apply to a wide variety of park systems. The application of any given maintenance standard model can contain a myriad of elements. Then additional segments may be added to cover maintenance costs. Due to the wide variety of staffing arrangements and personnel levels, an agency may be using part of the elements from one "maintenance level" and some from another. Also, costs associated with facilities maintenance vary widely due to local labor and material costs.

Despite the almost endless variety of tasks and methods associated with the upkeep of any system of outdoor recreation facilities, the National Recreation and Parks Association (NRPA)

has developed a set of guidelines. **Park Maintenance Standards,** published in 1986 by NRPA was developed after years of research and evaluation. This document covers a multitude of maintenance levels, methods, and practices. Due to the length and complexity of the NRPA **Park Maintenance Standards,** there is no attempt to summarize the document here. However, copies may be obtained by writing the National Recreation and Parks Association, 3101 Park Center Drive, Alexandria, Virginia 22302.

Need for Urban Standards

The heavily populated urban localities have indicated that many of the standards identified here may no longer be applicable to their situation. While standards were never meant to be applied to all situations without modification, it appears that a fresh examination of state recreation standards should be conducted.

Recommendation

- The Division of Planning and Recreation Resources should conduct a standards workshop, in cooperation with the 22 planning district commissions, state universities, local and state planners, as well as other interested organizations. This workshop should take place in 1989 or early 1990 to be of maximum value. [P1-H]

Table 2 summarizes the acre standard, service radius, and minimum size for each of the park types.

Table 2

Summary of Local Park Area Standards

CLASS	ACRE/ 1,000	SERVICE RADIUS URBAN/ SUBURBAN	SERVICE RADIUS RURAL	MINIMUM SIZE
Neighborhood	3	½ mile	1-1½ miles	5 acres
Playground or Playlot	—	½ mile	—	—
Community	3	1 mile	3-7 miles	20 acres
District	4	5-7 miles	10-15 miles	50 acres
Regional	*	25 miles	25 miles	100 acres
State	10	1 hour	50 miles	400 acres
Total Recommended Acres/1,000	20	—	—	—

*Considered at a variable rate over and above local area standard.

The following pages contain schematic sketches of the various types of parks and recreational sites and a list of facilities typically found at each.

Neighborhood Playground or Playlot

+ **Size**
  ¼ acre and up
+ **Service Area**
  Approximately 5 minutes walking time.
+ **Administrative Responsibility**
  Local unit of government
+ **Purpose**
  Usually, the primary function of the playground or playlot is to provide for play of school age children, especially in areas of high density where it substitutes for back yards. These parks, however, can sometimes be oriented toward adult needs.
+ **Character**
  The character of the playground facility 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 provide opportunities for passive recreation. 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

NEIGHBORHOOD PLAYGROUND OR PLAYLOT

1/4 AC & UP

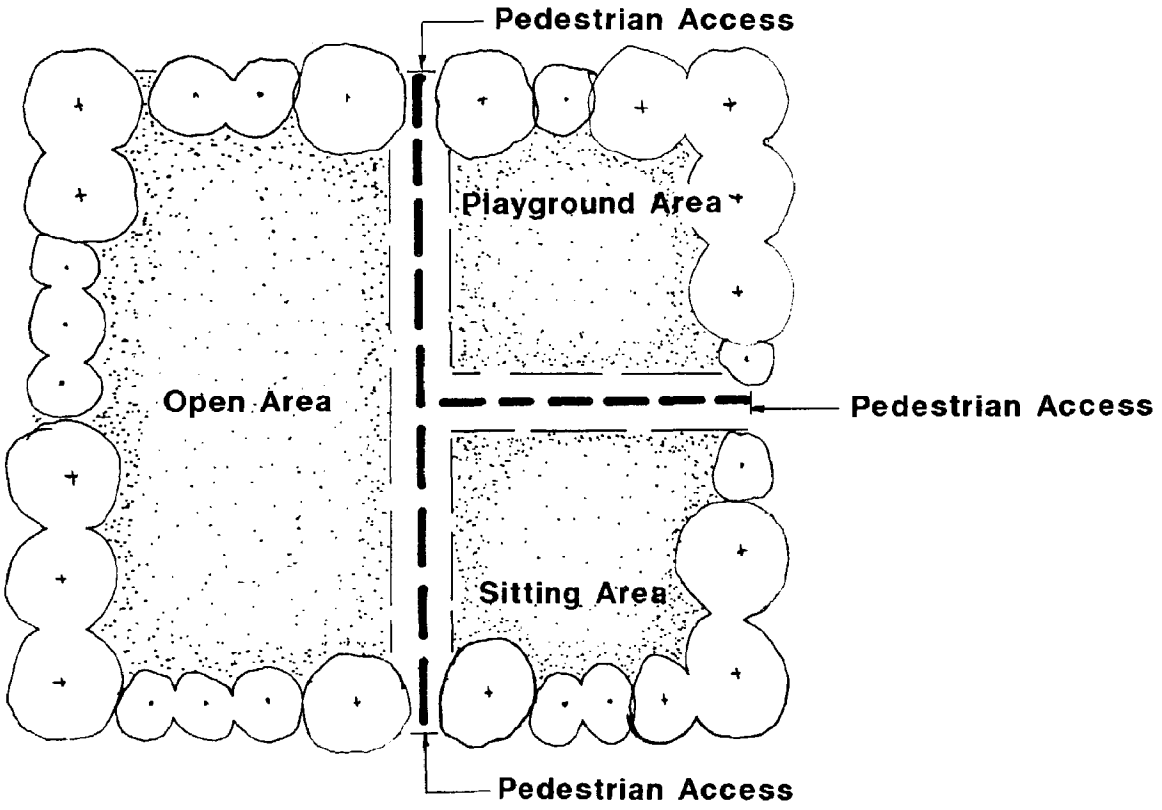


Diagram 1

Neighborhood Park

+ **Size**
  5-20 acres
  Plan at 3 acres/1000 population
+ **Service Area**
  Approximately 5-15 minutes walking distance or ½ mile to 1½ miles driving distance.
+ **Administrative Responsibility**
  Local unit of government
+ **Purpose**
  The primary function of the neighborhood park 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 areas that are level to gently rolling to accommodate the 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 barriers.
+ **Potential Facilities**
  - playground
  - picnic facilities
  - tennis courts
  - ball diamond
  - horseshoe courts
  - shuffleboard courts
  - basketball courts
  - football/soccer field
  - volleyball courts
  - badminton courts
  - walking trails
  - fishing pond
  - swimming pool
  - bikeway
  - recreation center

Playfields usually serve a dual purpose in this type of facility. They provide an area for sports and running games and also serve as open space.

Intensive use areas (the playground area and hard surfaced 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 facilities are provided, site design should encourage pedestrian access to the greatest extent possible.

Rural communities may want to consider deleting neighborhood parks and include their function 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.

NEIGHBORHOOD PARK

5 - 20 AC

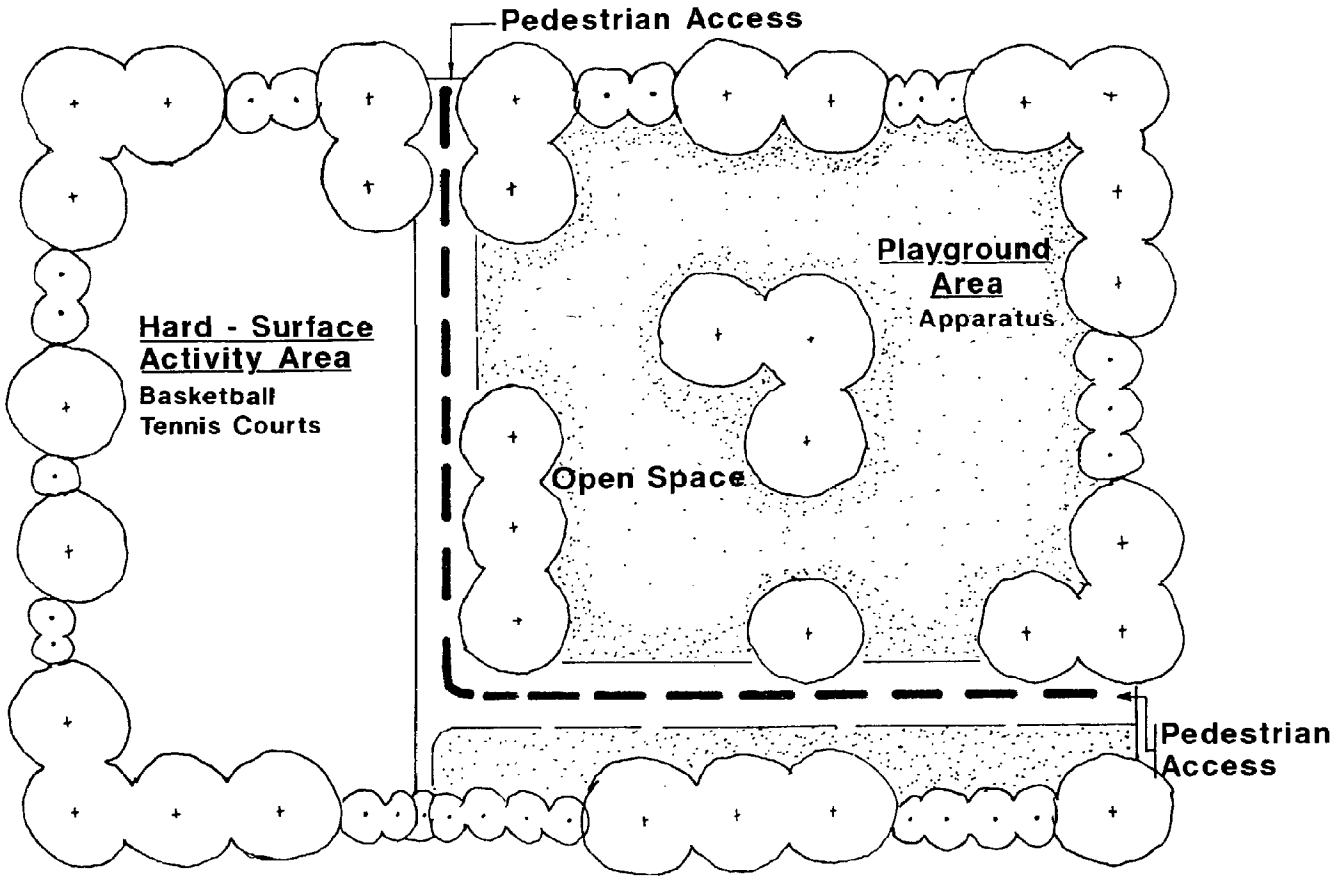


Diagram 2

Community Park

+ **Size**
  20-50 acres
  Plan at 3 acres/1000 population

+ **Service Area**
  Approximately 15 minutes driving time.

+ **Administrative Responsibility**
  Local unit of government

+ **Purpose**
  Community parks should primarily support active recreation 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 area. Such a park should be adaptable to a wide variety of recreational activities. Access is gained by auto, bicycles, or walking.

+ **Location**
  Locate when possible near the center of the community with good access and serviced by a public transportation system.

+ **Potential Facilities**
  - playgrounds
  - picnic facilities
  - tennis courts
  - ball diamonds
  - horseshoe courts
  - beach and swimming area
  - shuffleboard courts
  - basketball courts
  - volleyball courts
  - football/soccer fields
  - trails: walking, hiking, biking, fitness
  - natural area
  - fishing lake or stream access
  - 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 is dependent upon the natural terrain, need for control, and vehicular access. Any existing natural qualities, topography, water features, trees, etc., should be preserved and utilized as natural buffers between activity areas as well as to protect the recreation environment from surrounding, incompatible influences. These natural elements should also be used to provide a space for more passive forms of recreation such as nature walks, picnicking, and fishing.

In the 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 recreation needs of most localities.

COMMUNITY PARK

20 - 50 AC

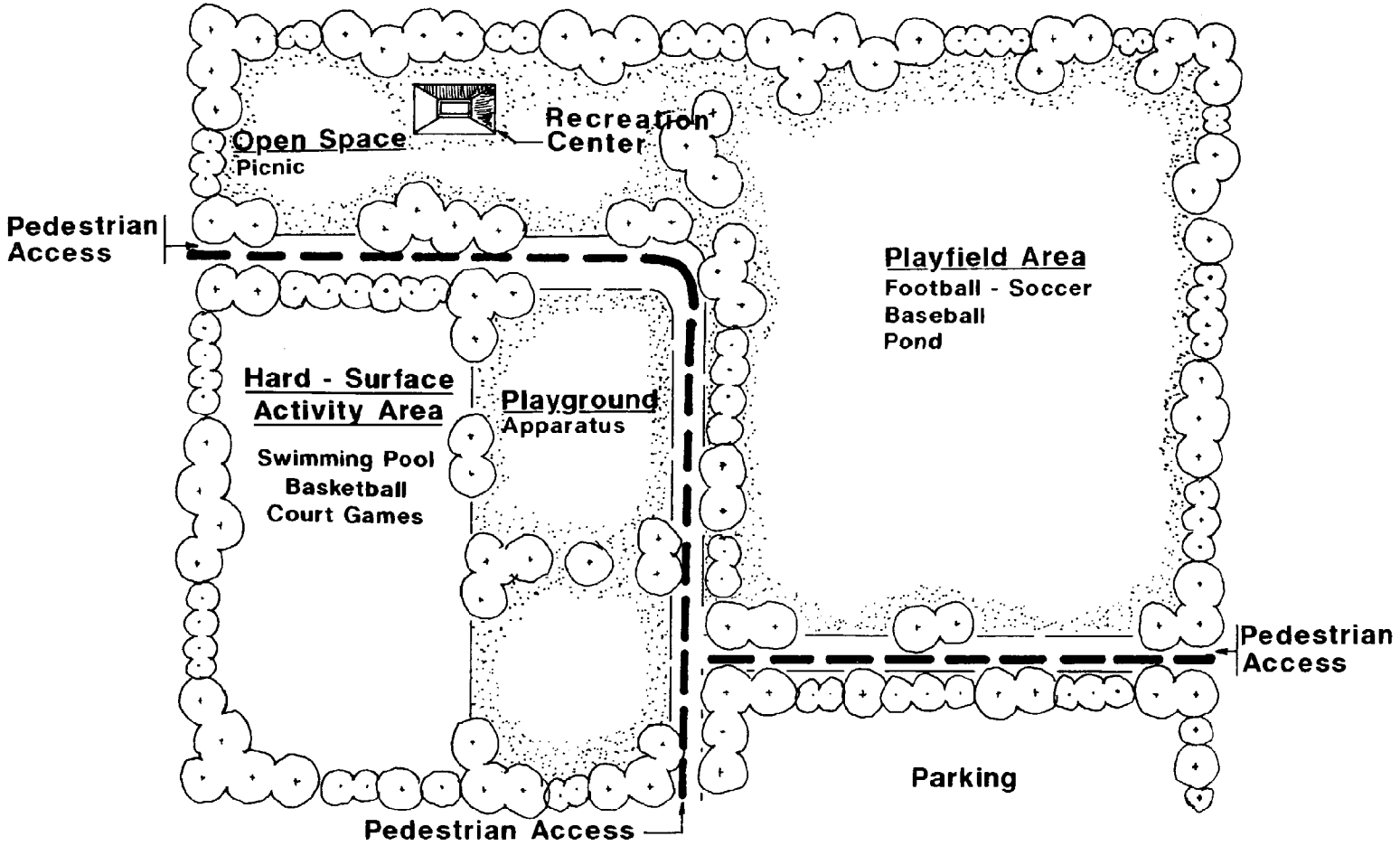


Diagram 3

District Park
(City or County)

+ **Size**
  50-150 acres
  Plan at 4 acres/1000 population
+ **Service Area**
  15-25 minutes driving time
  5-15 mile service radius
+ **Administrative Responsibility**
  Local unit of government
+ **Purpose**
  It 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 to steeply sloping topography. It should be capable of supporting a wide variety of activities with ample buffer and natural areas. Siting on a stream, lake or tidal waterfront is highly desirable. The district park needs to be accessible by automobile as well as by pedestrians and bicycles.
+ **Location**
  When possible, locate the district park so that it is near the center of the service area. It should be on or near a major street providing good access to the facility. In urban or suburban situations, easy access to mass transit is highly desirable. The site should also be accessible by pedestrians and bicyclists.
+ **Potential Facilities**
  - playgrounds
  - picnic facilities
  - tennis courts
  - ball diamonds
  - horseshoe courts
  - volleyball courts
  - basketball courts
  - parking areas
  - recreation centers
  - golf (on larger sites with ample land)
  - trails
  - natural area
  - lake or stream
  - fishing/boating
  - swimming pool and/or beach with a swimming area
  - football/soccer fields
  - shuffleboard courts

DISTRICT PARK

(City or County)

50 - 150 AC

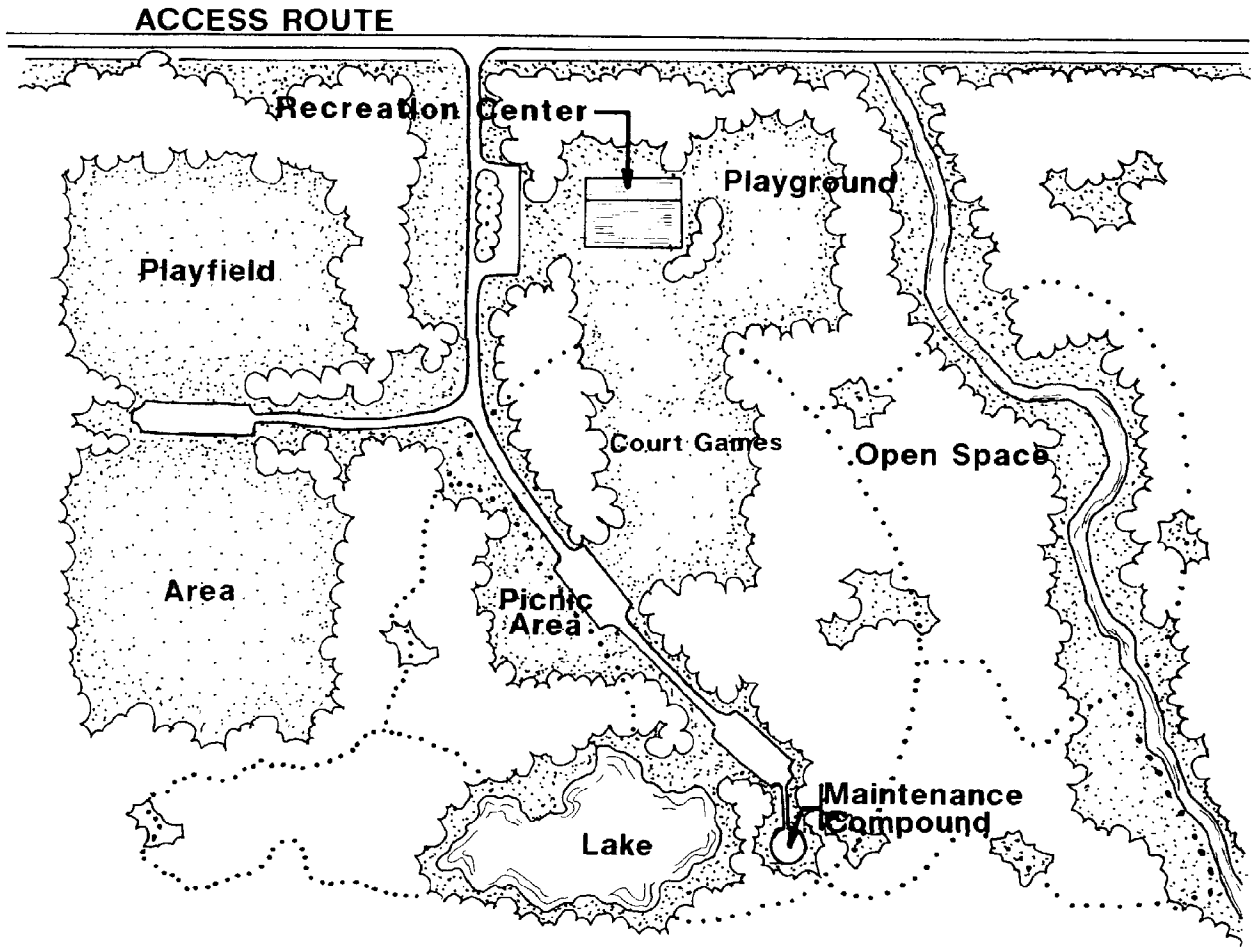


Diagram 4

RECREATION CENTER

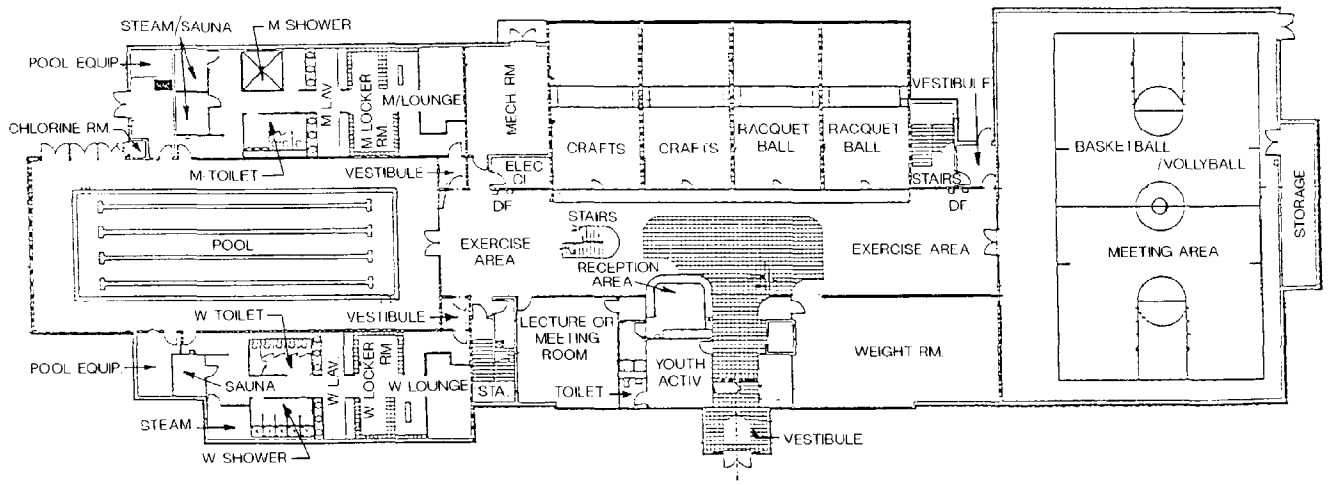


Diagram 5

Recreation Center

The recreation center may be found at the neighborhood, community, district, and large urban parks. At the neighborhood level, the recreation center is usually constructed to be between 15,000 and 20,000 square feet. It generally will include multipurpose rooms, an 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 may also include a gymnasium and locker room facilities.

The recreation center in a larger park that serves a community, district, or city area will be considerably larger, from 20,000-40,000 square feet, and will include several multipurpose rooms, gymnasium, shower and locker rooms, game room, arts and craft area, an auditorium or areas for performing arts, class or club rooms, kitchen, large meeting room, restrooms, office, lounge or lobby, and some specialized areas such as a ceramics workshop or weight room. Frequently, larger centers contain an indoor pool which is used year round for recreational, instructional, and therapeutic purposes. An important consideration in all recreation facilities is to provide adequate storage space.

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.

Regional Park

+ **Size**
  100-500 acres
  No special rate/1000 population

+ **Service Area**
  Approximately 45 minutes driving time.
  25 mile service radius

+ **Administrative Responsibility**
  Single or multi-jurisdiction.

+ **Purpose**
  Regional parks should supplement the community park system with more extensive open space areas and readily accessible passive recreation opportunities.

+ **Character**
  Variety in 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**
  Locate in areas with significant natural characteristics. The regional park should serve several communities.

+ **Potential Facilities**
  - camping, day
  - camping, overnight
  - natural area
  - picnic facilities
  - trails (all types)
  - playground
  - swimming area, (beach and/or pool)
  - boating facilities
  - golf
  - fishing lake

The regional park is designed to provide recreation space for relatively large numbers of people. The road system enables smooth vehicular flow to the various facilities, and a single main access point 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. Up to 80% of the site is left undeveloped, as 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 camping.

The regional park should compliment the facilities provided at other parks and should not be expected to take the place of 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 just enjoying the outdoors.

REGIONAL PARK

100-500 AC

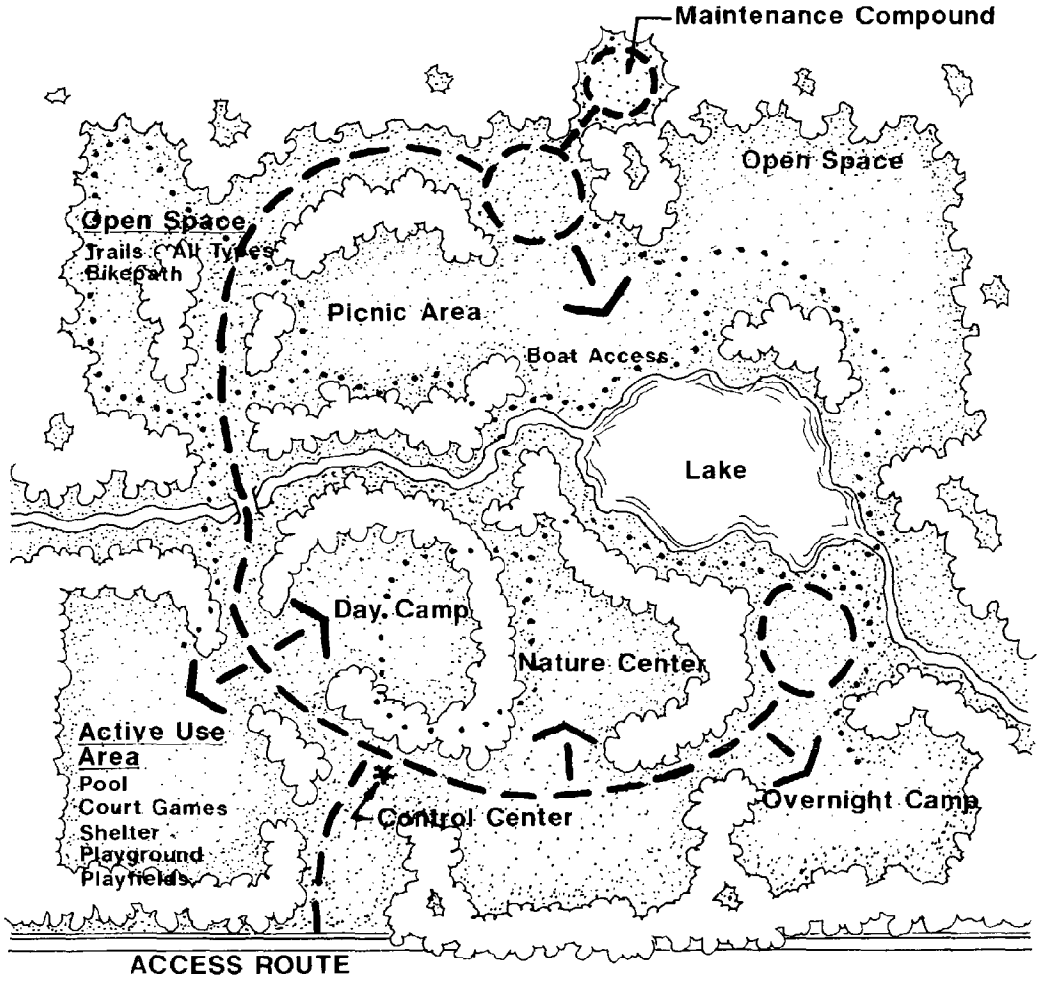


Diagram 6

Greenway

+ **Size**
  Any length, preferably longer than one mile.

+ **Service Area**
  Depends upon the location, size, and significance of the corridor.

+ **Administrative Responsibility**
  Federal, state, or local.

+ **Purpose**
  The greenway is established to protect, preserve, and maintain existing natural and cultural corridors; to link population centers with recreation areas and other population centers; and to provide recreation opportunities along these corridors by utilizing watercourses (streams, rivers, canals, etc.), utility rights-of-way, roads, and abandoned railroad rights-of-way.

+ **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.

+ **Location**
  Watercourses, transportation, and utility rights-of-way between urban areas and significant natural or cultural resource areas.

+ **Potential Facilities**
  - camping
  - picnic facilities
  - trails (all types)
  - natural area
  - boating and facilities
  - fishing
  - access points
  - canoeing
  - winter sports
  - parking areas

GREENWAY

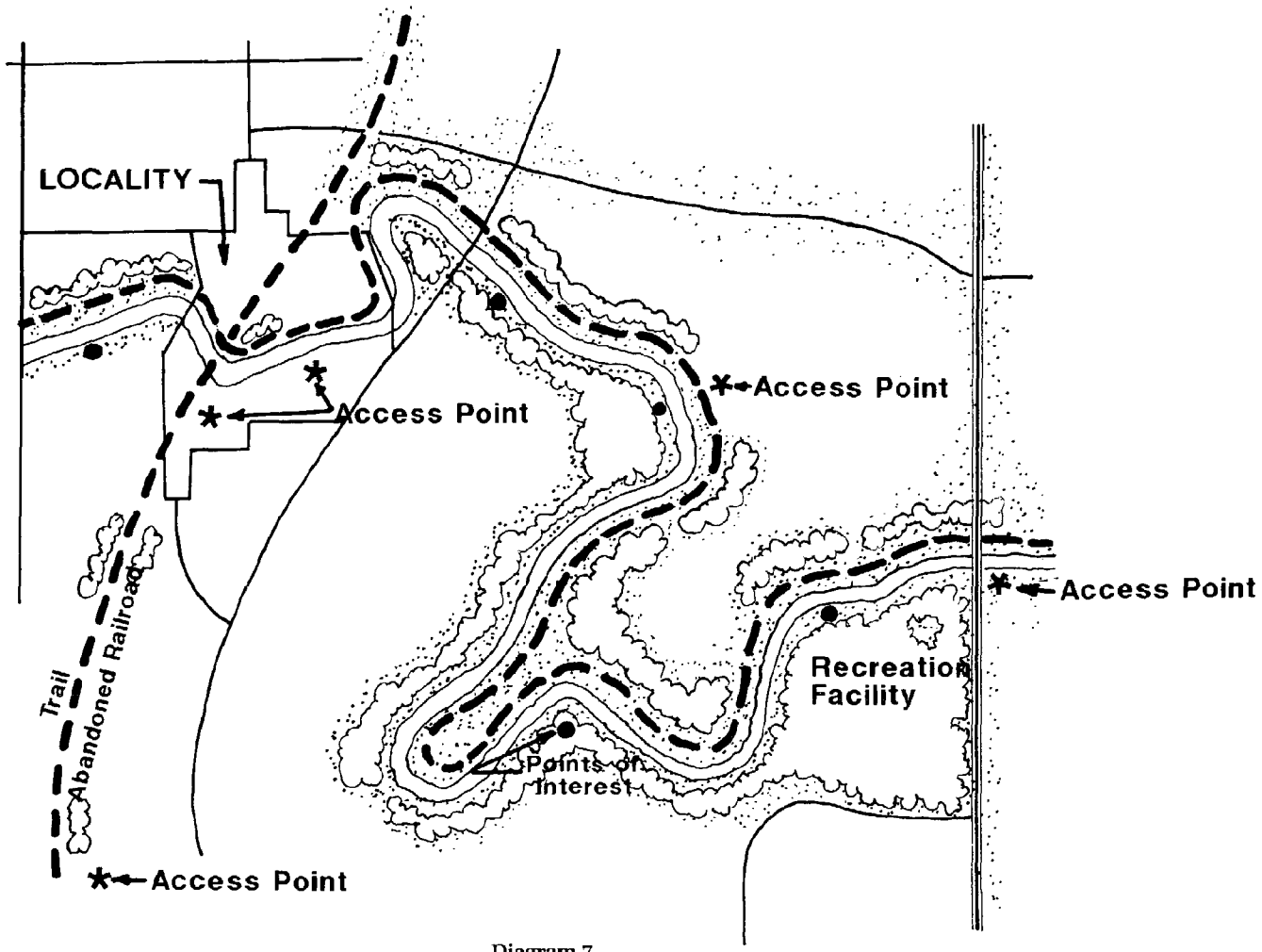


Diagram 7

State Park

+ **Size**
  400-2,500 acres
  Plan at 10 acres/1000 population

+ **Service Area**
  Entire state

+ **Administrative Responsibility**
  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 a major lake, ocean, bay, or river is highly desirable.

+ **Location**
  Usually determined by the location of areas with unique natural features and proximity to population centers.

  - The site should be suitable for meeting a variety of the popular outdoor recreation activities identified in **The Virginia Outdoors Plan.**
  - The site must be consistent with the mission, goals, and objectives of the Department.
  - The site should contain a significant natural feature, preferably water oriented.
  - 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% 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
  - playground
  - trails (all types)
  - canoeing
  - parking areas
  - overnight facilities
  - boating facilities
  - fishing lake and/or stream access
  - swimming pool and/or swimming area and beach
  - intensive facilities

STATE PARK

400-2500 AC

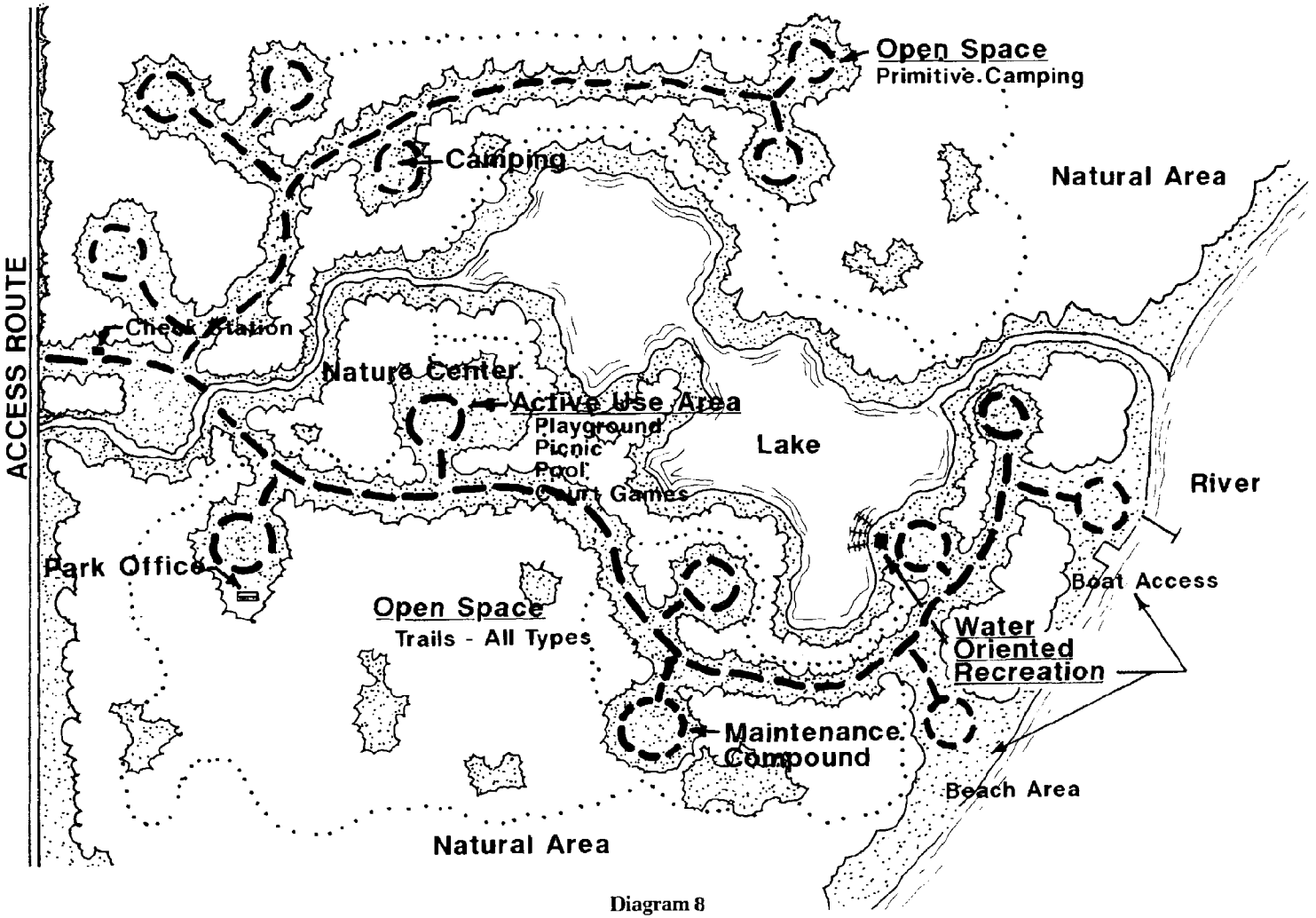


Diagram 8

TABLE 3

Space Standards

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 part of a range complex including rifle, pistol, skeet and trap-buffer area required.
BASEBALL (Diamond) Adult Little League	 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.
BASKETBALL (Court)	60′ x 100′	0.15	10	1/500	Full court—½ 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 multi-purpose 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.
BICYCLE TRAIL	6′ wide x length	0.7 ac/mile	50	1 mile/1,000	Provide bike paths off road where practical—connect schools, parks, and other facilities when possible.
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	12′ x 20′ min.	2 acres	8 boats/hr	see remarks	Provide one ramp for each 40 boats anticipated to use the facility on a design day.
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	5 ac/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/ mile***		***Small streams 10 to 40 feet wide, 4 canoes/mile—medium streams 40′ to 70′ wide will support 8 canoes/mile—large streams 75′ wide or over will support 12 canoes/mile. Width x 5280′ ÷ 43,560□′ = surface acres/mile.
EQUESTRIAN TRAIL	8′ wide with 10′ vertical clearance	1 ac/mile	8/mile	1 mile/5,000	Desirable unit should be four miles—locate away from intensive development when possible. Develop with several possible loops; consider at district, regional, and state facilities.

*Does not include land requirements for support facilities, buffer and parking.
**Suggested Dimensions — Site conditions or intended use may dictate smaller court or field.

TABLE 3 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 shoreline	1 mile shore/ 1,000	Consider on any water body that can support fish population—DGIF suggests 10 acre minimum size where unlimited fishing pressure anticipated. Fishing water is a plus for any community, district, regional or state facility.
Boat		4 ac water/boat with 2 people	.50/acre	4 acre/1,000	
Stream		1 mile/eight 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 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.
HIKING	Variable	5 ac/mile	8/mile	2 mile/1,000	Hiking trails should vary from ½ mile to several miles depending on resource available. Shorter nature trails and walks desirable in urban rights-of-way to connect facilities where possible. Develop as wide a variety of trails as possible.
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 multi-purpose fields.
(Ice Rink)	85′ x 200′	0.4	12	1/30,000	Artificial ice making required—can adapt paved court areas to hold water in colder parts of state for limited winter use.
HORSESHOE (Lanes)	12′ x 50′	0.4	4	1/10,000	Include in neighborhood, community, district, or regional park, consider in neighborhood park; if in neighborhood with high percentage of people over 30—mutiple lane best.
HUNTING					
Upland		12 acre/hunter/ day	.166 hunters/ac		Using a turnover factor of two = 6 acres of resource/hunter.
Waterfowl		12 ac/hunter	.166 hunters/ac		
JOGGING TRAIL	8′ x length	1 acre/mile	40/mile	2 miles/1,000	Can be fitness trail, or multipurpose loop trail. One mile trail used as base.
LACROSSE (Field)	260′ x 500′	3.0	24	1/25,000	Football or soccer fields often used—provided at community park.
ORV USE					Require carefully planned trails, courses or parks—Provide ample buffer from passive activities—Do not consider for fragile environments. Design width of 12′ requires 1.5 ac/mile.
2 Wheel	Variable	10 acre min.	3/mile	1 acre/5,000	
4 Wheel		15 acre min.	3/mile	2 acre/5,000	
PICNICKING	Variable		4/table	10 units/1000	Tie in with other activities—Density higher in urbanized areas.

*Does not include land requirements for support facilities, buffer and parking.
**Suggested Dimensions — Site conditions or intended use may dictate smaller court or field.

TABLE 3 continued

ACTIVITY AND TYPE OF FACILITY	DIMENSIONS**	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POP.	REMARKS
SAILING	Variable	6 acre/boat	2 person/acre	1 acre/1000	Large expanses of open water desirable.
SKIING (Snow)	100′ x length			1 ac. ski slope/ 1,000	Requires northeast facing slopes. On site of 100 acres or more, slopes should be protected by trees. Also requires annual snow fall of 30″ or more, or artificial snow making equipment.
SOCCER (Field)	250′ x 400′	2.25	22	1/10,000	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	18	1/3,000	Provide in complex at neighborhood, community, district, or regional park. Lighting desirable—more than one field per site desirable.
SWIMMING (Pool) Jr Olympic Olympic 75′ x 150′	 45′ x 75′ 0.75	 0.5 750	 225 1/20,000	1/10,000	15 sq. ft. of water per person, based on 3% of population. 100 sq. ft. deck per 35 sq. ft. of water.
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.

*Does not include land requirements for support facilities, buffer and parking.
**Suggested Dimensions — Site conditions or intended use may dictate smaller court or field.

TABLE 4

Capacity Standards

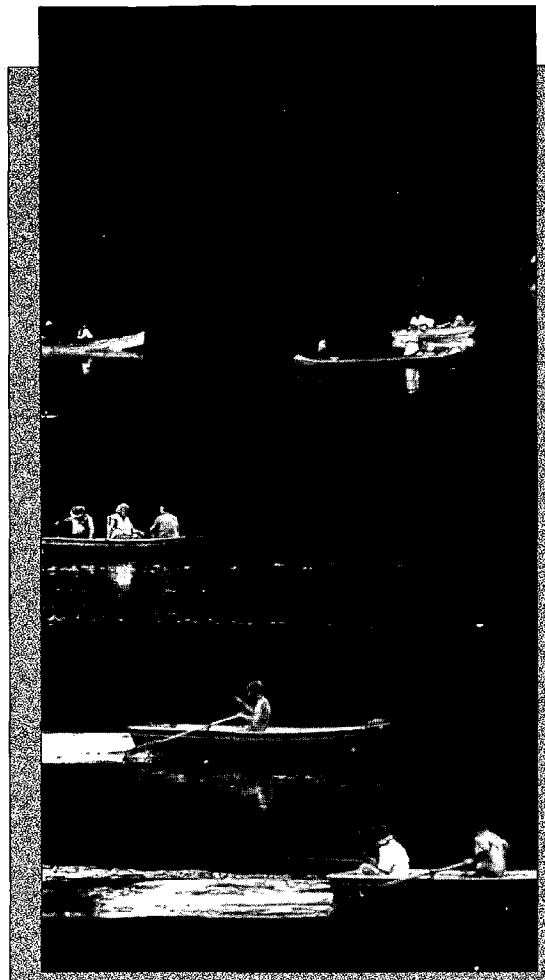
ACTIVITY	INSTANT UNIT CAPACITY*	MAXIMUM TURNOVER	DAILY CAPACITY EXPRESSED IN ACTIVITY DAYS/UNIT	REMARKS
ARCHERY	10	10**	100/range	Ten positions with targets at different distances from baseline.
BASEBALL	18	4**	72/field	
BASKETBALL	10	6**	60/court	
BEACH USE	150	2	300/acre	
BICYCLE TRAIL	40	5	200/mile	When possible, consider bike trails in units of 5 miles.
BOATING, POWER & WATER SKIING	3 people/boat/12 acres	3	.75/acre	
CAMPING				
Tent	3 people x 5/acre	1	15/acre	
Self Contained	3 people x 8/acre	1	24/acre	
CANOEING	2 people x 4/mile	12	96/mile	
EQUESTRIAN TRAILS	8/mile	10	80/mile	
FIREARMS SHOOTING				
10 rifle positions 10 pistol positions	20/range	**1 person/hr	160/day	
TRAP AND SKEET	4/field	2 rounds/hr	64/day	
FISHING				
Bank	10/mile	4	40/mile	***Small stream 10'-40' wide, 4 people/mile medium stream 40'-75' wide — 8 people/mile large stream over 75' wide — 12 people/mile (Use width x 5280' ÷ 43,560□' = surface acre/mile.)
Boat	2 people/boat/4 ac	4	2/mile	
Stream	4 people/mile***	4	16/mile	
FOOTBALL	22	4**	88/field	
GOLF	4/hole x # holes in course	7**	504/18 holes course	

*In team activities, does not include substitutes, coaches, officials, or spectators.
**Assumes 8 hour day; extended hours, night lighting or controlled conditions could increase turnover.

TABLE 4 continued

ACTIVITY	INSTANT UNIT CAPACITY*	MAXIMUM TURNOVER	DAILY CAPACITY EXPRESSED IN ACTIVITY DAYS/UNIT	REMARKS
HIKING	10/mile	6	60/mile	
HOCKEY				
Field	22	3**	66/field	
Ice	22	3	66/rink	
HORSESHOES	4	12**	48/lane	
HUNTING				
Upland	1 hunter/12 acres	2	.166/acre	
Waterfowl	1 hunter/12 acres	2	.166/acre	
JOGGING TRAIL	24	3	72/trail	Use one mile trail as base.
LACROSS	24	3**	72/field	
OFF ROAD VEHICLE TRAIL				
2 Wheel	2/15 miles	10	30/mile	
4 Wheel	1/15 miles	10	15/mile	
PICNICKING	4/table	2	160/acre	Assume a density of 20 tables per acre.
SAILING	3 people/boat/6 acres	2	1/acre	
SKIING SNOW	30/acre	6**	1 lift/200 skiers	
SOCCER	22	4**	88/field	
SOFTBALL	18	6**	108/field	
SWIMMING				
Jr. Olympic Pool	15 square ft/person	6**	1,350/pool	
Olympic Pool	15 square ft/person	6	4,950/pool	
TENNIS	4/court	12**	48/court	
VOLLEY BALL	12	10**	120/court	
WALKING FOR PLEASURE				
(Nature Trails)	25/mile	3	75/mile	

*In team activities, does not include substitutes, coaches, officials, or spectators.
**Assumes 8 hour day; extended hours, night lighting or controlled conditions could increase turnover.



CHAPTER XV:
The Demand for Outdoor Recreation

Two major components of **The Virginia Outdoors Plan** are the Demand Survey, which indicates demand for the 26 measured recreational activities, and the Inventory of Recreational Areas and Facilities, which enumerates the supply of places for these leisure activities to take place. In 1982, the Division of Planning and Recreation Resources entered into a cooperative agreement with Virginia Commonwealth University's Center for Public Affairs to design and conduct a survey and to develop demand data for 26 outdoor recreation activities. The results of this demand survey were used to develop the needs assessment for **The 1984 Virginia Outdoors Plan.** In preparing for **The 1989 Plan,** the Department contracted with Virginia Commonwealth University to update the demand data.

The methods chosen to accomplish this purpose were designed to make use of available sources of data without resorting to a new statewide survey of recreational demand. Among the new sources of information used were the **1987 Report of the President's Commission on Americans Outdoors,** raw data and published results from the 1986 Public Area Recreation Visitor Survey (PARVS) in Virginia by the U.S. Forest Service, and 1980 U.S. Census of Population data together with official population projections furnished by the Virginia Department of Planning and Budget. Updated information on facilities and area inventories was provided by the DPR with input from regional and local recreation and planning agencies, as well as the Virginia Department of Game and Inland Fisheries.

A limitation of the 1982 study was that recreation needs were assumed to originate entirely within a given locality. No allowance was made for the "spillover effect": citizens from areas lacking resources traveling to areas with more abundant resources available. The updated estimates in the current study take this into account, providing separate estimates of demand originating from within a locality, and the net demand (if positive) resulting from predicted

visits to a locality regardless of visitor origins. However, because of a lack of comparable data, it has again been necessary to ignore demands originating from outside Virginia, even though many areas of the Commonwealth experience heavy visitation from other states and from Canada. The caveat that the needs estimated by this study are on the conservative side is still true in 1988, as it was in 1982.

Youth Demand

Another limitation of the 1982 study was that the needs of young people under 12 years of age were not recorded in the statewide surveys of 1980 and 1981. For certain sports activities, youth demand can have a significant impact on the availability of recreational resources for adult and family use. As part of the current study, the Virginia Commonwealth University Department of Recreation, Parks, and Tourism investigated youth participation in sports. (See Table 5) Their estimates were added to the updated 1982 study results to produce a more complete view of the demands being placed on the Commonwealth's public recreational facilities. The activities affected were pool swimming, tennis, softball and baseball, soccer, and football.

In general, estimates of the demands on facilities were increased for these activities. The impact varied from activity to activity. For example, the male beginning age of 14 for tennis meant that youth demand had already been included in the 1982 study, whereas the beginning age of nine for baseball meant that the demands of 9-11 year-olds had previously been ignored. Hence, facility needs for tennis were not affected, but those for softball and baseball were revised upward. Impacts also varied from locality to locality, based on the number of youths in the specified age groups projected for the year 1990. Estimates were based on projections supplied by the Virginia Department of Planning and Budget.

The results of this study are available from the Virginia Department of Conservation and Recreation. Data supporting the results are maintained by the Public Data Resources project at Virginia Commonwealth University. A more detailed description of the analysis procedures follows.

Origin-Destination Model

A major part of the current study was to develop, test, and implement an origin-destination model of recreational demand for the Commonwealth. Such a model serves two purposes. First, it is the basis for estimating "spillover" demands as described above. Secondly, it can be used to help estimate the future impacts of recreational developments. For example, if a new reservoir is planned for a certain locality, it will not only create its own demand in terms of drawing visitors who never enjoyed reservoir recreation before, but also draw some visitors away from other reservoirs located elsewhere. An origin-destination model of demand can help assess the magnitude of these impacts.

Because the available survey data were from 1980 and 1981, the origin-destination model compared survey data on origins and destinations of recreational visitors, by activity, with 1980 Census data on the originating localities. For each of the 26 recreational activities for which data were available from the surveys, the distance traveled by each respondent who participated in the activity was calculated. The surveys recorded the county or city of origin and destination for each activity for each respondent. From a computer mapping file of county and city outlines, a "centroid" location (average latitude and longitude) was calculated for each city and county. These geographic (spherical) coordinates were converted to planar coordinates using the cosine of the middle latitude of Virginia as the estimated conversion factor for each degree of longitude. The results of this operation produce a maximum of one mile per degree longitude of distortion in the extreme northern and southern portions of the Commonwealth. Distances were then calculated by the Pythagorean Theorem [c**2=a**2+b**2] with the following exceptions: (1) distances within the same locality were estimated as ½ the standard deviation of the bounding coordinates; and (2) distances between adjoining localities were set at a minimum as the sum of ½ the standard deviations of each locality. Otherwise, for example, distances traveled within the City of Richmond would be counted as zero, and distances traveled between Bedford County and Bedford City would also be counted as close to zero. The distances thus obtained were fed into a model finding the least-squares regression estimate of the "distance-decay" coefficient for each activity. [By the following steps: divide the distances traveled into distance zones; aggregate visitors by distance zone; take the base-10 logarithm of both number of visitors and distance by zone; and regress the log of visitors on the log of distance.]

The only comparable data available to test the reliability of the distance-decay estimates for these activities in Virginia was provided by PARVS. The Public Area Recreation Visitor Survey conducted by the U.S. Forest Service was taken at selected Virginia State Parks during the summer of 1986. Unlike the 1980-81 surveys of households for the 1982 demand study, PARVS investigated on-site recreational behavior. Normally, one would expect that an on-site survey would produce a more "distance-elastic" estimate of recreational demand. Looking out from a household, one has a geometrically increasing range of choices as one travels farther away from

home, resulting in a less elastic demand pattern for a given activity, whereas the demand for a particular activity in a given park is normally much more "elastic" in the sense that visits drop off more steeply with distance away. Thus, it was expected that visitor origins and destinations from the PARVS survey would exhibit a higher "distance-elasticity of demand" than that shown by the results of the household surveys. However, analysis of the PARVS data showed that distance-elasticity of demand was lower, for all 26 activities sampled, than the elasticities derived from the 1980-81 Virginia household surveys. Possible explanations of this finding might be either 1) that the State Parks in which PARVS surveys were conducted attract visitors from farther away than other areas offering comparable activities, or 2) that self-selection of respondents favored longer distance visitors in the PARVS study. Regardless of why these results occurred, in keeping with the general goal of maintaining a more conservative perspective on outdoor recreational demand, the more conservative (higher) estimates of elasticity derived from the 1980-81 household surveys were retained without modification for use in the model.

Since there were two surveys (the first covering the six-month period of summer recreation and the second covering the six-month period, including winter recreation), and since both surveys included information about many of the same activities, different elasticities were obtained for each activity from the two surveys. In these instances, the following rules were followed: if an activity had many more participants on one season than the other, the elasticity from the season with the most participants was used in the model; if the number of participants was about equal between seasons, the elasticity used in the model was halfway between the estimates for the two seasons.

The model used was:

$$\log w_{ijk} = \log P_i + \log R_{ik} + 0.5 \log A_{jk} - u_k \log D_{ij} \quad [1]$$

Where w is the number of visitors from locality "i" going to locality "j" to participate in activity "k";

P is the population of locality "i";

R is the participation rate of residents of locality "i"in activity "k"

A is the attractiveness of locality "j" for activity "k," measured in units of area or facilities available in locality "j";

u is the distance-elasticity of demand for activity "k"; and,

D is the distance from origin locality "i" to destination locality "j."

The coefficient of 0.5 for attractiveness "A" is based on previous research by VCU researchers, but within the context of the present study may be viewed as arbitrary.

The participation rates "R" were originally taken from the 1982 demand study. They were then compared with participation rates for the nation as a whole recorded in the **Report of the President's Commission on Americans Outdoors.** The commission report listed two levels of participation rates: those for people who participate sometimes; and those for people who participate often or very often. Again, in keeping with the guidelines of making conservative estimates of demand, participation rates for Virginia from the 1982 demand study were evaluated based on these more recent national statistics. The criteria used was that estimated Virginia rates should fall somewhere between the national sometimes rate and the national often or very often rate.

Nearly all participation rates from the 1982 study fell within these limits. A few estimated Virginia rates fell somewhat below the sometimes rates from the national study, and were adjusted upward accordingly. The affected activities were:

Camping — 21% rather than the survey estimate of 19%

Swimming outdoors — 43% rather than 32%

Golf — 10% rather than 7%

Snow skiing — 8% rather than 6%

These adjustments were made proportionally, since different recreation regions of Virginia have different rates of participation in each activity.

Once the figures were determined for distance-elasticity, attractiveness-elasticity, and participation rates, the model was run using equation [1] to arrive at an initial estimate of statewide demand for each activity:

$$W_k = 10^{**}[EEw_{ijk}] \quad [2]$$

The model was then calibrated by the total statewide participation estimated from the 1982 study (U_k) as:

$$S_k = U_k / W_k \quad [3]$$

and the results for each locality recalculated accordingly:

$$v_{ijk} = S_k W_{ijk} \quad [4]$$

These figures could then be used to estimate the total (both locally-generated and "spillover") demand for each activity in each locality of destination, as:

$$V_{jk} = Ev_{ijk} \quad [5]$$

Local and Nonlocal Demands

Finally, the visitor-days to be expected for a given activity in each locality were estimated as the larger of either 1) locally-generated demand, or 2) locally-experienced demand regardless of visitor origins. In the process, a net imported

demand figure was calculated as the difference between locally-generated demand (U_{jk}) and locally-experienced demand (V_{jk}). Note that this is a "net" figure, because even if resources are locally available, some local residents will still travel outside the area to participate in a given activity. Since the purpose of the demand estimate is to assess local needs, demand-exporting localities were assumed to have a net import of zero.

Projecting Potential Activity-Days

Once the model was calibrated, it was used for predicting future needs in Virginia localities. Predicting future needs involved two further refinements of the model. First, population figures "P" used in equation [1] were replaced by official projections for the years 1990, 2000, and 2010. Secondly, some activities were assumed to be growing faster than normal, based on evidence from the **Report of the President's Commission.** For the activities identified as increasing in popularity, participation rates "R" were increased by 1% per decade. Again, this was a conservative estimate of potential demand increases in these selected activities — camping, canoeing, sailing, water skiing, outdoor swimming, hiking, bicycling (to work and for pleasure), tennis, basketball, soccer, ice skating, and snow skiing.

Conversion to Acreage and Facility Needs

Projected activity-days were converted to needed acreage or facilities based on rule-of-thumb standards previously developed by the Virginia Division of Planning and Recreation Resources. The standards are based on a formula in which:

$N = AD/WIS \times DDP/TF \times PCN$;

Where N is the need (in acreage or facility units);

AD is the number annual activity days for the activity;

WIS is the number of weeks in the season for the activity;

DDP is the design-day percentage, i.e., the proportion of an average week's use that occurs on the peak day of the week;

TF is the turnover factor, i.e., how many times during the day the same resource can be reached by other visitors;

PCN is the per capita need (in acreage or facility units) for each visitor during the design day.

The figures used for WIS, DDP, TF, and PCN are the same as in previous recreation demand studies (see Table 6). The figures for AD have been calculated according to the methodology described above. The only exception is for skiing. Skiing needs were reported on an acreage basis in 1984. In the current inventory, skiing supply is reported by number of ski lifts. The daily capacity for skiing was changed from 1 acre/180 skiers in 1984 to 1 ski lift/200 skiers in the current estimates.

Determine Need Gaps

Need gaps were arrived at by a simple subtraction: N - S (need minus supply), with N calculated by the formula above, and S based on the results of updating the acreage and facility supply inventory. This result is the "bottom line" which presents a quantitative estimate of needs for acreage acquisition and facility development in each Virginia locality. Computer printouts have been provided to the Division of Planning and Recreation Resources containing these results along with detailed reports of the intermediate findings on which the results are based. Inquiries concerning any of these findings or results should be addressed to the Virginia Department of Conservation and Recreation.

General Findings of Survey

The **1988 Outdoor Recreation Demand Survey** indicates that Virginians participated in 26 kinds of outdoor recreation activities. Three of the top five, based on percent population participating, are sunbathing, pool swimming, and beach swimming. Together they account for over 20% of the activity days of demand each year. Water resources draw the most recreationists in the state and water based recreation such as boating, sailing, canoeing, and fishing cumulatively represent more than 28% of the total annual activity days. More than 65% of the population participates in one or more of these activities. Picnicking ranks as the third most popular activity with over 42% of the population participating and is often done in conjunction with water based recreation.

America's concern for staying in shape has led to a significant increase in recent years in the number of people who participate in jogging and bicycling for pleasure. The majority of this activity occurs close to home on local streets and sidewalks, with 33% of the population participating and accounts for over 36% of the activity days generated each year.

Eighteen percent of the activity days generated each year are spent playing outdoor sports such as football, soccer, baseball, softball, tennis, and basketball. More than 20% of the population participates in outdoor games. For the most part, these activities take place close to home on improved multipurpose play fields that are part of the local school system or parks and recreation department. Other activities rank as shown in Table 7, page 90.

A survey of the attitudes of people towards recreation was conducted along with the demand survey. It was determined from this survey that 53% of the respondents felt recreation was very important to them, 33% felt it was of some importance while only 14% felt it was not very important. These same respondents, when questioned about their preferences for various types of outdoor recreation facilities and opportunities indicated that smaller, close-to-home parks were preferred to large more remote parks. Over 50% of those responding felt that available funding should be spent improving facilities and developing opportunities at existing parks instead of acquiring more undeveloped land.

When asked why they did not use existing recreational facilities more, the major reasons cited were lack of time, lack of information, overcrowding, and lack of desired facilities. When questioned concerning their willingness to travel in order to participate, it was found that for some of the most popular activities, such as tennis, softball, pool swimming, and basketball, most people were not willing to travel more than fifteen to twenty minutes. Therefore, these facilities should be provided in close proximity to user groups.

Resource oriented activities, however, draw the majority of the participants from over an hour away. For fishing, canoeing, boating, beach use, camping, picnicking, and hiking most users will travel more than one hour. For this reason, planners with a major resource base should take imported demand into consideration. For example, Region 8 is a major importer of power boating, sailing, waterskiing, and canoeing activity. Region 6 imports fresh water fishing, and camping demand. The swimming and beach resources in Region 3 draw sunbathers and swimmers from other regions. On the other hand, Region 1 is a major exporter of hunting demand, as few opportunities exist for hunting in that region.

Demand Assessment for Youth Sports Participation

In the development of a model to assess the potential demand for facilities to support organized youth sports at the community level, several limitations and variables must be considered in describing the accuracy of prediction. The most glaring limitation in developing a predictive formula is the lack of data analysis pertaining to youth participation.

Data relative to the participation levels in youth sports (nonschool) has been provided by a variety of sources: U.S. Bureau of Census, U.S. Department of Interior, and **Sport for Children and Youth.** The breakdown of participation data by variables such as age groupings, geographic influence, economic stature of the community, level of competition, racial differences, type of community, and length of season however, have not been developed.

The Bureau of the Census data projected that the 1984 Virginia population was 5,636,000 individuals of which 1,037,000 or 18.4% of these residents were between 5 and 17 years of age. Of this 1,037,000; 686,000 were between the ages of 5 and 13. A specific census of youth by age (age 1 through 19) has been obtained from the State Superintendent of Education for 1986. By computing the data provided by the superintendent's summary, a differential of 33,579 was noted. This could be attributed to the two-year difference between the reported data.

In regard to youth participation in nonschool sports, a nationwide survey estimated (Martens, "Youth Sport in the USA," **Sport for Children and Youth**) that 35.55 million youth participants were involved in organized sports. It should be noted that the same child can be 10 participants if he or she was involved in that many different activities during the same calendar year.

The following chart provides a projected percentage of the number of youth between the ages of 6 and 18 who were involved with related youth sports in 1984. (Data from Martens, **Sport for Children and Youth.**)

Table 5

Demand Assessment for Youth Sports Participation

Sport	Percent of Youth Involved	Percent of Youth Participating Who Are Male	Male Beginning Age
Baseball	10.06	86.3	9
Football, flag	3.70	72.7	10
Football, tackle	2.80	92.1	12
Soccer	8.70	55.5	10
Softball	10.49	44.5	10
Swimming	8.73	47.1	11
Tennis	5.80	52.1	14

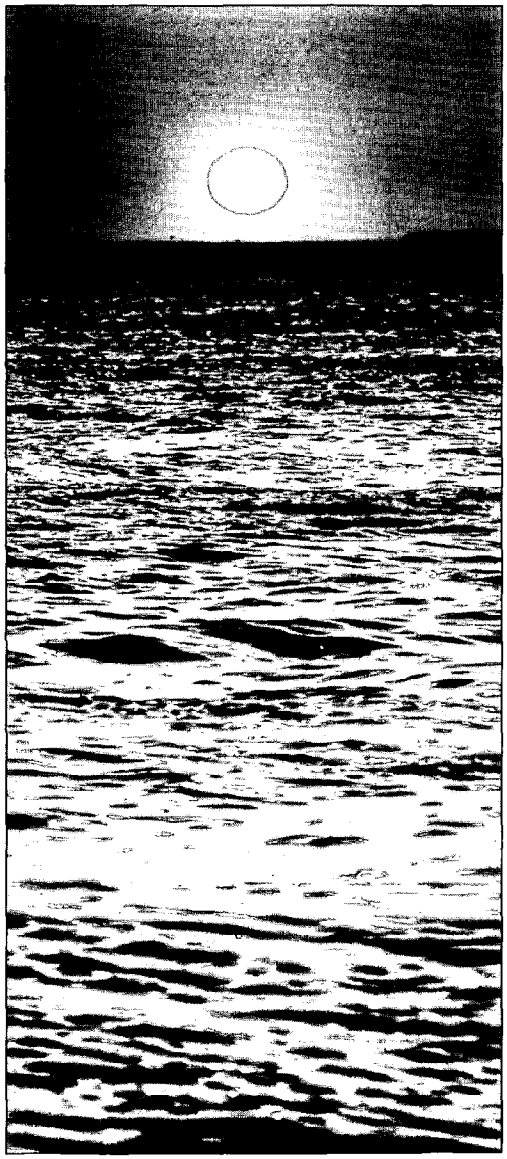
In 1984, it was estimated that 20 million different children (45% of the population available to participate) were involved with an organized youth sport during the year. Based upon the data provided, rough estimates of possible participation in various activities can be attempted. But the estimates must be developed in concert with several major variables that impact local demand.

Several communities (Virginia Beach, Henrico County, and Greensboro, North Carolina) were contacted in regard to the trends and variables that must be considered in assessing facility demand for youth sports.

1. Practice times and game differ by age groups but they must be considered in planning facility utilization. The listed times refer to the average facility consumption needed to support a competitive quasi-private or public league for 10 year-old participants. (Not All-Star or elite teams.)

Baseball		
School wks.	6.0 hours/wk/team	13 wks.
Summer wks.	8.5 hours/wk/team	13 wks.
Softball		
School wks.	4.5 hours/wk/team	13 wks.
Summer wks.	6.5 hours/wk/team	13 wks.
Swimming		
Summer leagues	7.5 hours/wk/team 4.0 hours/wk/meets	13 wks.
Football, tackle	8.0 hours/wk/team	13 wks.
Tennis	No figures available	
Football, flag	5.0 hours/wk/team	13 wks.
Soccer	4.5 hours/wk/team	13 wks.

2. As the age of the participants and the level of competitiveness increase, the times for facility utilization show a significant rise.
3. The sponsorship of youth sports specific quasi-private agencies increases the neighborhood participation rate over the rates associated by public agencies. In planning demand, the type of sponsorship is a critical variable for consideration.
4. Soccer has seen the greatest relative and absolute increase in participation numbers of all the team sports played by youth.
5. The lack of adult volunteers may dictate the consolidation of practice times and heavier utilization of facilities on Saturday and Sunday.
6. The participation of girls in traditional male sports and leagues has not occurred at a level that projects an unexpected increase in youth team sports.
7. Several youth sports utilize the same facilities during similar seasons (football and soccer; softball and baseball) and this creates a peak field utilization during very short and specific time periods (football and soccer practice occur from late August to mid-November after school hours for most practice situations). Instead of 13 weeks times 7 days times daylight hours for practice (1,092 hours), most leagues have 13 weeks times 5 days times 3 hours (4:00–7:00 p.m.) for team practice (195 hours).
8. Socioeconomic and racial factors will influence participation and the selection of activities by youth. It appears as if tackle football remains the most popular outdoor youth activity for black youths in the selected communities; whereas, baseball and soccer are the activity of choice by white youths.



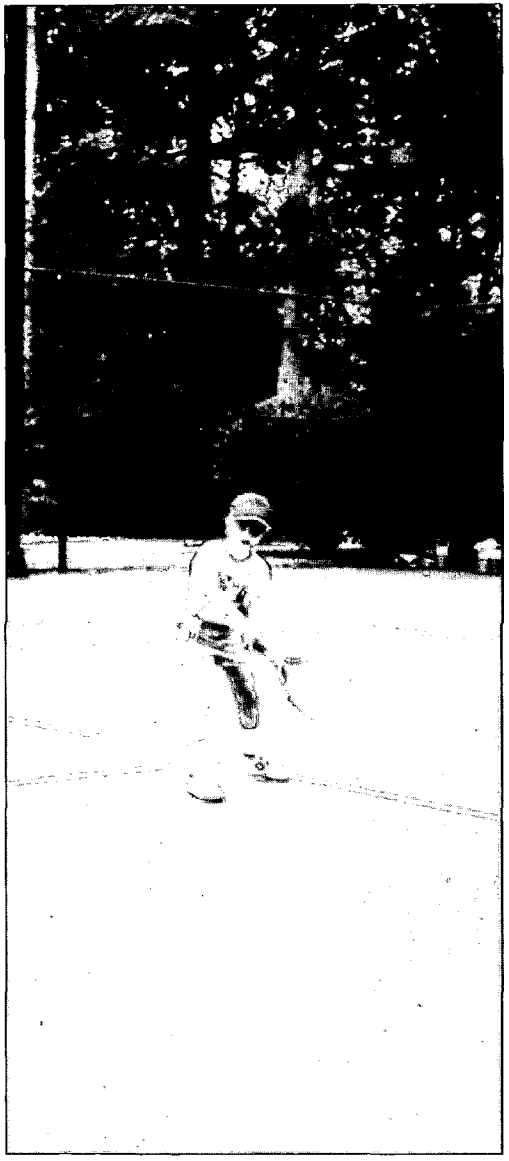


Table 6

Standards for Recreation Resource Needs

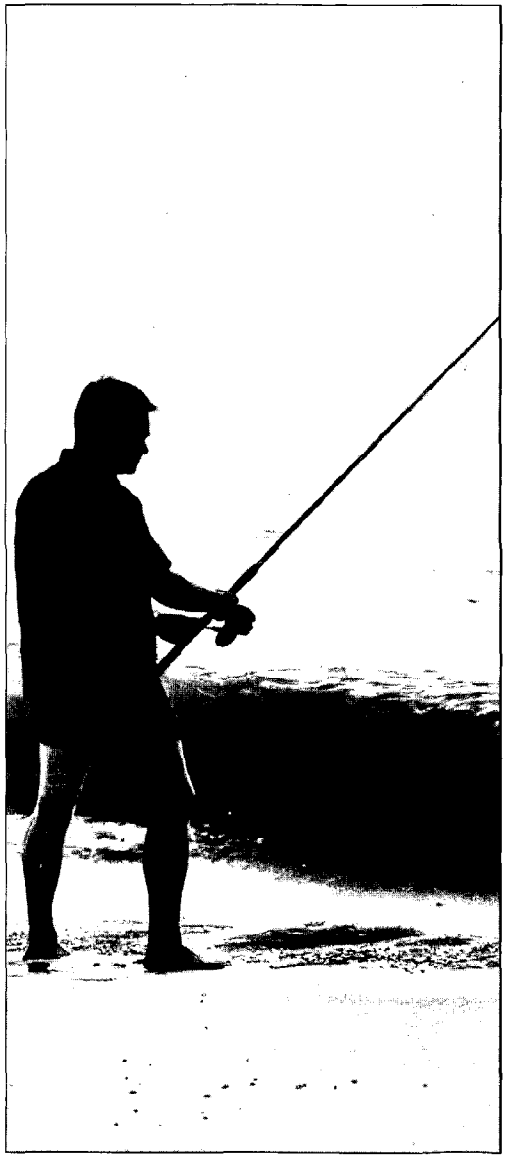
Activity	Weeks in Season (WIS)	Percent on Designed Day (DDP)	Daily Cap (DDP/TFxPCN)	Unit
Basketball	26.00	0.37	100.00	Goals
Beach Use, Sunbathing	20.00	0.43	300.00	Acres
Bicycling, Pleasure	26.00	0.37	200.00	Miles
Bicycling, Work/School	26.00	0.20	200.00	Miles
Camping	26.00	0.46	3.00	Sites
Canoeing, etc.	26.00	0.44	48.00	Miles
Fishing	26.00	0.45	2.00	Acres
Football	20.00	0.37	132.00	Fields
Four-wheel, ORV	26.00	0.38	96.00	Miles
Golf	26.00	0.39	360.00	Courses
Hiking/Backpacking	26.00	0.40	30.00	Miles
Horseback Riding	26.00	0.45	40.00	Miles
Hunting	12.00	0.49	0.17	Acres
Ice Skating	16.00	0.42	300.00	Rinks
Jogging	26.00	0.15	72.00	Trail Miles
Motorcycling, Off-road	26.00	0.38	32.00	Miles
Picnicking	26.00	0.54	8.00	Tables
Power Boating	26.00	0.47	0.75	Acres
Sailing	26.00	0.45	1.00	Acres
Skiing	12.00	0.50	200.00	Ski Lifts
Soccer	20.00	0.37	88.00	Fields
Softball/Baseball	26.00	0.37	120.00	Fields
Swimming, Outdoors	14.00	0.43	300.00	Beach Acres
Swimming, Pool	14.00	0.40	1,350.00	Pools
Tennis	26.00	0.39	48.00	Courts
Water Skiing	26.00	0.47	0.75	Acres

Table 7

Ranking of Activities

Ranked by total number of participants per activity	Percent of population participation	Total annual activity days
1. Swimming, Pool	46.46	75,007,818
2. Swimming, Outdoors*	44.34	25,041,691
3. Picnicking	42.78	12,632,992
4. Beach Use, Sunbathing*	36.56	26,020,588
5. Bicycling, Pleasure*	33.52	49,098,734
6. Jogging	30.77	82,245,248
7. Fishing	27.64	16,203,734
8. Softball/Baseball	24.26	24,903,823
9. Basketball	21.95	41,793,374
10. Camping	21.80	8,884,150
11. Hiking/Backpacking	21.12	7,442,544
12. Tennis	20.78	13,073,834
13. Football	15.52	11,732,053
14. Power Boating	13.34	4,252,889
15. Soccer	10.69	8,321,673
16. Golf	10.66	8,682,787
17. Hunting	10.42	6,953,959
18. Bicycling, Work/School	10.13	16,527,562
19. Four-wheel ORV	9.78	7,042,829
20. Skiing	9.46	2,459,469
21. Canoeing, etc.	8.04	1,928,674
22. Ice Skating	7.90	1,475,878
23. Water Skiing	7.88	5,754,166
24. Sailing	6.60	2,360,022
25. Horseback Riding	6.02	3,404,716
26. Motorcycling, Off-road	5.88	6,759,844

*Mostly along local streets.



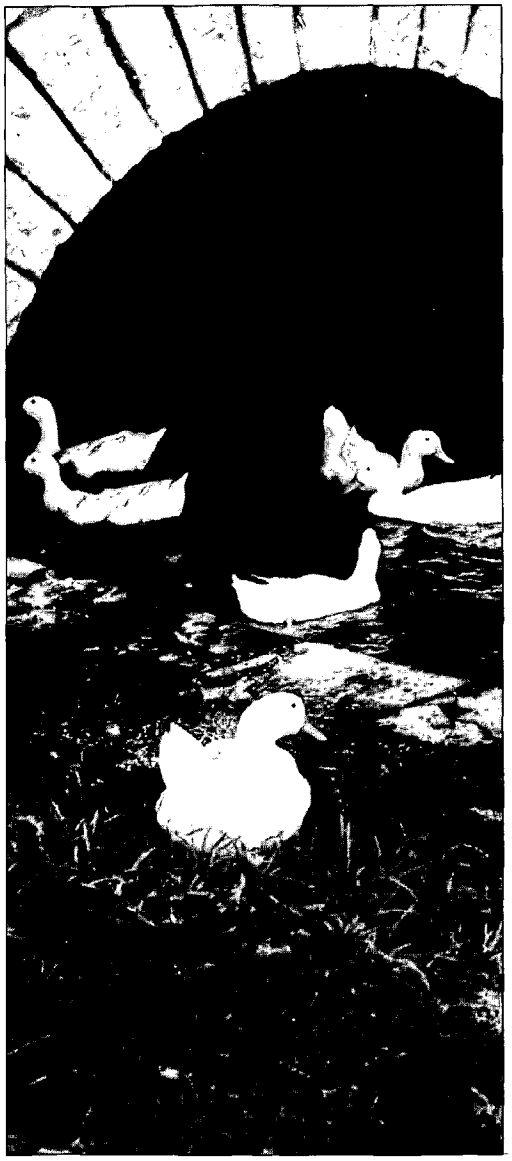


Table 8

Statewide Demand Expressed in Facilities

Activity	Unit	1990	2000	2010	Percent Participation
Basketball	Courts	5,943	6,752	7,603	21.95
Beach Use, Sunbathing	Acres	1,856	2,037	2,215	36.56
Bicycling, Pleasure	Miles	3,491	3,934	4,407	33.52
Bicycling, Work/School*	Miles	634	763	900	10.13
Camping	Sites	52,391	59,947	67,990	21.80
Canoeing, etc.	Stream Miles	680	838	1,007	8.04
Fishing	Acres	140,240	152,200	164,240	27.64
Football	Fields	1,630	1,776	1,924	15.52
Four-wheel, ORV	Miles	1,031	1,111	1,200	9.78
Golf	Courses	360	392	422	10.66
Hiking/Backpacking	Miles	3,816	4,354	4,937	21.12
Horseback Riding	Miles	1,471	1,593	1,698	6.02
Hunting	Acres	1,670,314	1,804,646	1,940,060	10.42
Ice Skating	Rinks	122	154	184	7.90
Jogging	Miles	6,712	7,331	7,966	30.77
Motorcycling, Off-road	Miles	489	521	563	5.88
Picnicking	Tables	32,794	35,950	39,119	42.78
Power Boating	Acres	102,515	111,601	120,762	13.34
Sailing	Acres	40,850	52,410	65,202	6.60
Skiing	Lifts	500	624	743	9.46
Soccer	Fields	1,946	2,350	2,798	10.69
Softball/Baseball	Fields	2,955	3,242	3,523	24.26
Swimming, Outdoors	Beach Acres	2,571	2,856	3,154	44.34
Swimming, Pools	Pools	1,584	1,742	1,895	46.46
Tennis	Courts	4,366	5,033	5,741	20.78
Water Skiing	Acres	138,692	169,922	204,410	7.88

*Mostly along local streets.

Visitor Center

CHAPTER XVI:
The Supply of Outdoor Recreation Areas and Facilities

An inventory of outdoor recreation resources in the Commonwealth is one of the primary components in the development of **The Virginia Outdoors Plan.** The current recreation picture in the state can be developed only after obtaining this information.

A 1987 update of Virginia Outdoor Recreation Areas and Facilities Inventory was carried out in two phases. First, state and federal land managing agencies were asked to provide updated listings of the land areas and facilities they managed in Virginia. Second, each local parks and recreation department or county administrator was provided a copy of the existing inventory and a supply of new inventory forms. Each locality then updated the data for its area to ensure that the inventory was complete and accurate.

In 1987, the Division renewed its cooperative agreement with Virginia Commonwealth University's Center for Public Affairs to provide a more flexible and easily accessible system for handling supply and demand data. With the completion of this project, data is now available to the Department via an in-house computer system. The Division is now able to add new sites as they are acquired, update facilities on existing sites as they are added, and put information on private holdings and facilities into the system as the inventory process becomes more refined.

Inventory information is stored on computer tapes according to recreation region, planning district, locality, and individual site. It is further

Table 9

Statewide Supply Expressed in Facilities

ACTIVITY	UNIT	# OF UNITS
BASKETBALL	COURTS	2,774
BEACH USE, SUNBATHING	ACRES	1,453
BICYCLING, PLEASURE**	MILES	1,478
BICYCLING, WORK/SCHOOL	MILES	-0-***
BOAT ACCESS RAMPS	LANES	1,198
CAMPING	SITES	50,783
CANOEING, ETC.*	STREAM MILES	2,888
FISHING*	ACRES	1,277,520
FISHING PIERS	PIERS	90
FISHING, STREAM*	MILES	2,992
FOOTBALL*	FIELDS	1,406
FOUR-WHEEL, ORV*	MILES	101
GOLF	COURSES	205
GYMS	EACH	303
HIKING/BACKPACKING	MILES	3,710
HORSEBACK RIDING	MILES	1,092
HUNTING	ACRES	1,685,921
ICE SKATING	RINKS	-0-
JOGGING**	MILES	252

***Not additive to other similar resources
**Includes only specially constructed trails.
***Unmeasured, provided on any suitable surface including local streets.

subdivided by administrative agency and use type. This format enables the Division of Planning and Recreation Resources to perform a valuable service to federal, state, and local agencies, planning district commissions, and the private sector, by being able to extract acreage and facility listings and/or totals for each site, type of activity, or administering agency, land class, or any combination thereof. Copies of the inventory printout have been provided to each parks and recreation director. Duplicate copies and summaries are provided to local, state, or federal agencies upon request.

It should be noted that this inventory still does not include many of the private swimming pools, tennis courts, and other facilities normally provided by apartment complexes, housing developments, or motels. While it is true that these

Table 9 (continued)

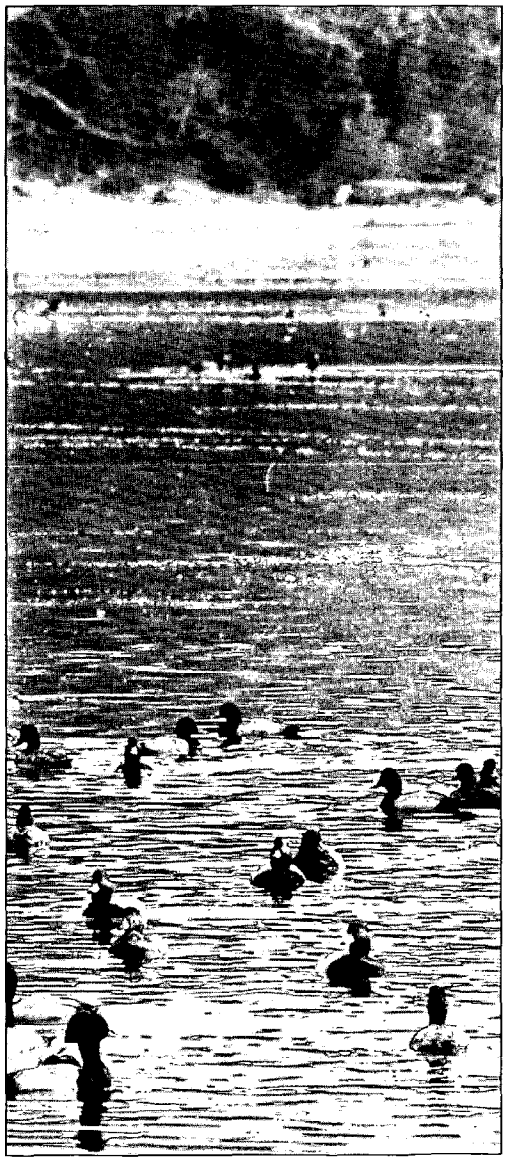
ACTIVITY	UNIT	# OF UNITS
MARINAS	SLIPS	23,823
MOTORCYCLING, OFF-ROAD*	MILES	101
MUSEUMS	EACH	17
NATURE CENTERS	EACH	24
PICNICKING	TABLES	30,958
PLAYGROUNDS	EACH	2,119
POWER BOATING*	ACRES	1,286,179
RANGES, ARCHERY	EACH	199
RANGES, RIFLE/PISTOL	EACH	125
RANGES, SKEET/TRAP	EACH	27
RECREATION CENTERS	EACH	154
SAILING*	ACRES	1,286,179
SKIING	LIFTS	26
SOCCER*	FIELDS	1,406
SOFTBALL/BASEBALL	FIELDS	2,760
SWIMMING, OUTDOORS	BEACH ACRES	1,453
SWIMMING, POOL	POOLS	616
TENNIS	COURTS	3,217
WATER SKIING*	ACRES	1,286,179

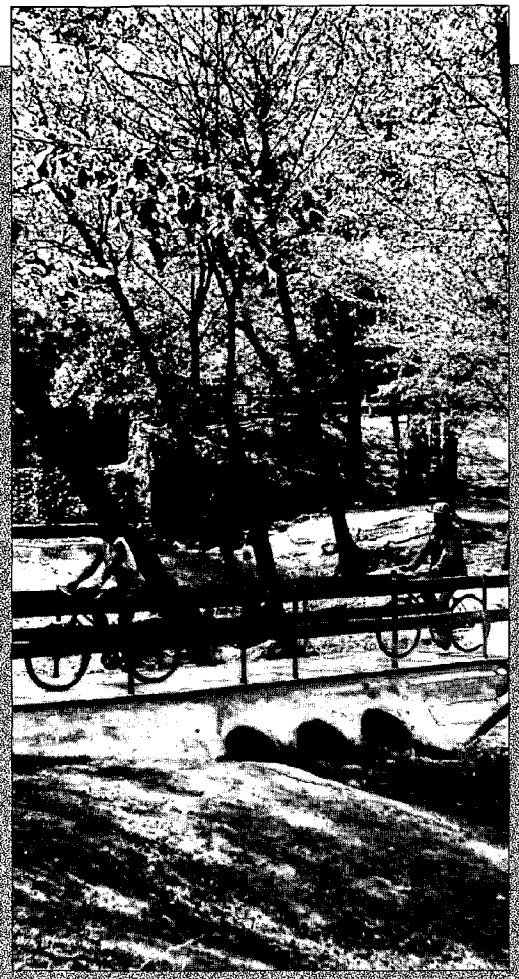
***Not additive to other similar resources
**Includes only specially constructed trails.
***Unmeasured, provided on any suitable surface including local streets.

facilities, and others of similar type, meet some local recreational demand, they are not generally open and available to the public. When evaluating the need for a given facility, however, thought should be given to the availability of these private resources, and to the percent of local demand served by their presence. This should ensure that duplication of service does not occur.

Also, the inventory does not attempt to measure the quality of available facilities. Local factors, such as lighting, accessibility, maintenance capabilities, layout, and design of existing fields, courts, and other elements, will ultimately determine whether inventoried recreation resources can be used to their maximum potential.

Table 9 on the following page summarizes the basic supply of outdoor recreation facilities used in developing **The Virginia Outdoors Plan.**





CHAPTER XVII:
The Need for Outdoor Recreation Areas and Facilities

The purpose of demand and supply studies is to provide data for calculating the need for recreation lands and facilities. The needs picture provides a reasonably accurate guide for directing the expenditure of local, state, and federal resources, and suggests emphasis for other governmental and private acquisition and development programs. An estimate of area and facility needs has been prepared for the state as a whole and for each of the eleven planning regions.

Facility needs do not necessarily reflect activity popularity or activity day demand, but rather the design day concept. For example, some outdoor recreation activities, such as bicycling, require fewer facilities than others because participation is fairly evenly distributed throughout the week and the year. An activity such as snow skiing, on the other hand, requires more facilities per participant because participation occurs primarily on winter weekends.

Present and projected regional and planning district needs were considered in the development of the regional analysis presented in Chapter XX. Some of the ways that the calculated needs can be met include: acquiring and properly developing additional facilities; lengthening use hours by facility lighting; developing mobile programs and equipment; encouraging private facility managers to open their facilities to specific user groups; and coordinating transit systems, road improvement projects and the like to make existing areas more accessible. In addition, incentives should be provided to promote private sector involvement in the development of recreational facilities and services.

Virginia's needs for outdoor recreation can be met only through coordination and cooperation between public agencies and private enterprise. Tables 10 through 13 contain the basic current and projected needs summarizations used in developing **The Virginia Outdoors Plan.** Summary needs data, by locality, is available in booklet form from the Division of Planning and Recreation Resources.

Table 10

Statewide Needs Expressed in Facilities

Activity	Unit	1990	2000	2010	Percent Participation
Basketball	Courts	3,169	3,978	4,829	21.95
Beach Use, Sunbathing	Acres	403	584	762	36.56
Bicycling, Pleasure	Miles	2,013	2,456	2,929	33.52
Bicycling, Work/School*	Miles	634	763	900	10.13
Camping	Sites	1,608	9,164	17,207	21.80
Canoeing, etc.	Stream miles	+2,208	+2,050	+1,881	8.04
Fishing	Acres	+1,137,280	+1,125,320	+1,113,280	27.64
Football**	Fields	224	370	518	15.52
Four-wheel, ORV	Miles	930	1,010	1,099	9.78
Golf	Courses	155	187	217	10.66
Hiking/Backpacking	Miles	106	644	1,227	21.12
Horseback Riding	Miles	379	501	606	6.02
Hunting	Acres	+15,607	118,725	254,139	10.42
Ice Skating	Rinks	122	154	184	7.90
Jogging	Miles	6,460	7,079	7,714	30.77
Motorcycling, Off-road	Miles	388	420	462	5.88
Picnicking	Tables	1,836	4,992	8,161	42.78
Power Boating	Acres	+1,183,664	+1,174,578	+1,165,417	13.34
Sailing	Acres	+1,245,329	+1,233,769	+1,220,977	6.60
Skiing	Lifts	474	598	717	9.46
Soccer**	Fields	540	944	1,392	10.69
Softball/Baseball	Fields	195	482	763	24.26
Swimming, Outdoors	Beach Acres	1,118	1,403	1,701	44.34
Swimming, Pool	Pools	968	1,126	1,279	46.46
Tennis	Courts	1,149	1,816	2,524	20.78
Water Skiing	Acres	+1,147,487	+1,116,257	+1,081,769	7.88

+ = Surplus

*Primarily on local streets.

**In most cases, inventoried as a combined supply. Need could be higher than indicated.

TABLE 11

Recreation Needs 1990 Expressed in Facilities

ACTIVITY/UNITS OF MEASURE	RECREATION REGION										
	1	2	3	4	5	6	7	8	9	10	11
CAMPING/SITES	5,995	8,183	7,541	2,928	1,378	+24	2,236	933	1,580	+3,630	+1,178
FISHING/ACRES	+51,217	+15,541	+129,567	+9,556	12,910	+1,744	+12,485	+442,794	+21,508	+53,003	+17,770
CANOEING, ETC./STREAM MILES	+39	+56	189	+119	+134	+493	+1,011	+33	18	7	2
SAILING/ACRES	+39,966	+17,523	+144,162	+14,176	+5,663	1,079	+14,193	+441,710	+21,297	+422,045	+87,785
POWER BOATING/ACRES	+30,010	+4,501	+124,520	750	+171	4,527	+11,726	+421,508	+16,052	+416,077	+80,857
WATER SKIING/ACRES	+21,672	+4,464	+93,666	3,032	1,889	1,307	+7,233	+405,465	+14,872	+409,710	+71,737
POOL SWIMMING/POOLS	320	160	400	69	49	78	55	13	56	1	13
SWIMMING OUTDOORS/BEACH ACRES	315	234	769	191	228	52	124	45	97	+196	51
BEACH USE, SUNNING/ACRES	305	150	210	64	114	50	56	25	34	+218	30
HIKING, BACKPACKING/MILES	725	257	394	193	51	+72	167	41	168	+9	79
JOGGING/MILES	2,246	1,021	6,807	1,317	813	845	1,122	50	912	54	491
BICYCLING/WORK, SCH/MILES	154	39	144	82	88	60	31	3	6	13	41
BICYCLING PLEASURE/MILES	686	531	1,332	184	19	63	308	81	174	30	159
HORSEBACK RIDING/MILES	21	67	139	70	203	111	49	25	125	2	72
FOUR WHEEL O.R.V./MILES	206	64	235	69	467	202	172	37	45	6	40
MOTORCYCLE OFF ROAD/MILES	88	56	117	85	198	114	18	12	9	6	57
HUNTING/ACRES	205,279	158,712	347,516	+91,955	+121,936	+127,155	129,821	93,718	88,309	7,586	258,073
PICNICKING/TABLES	3,582	2,338	3,780	631	+493	+399	956	391	504	+611	+1,108
GOLF/COURSES	48	3	42	16	10	8	22	7	17	0	16
TENNIS/COURTS	286	332	561	+31	152	17	190	37	130	+2	30
SOFTBALL, BASEBALL/FIELDS	537	24	246	159	+31	84	50	105	80	35	38
BASKETBALL/COURTS	783	464	1,148	499	567	452	474	108	323	62	630
SOCCER/FIELDS	272	26	220	+9	275	15	25	17	90	4	30
FOOTBALL/FIELDS	160	73	+29	264	172	55	134	17	47	4	123
ICE SKATING/RINKS	56	15	19	3	0	9	5	9	3	1	2
SKIING/LIFTS	150	90	101	34	6	67	47	3	29	7	23

+ = SURPLUS

TABLE 12

Recreation Needs 2000 Expressed in Facilities

ACTIVITY/UNITS OF MEASURE	RECREATION REGION										
	1	2	3	4	5	6	7	8	9	10	11
CAMPING/SITES	8,792	9,674	9,555	3,559	2,030	921	2,977	1,713	1,894	+3,373	+728
FISHING/ACRES	+48,649	+13,781	+125,879	+9,116	14,326	+1,272	+11,453	+440,866	+21,220	+52,955	+17,418
CANOEING, ETC./STREAM MILES	13	+37	240	+102	+118	+462	+954	+13	21	9	11
SAILING/ACRES	+36,423	+16,165	+139,048	+13,799	+5,099	2,148	+13,289	+437,531	+20,053	+420,518	+86,747
POWER BOATING/ACRES	+27,337	+2,373	+120,468	1,505	277	4,865	+11,260	+417,777	+15,417	+415,110	+80,317
WATER SKIING/ACRES	+12,729	+201	+77,536	6,007	4,161	1,718	+4,652	+393,584	+12,798	+405,676	+68,812
POOL SWIMMING/POOLS	384	185	447	74	59	88	64	15	59	1	16
SWIMMING OUTDOORS/BEACH ACRES	378	266	936	202	254	63	141	58	109	+188	55
BEACH USE, SUNNING/ACRES	352	169	302	71	131	55	63	35	39	+212	33
HIKING, BACKPACKING/MILES	950	317	503	257	121	31	259	58	199	+6	98
JOGGING/MILES	2,513	1,116	7,388	1,392	854	916	1,218	54	971	54	506
BICYCLING/WORK, SCH/MILES	194	49	169	101	102	70	35	7	8	14	14
BICYCLING PLEASURE/MILES	836	622	1,519	205	48	90	363	91	193	32	169
HORSEBACK RIDING/MILES	39	78	169	78	229	132	75	28	132	2	75
FOUR WHEEL O.R.V./MILES	235	71	256	73	496	212	188	40	45	7	40
MOTORCYCLE OFF ROAD/MILES	100	61	126	89	214	120	20	14	10	6	57
HUNTING/ACRES	243,693	177,907	380,704	+75,599	+111,079	+97,259	152,074	104,837	95,630	9,584	266,773
PICNICKING/TABLES	4,941	2,797	4,612	800	+288	+73	1,199	480	560	+596	+1,050
GOLF/COURSES	60	6	46	19	14	10	25	9	18	0	19
TENNIS/COURTS	460	452	778	2	202	49	267	53	150	0	47
SOFTBALL, BASEBALL/FIELDS	692	68	335	183	+19	104	71	119	94	36	43
BASKETBALL/COURTS	1,004	590	1,473	567	639	511	551	128	365	67	685
SOCCER/FIELDS	445	58	340	23	343	28	52	22	109	4	41
FOOTBALL/FIELDS	225	97	12	283	185	62	155	20	51	4	128
ICE SKATING/RINKS	68	19	24	5	0	12	8	9	4	1	4
SKIING/LIFTS	192	111	123	40	11	86	56	7	31	9	33

+ = SURPLUS

TABLE 13

Recreation Needs 2010 Expressed in Facilities

ACTIVITY/UNITS OF MEASURE	RECREATION REGION										
	1	2	3	4	5	6	7	8	9	10	11
CAMPING/SITES	11,819	11,274	11,694	4,220	2,734	1,923	3,768	2,544	2,233	+3,100	+254
FISHING/ACRES	+46,065	+11,973	+122,207	+8,668	15,710	+768	+10,389	+438,754	+20,908	+52,908	+17,066
CANOEING, ETC./STREAM MILES	72	+14	296	+84	+101	+423	+889	8	26	10	18
SAILING/ACRES	+32,422	+14,655	+133,472	+13,386	+4,488	3,349	+12,255	+432,905	+18,707	+418,841	+85,632
POWER BOATING/ACRES	+24,596	+209	+116,350	2,263	726	5,210	+10,790	+414,014	+14,747	+414,135	+79,770
WATER SKIING/ACRES	+2,489	4,542	+59,849	9,178	6,638	2,173	+1,756	+380,446	+10,507	+401,247	+65,688
POOL SWIMMING/POOLS	449	208	497	81	64	98	73	17	62	1	17
SWIMMING OUTDOORS/BEACH ACRES	440	303	1,109	221	281	73	159	69	119	178	61
BEACH USE, SUNNING/ACRES	400	190	390	74	144	63	74	44	44	207	36
HIKING, BACKPACKING/MILES	1,190	385	624	328	189	141	354	75	237	+2	119
JOGGING/MILES	2,784	1,214	7,970	1,466	903	985	1,314	61	1,035	55	518
BICYCLING/WORK, SCH/MILES	239	59	197	117	116	84	40	9	9	15	15
BICYCLING PLEASURE/MILES	996	721	1,715	230	81	123	421	105	212	33	179
HORSEBACK RIDING/MILES	56	91	198	85	251	151	98	32	140	2	80
FOUR WHEEL O.R.V./MILES	266	79	275	75	530	222	206	43	46	7	42
MOTORCYCLE OFF ROAD/MILES	114	69	137	93	229	128	22	15	10	6	59
HUNTING/ACRES	282,196	197,464	413,889	+59,126	+100,086	+66,520	174,550	116,038	103,375	11,670	275,529
PICNICKING/TABLES	6,298	3,263	5,448	971	+75	256	1,445	569	620	+581	+985
GOLF/COURSES	71	8	57	19	15	13	28	10	18	0	19
TENNIS/COURTS	642	580	1,010	41	255	82	349	67	173	1	68
SOFTBALL, BASEBALL/FIELDS	849	113	423	204	+12	122	91	133	105	37	49
BASKETBALL/COURTS	1,242	726	1,820	637	715	572	630	150	409	72	742
SOCCER/FIELDS	640	92	472	52	422	43	77	30	132	5	55
FOOTBALL/FIELDS	290	123	55	299	201	70	173	25	55	4	131
ICE SKATING/RINKS	80	24	27	5	0	14	10	12	5	1	6
SKIING/LIFTS	238	129	147	49	13	103	65	9	35	10	39

+ = SURPLUS

CHAPTER XVIII:
Outdoor Recreation Systems

The purpose of this chapter is to outline the total outdoor recreation picture in Virginia. This picture is composed of 21 major recreation systems administered by a variety of agencies.

This chapter discusses the role of each system in the satisfaction of outdoor recreation demand and recommends possible ways of providing additional outdoor recreation opportunities.

National Parks

Congress has charged the National Park Service of the Department of Interior with the responsibility for acquiring and managing a nationwide system of superlative natural, historical, cultural, and recreational areas for the perpetual benefit and enjoyment of all people. Initially, units of the national park system were carved from the vast public domain that existed in the West. Expansion of the system to include cultural, historical, and recreational areas and facilities, however, has involved the acquisition and management of significant resources in even the most populated urban areas of the country.

The National Park Service administers 18 units in Virginia, with a total area of 290,791 acres. Although the majority of sites are in the historic category, the greatest percentage of the total acreage is in the natural and recreational classifications. These areas include sites such as Shenandoah National Park, the Blue Ridge Parkway, and Assateague Island National Seashore. In 1976, over 70,000 acres of the 193,000-acre Shenandoah National Park became components of the national wilderness preservation system, to be managed in accordance with the Wilderness Act of 1964. The National Park Service areas in Virginia are depicted on Plate 2 on page 102.

The policy of the National Park Service has shifted from one of acquiring and developing

prime resources to one of improving and protecting existing components of the system. It is extremely important that the Park Service maintain good communication with state, regional, and local units of government in order to assure that the short and long range goals of the Park Service are thoroughly understood. Good coordination is imperative if the recreation resources of the nation and the Commonwealth are to be effectively protected and utilized.

The 1988 Virginia Outdoor Recreation Demand Analysis shows a continued increase in the demand for picnicking, hiking, bicycling, and other day use recreational activities provided at most of the National Park Service facilities in Virginia. National Park Service planners should be aware of this increased demand and consider the addition of picnicking facilities and trail loops for hiking and bicycling at national parks close to large population areas.

Assateague Island National Seashore will continue to feel the affects of increased demand by Virginians for beach use, sunbathing, and swimming. Plans for the National Seashore should be evaluated to determine if additional support facilities are going to be required. They should also coordinate with the regional and local planners to explore the feasibility of a "transit" system that will enable larger numbers of recreationists to visit the beaches without inundating the entire island with private vehicles. Chincoteague National Wildlife Refuge should not be expanded to close beaches or to further limit public use of the areas of the National Seashore.

Recommendations

The National Park Service should:

- Complete acquisition of the Appalachian Trail corridor. [P1-C]
- Complete the planning and construction of recreation areas identified in the Blue Ridge Parkway Master Plan. [P1-C]
- Complete the upgrade of facilities in Shenandoah National Park. [P1-C]
- Protect significant historic lands in the vicinity of Manassas National Battlefield Park (Prince William County) from incompatible development. Within this vicinity is the Cundiff House, Lee's Headquarters, the Lewis House, Longstreet's staging area, Stony Ridge, and other important areas. A feasibility study should be conducted concerning rerouting nonpark visitor traffic around the park. [P1-C]
- Work with trail clubs on the construction of additional loop trails and publish maps and descriptions of each trail in units of the National Park Service (NPS). [P1-C, P2-G]
- Work closely with state and local land use planning agencies and organizations to assure that development adjacent to Shenandoah National Park is compatible with both local and NPS needs to protect sensitive resources and maintain public access. [P2-E]
- The U.S. Department of Interior should revise its current policy concerning Chincoteague National Wildlife Refuge (NWR) and Assateague Island National Seashore by placing a higher priority on the provision of water and beach access for recreation on the National Seashore. Currently, it appears that the needs of the Wildlife Refuge take precedent. [P1-C, P2-E]
- Assist in the development of a horse trail from Lexington to Roanoke by helping to locate the route, provide trail head parking, and provide technical assistance. [P1-C]

NATIONAL PARKS

EXISTING ■ ———

PROPOSED □ - - - - -

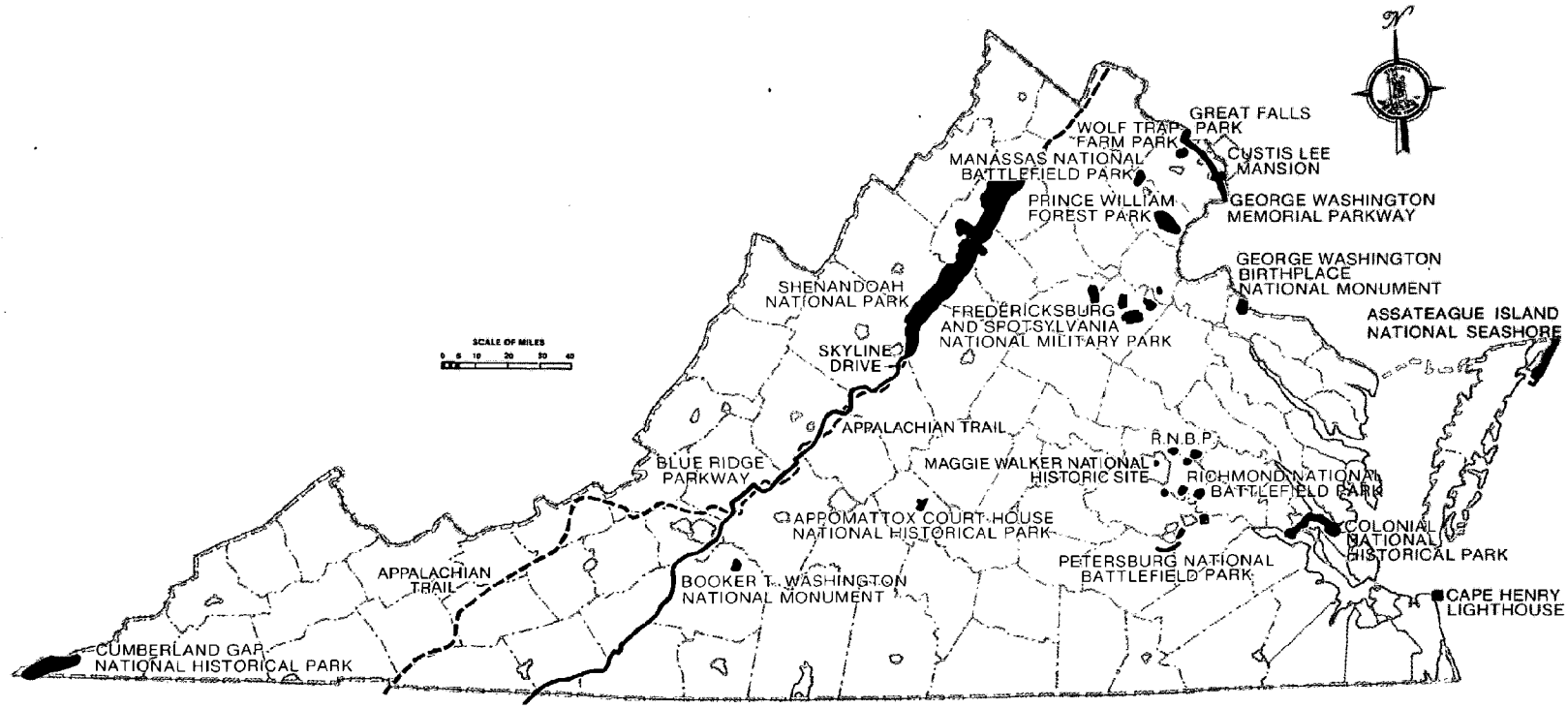


Plate 2

National Forests

The United States Forest Service administers the George Washington and the Jefferson National Forests in Virginia. These forests currently encompass over 1,600,000 acres. They constitute 50% of all public outdoor recreation land in the Commonwealth.

National Forest lands are managed under the multiple-use sustained yield concept, thereby insuring the continual provision of timber, forage, water, wildlife, and recreational opportunities needed by this and future generations. The recreation management objective of the Forest Service is to develop opportunities which will enhance public use and enjoyment of the forest lands.

In recent years, both the George Washington and Jefferson National Forests have significantly expanded their recreation facilities and intensified their management of outdoor recreation areas. Now a focal point for public outdoor recreation, the forests are of major significance in satisfying the increasing demand for dispersed, resource based recreational opportunities.

In 1988 the Chief of the Forest Service developed a new National Recreation Strategy that placed recreation at the same level of importance in planning and management of National Forests as timber, minerals, wildlife, and water. This renewed emphasis on meeting the needs of forest recreationists is taking shape in the Jefferson National Forest under the name "Operation Cornerstone" — the "Cornerstone" in this case being recreation and tourism. The U.S. Forest Service, in conjunction with state, local, and private recreation, tourism, hospitality, and business leaders, is developing a coordinated and combined recreation and tourism marketing strategy for southwestern Virginia that emphasizes the interrelationship of the National Forest with other attractions in the region.

The National Forest Management Act amended the Forest and Rangeland Renewable Resources Planning Act and required the National Forests to prepare new National Forest Land Resource Management Plans which will guide forest management for the next 10 years. Plans are reviewed at least every five years and updated if necessary. Forest planning has become highly sophisticated with computerized geographic information systems, extensive inventories of natural, cultural, and historic resources, and state of the art technology. Citizen input at all phases of the planning process ensures a responsive plan that will address the needs of all users.

The U.S. Army Corps of Engineers transferred management responsibilities for two of its major impoundments to the Forest Service. The North Fork of the Pound Reservoir in Wise County will substantially increase the recreational opportunities in the Jefferson National Forest. Lake Moomaw, located on the Bath and Alleghany County line, is considered one of the finest recreation resources in the state and contributes significantly to opportunities on the George Washington National Forest. Each impoundment has developed camping, swimming, picnicking, and boating facilities and both have excellent potential for expansion.

NATIONAL FORESTS AND WILDLIFE REFUGES

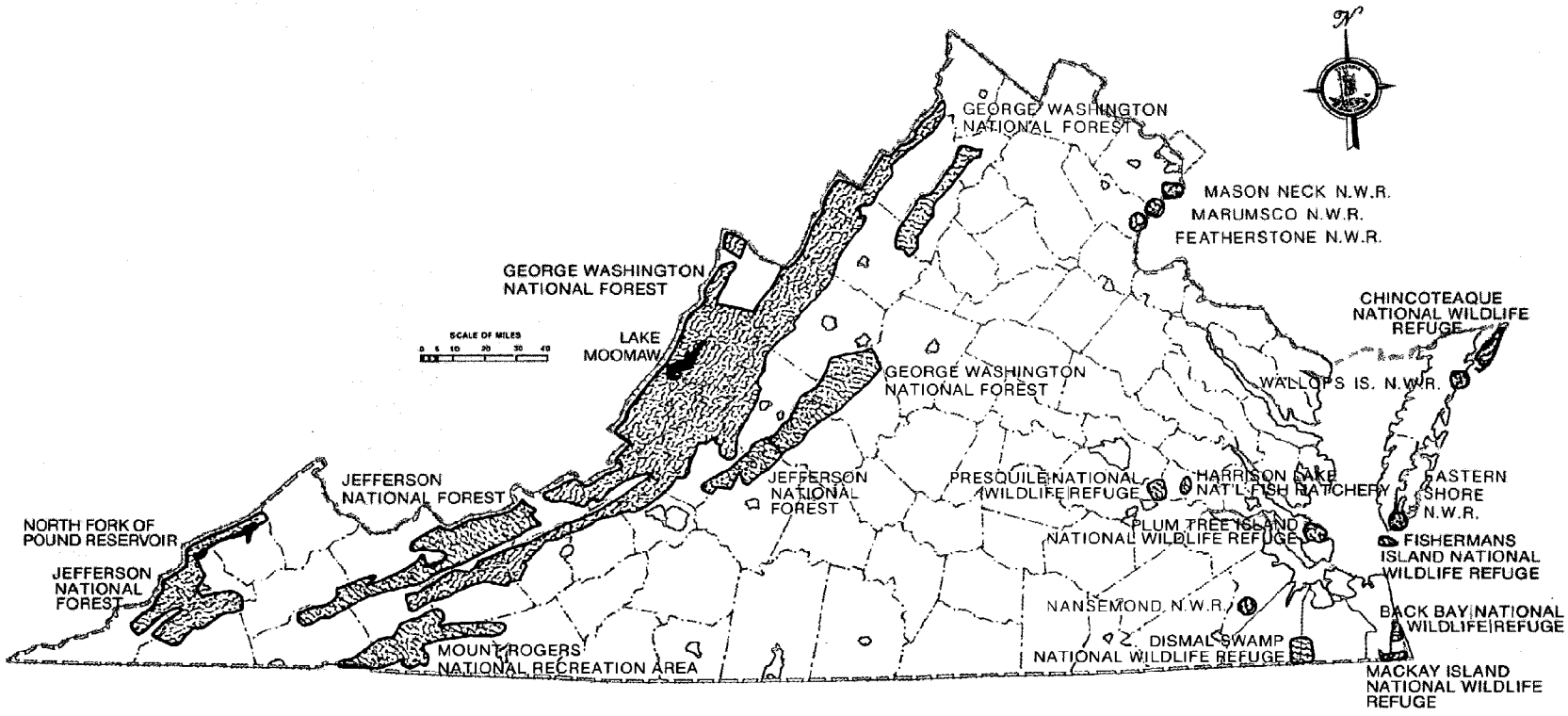


Plate 3

The Mount Rogers National Recreation Area (NRA) in southwest Virginia is a major destination for recreationists from across the country. With the opening of Beartree Recreation Area in 1982, Mount Rogers NRA can now meet substantially more of the ever increasing demand for forest oriented outdoor recreation.

In addition to the facilities mentioned above, the two national forests also include numerous other recreation areas, hundreds of miles of rivers, streams, and trails, 12 wilderness areas, and numerous areas of historical or natural significance. The availability of these areas and facilities has made the National Forests major recreational focal points.

Planning coordination between the Forest Service and the Commonwealth has been very successful. The Department of Conservation and Recreation is given the opportunity to review and comment on all Forest Service composite plans prior to finalization. In turn, Forest Supervisors are invited to review and provide input during various stages of the preparation of **The Virginia Outdoors Plan.** These valuable coordination efforts have facilitated a smooth working relationship, which helps to maximize recreation services, facilities, and opportunities.

Recommendations

The U.S. Forest Service should:

- Provide additional access to water resources on National Forest land. [P1-C]
- Better publicize National Forest recreation opportunities. [P2-G]
- Develop the Mount Rogers National Recreation Area to its planned capacity. [P1-C]
- Designate qualifying National Forest Scenic Byways and study potential of these roads for inclusion in the Virginia byways system. [P1-H, P2-F]
- Complete designation and protection of the Appalachian Trail Corridor within forest proclamation boundaries. [P2-C]
- The U.S. Forest Service's extensive collection of cultural and archaeological data and artifacts should be more fully utilized by researchers, interpreters, and museums in the state. Much of this information can also be used in local and regional land use planning, road and utility corridor identification, and in the environmental review process. [P1-H]
- Manage abandoned railroad rights-of-way for trail use if located in or adjacent to National Forest boundaries. [P1-D]
- Provide a managed system of roads and trails open to off-road vehicles. [P1-C]

National Wildlife Refuges

The U.S. Fish and Wildlife Service (USF&WS) manages 14 units containing 110,000 acres in Virginia, consisting of wildlife refuges and national fish hatcheries. Although the refuge areas are managed primarily to provide habitat and protection for migratory waterfowl, they also provide significant outdoor recreation opportunities. In certain instances, some hunting is allowed on some of the refuges.

In 1987 the U.S. Fish and Wildlife Service obtained title to the Cape Charles Air Force Station at the southern end of Northampton County on Virginia's Eastern Shore. The USF&WS plans to use the developed section of the property for a national training center while undeveloped areas will continue to be managed as a component of the refuge system. The service has also been negotiating to acquire some of the barrier islands in the vicinity of the Cape Charles Refuge in order to expand that unit. They are also proposing to acquire Cedar Island as a future addition to the system.

The USF&WS Refuge System operates under broad goals that show concern for and identify the nation's wildlife resources for the following 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 for wildlife ecology and man's role in his environment while offering refuge visitors safe, wholesome, and enjoyable recreational experiences. The planning for both wildlife and nonwildlife oriented recreation opportunities is approached from the point of view that the amount of recreation provided should be determined by the capacity of an area to provide a quality recreation experience, and not its ability to accommodate quantity.

The service has recently narrowed its interpretation of refuge system goals and objectives, which in some cases has led to limited public access. The USF&WS should make its facilities available for wildlife compatible forms of recreation such as beach use, hiking, birdwatching, photography, fishing, picnicking, and other activities.

The Virginia Outdoors Plan encourages the continued provision of both wildlife and compatible nonwildlife oriented recreation opportunities on the refuges in Virginia. There are at least two significant opportunities where the U.S. Fish and Wildlife Service can consider increasing the availability of its resources for compatible uses by Virginians and out-of-state visitors. These two opportunities are: 1) Back Bay Wildlife Refuge in Virginia Beach is in close proximity to almost one million residents and could assimilate additional use, and 2) Presquile Wildlife Refuge

in the Richmond area is close to a large urban population, but is generally inaccessible to the public.

The 1987 Virginia Outdoor Recreation Demand Update shows a demand for over 50,000,000 activity days of ocean swimming and beach use. Much of this in-state demand is imported into the Hampton Roads/Virginia Beach area from all over the Commonwealth. The USFWS announced a proposal to study the possible expansion of Back Bay National Wildlife Refuge to the north and west. The study area contains almost 8,500 acres, and includes land west of Sandbridge, as well as lands along the western shore of Back Bay. The USFWS must consider the continuation of existing public access and recreation activity and the expansion of compatible recreational opportunity, which can be accommodated within the area without adversely affecting the wildlife habitat. It should also continue to work toward the resolution of access to False Cape State Park. Appropriate access through the refuge will allow the park to accommodate much of the recreation demand directed toward the refuge.

Presquile National Wildlife Refuge on the James River near Richmond offers a unique opportunity for city dwellers to observe wildlife in close proximity to an urban environment. This Refuge is on an island in the James River and, although there are a number of existing internal roads and trails which could accommodate additional pedestrian traffic, the only access to the island is via a ferry operated by the Fish and Wildlife Service. The Fish and Wildlife Service should consider improving the ferry by providing scheduled service to Presquile Island. Additional parking at the ferry landing and an expanded public information program would be helpful in making this resource more accessible and usable by area recreationists. See map on page 109.

Recommendations

The U.S. Fish and Wildlife Service should:

- Improve ferry service to Presquile National Wildlife Refuge. [P1-C]
- Increase the accessibility to wildlife refuges for compatible outdoor recreation activities. [P1-C]
- Complete an equitable land exchange at False Cape between the Department of Conservation and Recreation and the U.S. Fish and Wildlife Service which will allow appropriate wildlife management while increasing recreational access to False Cape State Park. [P1-B, P1-C]
- Work with the National Park Service to ensure that as much of the Assateague National Seashore as possible remains available for the public's recreational use. [P1-C]
- Move to implement the alternatives identified in the Master Plan for the Great Dismal Swamp National Wildlife Refuge. The environmental review process for this plan was completed in 1987. The USF&WS full management alternatives direct a number of actions that are aimed toward wildlife and public benefits. [P1-C]

Other Federal Areas and Programs

In addition to those areas already discussed, federal agencies administer a variety of other areas and programs which contribute to the outdoor recreation picture in Virginia.

Other agencies of the federal government administer over 426,000 acres of land and water in the Commonwealth. Of this total, Flannagan, Kerr, and Philpott reservoirs, operated by the Army Corps of Engineers, make the greatest contribution to Virginia's recreation picture. These reservoirs provide 35,000 acres of land and 64,000 acres of water, for a total of 99,000 acres of recreational areas. Traditionally, Corps projects were designed for navigation and flood control. However, broadened legislative authority now requires that full consideration be given to multiple purpose developments including recreation, fish and wildlife conservation, hydroelectric power, water supply, and preservation and enhancement of natural beauty. Beginning in 1982, the Army Corps of Engineers turned over operation responsibility for two of its reservoirs, North Fork of the Pound and Lake Moomaw, to the U.S. Forest Service. These reservoirs are within the boundaries of national forests.

The U.S. Army has nine installations in Virginia, encompassing over 188,000 acres. Fort A.P. Hill and Fort Pickett, two of the larger posts, have a combined acreage of 154,000. Of this total, some 122,000 acres are open to public hunting by special permit. Both installations have numerous small lakes and ponds which, when the military mission of the post does not require their closure, are open to the public, subject to post regulations and user fees. These two installations are primarily used for reserve training. However, at times, post recreation facilities are made available to surrounding communities when there are no conflicts with troop recreational activities or training. The other army installations encompass almost 34,000 acres of which nearly 1000 acres are designated for outdoor recreation use by military personnel, dependents, and guests. The U.S. Navy has nine installations in Virginia, totaling about 48,000 acres. Of this total, over 200 acres contain outdoor recreation facilities.

The U.S. Marine Corps operates the Quantico Marine Base in Prince William County. It is the policy of the base to allow a percentage of all hunting and fishing permits on the 54,000 acres to be made available to the general public.

This site is probably the closest available hunting lands to the heavily populated Northern Virginia area. The remaining military installations in Virginia consist of an air force base, an air force station, one National Aeronautical and Space Administration (NASA) facility, and eight Coast Guard stations, with a total of 5,700 acres, of which about 150 are devoted to outdoor recreation facilities.

In the last few years, the Plum Tree Island Bombing Range, Cape Charles Air Force Station and three other small sites have been acquired by the U.S. Fish and Wildlife Service for operation as wildlife refuges.

The Tennessee Valley Authority (TVA) administers 2,000 acres of water and about 40 acres of recreation land on the Virginia portion of the South Holston Reservoir. Additionally, the TVA coordinates with the Department of Game and Inland Fisheries in the provision of improved public access to those rivers in Southwest Virginia which are within the Tennessee Valley.

Of the military lands in Virginia, over 176,000 acres are frequently available for public hunting and fishing, while about 1100 acres are available for other forms of outdoor recreation. The Department of Defense, recognizing the importance of providing diversified recreational facilities for its personnel, maintains a wide variety of quality indoor and outdoor recreational opportunities at most military installations. In many cases, the surrounding communities are permitted to use some on-post recreational facilities. Often, recreational programs become a major focal point for the base's community relations activities.

In 1981, Fort A.P. Hill first opened its gates to over 30,000 scouts for a national Boy Scout Jamboree. Another jamboree was held there in 1985. These events have been so popular with the scouts and successful for the Army, that an agreement has been reached to hold future jamborees at the base.

Obtaining adequate outdoor recreation inventory data from military installations has been a problem. This is partly due to the fact that responsibilities for recreation facilities and programs are divided among two or three offices at each installation. The Recreation Service Officer usually has charge of sport fields, game courts, swimming pools, and other similar facilities, while the Post Engineer and/or the Wildlife and Fish Section oversees hunting, fishing, picnicking, and natural areas.

Since the Surplus Property Act, PL 91-485, was passed in 1970, approximately 4,300 acres of federal surplus property have been transferred to the Commonwealth for park and recreation purposes. Of this total, approximately 300 acres have been accepted by state agencies and about 4,000 acres have gone to cities and counties.

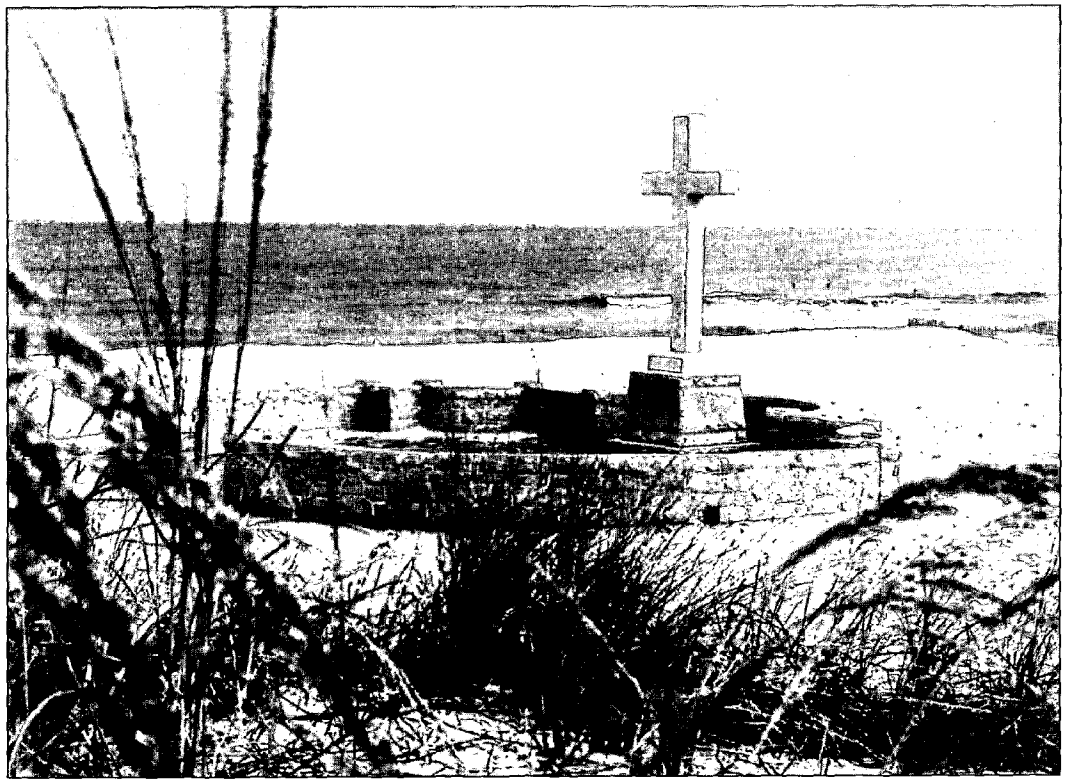
The Department of Conservation and Recreation is responsible for assessing Virginia's outdoor recreation and open space needs. The transfer of federal surplus properties to the state, or

one of its political subdivisions, affects these needs. Currently, there are some improvements that need to be made in the administration of the federal surplus property program.

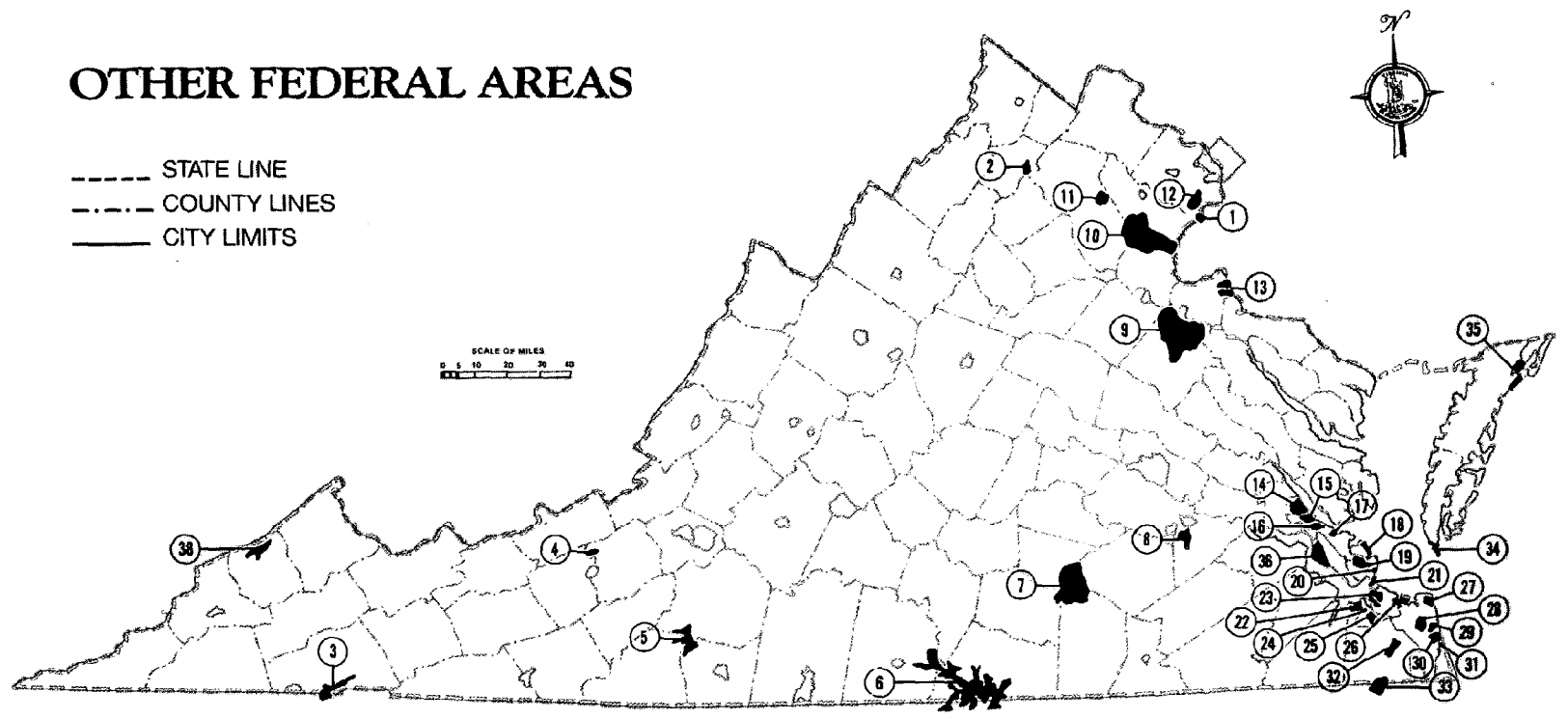
A frequently encountered problem is that of obtaining adequate property descriptions and maps. Often the only descriptions provided are those delineating the property boundaries and structures. No indication of the physical condition of the land is available. This is further compounded by the fact that readable location maps are seldom provided on the property. Another problem is the absence of notification of final disposition on properties that have been declared surplus to federal needs. Because the transfer of these properties affects the outdoor recreational needs picture, the Department should be notified at the time of deed transfer. In addition, a problem has resulted from the current administration's policy of requiring recipients of surplus property to pay fair market value for the land. This places the taxpayer in the position of having to pay twice for the use of a piece of real estate.

Recommendations

- The National Park Service should coordinate with the Department of Defense in the development of a process whereby the state can obtain accurate recreation area and facility inventory information. [P1-H, P2-G]
- The National Park Service should work with the General Services Administration to ensure that usable property descriptions and location maps accompany federal surplus property notifications and that involved state agencies are notified of surplus property title transfers. [P1-H, P2-G]
- The Department of Defense should assess its holdings in Virginia and increase the amount of recreational land and facilities available for public use wherever possible. [P1-C]
- Greater impetus should be given 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." Such an effort would not only be beneficial in meeting the outdoor recreation needs of the general public, but would also ensure that military personnel and dependents are offered adequate recreational 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 make military lands more available for public outdoor recreation use. [P1-C]
- The Tennessee Valley Authority should continue to provide access to major streams within the Virginia portion of the Tennessee River Watershed. [P1-C, P1-F]



OTHER FEDERAL AREAS



1. WOODBRIDGE RESEARCH FACILITY
   U.S. ARMY
2. U.S. DEPT. OF AGRICULTURE
   RESEARCH CENTER
   (REMOUNT STATION)
3. SOUTH HOLSTON RESERVOIR
   T.V.A.
4. RADFORD ARSENAL
   U.S. ARMY
5. PHILPOTT RESERVOIR
   CORPS OF ENGINEERS
6. BUGGS ISLAND LAKE
   (KERR RESERVOIR)
   CORPS OF ENGINEERS
7. FORT PICKETT
   U.S. ARMY
8. FORT LEE
   U.S. ARMY
9. FORT A. P. HILL
   U.S. ARMY
10. QUANTICO MARINE BASE
    U.S. MARINE CORPS
11. VINT HILL FARM MILITARY RESERVATION
12. FORT BELVOIR
13. DAHLGREN NAVAL PROVING GROUNDS
    U.S. NAVY
14. CAMP PERRY
15. U.S. ARMY SUPPLY CENTER
    CHEATHAM ANNEX
16. YORKTOWN WEAPONS STATION
    U.S. NAVY
17. COAST GUARD TRAINING CENTER
    U.S. COAST GUARD
18. PLUM TREE ISLAND
    BOMBING RANGE
19. LANGLEY AIR FORCE BASE
    U.S. AIR FORCE
20. GROUP STATION—HAMPTON ROADS
    U.S. COAST GUARD
21. FORT MONROE
    U.S. ARMY
22. CRANEY ISLAND FUEL DEPOT
    U.S. NAVY
23. COAST GUARD STATION—NORFOLK
    U.S. COAST GUARD
24. PORTSMOUTH COAST GUARD BASE
    U.S. COAST GUARD
25. NORFOLK NAVY SHIPYARD
    U.S. NAVY
26. LITTLE CREEK AMPHIBIOUS BASE
    U.S. NAVY
27. FORT STORY
    U.S. ARMY
28. OCEANA NAVAL AIR STATION
    U.S. ARMY
29. AMPHIBIOUS BASE
    U.S. NAVY
30. DAM NECK FLEET TRAINING CENTER
    U.S. NAVY
31. COAST GUARD
    U.S. COAST GUARD
32. FENTRESS LANDING FIELD
    U.S. NAVY
33. U.S. NAVAL RESERVATION
34. CAPE CHARLES AIR FORCE BASE
    U.S. AIR FORCE
35. WALLOPS ISLAND & WALLOPS STATION
    NASA
36. FORT EUSTIS
    U.S. ARMY
37. NORFOLK NAVAL AIR STATION
    U.S. NAVY
38. JOHN W. FLANNAGAN RES.
    CORPS OF ENGINEERS

Plate 4

State Parks

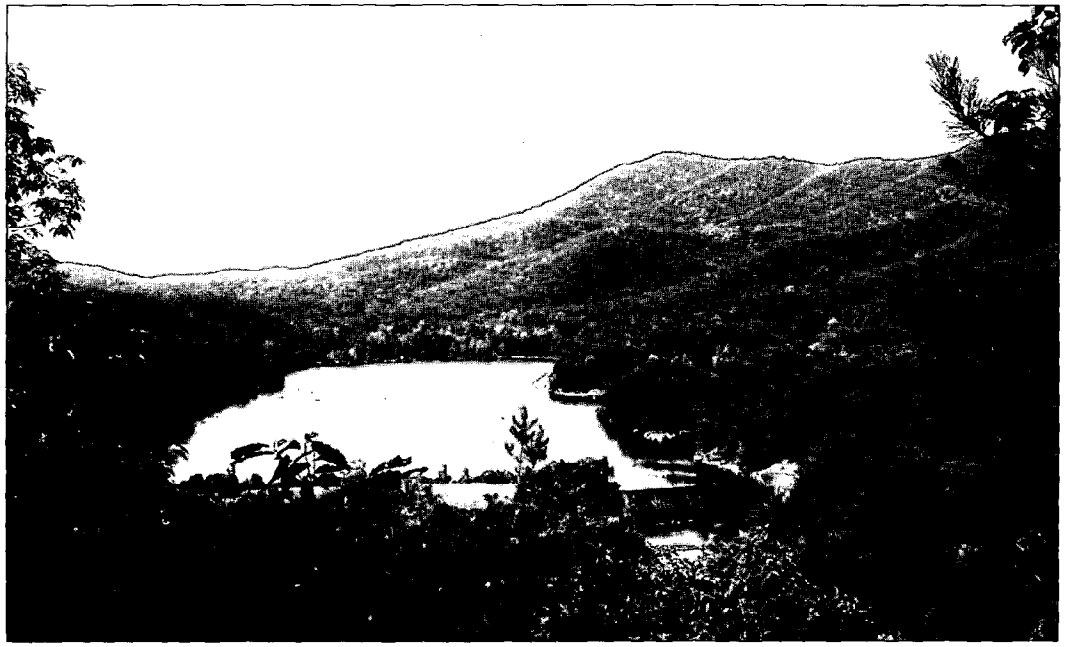
In the early 1930s, through the efforts of the Civilian Conservation Corps, many recreational sites and facilities were developed in Virginia. Six of these sites were brought into Virginia's newly established state park system in 1936. Over the years, as Virginia's recreational and open space needs increased, the system expanded and developed. By 1964, it had grown to include nine state parks, three recreational areas, several historic sites, and seven natural areas.

In 1965, **Virginia's Common Wealth,** a report of the Virginia Outdoor Recreation Study Commission, was released. This report was commissioned by the General Assembly for the expressed purpose of evaluating the demands of Virginians for outdoor recreation and the capability of the state's resources for meeting those demands. One major finding of that report was:

> "The opportunities for enjoyment (of outdoor recreation) are severely limited by inadequate facilities and by a threatened and diminishing supply of enjoyable lands and water. Especially urgent is the need for a program of land acquisition for major enlargement of our state park system, which now falls far short of meeting the demand of our own citizens and of visitors to Virginia."

This study helped to focus new emphasis on the continued development and expansion of the state park system.

Over the past 23 years, the Division of State Parks has continued its efforts to acquire and protect significant natural resources while providing opportunities for meeting recreational needs. During this time, 14 major state park sites were acquired, bringing the total system to 24 parks, six historic sites, seven natural areas, and one conference center with a combined total of



51,083 acres, including approximately 258 acres of the Appalachian Trail through Virginia. Of the 14 new park sites acquired, 13 have been opened for public use. Thus, the state now has a total of 24 operating state parks.

Although significant progress has been made, there is still a shortage of adequately developed state park facilities. Five previously unopened parks have gone into operation within the past six years. However, facility development at all five should be significantly increased as soon as possible. Priority should also be placed on developing sufficient facilities to accommodate public use at the one state park site that has been acquired but not made available for public use. Acquiring significant natural resources however will continue to be a challenge; the problem remains one of obtaining sufficient development and operational funding.

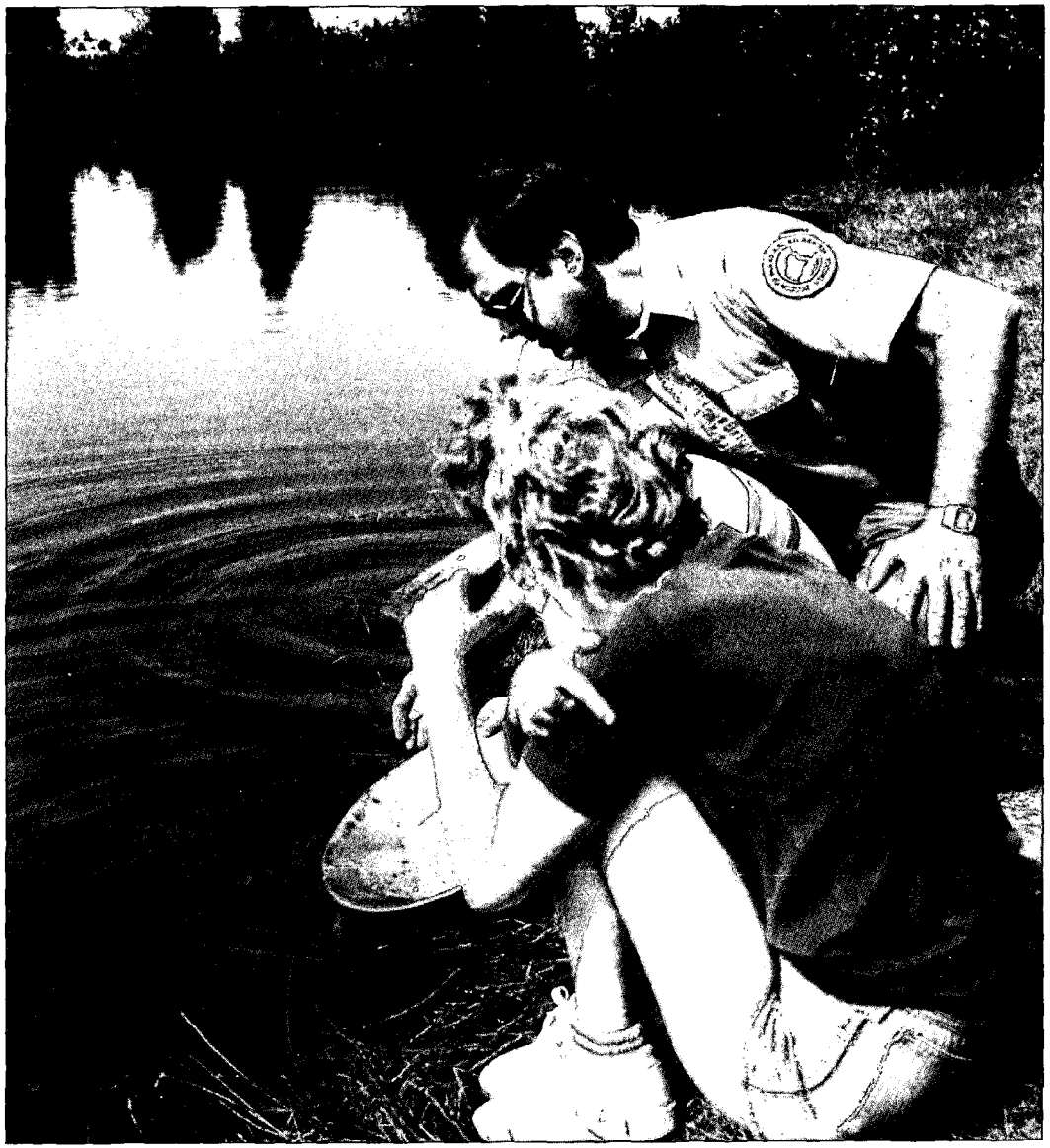
The importance of our state park system in meeting recreational needs in Virginia can be seen by comparing opportunities provided by our state parks with the table on page 90, which shows the most popular outdoor recreation activities participated in by Virginians. Six of the top ten activities — sunbathing/beach use, swimming, picnicking, fishing, hiking, and camping — are specifically provided for at nearly all operating state parks. These activities are increasing in popularity and are ones for which the participant is willing to drive an hour or more. Two of the other top ten activities — bicycling and jogging — also occur within our state parks. Boating and canoeing are popular activities, and are available at many of the parks. In addition, opportunities for hunters are provided at several parks through

the provision of camping facilities and access trail to hunting lands. In some instances, through cooperative arrangements with the Department of Game and Inland Fisheries, state park lands are available for hunting.

It has become evident that, in addition to protecting significant segments of our state's natural heritage, our parks also are prime providers of the most desired types of recreational opportunities. It is essential, therefore, that the state continue to bring on-line those acquired but unopened park sites and offer, wherever compatible, those activities people traditionally expect from our parks. Consideration should be given to the development of cooperative relationships with local and regional governments to develop plans or programs to meet special needs.

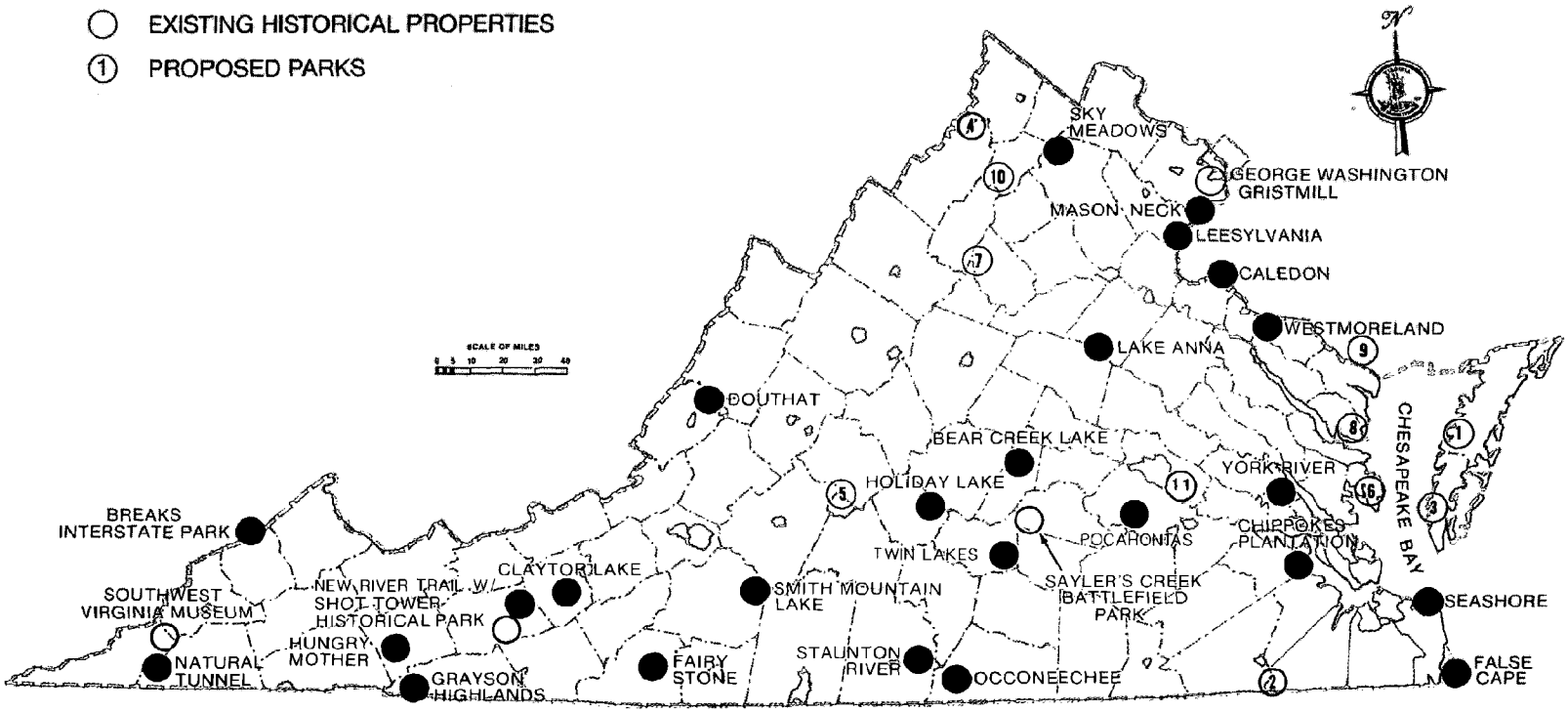
The natural resources within the various components of the state park system afford excellent opportunities for environmental education. Programs on the natural environment, consisting of talks, walks, and exploratory activities, are provided in most state parks. Self-guided interpretive trails and specially identified natural areas, set aside for environmental education purposes, are also present within the state park system.

Virginia's state park facilities provide invaluable natural and recreational resources for residents and visitors. Although lands and facilities have been added in the past years, the full potential of the system for meeting recreational needs is undeveloped. There are not only opportunities for the improvement and expansion of existing facilities, but also for the development of sites currently not open to the public. The challenge is to develop the potential while protecting and preserving the natural environment. In view of this the following recommendations are made.



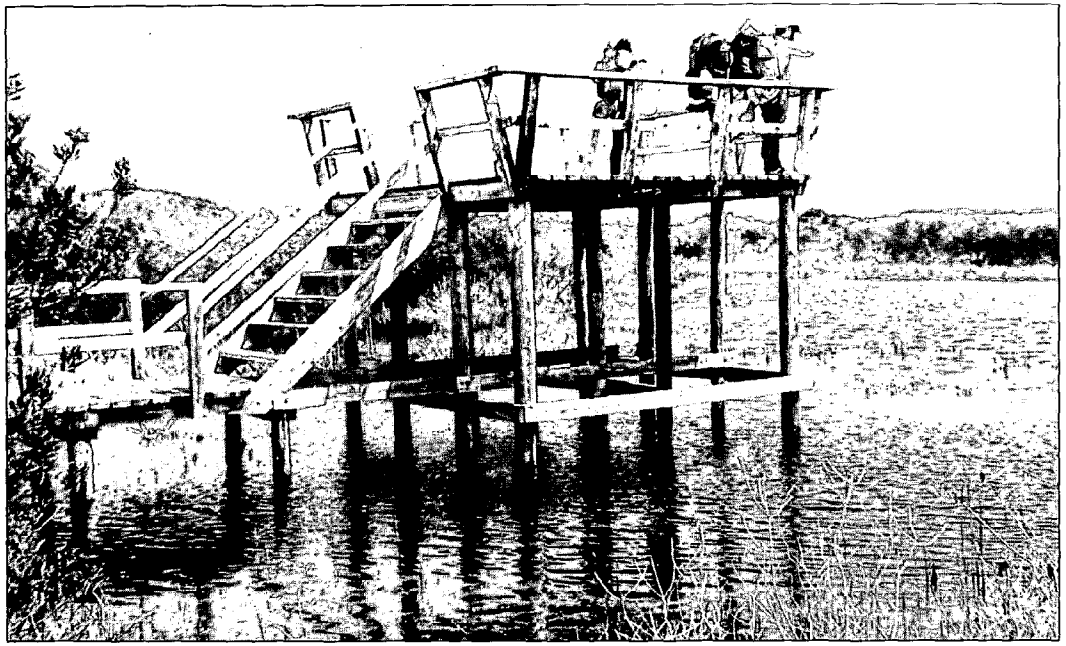
STATE PARKS

- ● EXISTING PARKS—ACQUIRED OR BEING ACQUIRED
- ○ EXISTING HISTORICAL PROPERTIES
- ① PROPOSED PARKS



1. PUNGOTTEAGUE CR.
2. BLACKWATER RIVER
3. EASTERN SHORE
4. CEDAR CREEK
5. JAMES RIVER—LYNCHBURG
6. MATHEWS COUNTY
7. RAPIDAN RIVER
8. RAPPAHANNOCK RIVER—LANCASTER COUNTY
9. POTOMAC RIVER—NORTHUMBERLAND COUNTY
10. SHENANDOAH RIVER
11. JAMES RIVER NEAR RICHMOND

Plate 5



Recommendations

- **ACQUISITION OF STATE PARK LANDS** should be a top priority over the next five years. Diminishing availability of undeveloped land with significant natural and recreational resources means that prime sites may be lost if not acquired in the immediate future. [P1-B, P1-C]

Following is a list in priority order of the 10 areas which should be targeted for state park acquisition:

1) Eastern Shore
2) Rappahannock River — Lower
3) Shenandoah River — Page, Warren, and Clark County
4) James River — Near Richmond
5) Chesapeake Bay Site — On Middle Peninsula
6) James River — Near Lynchburg
7) Cedar Creek — Shenandoah/Frederick County
8) Rapidan River — Madison/Orange County
9) Potomac River — Northumberland County
10) Black Water River — Suffolk

Should the opportunity arise for the state to acquire a new park site, the following criteria should be considered:

— The site should contain a natural feature of statewide significance.

— The site must be consistent with the mission, goals, and objectives of the Division of State Parks.

— The site should be suitable for meeting a variety of the popular outdoor recreational activities identified in **The Virginia Outdoors Plan.**

— There must be adequate access to the park area.

- **MASTER PLANNING** is needed in all of our state parks. Many of the existing park master plans do not meet the current standards developed by the Department of General Services. If the Division of State Parks is to be able to balance the conservation of significant natural resources of the Commonwealth with the provision of recreational opportunities, and coexist with the urban growth in eastern Virginia, master planning must be a priority in the next five years. [P1-B, P1-I]

- **OPERATIONS AND MAINTENANCE (O&M).** Existing state parks must be protected from use, overuse, and misuse. Staffing, equipment, and supplies for maintenance of state parts must be the number one priority. Our citizens cannot be served without a reasonable number of on-site employees and seasonal help.

User fees should be examined to determine their appropriateness and adjusted to reflect the quality of facilities and services provided at individual parks. It should not be the goal of the state park system to be a totally user supported profit-making endeavor, nor should it be a totally subsidized enterprise. A successful pricing structure should:

- Take into account local demographics.
- Reflect the level of development/activities in the park.
- Provide a measure of control in heavy use areas and an incentive for use during off

periods and at underutilized facilities.

- Help the system reach a specified level of self-sufficiency.

However, such a fee structure should not create unfair competition between the state park and surrounding private facilities. [P1-B, P1-G, P1-I, P2-D]

- **FACILITY DEVELOPMENT AND RENOVATION.** During the next five years, emphasis should be placed on completion of developments at a minimum of three parks. Potential sites include Smith Mountain Lake, Lake Anna, Caledon, Leesylvania, Sky Meadows, Mason Neck, False Cape, Occoneechee, and New River Trail State Parks. This should include expanding the technical staff to facilitate the capital outlay process required for the completion of the proposed developments. [P1-B, P1-G, P2-B]

State Fish and Wildlife Management

The Department of Game and Inland Fisheries has statutory responsibility for the management of the state's wildlife and inland fisheries. Additionally, the Game Department is vested with specific authority to take positive steps to provide opportunities for the recreational use of fish and wildlife resources by acquiring and developing lands and waters for public hunting and fishing. The following programs illustrate the various ways in which the Game Department pursues these responsibilities.

Virginians spend almost 7,000,000 activity days annually sport hunting. The Department helps satisfy the demand for hunting opportunities through a combination of cooperative management agreements on lands owned by other government and nongovernment entities and by the acquisition and management of wildlife management areas. Through its Game Division, the Department cooperatively manages wildlife on about 2,000,000 acres of land owned by the U.S. Forest Service, Corps of Engineers, Department of Defense, Virginia Department of Forestry, Virginia Department of Conservation and Recreation, and a number of private corporations. The Department also owns and manages 33 wildlife management areas comprising some 176,400 acres.

Because approximately 80% of Virginia's wildlife habitat is in private ownership, the Department operates a Game Management Assistance Program to aid private landowners in developing proper game management techniques.

When ranked by total number of participants, fishing is the seventh most popular outdoor recreation activity in Virginia. In order to increase and enhance sport fishing opportunities in the Commonwealth, the Department's Fish Division administers a comprehensive fisheries management program on most of the public inland waters of the state. Through this program, the Department has constructed and maintains 26 public fishing lakes totalling some 3,331 acres. In addition, the Department has entered into cooperative agreements to manage fishery resources owned by the Blue Ridge Parkway, the Department of Conservation and Recreation, the Department of Defense, the Corps of Engineers, the U.S. Forest Service, and a number of counties and municipalities. These contracts include 15 reservoirs and over 100 small impoundments and comprise over 200,000 acres of impounded water. Further, the Division is responsible for fishery resources in over 2,000 miles of native trout streams and 30,000 miles of warm water rivers and streams. They stock about one million catchable size trout annually in over 1,000 miles of streams. Fish for both stream and lake stocking programs are produced at nine hatcheries operated by the Fish Division. Collectively, these hatcheries produce about 20 million stockable fish each year.

Another water related program administered by the Department is the Boating Access Program. Designed to provide the public with better recreational access to Virginia's abundant water resources, the program has provided 176 access locations, greatly enhancing the recreation opportunities on thousands of acres of reservoirs and hundreds of miles of rivers and streams. The Governor's Chesapeake Bay initiatives will provide more emphasis in Bay and tidal river access.

In 1981, the General Assembly passed an act which enables taxpayers to donate a portion of their tax return to the Endangered Species and Nongame Wildlife Fund administered by the Department of Game and Inland Fisheries. Since that time, over $3,000,000 has been devoted to this program. The major thrust of the effort has been to speed the recovery of endangered and threatened wildlife. It is also designed to monitor other species to prevent them from becoming threatened or endangered and enhance the public's understanding of the needs of all nongame wildlife. In 1987, the Department published the first list of wildlife found to be endangered in Virginia.

Since 1982, the Department has been involved in the development, implementation, and maintenance of the Commonwealth's computerized Fish and Wildlife Information Systems (FWIS). The primary system currently contains information on over 1,070 vertebrates and invertebrates found in Virginia and is used routinely by the agency for a variety of tasks. The FWIS are used mainly in environmental reviews and assessments,

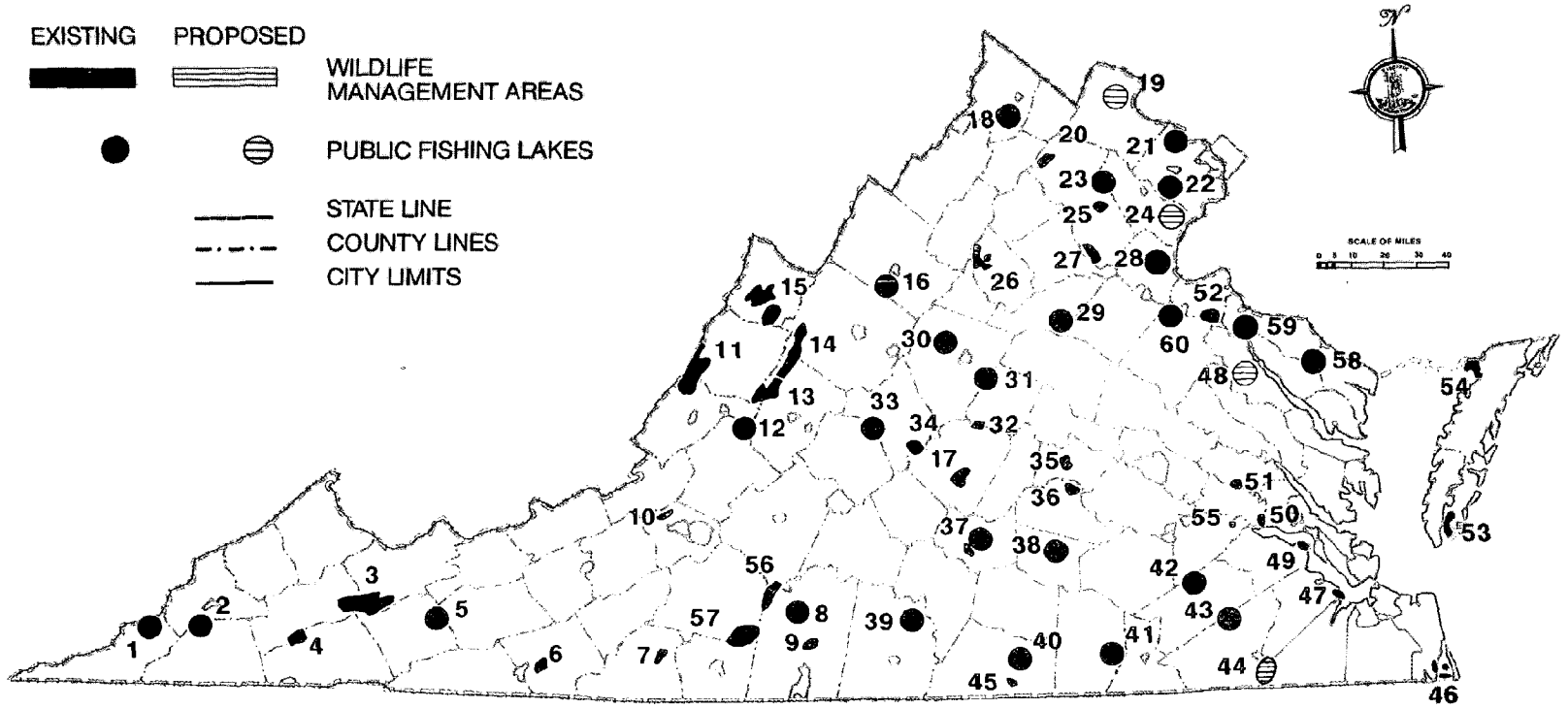
prioritization of research efforts and resource allocations, and as planning tools for agency and area management plans. However, the manipulative capabilities of the database management package, and the plotting routines available, enable the Department to use the system for a wide variety of applications. One example is the agency's use of the FWIS to assist in the development of the state endangered species list.

The Fish and Wildlife Information Systems' primary system, Biota of Virginia (BOVA), includes information on taxonomy, status, county level and other distribution, habitat associations, food habits, environmental associations, life history, and effects of management practices for 1,077 species. There are currently over 300 fields of information in a given species account, permitting sorting and retrieval of data in a variety of ways. Taxa covered include fish, amphibians, reptiles, birds, mammals, aquatic mollusca, crustaceans, and insects, terrestrial insects and other invertebrates, and marine mammals. Species information is supported by literature citation, with over 8,500 bibliographic references being maintained in the faunal reference information system.

Other systems in the FWIS contain information on dam and cave locations; species ranking; breeding bird distributions from the Virginia Breeding Bird Atlas Project; fish collection records from Dr. Robert Jenkins, Roanoke College; point occurrences for selected species (digitized from USGS 7.5' topographic maps); NPDES permit locations from the State Water Control Board; and stream surveys for some of the coldwater and all of the warmwater streams, including qualitative and quantitative data. Plotting capabilities allow for the overlaying of multiple layers of information on a given map, assisting Department staff, and outside users, in research, planning, and review.

The Department attempts to make the data in the FWIS available to as many users as possible and cooperates with a variety of agencies and organizations. This includes: the Virginia Department of Agriculture, Virginia Department of Mines, Minerals and Energy, U.S. Forest Service, regional/local planning boards; Virginia Marine Resources Commission, Virginia Department of Transportation, U.S. Fish and Wildlife Service, Pennsylvania Game Commission, Maryland Department of Natural Resources, Tennessee Wildlife Resources Agency, Chesapeake Bay Program, Multi-State Fish and Wildlife Information Systems Project, Virginia Council on the Environment, and Virginia Department of Conservation and Recreation. The Virginia Department of Game and Inland Fisheries was able to provide the Virginia Natural Heritage Program with all of the FWIS data (informational and locational) for rare/threatened/endangered fauna in Virginia when the program was started. As the legal authority for most of the fish and wildlife in Virginia, the Department routinely responds to approximately 15-25 requests for faunal information or environmental reviews per week for over 800 per year.

STATE WILDLIFE MANAGEMENT AREAS



1. KEOKEE LAKE
2. SCOTT-WISE LAKE
3. CLINCH MOUNTAIN WMA & LAUREL BED LAKE
4. HIDDEN VALLEY WMA & LAKE
5. RURAL RETREAT LAKE
6. CROOKED CREEK WMA
7. FAIRYSTONE FARMS WMA
8. LAKE BURTON
9. WHITE OAK MTN WMA
10. HAVENS WMA
11. GATHRIGHT WMA
12. LAKE ROBERTSON
13. GOSHEN WMA
14. LITTLE NORTH MOUNTAIN WMA
15. HIGHLAND WMA
16. LAKE SHENANDOAH
17. HORSEPEN WMA
18. FREDERICK COUNTY LAKE
19. LOUDOUN COUNTY LAKE
20. G. RICHARD THOMPSON WMA
21. LAKE FAIRFAX
22. LAKE BURKE
23. LAKE BRITTLE
24. PRINCE WILLIAM COUNTY LAKE
25. WESTON WILDLIFE REFUGE
26. RAPIDAN WMA
27. CHESTER F. PHELPS WMA
28. LUNGA RESERVOIR
29. ORANGE COUNTY LAKE
30. LAKE ALBEMARLE
31. FLUVANNA-RURITAN LAKE
32. HARDWARE RIVER WMA
33. NELSON COUNTY LAKE
34. JAMES RIVER WMA
35. POWHATAN WMA & LAKE
36. AMELIA WMA
37. BRIERY CREEK WMA & LAKE
38. NOTTOWAY COUNTY LAKE
39. CONNOR LAKE
40. GORDON LAKE
41. BRUNSWICK COUNTY LAKE
42. SUSSEX COUNTY LAKE
43. AIRFIELD LAKE
44. BLACKWATER WMA
45. ELM HILL WMA
46. POCAHONTAS & TROJAN WMA
47. RAGGED ISLAND WMA
48. ESSEX COUNTY PFL
49. HOG ISLAND WMA
50. CHICKAHOMINY WMA
51. GAME FARM MARSH WMA
52. LANDS END WMA
53. MOCKHORN WMA
54. SAXIS WMA
55. KITTEWAN WMA
56. SMITH MOUNTAIN WMA
57. TURKEYCOCK MOUNTAIN WMA
58. GORDYS MILL POND PFL
59. CHANDLERS MILL POND PFL
60. PETTIGREW WMA

Plate 6

The vast amount of natural resources owned and managed by the Game Department offers a variety of recreational opportunities. Additional development could provide other facilities, such as hiking trails, primitive campsites or bridle paths for horseback riding, but they must be carefully planned. Primary consideration must be given to the original purpose of these areas, which is the management of wildlife. New funding sources will have to be found through hunting and fishing licenses for such developments that benefit the segment of the public who do not contribute to the maintenance of these areas.

Recommendations

- The Department of Game and Inland Fisheries should continue to emphasize the provision of improved recreational access to the state's water resources. [P1-C, P1-F]
- The Department should expand trail facilities and primitive camping opportunities within their existing wildlife management areas. [P1-C]
- The Department should acquire additional public hunting lands with emphasis on areas east of the Blue Ridge. [P1-C]
- Lands acquired with nongame funds should be made available for outdoor recreation activities and connected to the Greenways network, when feasible. [P1-C]
- The Department should develop a cooperative agreement with the Appalachian Trail Conference and the maintaining clubs to provide technical assistance on game management issues for property managed by the Conference. [P2-A]
- The Department should continue its active support of OPERATION RESPECT. [P2-H]
- The Department should maintain cooperative agreements with appropriate agencies to share natural resource data and computer-based information. [P2-A]
- The Department should determine the economic impact of its resources on the economy of Virginia and within each locality. [P2-F]
- The Department should emphasize protection of the trout stream resource which is presently threatened by acid precipitation. [P1-C]
- The Department should continue its development of plans for an urban fishing program. [P1-C]

- The Department should investigate leased or joint management of facilities with other state and local agencies, i.e.: boat launching ramps and campgrounds. [P2-A]

State Forests

Starting with a gift of 589 acres in 1919, Virginia's state forest system now consists of over 50,000 acres in 10 forest units. The majority of this land has been donated to the state by the federal government and private individuals. The system is managed by the Department of Forestry which became a department-level agency

by action of the 1987 General Assembly. The Department operates three tree nurseries which together produce in excess of 100,000,000 seedlings annually.

The 10 state forests play a substantial role in meeting educational and recreational demand. They are managed for multiple-use including watershed protection, recreation, timber production, applied forest research programs, wildlife and fisheries management. The four largest forests provide the resource base for the state parks within them which round out recreation opportunities by providing camping, picnicking, interpretive, and swimming facilities.

Natural areas have been designated at 10 locations within the forest system. These areas, consisting of over 320 acres, have been set aside for environmental studies and protection.

The wildlife and fishery resources on the state forests are managed through a cooperative agreement with the Department of Game and Inland Fisheries. The success of this partnership is clearly evidenced by the popularity the state forests have with hunters, fishermen and nature lovers throughout the state.

The majority of the state forest acreage is concentrated in the Central Piedmont region between Richmond and Lynchburg. Acquisition of additional units in southeastern Virginia is under consideration. Existing and potential areas are shown on plate 7, page 119.

Recommendations

The Department of Forestry should:

- Place emphasis on Best Management Practices and management of forest land for properties adjoining the recreation systems identified in **The Virginia Outdoors Plan,** i.e., Scenic Rivers, Virginia Byways, Natural Areas Act. [P2-E]
- Coordinate with and seek the assistance of trail and river clubs to develop forest trails and publish trail maps for each state forest. [P1-C, P2-A, P2-G]
- Continue to acquire inholdings and other properties to straighten out boundary lines and improve management. [P1-C]
- Work with private forest landowners to promote OPERATION RESPECT-principles which could result in making more private land available for public use. [P2-H]
- Enter into or maintain cooperative agreements to support the natural resource data base being developed by the Natural Heritage Program. [P2-A]
- Enter into a cooperative agreement with the Appalachian Trail Conference to provide technical assistance and support for the management of the forest resource base on A.T. Conference managed lands. [P2-A]

STATE FORESTS

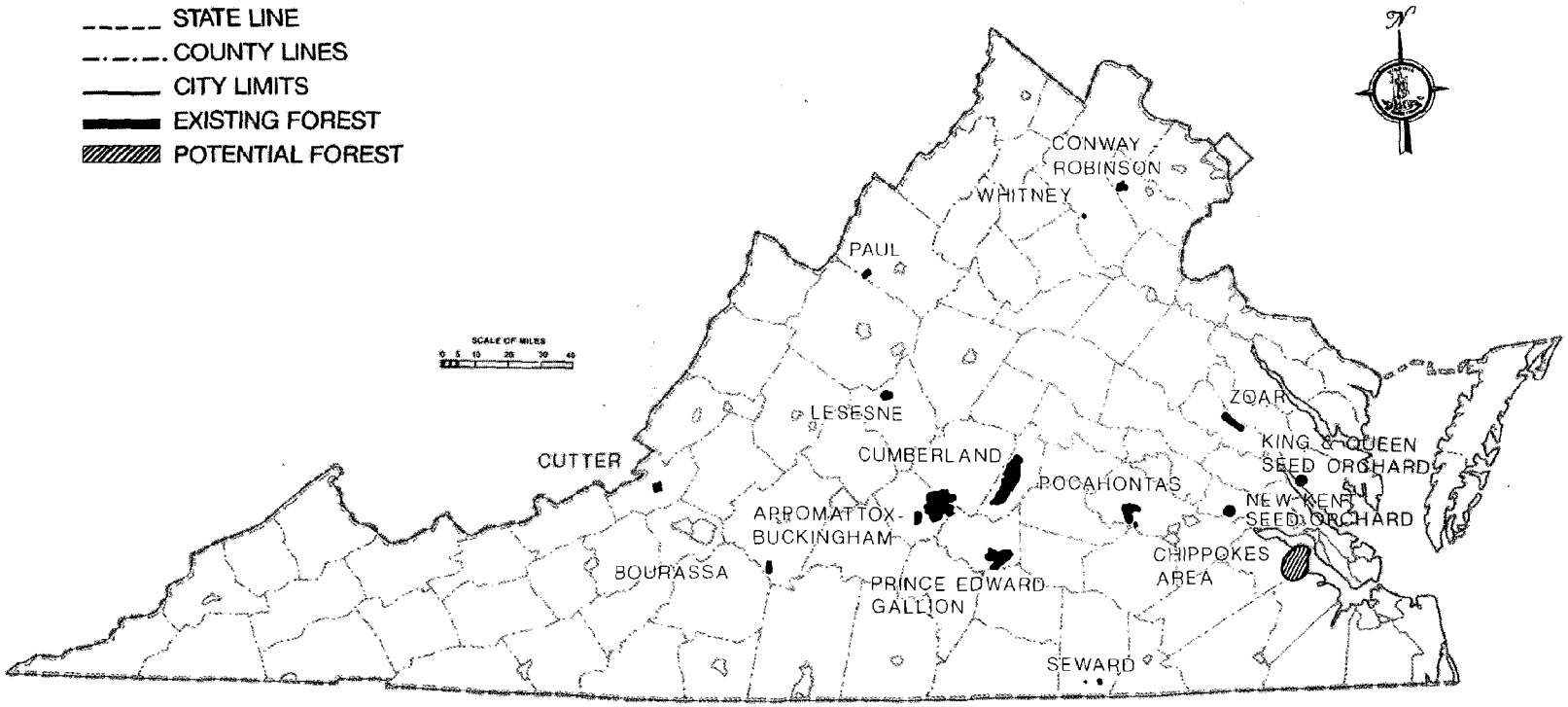


Plate 7

Virginia Historic Landmarks

Virginia's historic landmarks are not normally considered in outdoor recreation planning studies of supply, demand, and needs. They are however, significant contributing features to the state's cultural, scenic, and recreational resources. As such, they draw each year several million visitors who enjoy the many historic sites throughout the Commonwealth.

The preservation of our historic, architectural, and archaeological resources has been assigned by the General Assembly to the Department of Historic Resources (DHR). The primary role of the DHR is to identify and to encourage the preservation of Virginia's great wealth of historic, architectural, and archaeological resources. Prior to creation of the Virginia Historic Landmarks Board (VHLB) in 1966, most preservation work was done by private individuals, groups, or societies. The accomplishments of the Association for the Preservation of Virginia Antiquities, the Colonial Williamsburg Foundation, the National Trust for Historic Preservation, and many other groups and individuals have been well documented. The Department of Historic Resources is responsible for:

- Conducting a statewide survey of historic buildings and their associated landscapes and archaeological sites.
- Publishing the official register of buildings, sites, structures, and districts with state or national historic significance.
- Designating registered landmarks with plaques.
- Accepting preservation easements on sites and landscapes of historic significance.
- Establishing and promoting uniform standards for the care and management of registered landmarks, historic buildings, and properties.
- Conducting full-scale archaeological excavations and maintaining facilities for the preservation of recovered artifacts.
- Directing the state highway historical markers program.
- Working with other state agencies, local governments, and volunteer groups to conduct preservation programs.

Additionally, the Department functions as liaison with the federal historic preservation program. Under the National Historic Preservation Act, the Department of Historic Resources is charged with nominating Virginia landmarks to the National Register of Historic Places, and preparing the comprehensive statewide preservation plan. The agency also evaluates the historical significance of properties as well as the appropriateness of rehabilitation work under the terms of the Economic Recovery Tax Act of 1981. The Department staff reviews and comments on any action sponsored or funded by the federal government which might impact on a state historical landmark.

Proper management of Virginia's many historic, architectural, and archaeological resources requires a current, comprehensive, statewide inventory. This bank of information maintained by the Department is a valuable planning tool for government agencies and private groups which provides documentation of historically significant properties. To date, surveys and assessments have been completed on more than 49,000 structures and more than 20,000 archaeological sites in the Commonwealth. Nearly 1,250 individual buildings, structures, and sites have been enrolled in the Virginia Landmarks Register, as well as over 140 historic districts. The Department has acquired easements on nearly 110 properties of historic, architectural, and archaeological significance, guaranteeing in perpetuity their survival in compatible settings.

Under provisions of the federal tax laws, the Department of Historic Resources has certified over 200 rehabilitation projects with a combined total private investment of over $20,000,000. As a result of its survey and register programs, the agency has expedited the environmental review of thousands of construction projects while protecting Virginia's historic resources.

Recommendations

- The Department of Historic Resources should evaluate those historic properties administered by public or quasi-public agencies to determine the possibility of compatible recreational uses and alert the Department of Conservation and Recreation to those that they feel may have potential. [P1-C, P2-A]
- The Department of Conservation and Recreation should assist the Department of Historic Resources in determining compatible recreational uses on those properties identified as having some recreational use potential. It may be that picnicking and incidental hiking and walking trails could contribute to the visitor enjoyment of the site and provide additional recreational opportunity. [P2-E]
- The Department of Historic Resources should focus as a priority evaluation on those resources adjacent to lands or waters identified as an element of **The Virginia Outdoors Plan** recreation systems. [P1-C]
- The Department of Historic Resources should continue to provide technical assistance on the management and maintenance of historic properties to include the site and its landscape elements. [P1-H]

Conservation Easements

Realizing the need to promote a public policy of open space preservation in the face of rapid urbanization, the 1966 General Assembly created the Virginia Outdoors Foundation for the purpose of encouraging private gifts of money, securities, land, or other properties in order to preserve open space resources. Since its creation, the Foundation has solicited 206 easements on over 46,000 acres of open space, and protects another 6,000 acres through fee-simple ownership.

A conservation easement is a restriction on the use of land granted by a landowner in the form of a deed to a public agency or a private conservation organization. In Virginia, conservation easements granted to public bodies have produced advantages for the landowners and the public. A landowner who gives an easement on a tract of land is assured that the land will remain as he has known it, in its undeveloped state. In addition to enjoying uses of the land permitted under the easement, the landowner may benefit from income, property, and estate tax reductions based on the absence of development potential for his land. The public is assured of the continued presence of valuable open space lands without the commitment of government funds otherwise required for purchase and management of land identified for preservation. Easement protected land produces a public benefit while remaining in private ownership, in production of food and fiber, and on the tax rolls.

The 1966 General Assembly also passed the Open Space Land Act which authorized all public landholding bodies in Virginia to use conservation easements. Very few agencies have used the conservation easement to preserve recreation resources. Every agency that adminis-

ters a recreation resource in the Commonwealth should take a new look at the use of easements to more effectively meet their land needs.

The Outdoors Foundation program of voluntary donations of easements has contributed significantly to open space preservation in Virginia. However, there remains a vast untapped potential for the use of conservation easements to fulfill the goals of local, state, and federal conservation plans. The protection of scenic rivers, trails, and scenic roads will require consideration of a purchase program for conservation easements. Voluntary donations will continue to be important, but the systematic protection of the state's resources will be effected only if voluntary donations are supplemented by a well planned purchase program similar to that presently nearing completion along the Appalachian Trail.

The 1988 Session of the General Assembly passed the Virginia Conservation Easement Act under Chapter 13.2 of Title 10 which authorizes certain charitable corporations, associations, or trusts to acquire and hold conservation easements for the protection of natural, scenic, recreational, historic, or open space values. This Act will assist The Nature Conservancy, the Chesapeake Bay Foundation, and other similar organizations in protecting Virginia's common wealth.

In summary, the future emphasis of public and easement holding agencies should continue to be the protection of natural, scenic, historic, and recreational resources identified for preservation in local, state, and federal conservation plans. The present program of voluntary donations of easements should be supplemented by a planned purchase program for significant natural, cultural, and recreational resources.

Recommendations

- Easements should be utilized in protecting significant state resources such as the Chesapeake Bay, Scenic Rivers, Virginia Byways, historic sites, and for the establishment of greenways and trails. [P1-C, P2-A]
- The use of easements to provide buffer zones around parks and natural areas should be considered wherever feasible. [P1-B, P1-C, P2-A]

Natural Areas

The Natural Areas Program was initiated in 1960. Between 1960 and 1964, five sites totaling 3,956 acres were acquired by donation to the Department of Conservation and Economic Development's Division of State Parks, now located in the Department of Conservation and Recreation. Later, in 1965 and 1975, portions of Seashore State Park and Caledon State Park, respectively, were designated National Natural Landmarks and added to the system, bringing the total acreage of state owned natural areas to 7,100. In addition to these designated Natural Areas, the Division of State Parks has reserved specific sites within its state parks for educational purposes. These interpretive natural areas generally exhibit natural features typical of the park and are managed to maintain site quality despite high visitor use levels.

The concept of Virginia Natural Areas has evolved slowly since the inauguration of the program. Early literature describes natural areas as aesthetically, topographically, or biologically unique, and as land which has never been exploited. It is important to keep in mind that the title "Natural Area" may be applied to a variety of resource types. At one extreme, natural areas may be in almost pristine condition, free from any sign of human activity; and at the other

extreme, it may be nothing more than a vegetated lot within the boundaries of a city. Thus, depending on who is doing the designating and the intended use of the area, a natural area can be any place that is somewhat more natural than its surroundings. For the purpose of the State Natural Areas System, three categories of natural areas were defined:

1. **Unique** natural areas harbor special or unusual examples of Virginia's environment.
2. **Representative** natural areas exhibit features characteristic of Virginia's natural resources.
3. **Interpretive** natural areas which do not necessarily exhibit any exceptional natural component, but are useful for public education.

The key natural area elements are: uniqueness, educational or scientific use, and the aura of a natural environment. These merge to yield a single definition:

> An area of land, wetland, or water which manifests a natural character, although it need not be completely undisturbed, and/or which sustains rare or exemplary natural features characteristic of Virginia's natural heritage and which has scientific or educational value.

The early goal of the Virginia Natural Areas System reflected an awakening environmental awareness which was to become "the movement" of the 1960s. Beginning with the Open Space Land Act in 1966, the General Assembly authorized local governments and park authorities to acquire land/or certain land rights in order to preserve open space. According to this law, land may qualify for protection if it displays significant natural features or historic, scenic, or scientific qualities.

In 1970, an addition to the Virginia Constitution gave legal foundation to much environmental legislation which subsequently became law:

> ". . . Further it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction for the benefit, employment, and general welfare of the people of the Commonwealth."

The Scenic Rivers Act of 1970 and the Wetlands Act of 1972 have done much to protect the state's water resources, while the Endangered Species Act of 1972 and the Plant and Insect Species Act of 1979 have provided legal protection for endangered species. The Virginia Cave Protection Act of 1979 provides much needed protection for caves and cave dwelling species.

Natural areas already in the system or otherwise protected are shown on the map on page 129. Some areas identified as significant and needing protection are listed in each regional analysis. The Heritage Program office has lists with many more sites needing protection and should be consulted by all units of government before making land use decisions.

The agencies charged with the responsibility for the management of state owned natural areas are the Department of Conservation and Recreation's Divisions of State Parks and Natural Areas Conservation. In addition to the six State Natural Areas, the Division has set aside areas within each state park which represent the natural diversity of the area.

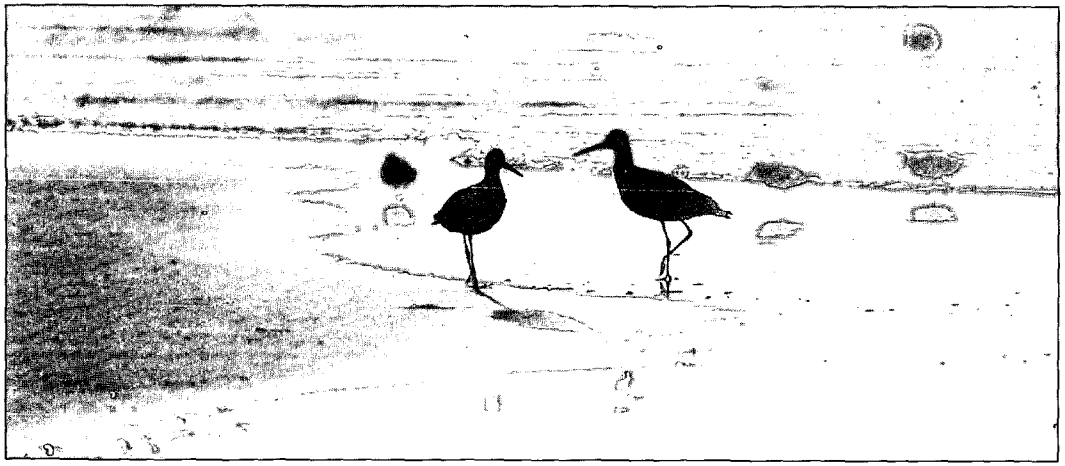
The Department of Forestry has identified 10 sites encompassing 320 acres within state forest boundaries which support exemplary stands of the major timber types found in the Piedmont physiographic province. All activity is prohibited in these natural areas except hiking.

For many years, the Department of Game and Inland Fisheries used funds from hunting and fishing license fees for management and protection of nongame wildlife species, as well as game species. In January, 1981 the General Assembly adopted legislation which enables taxpayers, slated to receive state income tax refunds, to voluntarily contribute a part of their refund to a nongame cash fund. These monies are used exclusively for the management of nongame wildlife including endangered/threatened species, aquatic wildlife, protected species, wildlife requiring specialized habitat, and certain invertebrates. The acquisition of lands to protect these species will make an important contribution to the state's Natural Areas Program. The Game Department expects to undertake such activities as citizen education, habitat improvement and acquisition, endangered species research, and habitat and species inventories. The Game Department is responsible for the enforcement of the state's Endangered and Threatened Animal Species Act.

In 1966, the Virginia Outdoors Foundation (VOF) was established to encourage the preservation of open space throughout the Commonwealth. Under this program, landowners voluntarily restrict the development of their properties by granting to the Foundation scenic or conservation easements. Currently over 46,000 acres are protected. Occasionally the Outdoors Foundation will actually acquire a property through gift or purchase. The Bull Run Mountain Area is one such site.

The 1988 session of the General Assembly passed the Virginia Conservation Easement Act which authorizes nongovernment organizations to solicit, or purchase conservation easements. Lands protected through this program will expand the acreage of natural areas in the state.

Since 1976, the Tennessee Valley Authority's (TVA) Regional Natural Heritage Project has gathered natural resource data and identified sensitive habitats in 11 counties of southwestern Virginia. TVA's Heritage Project goals are to identify and protect sensitive natural features on TVA owned lands, provide recreation development where appropriate, and assist state and local governments in their endangered species/natural areas protection and management efforts.



In 1986 the Virginia Natural Heritage Program (VANHP) was established through the joint efforts of The Nature Conservancy and the Commonwealth of Virginia. The goal of VANHP is to develop an easily accessible, constantly updated data base that reflects the current status of biological diversity on Virginia's landscape.

The Nature Conservancy is a major private conservation organization that specializes in ecological data management for the preservation of natural lands. For over a decade this organization, in partnership with state governments, has been pursuing biological inventory in a unique and systematic manner. Called State Natural Heritage Programs, these biological inventories collect and disseminate information on the existence, status, and precise locations of rare plants and animals and unique or exemplary natural communities. The data are assembled into an integrated system of data bases that can serve many purposes.

Natural Heritage Programs are typically located in state capitals where their data bases can be conveniently used by various state land managing agencies, along with federal and private users. The success of heritage methodology is reflected in state acceptance and recognition that a centralized, continually updated inventory that details specific locality information is critical to successful long-term planning and management. Heritage Programs have been established in forty-seven states, in Canada, and almost half of

the Latin American countries. The Natural Heritage network has made disparate information within a state comprehensible and consistent, and has facilitated the sharing of ecological data across state and national boundaries.

The Virginia Natural Heritage Program operated for its first year at the national office of The Nature Conservancy, where it was developed as a model, incorporating and testing the improvements in data base management that are now applied by Natural Heritage Programs across the nation. The Nature Conservancy's efforts to place a Natural Heritage Program in Virginia culminated in a contract signing in Governor Baliles' office in August of 1986. The VANHP was established in Richmond in November 1986 and is administered by the Department of Conservation and Recreation. Other cooperating agencies include the Department of Game and Inland Fisheries, the Department of Agriculture and Consumer Services, and the Council on the Environment. In July 1987, a Memorandum of Agreement was signed, formalizing the relationship of the VANHP with the Plant Protection Bureau of the Department of Agriculture and Consumer Services for cooperative efforts under the Virginia Endangered Plant and Insect Act. A similar agreement covering animals is being developed with the Department of Game and Inland Fisheries.

Both national forests in Virginia have endangered and threatened species programs and coordinate with the Heritage Program and various state universities. Many states, recognizing the usefulness of their Natural Heritage Programs, have made them state agencies. The 1988 session of the General Assembly established the Heritage Program as a state-funded entity under the Department of Conservation and Historic Resources, now the Department of Conservation and Recreation.

Program Methodology

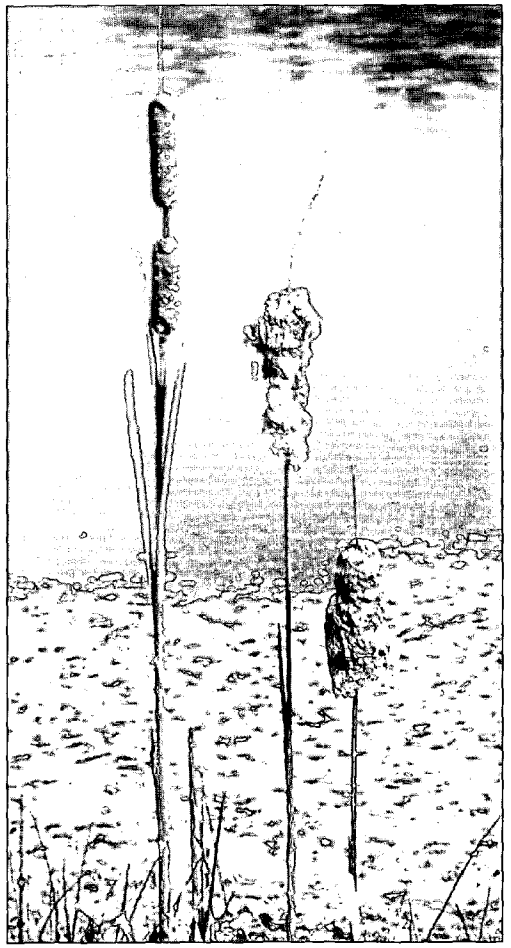
The Elements of Natural Diversity

The methods of data collection and management are consistent among all Natural Heritage Programs. The initial step is to decide which elements of natural diversity (species, natural communities, geologic features, etc.) need to be inventoried. It is both impractical and unnecessary to complete an inventory of every population of each species in the state, so a more pragmatic approach is used in an attempt to capture the full spectrum of Virginia's biological diversity. The preservation of natural communities (such as spruce-fir forests, tidal wetlands, and shale barrens) acts much like a coarse filter. If adequate examples of each of Virginia's natural community types are protected, the majority of the species native to the state will be preserved because they are among the usual components of these communities. On the other hand, because some species are exceedingly rare, or are denizens of very uncommon habitat types, a list of rare plants and animals is also compiled. Careful monitoring of these species acts as a fine filter to capture the rarest 10-15% of the Commonwealth's biota.

Natural Heritage Programs rely heavily upon the input of state experts in developing lists of rare species. Through every phase of the inventory the lists remain flexible and elements are added or deleted as the growing body of knowledge directs. Program lists currently include some 600 species of plants, 525 species of animals, and 40 natural community types.

Element Priority Ranking

Once the list of elements in each category is compiled, each element is ranked in order of its overall priority for inventory and protection efforts. A scale of 1 to 5 is utilized and species are ranked from both a state (S) and a global (G)



perspective according to rarity, number of individuals, population viability, and threats. A rank of S1 is assigned to an element that is critically imperiled in the state because of extreme rarity, whereas, a rank of S5 is given to an element that is demonstrably secure (Table 1). Global ranks are similar, but refer to a given species' rarity throughout its total range.

Table 1. Element ranks used by the Virginia Natural Heritage Program (VANHP). Each element (animal species, plant species, or natural community) monitored by the VANHP is assigned a global rank and a state rank. These ranks reflect the rarity of the element in the world, and within the Commonwealth of Virginia, respectively. Global ranks begin with the letter G while state ranks begin with an S. The meanings of these ranks are defined below as they apply on the state level, global ranks are similar (e.g., a G1 species is critically imperiled globally). Where the rarity of an element is uncertain, but is known to fall within a range of ranks, this is denoted with a combination rank, e.g. S1S2. When a global rank is applied to a subspecies, the rank of the full species is noted along with that of the subspecies, e.g. G3T1. Taxonomic uncertainties are denoted with a Q, e.g. S2Q.

- S1 — Critically imperiled because of extreme rarity.
- S2 — Imperiled because of rarity.
- S3 — Rare or uncommon.
- S4 — Apparently secure.*
- S5 — Demonstrably secure.*
- SA — Accidentals, (e.g. European strays).*
- SE — Exotic, not native to state.*
- SH — Historical records exist, but no recent sightings.
- SU — Uncertain status.
- SX — Apparently extirpated from state.

*Not actively monitored by the VANHP.

For example, the Peaks of Otter Salamander (*Plethodon hubrichti* Highton), a Virginia endemic known from only a single locality, has a rank of G1-S1 and consequently receives the highest priority. Although the Pygmy Salamander (*Desmognathus wrighti* King) is also very rare in Virginia (ranked S1) it is apparently secure over its entire range (G4) and receives somewhat lower priority. Some species, such as the Red-backed Salamander (*Plethodon cinereus*, green) are demonstrably secure throughout (G5-S5) and consequently are not actively monitored by the program.

The VANHP is now tracking 52 G1 and 531 S1 taxa. Giving first priority to the species that rank the highest, the staff isaccumulating and processing information on the rarest species of Virginia. In addition, these ranks are used for setting preservation priorities, planning status survey work, and the preparation of listing packages for state or federal endangered species.

Data Management System

The central unit of data in the Natural Heritage Program is termed the "element occurrence," a specific locality that supports one of the listed elements. For example, the site of the rare Clinch River mussel *Quadrula intermedia* Conrad (Cumberland monkeyface) near Pendleton Island in Scott County is an element occurrence. Likewise, a population of *Trifolium virginicum* Small (Kate's Mountain Clover) on a shale barren near Clifton Forge in Alleghany County, is also an element occurrence. Sources for such site-specific information include specimen labels, herbarium sheets, the scientific literature, personal communications from experts, and field surveys.

For each element occurrence a manual and computerized record (the Element Occurrence Record) is completed. This includes, in addition to the scientific and common names of the element, such information as the element's location, notes on the status of the population, a site description, threats to the site, and date of observation or collection, the name of the source supplying that record, and ownership information. Given the importance of site-specific information, the Element Occurrence Record includes fields for recording latitude and longitude, the USGS quadrangle, county, physiographic province, and watershed.

Because these records are computerized, data can be sorted and retrieved by any of the 65 fields on the Element Occurrence Record. For example, a printout of information on all known localities for the Piping Plover in Virginia is readily obtained. Should a summary be needed of all known occurrences of this element in Accomack County, or in a specific quadrangle in Accomack County, this too is easily available. Any combination of information on these records can be used to search and order the database. This information can be reported in a format tailored to fit a specific need.

In addition to this computerized file, the Heritage Program also maintains a complete set of USGS 7.5-minute topographic maps for Virginia on which the exact location of each element occurrence is marked. Boundaries of the suitable habitat for the element at that location are included when appropriate. Each mapped location is numbered and referenced to an entry in the margin of the map that tells what it represents, be it the location for a rare plant, animal, or community type. For each map a corresponding file folder is maintained (referred to collectively as the Geographic Manual File) in which all materials pertaining to that particular map are stored. These are the core files of the Natural Heritage Program, but three other files can be mentioned briefly: the Element File, the Source File, and the Managed Area File.

The Element File consists of one file folder per element in which all the life-history information encountered on that element is placed. For example, the file folder for the Virginia Big-eared Bat (*Plecotus townsendi virginianus* Handley) contains a variety of articles and text references on the biology of that species. This information is

used repeatedly by VANHP staff to prepare species abstracts, complete ranking forms, summarize status and threats, and in other day-to-day tasks.

The Source File is a collection of all sources of use to the program. These include articles, books, maps, abstracts on knowledgeable individuals, and various unpublished materials (field surveys, field notes, reports, correspondence, etc.). For each source a Source Abstract is completed. These abstracts list the citation of the source, the subjects it treats, its geographical coverage, and where it is filed. Thus, there is on file a list of written sources and Virginia experts on almost any field of natural history.

The Managed Area File consists of one folder for each area in Virginia managed by a conservation organization or state, federal, or local agency. Thus, there is a folder for each National Wildlife Refuge, State Park, Nature Conservancy preserve, etc. Information such as maps, regulations, species lists, and correspondence is kept in these files.

The VANHP's data base now contains over 3,200 element occurrences. New and updated information is continuously being added.

Users of the Data

One of the keys to the success of Natural Heritage Programs is the impartiality of their data and the ease with which this information can be retrieved. Because this data can be used to help avert environmental conflicts before they arise, the VANHP is appreciated by both commercial and environmental interests. For these reasons, state agencies and organizations should routinely consult the Heritage Program for environmental reviews in the state. In its first year of operation, the VANHP has responded to over 700 requests for information, and this demand continues to increase.

Natural Heritage Programs have Memoranda of Agreement with many federal, state, and private organizations. The Congressional Office of Technology Assessment recently cited the Heritage network to Congress as the leading effort in biodiversity data management. A number of state governments have given state Heritage Programs the authority to coordinate and conduct research on federal and state listed rare species.

The Department of Agriculture and Consumer Services relies on the Virginia Natural Heritage Program to conduct field status surveys and to provide recommendations for listing of plant and insect species for legal protection in Virginia. The VANHP has been working closely with the Department of Game and Inland Fisheries on animals of special concern that may be given protection under state law. Environmental reviews are frequently coordinated with other state agencies, such as the Council on the Environment, Department of Transportation, and the Marine Resources Commission. Federal agencies such as the Fish and Wildlife Service, Forest Service, and National Park Service routinely use information provided by the VANHP. In addition, many county and regional planning agencies request information on rare species within their jurisdictions.

In a more active conservation mode, the VANHP helps determine conservation priorities within Virginia. It is particularly important to focus preservation efforts on those select places that contain fine examples of irreplaceable biological resources. The VANHP serves this critical need by helping to identify these sites. This identification process involves an analysis of the entire database summarized in a "natural diversity scorecard." Here elements (rare plants, animals, and natural communities) are listed in order of their relative rarity. For each element on the scorecard, all known occurrences and the protection status of the sites where they are found are listed. The result is a clear, objective picture of what the rarest and unique natural features are and where they can best be protected. With the sites determined, the appropriate level of protection can be decided upon. The most critical of these sites may be acquired using the Natural Heritage Areas Fund, which is administered in partnership with The Nature Conservancy. Other areas can be protected through a variety of conservation tools such as easements and voluntary registration.

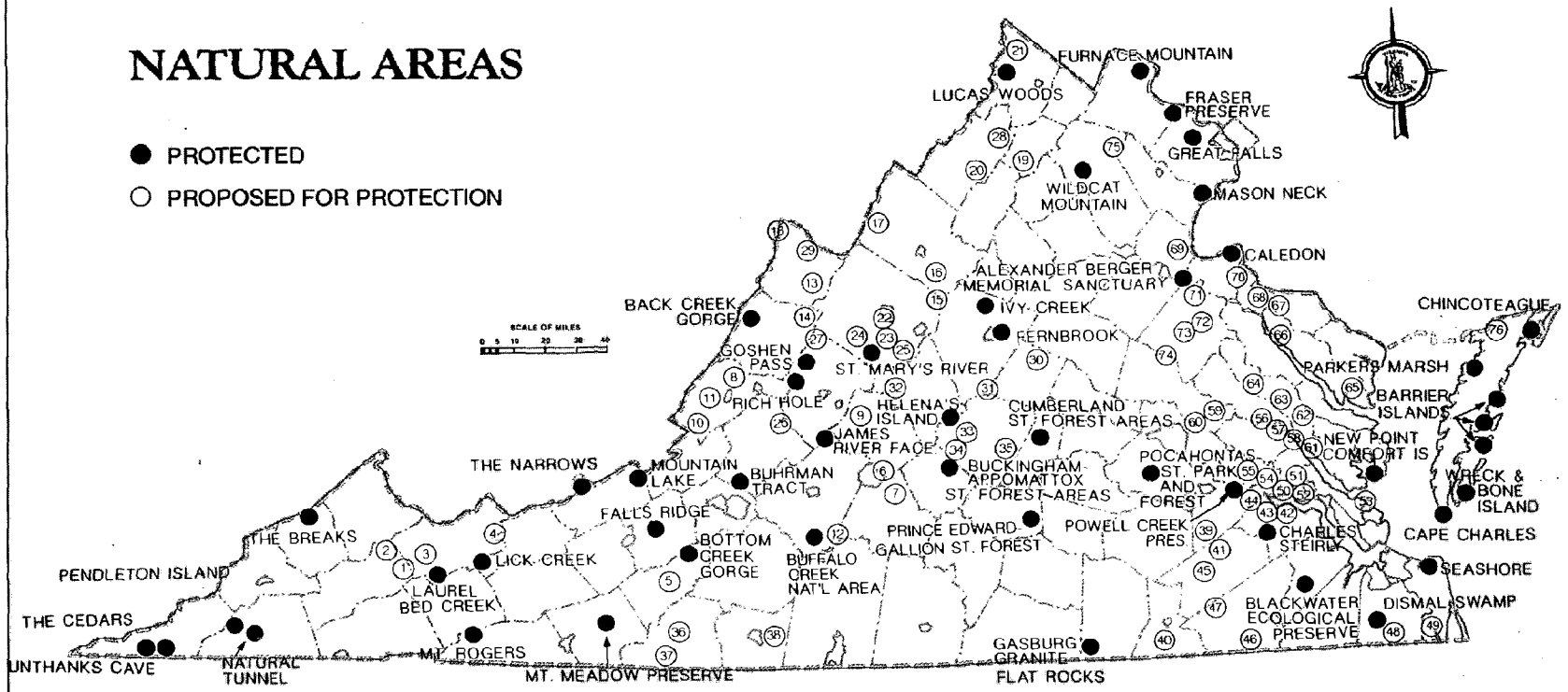
Since the VANHP maintains information on public as well as private lands, significant areas on public property can be identified, then managed by government agencies through existing agency programs. Data provided by the VANHP gives the Department of Conservation and Recreation additional knowledge in Scenic River designation, and in State Park and Natural Area management. The VANHP also complements the Historic Landmark and Cave Protection Programs, the Chesapeake Bay Program, and the work of the Virginia Outdoors Foundation.

By coupling traditional land acquisition techniques with administrative and voluntary protection by landowners, the components of Virginia's natural diversity can be safeguarded in ways that best fit the particular situation. In order to justify conservation priorities now and in the coming years and in keeping with the Department of Conservation and Recreation's mission of natural resource stewardship, the substantial, objective ecological database of the Virginia Natural Heritage Program is a valuable asset. [Natural Areas map, P1-C]

NATURAL AREAS

● PROTECTED

○ PROPOSED FOR PROTECTION



1. CLINCH MOUNTAIN
2. CLINCH RIVER
3. LAUREL BED CREEK
4. BURKES GARDEN
5. BUFFALO MOUNTAIN
6. TOBACCO ROW MOUNTAIN
7. CANDLER MOUNTAIN—LONG MOUNTAIN
8. WARM RIVER CAVE
9. STATIONS CREEK GORGE
10. POTTS POND
11. DUNLAP CREEK SHALE BARRENS
12. CASTLE—CRAIG DEPRESSIONS
13. BULLPASTURE RIVER GORGE
14. BUTLER & SINKING CREEK CAVE SYSTEM
15. CAVE HILL
16. MADISON RUN
17. LITTLE LAUREL RUN
18. LAUREL FORK
19. THUNDERBIRD ARCHEOLOGICAL PARK
20. SHORT MOUNTAIN
21. WHITE'S POND
22. SOUTH RIVER WET MEADOWS
23. MAPLE FLAT SINKHOLE PONDS
24. MAGNOLIA SWAMP
25. GREEN POND
26. SHORT HILLS
27. SHALE SLOPES
28. MASSANUTTEN WETLANDS
29. DEVIL'S BACKBONE
30. BYRD CREEK HEMLOCK BLUFFS
31. IVY CREEK HEADWATERS
32. SPY ROCK
33. JAMES RIVER ARBOR—VITAE BLUFF
34. BENT CREEK RAVINES
35. WILLIS MOUNTAIN
36. BUSTED ROCK
37. PINNACLES OF DAN
38. TURKEYCOCK MOUNTAIN
39. BLACKWATER RIVER SWAMP
40. SKIPPERS WETLANDS
41. NOTTOWAY RIVER
42. JAMES RIVER RAVINES
43. SUNKEN MEADOW
44. UPPER CHIPPOKES
45. SUSSEX SCHOOLHOUSE TRACK
46. LOWER BLACKWATER RIVER
47. ASSAMOOSICK SWAMP
48. NORTHWEST RIVER
49. NORTH LANDING RIVER
50. POWHATAN CREEK
51. CHISEL RUN—LONG HILL SWAMP
52. PASSMORE CREEK, YARMOUTH & GORDAN ISLANDS
53. GOODWIN ISLANDS
54. PARSONS ISLAND
55. WEYNOKE POINT
56. LILLY POINT MARSH
57. WEST ISLAND
58. TERRAPIN POINT
59. CHICKAHOMINY RIVER & SWAMP
60. ELKO AREA
61. POROPOTANK CREEK
62. DRAGON RUN
63. GARNETTS CREEK MARSH
64. MATTAPONI RIVER
65. BLUFF POINT MARSH
66. BROAD CREEK MARSH
67. CURRIOMAN BAY
68. HOLLIS MARSH
69. ACCAKEEK CREEK
70. CHOTANK CREEK
71. RAPPAHANNOCK BLUFF
72. TURKEY TRACK CREEK
73. MEADOW CREEK POND
74. RUTHER GLEN WETLANDS
75. BULL RUN MOUNTAINS
76. PITTS CREEK

Plate 8

Greenways

The 1988 Outdoor Recreation Demand Survey found that jogging, riding bicycles, hiking, and walking for pleasure were among the most popular outdoor recreation activities both in percent of the population participating and in the number of activity days generated by these activities each year. The President's Commission on Americans Outdoors found that 84% of all American adults walked for pleasure, 46% bicycled, 42% jogged, 22% canoed/kayaked/rafted, 17% backpacked, 8% participated in cross-country skiing, and 6% participated in horseback riding. Obviously, activities involving trails or other forms of linear corridors are extremely popular outdoor recreation attractions.

The President's Commission on Americans Outdoors (PCAO), recommended that communities identify and establish corridors of private and public lands and waters to provide people with access to open spaces close to where they live and to link together the rural and urban spaces in the landscape. They called these corridors "greenways." PCAO sees greenways as the way to provide open recreation spaces close to every home. They foresee a network of greenways linking towns, cities, and states all across the country.

The impetus for identification and establishment of these greenways is through the lighting of "prairie fires" of enthusiasm and commitment at all levels of society. The analogy of a "prairie fire" is used because they start small, spread fast, and the land blooms behind them. Citizens, clubs, private landowners, town and county governments, the state and federal governments must all work together to plan, develop, and manage these greenways. Rivers, abandoned railroads, utility corridors, scenic byways, trails, paths, sidewalks, floodplains, forests, farms, parks and refuges are all potential components of a network of greenways.

Southeastern Virginia has started a "prairie fire" with the formation of a Greenways with Growth Coalition of trail users, user groups, and government planners and officials. Interest generated by the enthusiasm of the coalition's early meetings led to the passage of House Joint Resolution 177 which required the Director of the Department of Conservation and Historic Resources to appoint an advisory commission to advise the Department on promotion of the growth and expansion of greenways and trails in the Commonwealth. This commission is composed of representatives of the State Corporation Commission, Department of Transportation, Department of Conservation and Recreation, the major telephone and electric utility companies and railroads doing business in Virginia, local governments, and members of the public.

Scenic Highways and Virginia Byways

In 1966 the General Assembly passed the Scenic Highway and Virginia Byways Act authorizing the Commonwealth Transportation Board, in cooperation with the Department of Conservation and Economic Development, (now the Department of Conservation and Recreation), to designate certain outstanding roads as Virginia Byways or Scenic Highways. The Act defines a Scenic Highway as a new road designed and built in a protected corridor. Virginia Byways are defined as existing roads with relatively significant aesthetic and cultural values, leading to or lying within an area of historical, natural, or recreational significance. Virginia Byways have the potential of becoming the strongest element of the Scenic Roads Program in Virginia, since opportunities for Scenic Highways are limited to protected areas such as large parks and forests.

The Virginia Byways Legislation was designed as a recognition act and as such, places no land use restrictions or controls upon a designated byway corridor. The only provision made in the law is that preference be given ". . . to corridors controlled by zoning or otherwise, so as to reasonably protect the aesthetic or cultural value of

the highway." The state obtains no land use controls, implied or otherwise, through the process of designating state roads as Virginia Byways. Maintenance and operating procedures of the Department of Transportation also remain unchanged.

When the Scenic Highway and Virginia Byway program was first considered, the Department of Transportation surveyed the 52,000 plus miles of highways throughout the Commonwealth and developed an initial list of more than 1,600 miles of roads which were felt to be worthy of receiving statewide recognition because of important visual qualities, historic interest, or recreational opportunities. This list was adopted as the potential Virginia byway system.

In 1982, the state's highway system was evaluated again to determine if more roads should be added to the potential Virginia Byway list, or if some roads no longer met the minimum criteria for potential Byways. Adjustments were made as recommended by the Department of Transportation. The majority of the potential byways on the original list, however, still meet the minimum criteria for Virginia Byways designation.

During 1974, the first Virginia Byway was designated. Since that time, over 500 miles of road, consisting of over 30% of those identified as having potential for inclusion, have been designated. Local land use controls have been relied upon to conserve the unique character of Virginia Byway environs. A variety of devices have been used by localities to conserve the scenic and historic integrity of these roads, and at the same time allow compatible development to occur. They include low density residential zoning with frontage and setback requirement, agricultural or conservation zoning, outdoor advertising sign ordinances, special overlay ordinances, structural facade treatment, and special landscape treatment. The Department of Transportation has occasionally been able to provide additional assistance in the form of special plantings to screen undesirable views or otherwise beautify the roadside. Waysides, scenic overlooks, and pulloffs have been provided in some highly scenic areas.

In 1988, the Department of Conservation and

Historic Resources published a **Guide To Virginia Byway Management**. This report is intended to identify existing state programs which are already in place and assist localities that have byway corridors. Nine laws and programs were identified but are not aimed specifically at scenic roads protection. However, they offer local units of government a series of options to aid in conserving the unique qualities of the local landscapes, including Virginia Byway corridors.

Although the Department of Transportation has primary responsibility for implementing the Virginia Byways Program, as well as any future scenic highways on nonfederal lands, the Department of Conservation and Recreation should continue to work closely with the Transportation Department in identifying those roads which qualify for designation. Together they have adopted criteria and procedures for evaluating potential Virginia Byways. In addition, the Department of Transportation has designed distinctive signs which are placed along Byways once they have been officially designated. The official state highway map now identifies designated Virginia Byways, as well as the federally administered parkways.

Scenic Highways, developed by the National Park Service and the U.S. Forest Service, have been in use in Virginia since the late 1930s. These roads, designed and built in protected corridors, were created for the enjoyment of motorists who desire to visit areas of scenic and historic importance. In 1988, the U.S. Forest Service began a program of recognizing scenic roads within national forests. This program may recognize state roads as national forest scenic highways.

The National Park Service's Colonial National Historical Parkway connects Jamestown Island, the first permanent English settlement in America, with Yorktown and Colonial Williamsburg. The George Washington Memorial Parkway in Northern Virginia provides opportunities for observing the numerous historic sites along the Potomac River, including George Washington's home, Mount Vernon. The Park Service also develops loop roads which enable visitors to tour the many battlefield sites under its administration. Skyline Drive, in Shenandoah National Park, was built for optimal recreational opportunities and enjoyment of outstanding scenic resources within the park. The Blue Ridge Parkway, extending along the crest of the Blue Ridge mountains from the southern end of the Skyline Drive into North Carolina, is also administered by the National Park Service. The Federal Government administers 616 miles of Scenic Highways in Virginia.

The Commonwealth has many miles of roads which traverse areas of exceptional beauty and/or outstanding historic interest. A traveler can now use scenic roads and Virginia byways to travel from the mountains to Tidewater Virginia and along the westward migration routes. These roads should be brought together in a special Scenic Highways and Virginia Byways System which would give official recognition to their unique qualities and, at the same time, encourage local units of government to adopt land use measures which will conserve these resources for the enjoyment of future generations. The full potential of the Byways program can be realized only if the people of the Commonwealth are prepared to take the steps necessary to strengthen land use controls and clean up the undesirable elements along Virginia's scenic roads. The Department of Transportation should, to the greatest extent possible, provide wide rights-of-way and pay careful attention to aesthetic and environmental concerns when improving existing roads or constructing new roads throughout the state. Additional waysides, scenic overlooks, and special treatment of roads in business areas should be considered in providing highway construction funds.

The Department of Conservation and Recreation will cooperatewith local units of government to suggest measures which will help to conserve outstanding scenic and historic road corridors. The staff will also cooperate with the Department of Transportation in the evaluation and designation of future Scenic Highways and Virginia Byways.

Recommendations

- Potential system components should be evaluated and qualifying segments designated. [P1-H]
- Good promotional brochures should be prepared, encouraging self-guiding tours along Virginia's Byways. Such brochures should help to promote tourism and enhance the enjoyment of Virginia's varied natural and cultural resources. [P2-F, P2-G]
- The state should consider the possibility of designating all qualifying road segments as Virginia Byways at the same time. This statewide designation would permit local, regional, and state planners to develop a more uniform approach toward recognizing and promoting the unique resources that exist along these special roads. This action could require General Assembly approval. [P1-H]
- The Department of Transportation should consider allocating special funds for maintenance and enhancement of the Virginia Byway corridors. [P1-A]

VIRGINIA BYWAYS, SCENIC HIGHWAYS & PARKWAYS

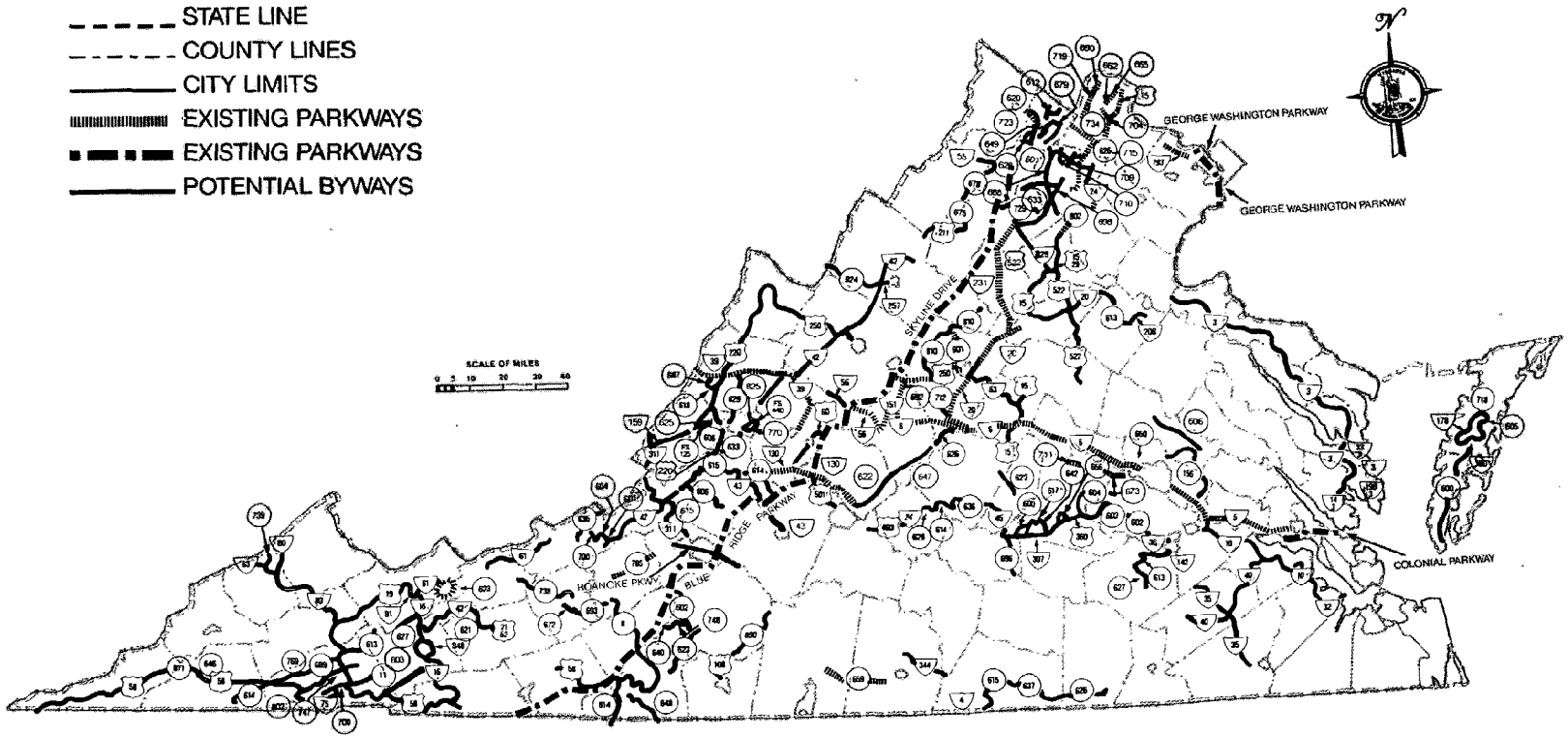


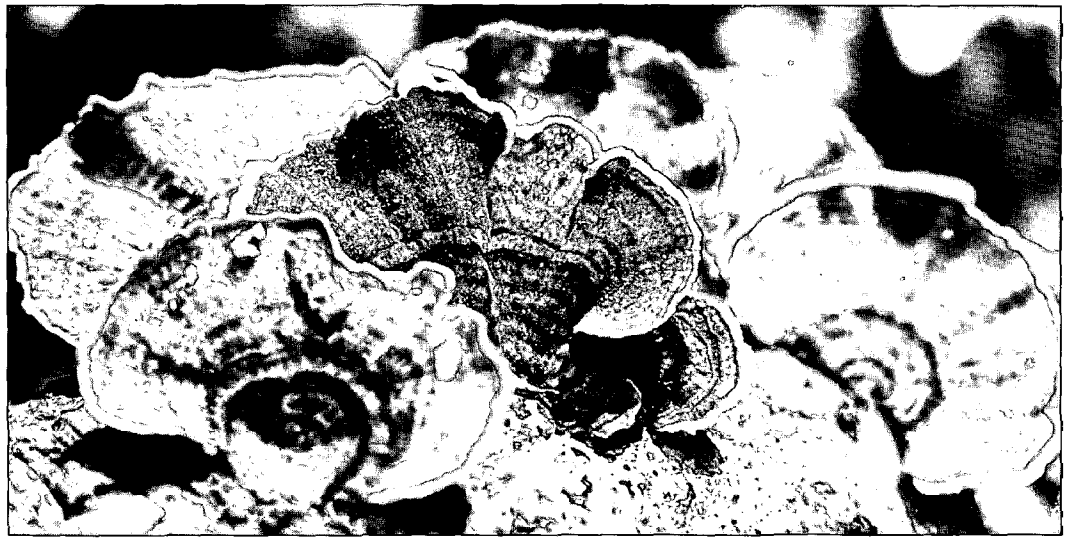
Plate 9

Trails

Nearly all of Virginia's long distance trails for hiking and horseback riding are located in the Jefferson National Forest, George Washington National Forest, and Shenandoah National Park. Together these three resources provide over 2,000 miles of back country type trails which are frequently preferred by backpackers, hikers, and horseback riders. Also, hundreds of miles of multipurpose primitive roads accommodate foot and equestrian travelers. Assateague Island National Seashore, the Dismal Swamp, and Back Bay National Wildlife Refuges and the larger national battlefield parks offer opportunities for extended trips in the eastern part of the state.

The Division of State Parks, Department of Forestry, and the Department of Game and Inland Fisheries also contribute significantly to the statewide trails scene. The Division of State Parks maintains 348 miles of trails on 36 state parks and historic sites, many of which tie in with the extensive trail and gated road systems within adjacent state forests. The state wildlife management areas supply some roads and trails for foot and horse use.

Many local park agencies have established lengthy hiking and riding trails, some of which are located in densely populated areas and utilize unique corridors. A multipurpose trail, constructed on an abandoned railroad right-of-way between the towns of Abington and Whitetop has received National Recreation Trail Status and is called the Virginia Creeper Trail. Two Virginia Beach parks will eventually be linked by a trail following portions of a utility easement. In Fairfax County many trails have been developed along stream valleys. Following the bed of the abandoned Washington and Old Dominion Railroad, the W&OD Railroad Regional Park, administered by the Northern Virginia Regional Park Authority, extends 44 miles through much of Fairfax and Loudoun Counties.



Short foot trails, such as interpretive and walking trails of two miles or less, are found in nearly all major recreation areas and in many local parks throughout the Commonwealth. Surveys have shown that these facilities are utilized by a majority of park visitors who use trails.

A particularly significant trail resource in Virginia is the Appalachian National Scenic Trail. Entering the state from the north near Harpers Ferry, this 2,100 mile Maine-to-Georgia foot trail winds its way down the crest of the Blue Ridge Mountains and then southwest through the Jefferson National Forest for over 540 miles before leaving the state near the Town of Damascus. The majority of the Appalachian Trail in Virginia is on public land and is consequently protected to some degree. Several stretches of the trail which cross private land, however, are threatened with incompatible encroachments and growing conflicts in uses.

The isolated and scenic character of the Appalachian Trail will continue to be threatened by many kinds of development: recreational homes, mining and industrial operations, communications and highway, power, or gas line corridors, and energy projects. Even where the trail seems securely protected by a public land unit, activities adjacent to or within these units may adversely affect the scenic and physical character of the trail. State and local units of government should take this into consideration in planning and zoning decisions affecting lands in the vicinity of the trail.

One of the unique aspects of the Appalachian Trail is its history of cooperative management. For more than fifty years the many components of the Appalachian Trail Conference (all of which are volunteers) have worked closely with units of federal, state, and local government as well as

numerous individual landowners to solve the many problems associated with the acquisition, development, administration, management, and maintenance of the trail. In 1985 the Secretary of Interior delegated management responsibility for the trail to the Appalachian Trail Conference and its member clubs.

In 1971, the Virginia General Assembly recognized the importance of the Appalachian Trail and designated the Department of Conservation and Economic Development, (now the Department of Conservation and Recreation), as the agency responsible for the acquisition, administration, and management of the trail in Virginia. In 1987, the Department of Conservation and Historic Resources entered into a Memorandum of Understanding with the Appalachian Trail Conference and has worked closely with the conference, the National Park Service, and others to complete the acquisition and protection of the trail corridor on state and private land. This five-year Memorandum of Understanding will ensure the perpetuation of the highest possible quality environment for the Appalachian National Scenic Trail in Virginia. Through this Memorandum, the Department of Conservation and Historic Resources has agreed to the following:

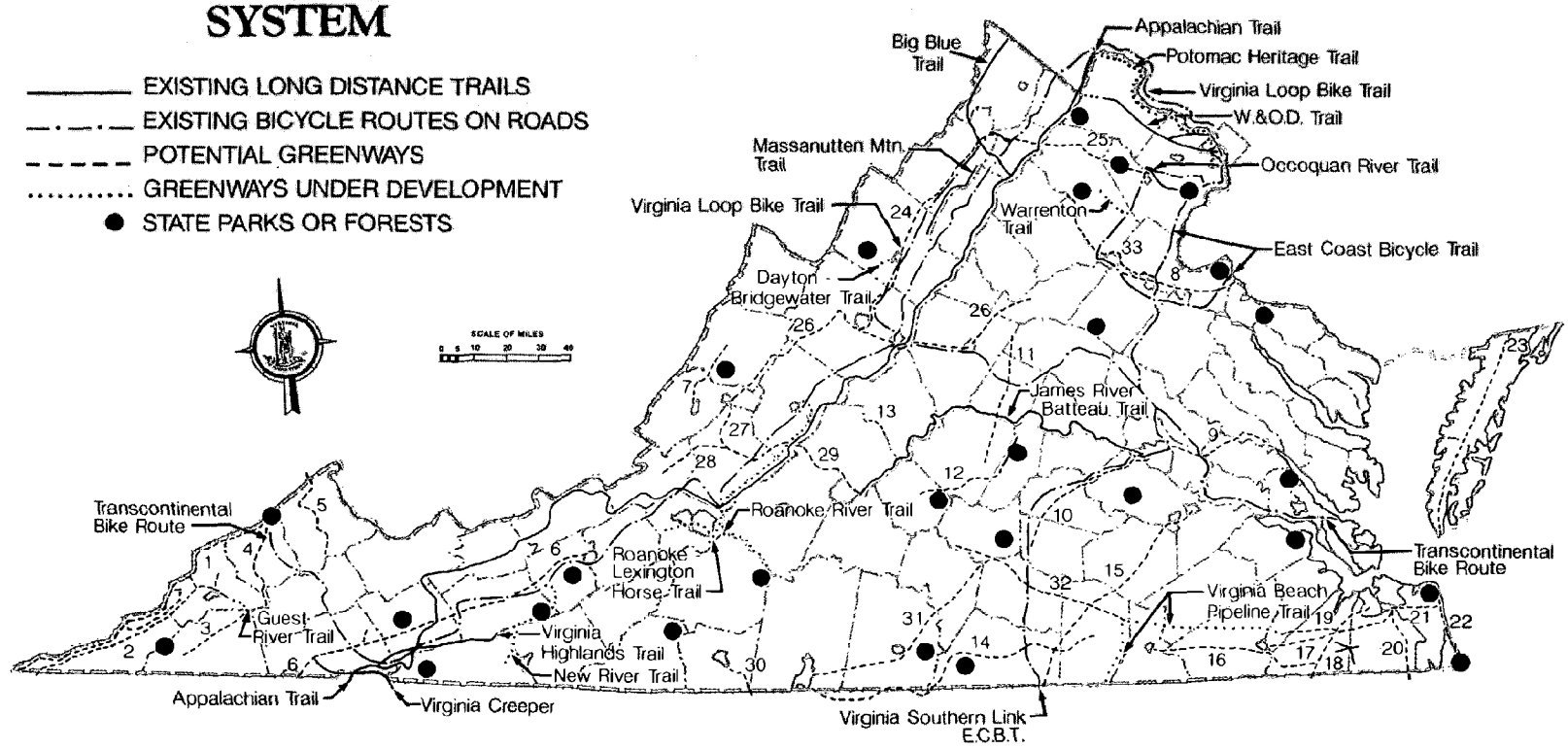
- To review the Trail's location on state owned lands.
- To seek to acquire lands or interests in lands to protect Trail values.
- To delegate to the Appalachian Trail Conference and Trail maintaining clubs responsibility for the development, maintenance, and monitoring of state owned trail corridor lands.
- To serve as liaison between the ATC and other state agencies.
- To meet annually with representatives of the ATC to discuss management progress and concerns.
- To ensure widespread understanding of the significance of the Trail and the components of good stewardship.

Trail Opportunities

There are numerous and readily available opportunities for extending and improving trails on public lands. On those sites where the established trails network is extensive, access to selected, perhaps underutilized, trails could be improved. New construction should focus on linking existing trails to form long distance hiking circuits of five miles or greater and riding loops of ten miles or more. On new sites and lands with few trails, trail systems should be included as an integral part of the area's recreational developments. The Department of Game and Inland Fisheries should seek to improve trails in the wildlife management areas in conjunction with the development of the Nongame Wildlife Fund's environmental education/interpretation programs.

Public land managers should strive to generate support and assistance from trail users, environmental groups, and the local community when developing new trails or seeking to maintain existing trails. There are many fine examples of trails projects in which volunteers have played a significant role, including the Willis River Trail in the Cumberland State Forest, the Virginia Highlands Horse Trail in the Mount Rogers National Recreation Area, the trails system in Richmond's James River Park, The Big Blue Trail in northwestern Virginia, and the Occoquan River Trail in Northern Virginia. Portions of public properties which serve nonrecreational purposes may in some cases be suitable for trails development.

VIRGINIA GREENWAYS SYSTEM



1. CUMBERLAND MOUNTAIN TRAIL
2. CUMBERLAND GAP TO PENNINGTON GAP (CSXT)
3. SPEERS FERRY TO ST. PAUL (CSXT)
4. ELKHORN CITY TO CASTLEWOOD (CSXT)
5. THOMAS TO CORONET MINE #2 (N & W)
6. BRISTOL TO RADFORD (N & W)
7. COVINGTON TO WARM SPRINGS (PRIVATE)
8. DAHLGREN JUNCTION (RF & P)
9. WEST POINT BRANCH (SOU)
10. BURKEVILLE TO RICHMOND (SOU)
11. DILLWYN TO LINDSAY (CSXT)
12. WILLIS RIVER TRAIL EXTENSION
13. VIRGINIA BLUE RIDGE
14. DANVILLE TO LAWRENCEVILLE (N & W)
15. PETERSBURG TO BRACY (CSXT)
16. EMPORIA TO SUFFOLK (N & W)
17. FRANKLIN TO SUFFOLK (CSXT)
18. N.C. LINE TO COLLEGE PARK (CSXT)
19. WALTERS TO SUFFOLK (N & W)
20. N.C. LINE TO CHESAPEAKE (C & NW)
21. TIDEWATER TO VIRGINIA BEACH (N & W)
22. CAPE HENRY TO CAPE HATTERAS TRAIL
23. EASTERN SHORE TRAIL (ESHR)
24. STAUNTON TO STRASBURG (SOU)
25. STRASBURG TO MANASSAS (SOU)
26. CLIFTON FORGE TO ORANGE (CSXT)
27. JAMES RIVER TRAIL (UPPER)
28. CRAIG CREEK TRAIL
29. JAMES RIVER TRAIL
30. LEAKSVILLE JCT. TO HILLTOP (N & W)
31. DANVILLE TO BURKEVILLE (SOU)
32. BRIERY TO PURDY (N & W)
33. RAPPAHANNOCK RIVER TRAIL

Plate 10

Privately owned corporate properties may also offer an opportunity for meeting trail needs. In some cases, trail recreation may suitably interface with the management activities carried out on lands held by pulp and paper companies, utility companies, or mining companies. Cooperative management programs for limited recreational use have been developed on a trial basis with WESTVACO Corporation on some of their timber lands. For example, they opened a two-mile nature trail along Buffalo Creek in Bedford County. As other such resources are identified, their potential for recreation should be examined and where feasible, cooperative agreements developed.

Fitness trails with associated exercise apparatus are becoming more popular in Virginia. Although mostly found in local parks, fit-trails are being developed on industrial park or office complex grounds. Homeowners associations and apartment complex owners should also consider constructing fitness trails in their communities. Localities should encourage developers to develop trails in conjunction with housing developments. When possible, these trails should be linked with the existing trails system in the locality.

Although governmental agencies usually direct the development of trails on their properties, the major initiative for obtaining new trails and keeping existing ones maintained often comes from the trail users. Many of the problems commonly associated with trails development, such as lack of community support, landowner opposition, and lack of funding may be overcome by strong, well organized local initiative. Therefore, individuals representing the diversity of trail interests in a community must first organize, identify stumbling blocks to trails development, and then identify the specific steps needed to overcome the obstacles and get the trails constructed. Many trail club members participate in "Adopt A Trail" programs and assume maintenance and monitoring responsibility for certain trail sections. Much of the cost of trail maintenance can be absorbed by these willing and able volunteers.

From a statewide perspective, the Virginia Trails Association (VTA) should draw support from the local organizations, and in return serve as an information clearinghouse for successful programs and projects and provide technical assistance. VTA should also coordinate multi-jurisdictional projects and spearhead statewide efforts to educate citizens as to the value of trails and proper trail etiquette. In addition, the VTA could serve as a liaison between state agencies whose activities affect trails and trail users in Virginia.

From Rails to Trails

The 1984 Virginia Outdoors Plan recommended that abandoned railroads be analyzed to determine their potential as trail corridors. The General Assembly's Outdoor Recreation Study Commission found much public support for rails to trails conversions and recommended that the Commonwealth strive to acquire and develop abandoned railroad rights-of-way as trails. Virginia is crisscrossed with an extensive rail system consisting of 3,623 miles of operating railroads. Over the last twenty years, a substantial number of additional miles of these railroads have been abandoned. A few have been acquired for trail use and have become very popular recreational resources. The majority, unfortunately, have not been acquired for recreational use.

One of the major problems associated with the development of a new long distance trail is having to deal with myriad patterns of private land ownership along the corridor. This problem is nearly nonexistent when an abandoned railroad right-of-way is acquired for trail use.

During the last twenty years, 551 miles of railroad have been abandoned in Virginia. Of this mileage, only 142.4 miles have been obtained for trail use. Some of the remainder has been sold or has reverted to adjacent landowners, but many of these abandoned miles are still owned by the railroad company, and may still be available for use as trails.

Currently, there are a number of miles of railroad rights-of-way available for acquisition or which may become available in the near future. Several of these railroads pass through more than one locality which complicates ownership and management. In cases like this, it is sometimes best to set up a separate entity to manage the trail. A park authority is a good mechanism for this in that it can cross jurisdictional lines in an equitable manner. The park authority can also raise money and incur debt for the development of the trail and facilities along the trail.

Carrying the trail concept a step further, Northern Virginia Regional Park Authority has developed the Washington and Old Dominion Railroad Regional Park along the bed of an abandoned railroad. The roadbed is the thread that ties together a series of parks, cultural attractions, and scenic areas. The right-of-way contains a paved surface, multipurpose, nonmotorized trail with a parallel horse trail for much of its 44-mile length. The park extends from Alexandria 44 miles west to Purcellville. Thinking of these old railroads as linear corridors of open space land with the added attraction of tying together a series of bubble parks, historic and cultural sites, commercial, industrial, residential, shopping and service areas, better focuses our attention on the full value of these rights-of-way. Their additional value as utility corridors for water, sewer, electric, telephone, oil and gas transmission lines, and subways is also significant.

Congress, in 1887, established the Interstate Commerce Commission (ICC) as an independent regulatory agency to protect the public from inflated rail rates and poor service. Under the Interstate Commerce Act, railroads must obtain the permission of the Commission before making any of a number of changes in their operations. One of these actions is the discontinuance of existing rail service or abandonment of rail lines. Before granting an abandonment to a railroad, notices are posted to inform the public and all potentially affected persons of the request, so that comments and appeals can be solicited. It is at this time that trail users have an opportunity to notify the ICC and the railroad of their interest in the right-of-way as a trail.

The National Trails System Act of 1968 (P.L. 90-543) provides for cooperation between the ICC and other federal agencies and the Secretaries of the Interior and Agriculture to assure that, to the extent possible, abandonments which may be suitable for improving or expanding the National Trails System are made available for public use. State and local governments and trail user groups are notified of impending abandonments so that action can be taken to acquire the railroad bed for trail use. However, the ICC will grant abandonments to railroads despite inquiries from units of state and local governments. When this occurs, local governments interested in acquiring the railroad must deal directly with the railroad company. This would seem to be the logical approach to acquisition of these rights-of-way except that in many cases there are reversion clauses on the titles of some sections that, upon abandonment, require the reversion of the property to the adjacent landowner. In cases where a federal or state easement was acquired and the railroad does not own the right-of-way fee simple, the abandonment authorization automatically triggers reversion to the present adjacent property owner.

The abandonment of underutilized track makes financial sense to the railroad industry, but the loss of valuable rights-of-way for public uses does not. Recognizing this fact, Congress enacted three laws designed to prevent the loss of these potential trail corridors:

- The Railroad Revitalization and Regulatory Reform Act of 1976 (The "4R Act") set forth procedures granting recreation agencies and nonprofit citizen organizations 180 days from the time an abandonment was approved to buy the undivided right-of-way before it was offered for sale piecemeal to landowners or developers.
- Four years later, Congress passed the Staggers Rail Act of 1980 which set forth a more detailed timetable under which negotiations for rights-of-way conversion could be carried out.
- The National Trails System Act Amendments of 1983 instructed the ICC to develop rules whereby a private organization or a local public agency could convert an unused railroad track into a trail on an "interim" basis (i.e., until such time as the right-of-way might again merit use as a railway) without the route becoming officially abandoned and fragmented among adjacent landowners. To qualify, the interested party must agree to assume full responsibility for management and liability and pay all taxes. Unfortunately, the ICC has promulgated regulations under

these amendments which fail to implement Congressional intent, providing only for voluntary transfers from willing seller railroads. At the same time, the ICC has continued to grant abandonments to rail companies at an unprecedented rate.

Once the railroad right-of-way is acquired, costs associated with conversion to a trail are minimized because so much of the work of grading, draining, and stabilizing has already been done. Decking and installing railings on trestles, providing parking areas at trail heads, as well as fencing and signing are costs of conversion in addition to acquisition and surface preparation. Costs for these items vary considerably by locality and ballast composition.

The Greenways System Map identifies many rail lines that have been abandoned as well as some operating lines which would be important components of the state greenways network. Many of the lines still in service operate only on low tonnage and may become the subject of an abandonment application in the near future. Localities should evaluate railroads in their jurisdictions to determine their current status. Plans should be made to obtain those roadbeds no longer needed for rail service for their future conversion to trails or other public uses.

In summary, abandoned railroad corridors make interesting linear parks/greenways with a multitude of opportunities for linking outdoor recreational, historical, and cultural areas. Many miles of abandoned railroads exist in Virginia and many more are being evaluated for abandonment. Each locality should study the potential uses of railroads in their jurisdiction and prepare plans accordingly.

Bicycling and Bikeways

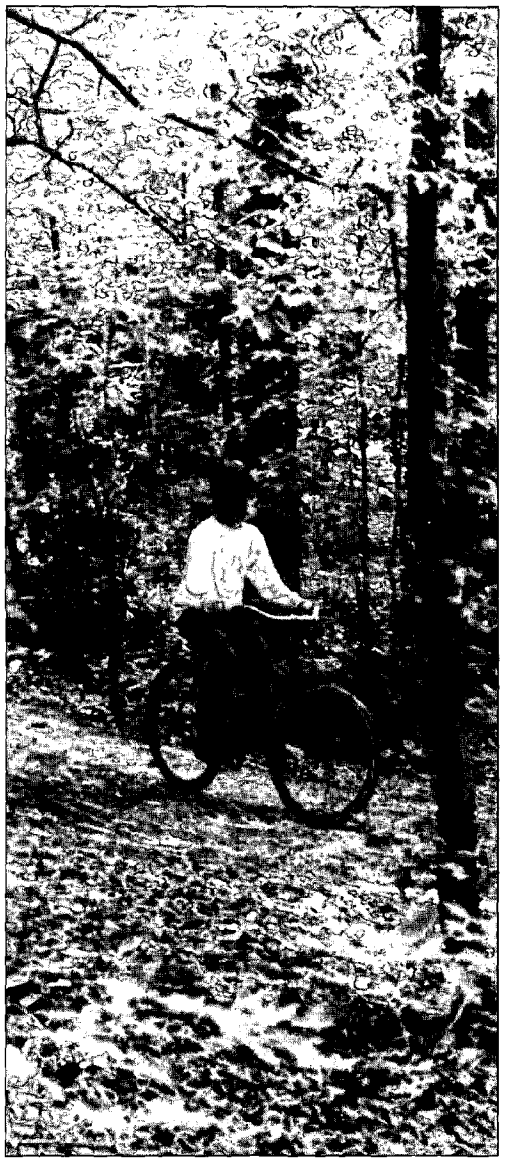
Virginia's wealth of magnificent scenery, parks and forests, numerous historical sites, and cultural and recreational attractions draw millions of visitors to the Old Dominion each year. Many visitors bring bicycles with them or rent bicycles while visiting the state and increasing numbers of visitors arrive on bicycles. In addition to visitors from out-of-state, the "1987 Virginia Outdoor Recreation Demand Survey" found that 33.5% of Virginia's residents over 12 years of age bicycled for pleasure. An additional nine percent bicycle to work or school on a frequent basis. The Division of Planning and Recreation Resources has recently conducted an inventory and analysis of available bicycle facilities in the state. The inventory and analysis identified existing bikeways and many areas where bikeways could be developed.

For purposes of this analysis, the term "bikeway" is used to refer to any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other modes of transportation. The American Association of State Highway and Transportation Officials (AASHTO) has identified four basic classifications of bikeways listed in their "Guide for the Development of New Bicycle Facilities."

AASHTO Classification of Bikeways

- Bicycle Path: A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Bicycle paths are facilities designed to minimize conflicts with motor vehicles and other trail users.

Bicycle paths can provide a community bicyclist with a shortcut through a residential neighborhood (e.g., a connection between two cul de sac streets). Located in a park, they can provide



an enjoyable recreational experience. The bicycle path is generally restricted to bicycle use only and physically separates bicyclists from other trail users. Bicycle paths should be designed to be one-way or be wide enough (eight feet) to accommodate two-way traffic. AASHTO'S "Guide for Development of New Bicycle Facilities, 1981" should be consulted for other design specifications.

- Bicycle Lane: A portion of a roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes can be considered when it is desirable to delineate available road space for preferential use by bicyclists and motorists. Bicycle lanes should always be one-way facilities and carry traffic in the same direction as adjacent motor vehicle traffic. The ideal minimum lane width is four feet but under certain urban conditions wider lanes are necessary. The AASHTO Guide should be consulted when designing bicycle lanes.
- Bicycle Route: A segment of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number. When providing continuity to other bicycle facilities, a bicycle route can be relatively short. However, a bicycle touring route can be quite long. For long bicycle routes, a standard bicycle route marker with a numerical designation in accordance with Part IX of the Manual on Uniform Traffic Control Devices can be used in place of a bicycle route sign.

The roadway width, along with factors such as volume, speed, type of traffic, parking conditions, grade, and site distance should be considered when determining the feasibility of a bicycle route. Roadway improvements, such as safe drainage grates, railroad crossings, smooth pavements, maintenance schedules, and signals responsive to bicycles, should always be considered before a roadway is identified as a bicycle route.

- Shared Roadway: Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

Bicycles Under the Law

In Virginia, a bicycle is considered a vehicle and bicyclists have the same rights and responsibilities as motorists. The laws governing the regulations of traffic apply to both except that bicyclists are required to ride to the right side of the roadway when not passing another vehicle, avoiding hazards, making a left turn, or when the lane is too narrow for a motor vehicle and bicycle to safely share the lane.

Bikeway Planning

The planning of bikeways in any area will probably include a mix of several types of bikeways. The excessive cost of constructing bike paths restricts most bikeway planning to existing roads. In scenic areas or where opportunities arise (abandoned railroad rights-of-way), bike paths may be practical. The purpose of the planning process should be to integrate the bicycle into the transportation plan and to provide for safe and efficient bicycle travel.

There are differences in bicyclists' abilities and purposes for riding which must be taken into consideration when planning bicycle transportation improvements. Ten percent of the population of Virginia uses a bicycle to commute to work or school. These bicyclists are more interested in getting to their destination quickly and safely. The 33.5% of the population that bicycles for pleasure however, is more concerned with the recreational and aesthetic aspects of bicycling and favor the scenic route over the direct route. The local bicycle plan should be designed to accommodate this mix of needs and abilities. Increased planning for bikeways will enhance the usage and popularity of bikeways, as well as the attraction for tourists.

Several techniques have been used with considerable success in other states and localities for attracting recreational bicyclists and bicycling tourists. Each locality should give consideration to appointing a balanced committee composed of bicyclists, a traffic engineer, historian, recreation professional, business representative, and interested citizens. The committee should identify significant historic, recreational, and cultural sites that should be included in a tour of their locality. Such places of interest to bicyclists as bicycle shops, hardware stores, laundromats, restaurants, campgrounds, hotels, inns and other lodging places, hospitals and medical services, etc. should be noted. An inventory of acceptable roads and existing bikeways should be compiled and plotted on a good large scale map of the locality. Those routes which most safely and directly guide the bicyclist to or through the area attractions should be chosen for the local bicycle tour route. A map and brochure describing the route can then be produced and distributed through bicycle organizations, tourist information systems, and the state travel agency.

Recommendations

There are a number of actions that can be taken to improve the overall safety of bicyclists and the opportunity for bicycling in the state. Consideration should be given to the following recommendations:

- State, regional, and local planners should coordinate bicycle facility planning to ensure system interface. [P1-C]
- The Department of Conservation and Recreation, in cooperation with local jurisdictions and the Department of Transportation, should develop a network of bikeways which will join together all the state parks. Additionally, the Department should work with local jurisdictions to produce maps and brochures of bikeways in the vicinity of each state park so that park visitors can bicycle to attractions, restaurants, hotels, and entertainment services in the surrounding area. [P1-B]
- The Virginia Recreation and Park Society, in cooperation with bicycle clubs, the Virginia Bicycle Federation, Bicycle USA, League of American Wheelmen, units of federal, state, and local government, and the hospitality industry, should cooperatively sponsor several annual bicycling events of major proportion. There are annual events in many states which do much to raise the profile of bicycling as a recreational, racing, touring, and community activity. These rides spread good will, expose people along the route to bicycle touring and bicycle tourists, and provide a source of revenue for the bicycle clubs and businesses along the way. A premier example is the annual RAGBRAI, a ride across Iowa sponsored each year by the *Des Moines Register*. By having these events in different parts of the state each year, different localities would have the opportunity to share in the excitement and demonstrate their most significant aspects. [P2-G]
- Appropriate units of federal, state, and local government should work in conjunction with bicyclists to identify and reduce hazards on bikeways. Funds should be appropriated by the General Assembly as a separate line item of the Department of Highways and Transportation budget which would be specifically allocated to reduce roadway hazards and to improve the safety of bicyclists. [P1-I]
- The Department of Transportation should continue to indicate the route of major state bikeways on county road maps they print. Localities should produce maps of their local bikeway systems and make them available to tourists through the travel information system. [P2-G]
- All associated state and local units of government, law enforcement, educational institutions, and the general public should work to improve the education of motorists, bicyclists, highway engineers, law enforcement officers, and the judicial system of the role of each in insuring the safety of everyone using our roads and bikeways. The Division of Motor Vehicles Driver's Manual should include extensive instruction on motorist-bicyclist relationships. High School Drivers Education courses should emphasize training in proper bicycling as well as motorist-bicyclist relationships. Bicycle safety educational programs directed toward elementary school children should emphasize the techniques of safe bicycle operation and the place of the bicycle in traffic. [P1-H]

Existing Major Bikeways

- **U.S. Bike Route 1** and **Southern Extension,** also known as the East Coast Bicycle Trail (ECBT). This route stretches from the Virginia-North Carolina line at Palmer Springs near Occoneechee State Park to Boston, Massachusetts. The route passes through Richmond and Fredericksburg and leaves the state crossing the Potomac River from Arlington County. Maps of this route are available from the League of American Wheelmen for a fee. County maps published by the Department of Highways and Transportation also depict this route. The DOT also has signed this route from Richmond north with the U.S. Bike Route 1 signs.
- **U.S. Bike Route 76,** also called the TransAmerica Bicycle Route begins in Yorktown, Virginia and crosses the country to Astoria, Oregon. This route goes west from Yorktown through Williamsburg, Richmond, Charlottesville and over the Blue Ridge Mountains to Waynesboro. From there the route goes south to southwest and exits the state at Breaks Interstate Park on the Virginia/Kentucky line in Buchanan County. Maps of this route are available from Bikecentennial of Missoula, Montana. The DOT county road maps also show this route and major sections of it are signed.
- **Bikecentennial East Coast Trail.** This trail begins in Richmond and goes east where it exits the state on Adams Swamp Road in Suffolk. From there it proceeds to Florida. Bikecentennial sells maps of the route.
- **Virginia Loop Bicycle Trail.** The Virginia Loop Trail begins and ends in Washington, DC. Maps detailing the 600-mile route may be purchased from Bikecentennial, Inc. After leaving Washington, D.C., this bikeway follows the C&O Canal Trail west across southern Maryland to Harpers Ferry, where it turns south and enters Virginia in Clarke County. The bikeway meanders through the Shenandoah Valley to Waynesboro where it joins the TransAmerica Bicycle Trail and goes east to the junction with the East Coast

Bicycle Trail near Ashland. Here the Virginia Loop turns north and follows the East Coast Bicycle Trail to Massaponax where it turns northwest and proceeds back to Washington, D.C.

- **Washington and Old Dominion Railroad Regional Park Trail.** This 44-mile long trail follows the bed of an abandoned railroad from Alexandria west to Purcellville. Many other bicycle trails intersect or pass nearby, thus providing many opportunities for commuters and recreationists alike. Maps are available from the Northern Virginia Regional Park Authority.

There are many other popular routes in the state, such as the Blue Ridge Parkway, Skyline Drive, the Mount Vernon Bikeway, the Virginia Beach Bikeway, Molly Custis Bikeway, and so on. Shorter bikeways are available in parks, forests, and wildlife management areas throughout the state. Towns and cities have bicycle plans as well as established bikeway systems. Bicycle clubs across the state have guides or lists of recommended routes. This information is available by contacting the individual clubs.

Several private bicycle touring companies offer tours of various parts of Virginia and have themselves put together interesting jaunts that take the tourist past significant historic, scenic, and cultural places. These tours can include stops for meals at local restaurants and overnight stays at country inns. This concept can be utilized by any locality interested in attracting greater numbers of tourists.

One new component of the bicycle picture is the mountain bike. These bicycles are geared for rough terrain and steep hills. Tires are wider and are usually knobby. These bikes can be used on much more primitive a bike path than a normal touring bicycle and are particularly at home on the more rugged multi-purpose trails used by the young on their BMX dirt bikes. One area of concern to resource planners and managers is the use of these bikes on trails designed and managed as foot trails. Owners of these bikes should ride only on authorized trails when visiting parks and forests. Resource managers, on the other hand, should review their existing inventory of trail facilities to determine if some could be redesignated as mountain bike trails. Perhaps some new trails will need to be constructed or existing trails modified to accommodate these bikes. The newly acquired New River Trail State Park will provide 55 miles of trails most suitable for use by mountain bikes. The cinder surface on this trail provides an excellent footing to the wider tires of these bicycles. As other rails-to-trails conversions take place across the state, more opportunities for mountain bike touring will become available.

Water/River Trails

Virginia is blessed with ample rainfall to support numerous streams and several large rivers. In our efforts to provide electricity, drinking water and flood control, we have developed lakes on many of these inland rivers and streams. The Department of Game and Inland Fisheries as well as units of the federal government and commercial enterprises have developed a system of public access points along major rivers and lake shores. Most of these access points include a parking area and a boat launching ramp. In areas where motorboats are impractical, less highly developed ramps are provided for canoe and light-boat access.

The Department of Game and Inland Fisheries publishes a map which identifies the location of each public access area. In addition, a public access guide to all sites on the Chesapeake Bay, its tidal tributaries, and the Susquehanna River is available through the Department of Conservation and Recreation. Additional access sites can be found at marinas and at some private recreational areas.

By identifying public access points along rivers and lakes, it is possible to plan many different types of water trail experiences. In many areas of the state, public access areas are close enough together so that day trips can be made from one to the other. By arranging transportation, these trails can be enjoyable family outings. Many canoe liveries operate in Virginia and will rent canoes and provide transportation to and from the access points.

Water trails are classed by degree of difficulty. Flat, or smooth water is what you would expect to find on lakes, long pools on rivers, and on the tidal rivers below the Fall Line. Whitewater is the other classification system and ranges from Class 1 to a Class 6. Degree of difficulty is based on river velocity, rate of fall, character of rapids and obstacles, ease of rescue, and amount of maneuvering required. Class 1 is the least difficult and can usually be handled by a paddler with basic canoeing skills. Class 4 and above require extreme skill, canoe floatation devices and, frequently, the decked boat of the kayak.

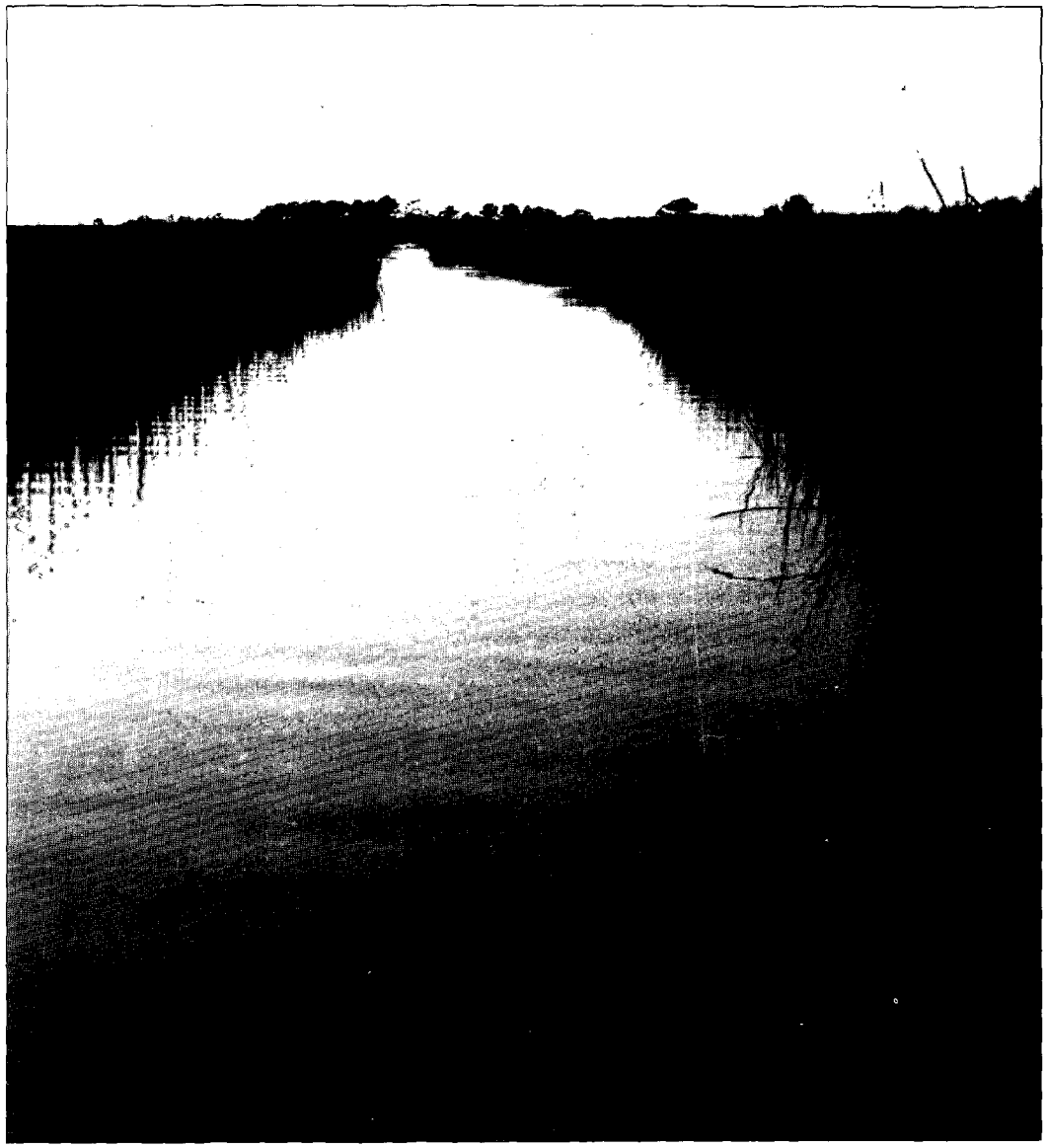
Degree of difficulty and class of a particular rapid or river segment varies with the volume of water in the river. River volume is measured by the U.S. Geological Service at river gauges placed along most streams in Virginia. A second gauging system was developed by canoe and river guide author Randy Carter. Carter painted lines on bridge abutments, piers, and footings at access points with the zero line indicating the lowest level for navigability of the stream. Most canoeing guidebooks relate USGS gauge readings to the Randy Carter system and prescribe maximum flow levels and changes in a section's

classification at each level. This is a good system for knowing when there is enough water to canoe as well as when there is too much to be safe. There is frequently a problem, though, in knowing what the water level is before you leave for the river. Information on the Potomac, Rappahannock, and Shenandoah River systems can be obtained from River Services, Weather Bureau, Suitland, Maryland. Information for the James River is available from the Weather Bureau office at Richmond International Airport near Richmond. For information on many smaller streams, there is no reliable source of water level information.

It is critical to the safety of canoeists and other whitewater enthusiasts to know at which level a river becomes dangerous. Guidebooks have been written to provide this information for most of the streams and rivers in the state, and can be acquired at most book stores and stores selling canoes and canoe equipment.

One of the major problems associated with river trails is the lack of public access to many good sections of streams. A great number of the access points identified in the canoeing guides are on private property or at bridge crossings where no authorized access or parking exists. A major program to identify suitable access to the best stretches of rivers needs to be initiated and a source of funding for acquisition and development of these areas needs to be found.

In addition to access points, river recreationists need places between landings to get out of their boats and rest, picnic, or camp. Few public, canoe in, day use, or camping areas exist. One solution to this problem is for private landowners to agree to open some of their riverfront lands to public use. Islands are particularly desirable for this use. The major rivers in the state have numerous islands, but all privately owned. The Department



of Conservation and Recreation has entered into a cooperative agreement with Westvaco Corporation for the public use of 100 acres of islands in the James River in Appomattox County. More agreements of this type will need to be formed if problems of promiscuous trespass are going to be solved in the future.

Recommendations

- Develop public access areas at convenient distances apart on state rivers. [P1-C]
- Identify landowners willing to allow public use of river front property for day use and overnight camping. [P2-A]
- Identify a funding source to cover the cost of renting lands for public use. [P1-A]
- Develop an improved system for reporting river levels throughout the state. Post signs at each public access area showing the range of safe river use by experience class. [P1-H]
- Brochures should be prepared for each river which show access points, day use and camping areas, hazards, historical structures along the river, etc. [P2-G]

Equestrian Trails

Trail riding is an increasingly popular sport among Virginia horseback riders. Each year sees the development of new horse trails and an increase in participation in trail riding events. Trail riding is an enjoyable sport and is good exercise for riders of all ages as well as for horses and ponies.

With the increased interest in trail riding, land managers and saddle club members must develop liaisons and work closely together to develop new trails and to maintain existing trails. In areas of the state where large tracts of public land suitable for horse trail development do not exist, horsemen will need to develop trails on private land. Good public relations with land owners can lead to use agreements where a trail can be developed through several farms in an area in exchange for agreements to keep gates closed, trail tread maintained, and litter removed.

There are many kinds of trail rides and a wide variety of options must be made available. The basic and most important requirement is for trail facilities close to where the horses are stabled. These should be from two to twenty-five miles in length, where horse and riders can exercise to stay in shape. This requirement is fairly easily met in the more rural parts of the state, but becomes increasingly critical as the more urban areas are approached. Urban sprawl has a tendency to replace farm land and open space with housing and commercial areas pushing the horseman ever further from the city center. Public development of greenways, such as stream valleys, abandoned roads and railroads, utility corridors, etc., will have to become standard procedure if the future trail needs of horsemen and other trail users are to be met.

Management of horse trails and facilities on public lands can create challenges for land managers. Many hikers do not find horses compatible with hiking. Many trails suitable for hikers are not suitable for horses and should be so signed. At the same time, off-road vehicles (ORVs) are usually not considered compatible with horses. Trails for horses should be restricted

grams at the federal and state level do not adequately protect wetlands. Management efforts must now be directed to control all wetland impacts—direct, indirect, and cumulative. Major actions include:

- Reviewing and evaluating existing regulatory and protection programs and initiating corrective measures.
- Identifying, in advance, wetland areas of special concern to enhance protection through the permitting process.
- Eliminating government sanctioned programs which are counterproductive to wetland protection, and establishing private sector incentive programs.
- Identifying priority areas for wetlands preservation through land acquisition.

3. **Building the Base: Rehabilitating, Restoring, and Creating Wetlands**

Commensurate with the goal of obtaining a net resource gain is the need to protect the existing wetlands base, thereby reducing extensive creation and restoration projects. In those instances where unavoidable losses occur, compensatory creation, rehabilitation, or restoration measures will be required. The policy emphasizes cooperative design and evaluation of compensatory mitigation projects, along with long-term monitoring and management of these sites. Equally important tools for building the base of functioning wetlands are incentives and land acquisition. Major actions include:

- Using private sector incentives to encourage rehabilitation, restoration, and creation of wetlands
- Acquiring strategic sites to provide appropriate locations for wetland restoration, creation, and use activities.

4. **Extending the Vision: Education and Research**

Wetland protection depends upon public awareness of wetland values, management needs, and landowner support for protection policies. Appropriate technical training must be made available to resource managers and private sector interests. In addition, research is essential to refine our knowledge of wetland functions and improve our ability to sustain these resources. Major actions include:

- Developing and disseminating information for the public and educational institutions on the values of and need to protect wetlands.
- Initiating technical assistance programs to support local government protection efforts.
- Evaluating the individual and cumulative effects on wetlands of current best management practices, shallow water dredging, structural shore erosion practices, and alteration of the land/water interface.
- Assessing the design and effectiveness of artificial wetlands developed for wildlife and waterfowl improvement, shore erosion control, wastewater treatment, or acid mine drainage.

Private efforts also play a role in wetland protection in Virginia. The Nature Conservancy, a nonprofit, privately supported land preservation organization that devotes its resources to the protection of unique and ecologically valuable areas, has made a significant contribution to the preservation of wetlands in Virginia. Two of the most notable preserves established by the Conservancy encompass the Great Dismal Swamp, transferred to the Fish and Wildlife Service for management, and the Virginia Coast Reserve, a chain of 13 barrier islands located along the Eastern Shore of Virginia, which is managed by the Conservancy. The Conservancy is now looking at preservation options for unique freshwater tidal wetlands identified along the Chickahominy, Pamunkey, Mattaponi, James, Potomac, and Rappahannock Rivers. Critical sites representative of wet meadows and sinkhole ponds of the Shenandoah Valley and mountain bogs have also been targeted for preservation by the Conservancy and are currently under negotiation for acquisition.

In a joint effort, The Nature Conservancy and the Commonwealth of Virginia have cooperatively established a Virginia Natural Heritage Program. This program has been identifying significant "elements of natural diversity" in the state such as rare species, natural communities and unique habitat, and determines the relative urgency of their need for protection. Data from this program is helpful in state natural resources management and in protecting important species and critical habitat, including unique wetland habitats.

Since the methodology for data collection and assessment is the same for all states' natural heritage programs, Virginia has access to information from neighboring states as well as national network information. Formal cooperative Natural Heritage Programs are found in 47 states and in Canada and Latin America. The Department of Conservation and Recreation administers the Heritage Program now housed in the Division of Natural Areas Conservation.

Ducks Unlimited, Inc. is another nonprofit organization interested in preserving critical habitat, specifically wetlands. Although most of their acquisition efforts have focused on areas in Canada, Mexico, and the northern midwest states, a program initiated in 1985, called MARSH (Matching Aid to Restore States' Habitat), offers funds for acquisition, preservation, protection, and enhancement of wetlands to all

states. Ducks Unlimited and the Department of Game and Inland Fisheries are working cooperatively on this program, targeting certain areas for habitat improvement.

Wetlands may also be preserved in Virginia through the donation of 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. Conservation easements offer many benefits to the landowner. Promotion of this concept and an increase in public awareness of wetland values could preserve significant environments without the burdens of regulation. Additionally, the State Wetlands Act allows the Marine Resources Commission to receive gifts, grants, and bequests of wetlands. A few small gifts have been made, generally for tax purposes. This program could gain momentum in future years as private owners become aware of the potential financial benefits of such donations. The Virginia Outdoors Foundation, the Department of Conservation and Recreation, and the Chesapeake Bay Foundation also acquire interests in wetlands for protection purposes.

In recent decades, tidal wetlands, and even more recently nontidal wetlands, have become recognized as beneficial resources to our society. Perhaps because of Virginia's maritime orientation and possibly due to the early attention these areas received, coastal wetlands are better protected by regulatory and conservation programs than nontidal wetlands. However, many existing programs need strengthening and others should be developed if these valuable areas are to be preserved for the benefit of future generations. The completion of the National Wetlands inventory now being conducted by the U.S. Fish and Wildlife in cooperation with the Council on the Environment will provide needed information on the location, condition, and types of wetlands in the Commonwealth. This will ensure that wetlands are categorized and prioritized according to their relative values. The inventory will also enable the resource managers to ascertain the vulnerability of wetland areas and monitor their alteration.

Priorities for Protection

The Governor has declared the Chesapeake Bay and its watershed to be a high priority for water quality and habitat protection. Therefore, of highest priority for protection from degradation will be wetlands of the Chesapeake Bay and its tributaries. [P1-C]

The Virginia Outdoors Plan identifies numerous wetlands that are unique or sensitive and recommended for protection.

The Natural Heritage Program identifies significant wetlands throughout the state that have rare, threatened, or endangered species within them or are unique or representative communities of Virginia. A priority for protection will include those areas identified by the Natural Heritage Program as being significant and which are threatened by some action of man which will impact the wetland.

Other actions which should be seriously considered by the Commonwealth include:

- Develop a state nontidal wetlands policy with the necessary mechanisms to provide the wise stewardship of these areas. A single agency should be delegated the responsibility to administer a protection program for nontidal wetlands. [P1-C]
- Develop tax incentives and educational programs, similar to those in other states, which have proven to be effective in encouraging private citizens and local governments to protect wetland areas. [P1-H]
- Adequate staffing and improved surveillance and enforcement programs are needed to effectively implement existing laws and policies or future programs. [P1-G]
- Emphasize preserving unique or vulnerable wetlands through acquisition and conservation easement programs. [P1-C]
- Develop comprehensive land use plans and corresponding zoning ordinances in all localities. These land use plans should recognize the importance of wetlands and flood plains and protect them from the adverse affects of development and incompatible land uses. [P1-H, P2-A, P2-E]

An integrated management approach would provide an array of options to state government, communities, developers, and citizens for wetland preservation. Such an approach would also foster the public's understanding and interest in protecting this resource. The issue of wetland protection has become a challenge for all concerned citizens of the Commonwealth and can no longer be ignored.

Table 15 lists those wetlands that have been identified as priorities for protection under the U.S. Fish and Wildlife Service's Wetlands Priority Protection Plan.

Table 15

Wetlands Priorities for Protection

Accomack County
- Smith Island Complex
- Fox & Little Islands
- Freeschool Marsh
- Michael Marsh
- Byrds Marsh
- Baileys Ridge
- Marks Island/Jacks Island
- Halfmoon Island
- Webb Island
- Flannegan Point Marsh
- Custis Cove Marsh
- Big Marsh Complex
- Parkers Marsh
- Scuitkill Neck Marsh Complex
- Hacks Neck
- Hyslop Marsh
- Pitts Creek Marsh
- Drummonds Millpond
- Wallops Island
- Watts Island
- Chincoteague Interior Swale Wetlands
- Cedar Island
- Metomkin Island
- Chincoteague NWR
- Saxis WMA
- Parramore Island
- Revel Island
- Sandy Island
- Assawoman Island

Albemarle County
- Fernbrook Natural Area

Alleghany County
- Potts Pond

Alexandria County
- Rolfs Tract Natural Area

Amelia County
- Appomattox River Wetlands

Augusta County
- Back Creek
- Mt. Torrey Furnace
- Campbells Pond
- Cold Spring Bridge
- Green Pond
- Grove Farm Pond
- St. Mary's River
- South River Wet Meadow
- Maple Flat Sinkhole Pond
- Wakena-Gleason Marsh
- Warehouse Marsh
- Peterson Pond
- Lebanon Church Fault
- Ramseys Draft
- Natural Chimneys
- Magnolia Swamp
- Kennedy Mountain Meadow
- Shenandoah Mountain Sink Holes

Bath County
- Bolar Mountain Pond
- Shenandoah Mountain Sink Holes

Bedford County
- Gap of Smith Mountain

Botetourt County
- James River Terrace near Warminster

Brunswick County
- Nottoway River Swamp
- Meherrin River Wetlands

Buckingham County
- Slate River
- James River Arborvitae Bluff

Campbell County
- Big Otter River—Hemlock Slope
- Big Otter River—North Slope

Caroline County
- Skinkers Neck
- Moss Neck/Corbins Neck
- Alexander Berger Memorial Sanctuary
- Camden
- Meadow Creek Pond
- Ware Creek
- Pete Ross Swamp
- Ruther Glen Wetlands
- Turkey Track Creek
- North Anna River Wetlands

Carroll County
- Hanks Branch
- Linard Creek

Charles City County
- Herring Creek Marsh
- Weyanoke Point
- Parson's Island/Sunken Marsh/Old Neck
- Morris Creek Marsh
- Chickahominy River Marshes
- Chickahominy Swamp
- Lower Kittewan Marsh
- Salem Run Bog
- Chickahominy WMA

Table 15 continued

Chesapeake County
- Pocaty Creek Swamp
- Northwest River Wetlands
- West Landing
- Gum Swamp

Chesterfield County
- Dutch Gap Fault
- Appomattox River Marshes
- Appomattox River Wetlands
- Presquile NWR

Cumberland County
- Willis River Wetlands

Dickenson County
- Breaks Interstate Park

Dinwiddie County
- Nottoway River Swamp
- Rowanty Swamp
- Appomattox River Wetlands

Essex County
- Otterburn Marsh
- Drake's Marsh
- Horsehead Point
- Marsh Point
- Tobys Point
- Beverly Marsh
- Payne's Island
- Broad Creek
- Mount Landing Creek Wetlands

Essex County
- Hoskins Creek Marsh
- Piscataway Creek Marsh
- Paynes Island/Beverly Marsh
- Dragon Run
- Jones Creek Wetlands
- Devil's Horseshoe Elbow
- Baylor Swamp

Fairfax
- Mt. Vernon Tidal Marsh
- Dogue Creek
- Pohick & Accotink Creeks
- Great Marsh
- Kanes Creek
- Burling Woods Park
- Eakin Park Wetlands
- Mason Neck NWR
- Fraser Preserve

Floyd
- Bottom Creek Gorge
- Twin Falls (Lick Fork Falls)

Frederick
- Back Creek/Route 681
- White's Marsh
- Hovermale Ponds

Giles County
- Craneberry Bog
- Little Meadows
- Mountain Lake

Gloucester County
- Purtan Island
- Catlett Islands
- Four Point Marsh
- Bush Point Marsh
- Dragon Run
- Poropotank River

Grayson County
- Big Spring Bog
- Big Wilson Creek
- Hanks Branch
- Mt. Rogers Wetlands
- Piney Creek Bog

Greensville County
- Beaver Pond Creek
- Turners Crossroads
- Skipper's Bog
- Meherrin River Wetlands

Hanover County
- Chickahominy Swamp
- North Anna River Wetlands
- Curles Neck
- Chickahominy Swamp

Henrico County
- Chickahominy River Preserve

Highland County
- Shenandoah Mountain Sink Holes

Isle of Wight County
- Lawnes Neck Creek Marsh
- Pagan River Marsh
- Ragged Island WMA
- Ballard Marsh
- Blackwater River Swamp
- Horse Swamp
- Zuni Pine Barrens

Table 15 continued

James City County
- Big Marsh Point
- Yarmouth, Simpson & Wright Creeks
- Ware Creek & Terrapin Point
- Taskinas Creek
- Passmore Creek
- College Creek Marsh
- Chisel Run Bog
- Chickahominy River Marshes

King George County
- Moss Neck/Corbins Neck
- Skinkers Neck
- Cleve Marsh
- Horsehead Point
- Marsh Point
- Tobys Point
- Caledon Creek
- Chotank Creek
- Persimmon Point
- Gambo Creek
- Upper Machodoc Creek
- Nanzatico WMA

King William County
- Brooks Creek Marsh
- Heartquake Creek Marshes
- Green Island Marshes
- Cohoke Marsh
- Sweet Hall Marsh
- Lee Marsh
- Eltham Marsh
- Horse Landing
- Pointers Landing
- Walkerton
- Clayborne Creek Marsh
- Pamunkey Indian Reservation
- Shanty Creek

Lancaster County
- Mosquito Island
- North Point Marsh
- Belle Island
- Belle Isle

Lee County
- Powell River Wetlands
- Unthanks Cave

Lunenburg County
- Meherrin River Wetlands
- Nottoway Falls

Madison County
- Big Meadows

Mathews County
- Lilleys Neck
- Mathews County Interior Wetlands

Middlesex County
- Dragon Run

Montgomery County
- Bottom Creek Gorge
- Falles Ridge Preserve

Nelson County
- Love Swamp
- Tye River Hemlock—Beech Slope
- Helena's Island Preserve

New Kent County
- Lilly Point Marsh Complex
- West Island
- Cousiac Marsh
- Hill Marsh
- Ware Creek & Terrapin Point
- Chickahominy River Marshes
- Chickahominy Swamp
- Lanexa Marsh
- Cumberland Thoroughfare
- Matton Creek
- Whites Landing
- Holts Creek
- North Anna River Wetlands
- Big Creek

Newport News County
- Mulberry Island
- Warwick River

Northampton County
- Butlers Bluff
- Fishermans Island
- Creens Creek
- Plantation Creek
- Wreck & Bone Islands
- Savage Neck Dunes
- Eastern Shore of Virginia NWR
- Mockhorn Island WMA
- Hog Island
- Cobb Island
- Godwin Island
- Ship Shoal Island
- Mink Island
- Myrtle Island
- Smith Island
- Rogue Island
- Magothy Bay Fringing Bottomlands

Table 15 continued

Northumberland County
- Hack Creek
- Bluff Point Marsh
- Bell Swamp/Owens Point
- Dameron Marsh

Nottoway County
- Nottoway River Swamp
- Nottoway Falls

Page County
- Unamed Bog
- Middle Mountain Site
- Rhododendron Bog
- Big Meadows

Powhatan County
- Appomattox River Wetlands

Prince Edward County
- Allen's Mill

Prince George County
- Powell Creek Marsh
- Kennon Marsh
- Ward's Creek
- Dutch Gap Fault
- Upper Chippokes Creek
- Appomattox River Wetlands
- Appomattox River Marshes

Prince William County
- Neabsco Creek Marsh
- Powell's Creek
- Quantico Creek
- Chopawamsic Creek
- Featherstone NWR
- Marumsco NWR

Richmond County
- Broad Creek
- Cat Point Creek
- Little Carter Creek Marsh
- Totuskey Creek
- Downing Bridge Marsh
- Jones Creek Wetlands

Rockbridge County
- Goshen Pass Natural Area
- Short Hills

Rockingham County
- Deep Run Pond
- Madison Run
- Maple Springs Pond
- Little Laurel Run
- Shenandoah Mountain Sink Holes

Russell County
- Clinch River Floodplain
- Laurel Bed Lake Wetlands

Scott County
- Clinch River Shoals
- Pendleton Island
- Rye Cove
- Pendleton Island Preserve

Shenandoah County
- Mudhole Gap Bog
- Peter's Mill Run Bog
- Massanutten Wetlands

Smyth County
- Saltville Marshes
- Mt. Rogers Wetlands
- Gap of Smith Mountain

Southampton County
- Blackwater River Swamp
- Nottoway River Swamp
- Turners Crossroads
- Beaver Pond Creek
- Kirk Track
- Assamoosick Swamp
- Smith Island
- Meherrin River Wetlands

Spotsylvania County
- Alexander Berger Memorial Sanctuary
- Ware Creek
- Hazel Run Fault

Stafford County
- Aquia Creek
- Accakeek Creek
- Potomac Creek

Stafford County
- Chopawamsic Creek
- Tank Creek Fault
- Crows Nest

Suffolk County
- Nansemond River/Bennett Creek Marshes
- Hoffler Creek Marsh
- South Quay Pine Barrens
- Blackwater River
- Great Dismal Swamp NWR

Table 15 continued

Surry County
- Upper Chippokes Creek
- Sunken Meadow Pond
- Crouch Creek & Timber Neck Creek
- Lower Chippokes Creek Marsh
- Hog Island
- Lawnes Neck Creek Marsh
- Blackwater River Swamp
- Surry Site
- Swann's Point
- Mt. Pleasant

Sussex County
- Nottoway River Swamp
- Charles C. Steirly Natural Area
- Nottoway Falls
- Sussex Schoolhouse Swamp
- Assamoosick Swamp

Tazewell County
- *Tazewell Beartown Wetland*
- Burkes Garden
- Laurel Bed Lake Wetlands

Virginia Beach County
- North Landing River Wetlands
- Pocaty Creek Swamp
- Seashore State Park
- Blackwater Creek
- Pungo Causeway
- False Cape State Park
- Gum Swamp
- Stumpy Lake
- Back Bay Wetlands
- Back Bay NWR
- Pocohontas WMA
- Trojan WMA
- Barbour's Hill WMA

Washington County
- Saltville Marshes
- Rush Creek

Westmoreland County
- Drake's Marsh
- Otterburn Marsh
- Nomini Cliffs
- Currioman Bay
- Hollis Marsh Island
- Bridges Creek

York County
- College Woods
- Grafton Ponds

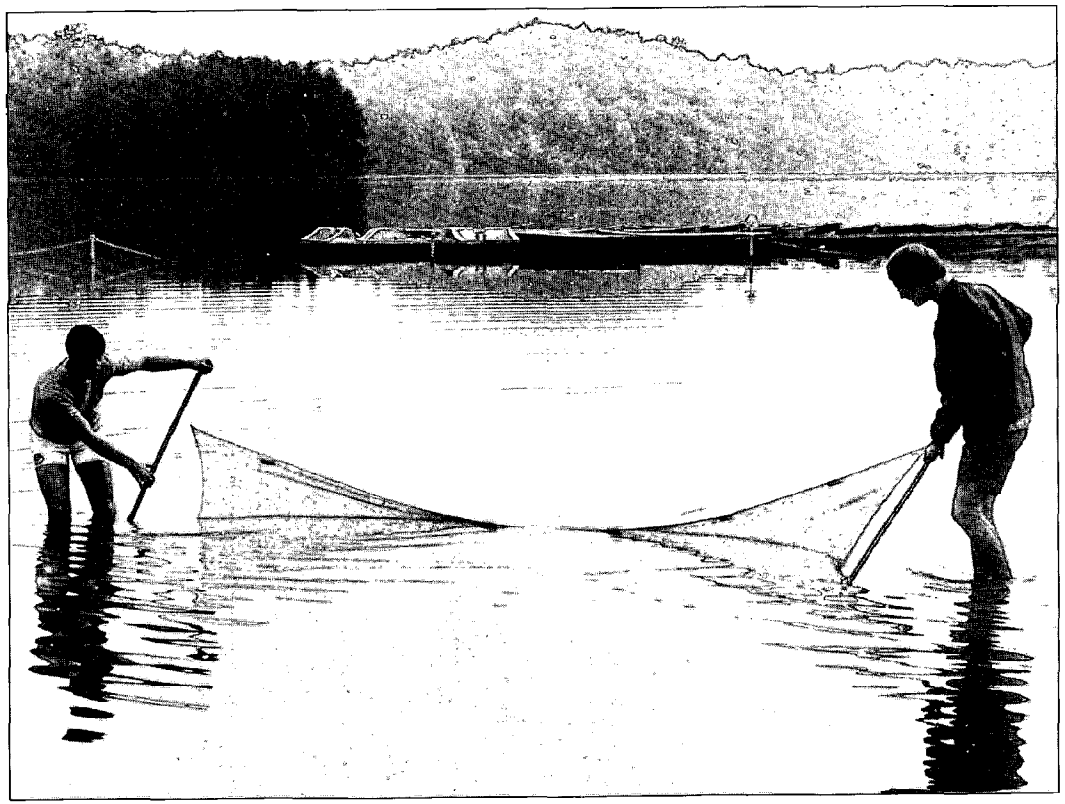


Table 16 lists those sites identified for protection or enhancement under the North American Waterfowl Management Plan.

TABLE 16

North American Waterfowl Management Plan Focus Area Acreage*

Virginia:

AREA	ACREAGE PROTECTION	ENHANCEMENT	TOTAL
VA Eastern Shore (Seaside)	14,500	500	15,000
VA Eastern Shore (Bayside)	7,000	800	7,800
Pamunkey River Marshes	9,200	100	9,300
Chickahominy River Marshes	4,400	50	4,450
James River Marshes	3,650	50	3,700
Back Bay/North River Landing Marshes	8,300	500	8,800
Rappahannock River Marshes	4,150	200	4,350
Mattaponi River Marshes	2,500	100	2,600
York River Marshes	1,400	250	1,650
Western Bayshore Marshes (Reedville-Mobjack Bay)	2,475	275	2,750
TOTAL	57,575	2,825	60,400

*Includes all protection strategies, i.e., acquisition, cooperative agreements, lease, easements, enhancement, etc.

Inland River Access

According to the 1987 Demand Survey, almost 30% of all participation in outdoor recreation by Virginians is water based. The increase in the popularity of canoeing, rafting, and kayaking over the past decade has been remarkable. River running has moved from a barely perceptible participation rate in 1972 to one of the 20 most popular outdoor recreation activities, with over one million Virginians participating in 1987.

River resources in Virginia are more than adequate to accommodate current and projected use levels. As is the case with a number of other resource based activities, however, access is a limiting factor. Public access to inland rivers and streams ranges from excellent to virtually nonexistent, depending on the river.

Historically, a majority of the public's recreational access to rivers and streams has been informal in nature, consisting primarily of road rights-of-way at bridge crossings and some access across private lands, with the owners permission. Until fairly recently, these informal sites, in combination with the excellent facilities provided by the Department of Game and Inland Fisheries, were adequate to satisfy the demand. Dramatic increases in use levels in the last few years, however, have resulted in increased instances of trespass, littering, and vandalism and consequently the posting of many of the informal sites previously open to the public.

During the last decade, it became apparent that the various sectors of government needed to intensify their efforts to increase formal river access opportunities. The Department of Game and Inland Fisheries in response to this need has significantly increased their inland boating access program, acquiring and developing thirty-three sites between 1982 and 1987, with similar progress expected to continue. Many of these sites have been provided as a direct result of interagency and intergovernmental coordination. The Department of Game and Inland Fisheries, the Department of Transportation, and the Department of Conservation and Recreation formalized a cooperative agreement whereby potential bridge replacement and road realignment projects are screened by all three agencies to determine the feasibility of incorporating river access facilities into the project. This cooperative venture has the potential of providing a significant amount of river access without the necessity for new land acquisitions. Another highly productive cooperative program is being carried out between the Department of Game and Inland Fisheries, the Tennessee Valley Authority, and local and regional units of government. Under this agreement, a number of access sites have been provided on the rivers in Southwest Virginia under the purview of TVA.

The role of local government in the provision of river access opportunities should be expanded.

City, county, and town governments should take the initiative in providing access areas and facilities on those rivers and streams which are of primary interest to their own citizenry, thereby allowing the Game Department to continue to concentrate on providing access to rivers which constitute recreational resources of greater than local significance.

A significant opportunity exists at the local level for cooperative ventures between government and the private sector. Park and recreation planning officials should identify corporate owners of riparian lands in their locality and determine their willingness to make land available for the development of river access facilities. Opportunities also exist for local government to develop cooperative access agreements with civic and/or conservation organizations which may have riparian land holdings. Because neither the area requirements nor the facility developments for access areas need be extensive, costs for all parties concerned can frequently be kept to a minimum.

In order to aid in the planning necessary to continue an effective access provision program, the Department of Conservation and Historic Resources completed a statewide inventory of both formal and informal access sites in 1982. By developing a comprehensive picture of access locations on our major rivers and streams, it becomes much easier to locate "holes" or "gaps" in the system. The identification of these gaps will aid in the formulation of priorities for the expenditure of increasingly limited funding. Existing and potential access areas are shown on the map on page 170.

PUBLIC ACCESS TO INLAND RIVERS

■ FORMAL ACCESS: SITE SPECIFICALLY DESIGNED OR INTENDED TO PROVIDE PUBLIC ACCESS TO A RIVER OR STREAM

● INFORMAL ACCESS: SITE NOT DESIGNED SPECIFICALLY FOR PUBLIC ACCESS TO A RIVER OR STREAM (GENERALLY A HIGHWAY BRIDGE CROSSING)

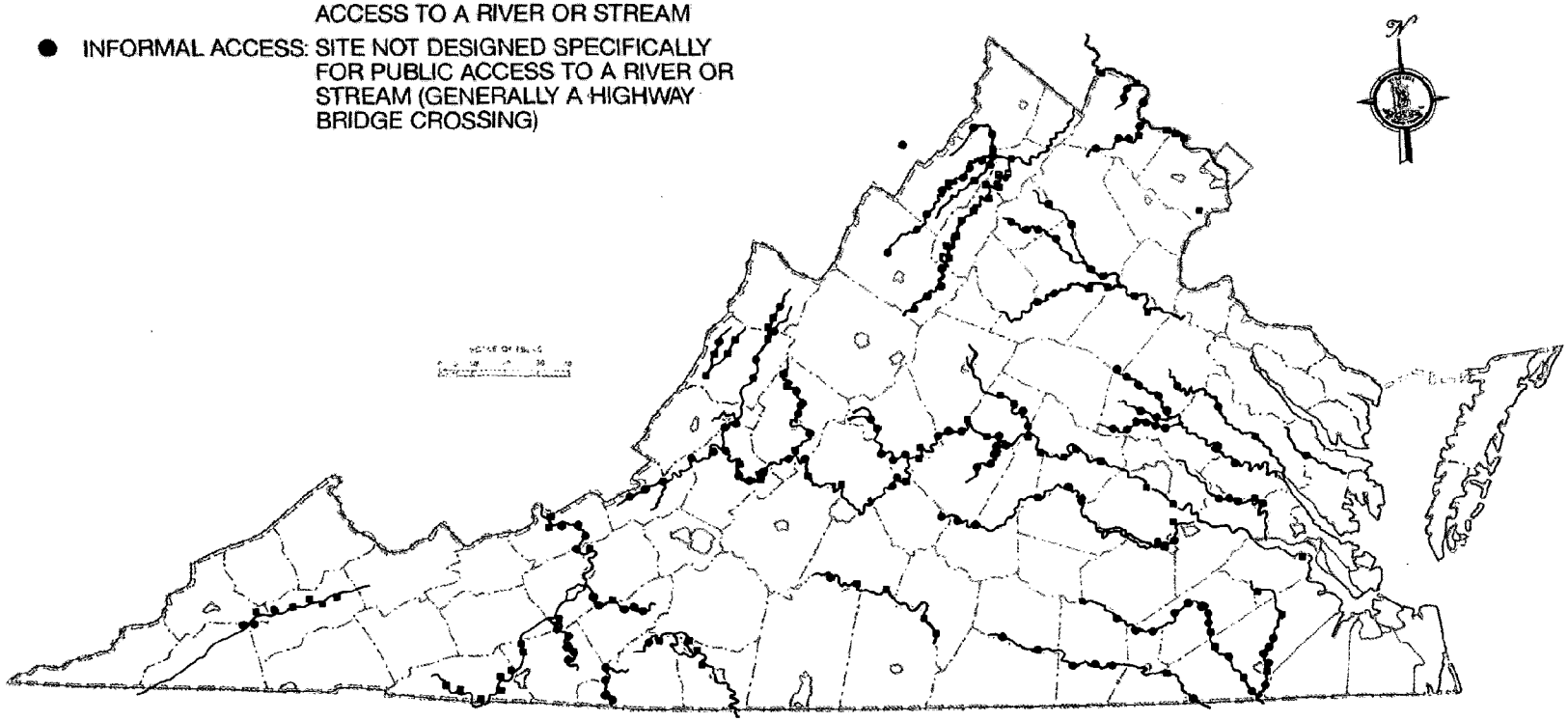
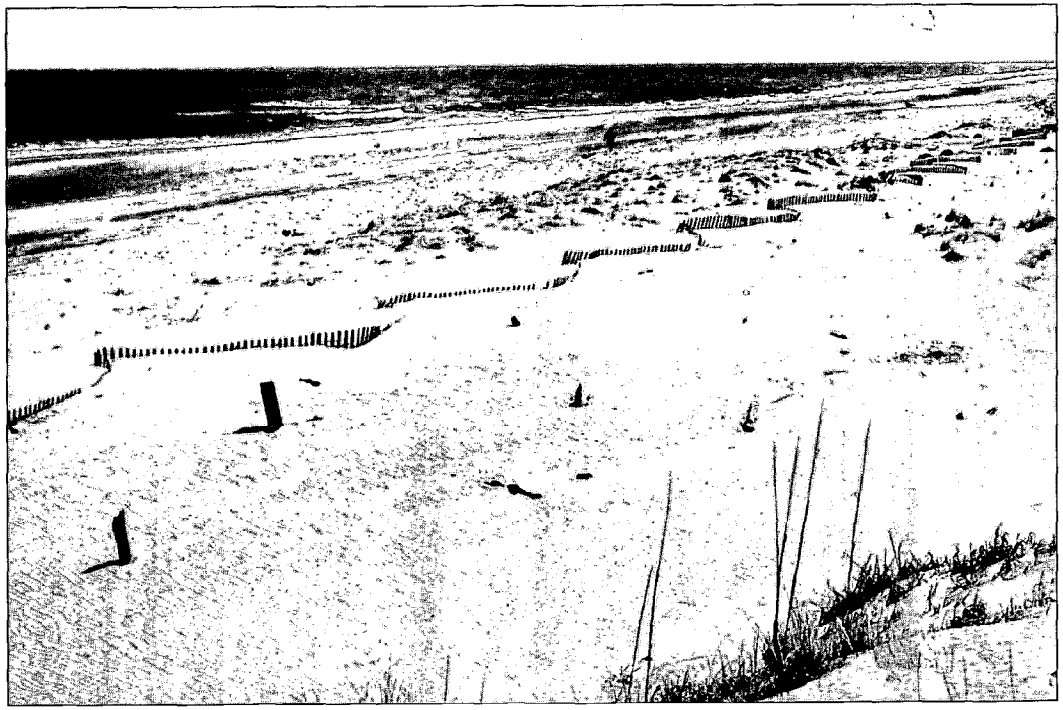


Plate 14

Recommendations

Successfully meeting a meaningful percentage of current and projected demand for recreational river access is going to require continued coordination and cooperation between a variety of governmental agencies, as well as segments of the private sector. Implementation of the following recommendations should significantly enhance access opportunities:

- State and federal land managing agencies, such as the Army Corps of Engineers, National Park Service, U.S. Forest Service, Division of State Parks, the Department of Forestry, and the Department of Transportation should survey their real estate holdings to determine the degree of potential to satisfy river access needs. [P2-G]
- Increasingly heavy use of popular river segments are beginning to result in conditions of overcrowding, overfishing, promiscuous trespass, litter, and conflicts between user types. Livery operators, river users, state, regional, and local government officials will need to give consideration to the development of river corridor management plans which address these problems. [P2-E]
- Local and state agencies should intensify their efforts to involve corporate land managing interests in the provision of public river access. [P2-A]
- Existing interagency and intergovernmental cooperation and coordination in the provision of access opportunities should continue and new opportunities for such cooperation sought. [P2-G]
- The Department of Game and Inland Fisheries should continue acquisition and development of river access sites of regional significance. [P1-C]



Beaches

Beach use/sunbathing is the single most popular outdoor recreation activity participated in by Virginians, in terms of total numbers of participants. Approximately 44% of the state's population participated in this activity in 1987. The Outdoor Recreation Area and Facilities Inventory indicates a surplus of beach resources. However, because many of these beach areas are privately owned, and many which are publicly owned are inaccessible, there is actually a deficit of available, public beaches.

The Board on the Conservation of Public Beaches was created by the General Assembly to assist localities in the enhancement and protection of public beaches. Of the more than 5,000 miles of shoreline in the tidal portion of the state, the Board has identified only about 24 miles of public beach. This beach is locally controlled by fee acquisition or easement and is eligible for public beach funding.

The public sector provides additional miles of high quality beach, which has limited public access. Many of the federal sites have restricted use because of the military mission or because of agency policy. Although most of the state-owned beaches are more open, access is limited due to insufficient parking and limited support facilities.

The Commonwealth has conducted a tidal beach inventory and evaluation in order to piece together a "picture" of the state's beach resources. The purpose of the study was to determine if and where opportunities exist and to improve their public recreational usability, as well as to determine where the priorities should be with regard to governmental actions aimed at increasing and improving beach availability to the public. The beaches inventoried were evaluated and ranked according to six weighted quality factors: physical quality; extent; proximity to population; fastland use and/or condition; accessibility; and ownership. Those resources which ranked highest are depicted on the map on page 173.

Not all beaches are appropriate for intense recreation. Beaches which are prime habitat for endangered species should receive special planning and consideration. The management of such areas will need to balance recreation use with species protection. In addition, care must be taken to provide protection of the dunes and their associated vegetation.

The primary conclusion drawn from this inventory and evaluation process was that a substantial amount of high quality beach can be made available for public use without the necessity of large scale land acquisition. Access and support facility development at three existing state parks and at Back Bay National Wildlife Refuge would result in making over 14 miles of currently inaccessible, high quality beach, available for use.

In Recreation Region 3, the primary destination of a majority of the state's beach users, there are over 20 miles of excellent beach to which public access is severely limited. The local governments in this region should be alert to opportunities to provide improved access to the beach, particularly in areas where public use already exists, but is limited by a lack of parking and other support facilities.

Although a majority of the beach use in the Commonwealth takes place in the Tidewater region, opportunities to increase beach availability in other areas should not be ignored. For example, beach areas are among the most heavily used resources found within our state parks. Insuring access to all state park beaches should be a priority. Also, where justifiable and feasible, these beaches should be enlarged. The proposed state park on the eastern shore should provide a large beach and public access to the Chesapeake Bay.

In summary, much of the need for additional beach can and should be satisfied through better utilization of those beaches already in the public estate.

VIRGINIA'S BEACH RESOURCES

NOTE: THE BEACHES IDENTIFIED ON THIS MAP ARE OF GOOD TO EXCELLENT RECREATIONAL QUALITY. HOWEVER, NOT ALL ARE AVAILABLE FOR PUBLIC USE.

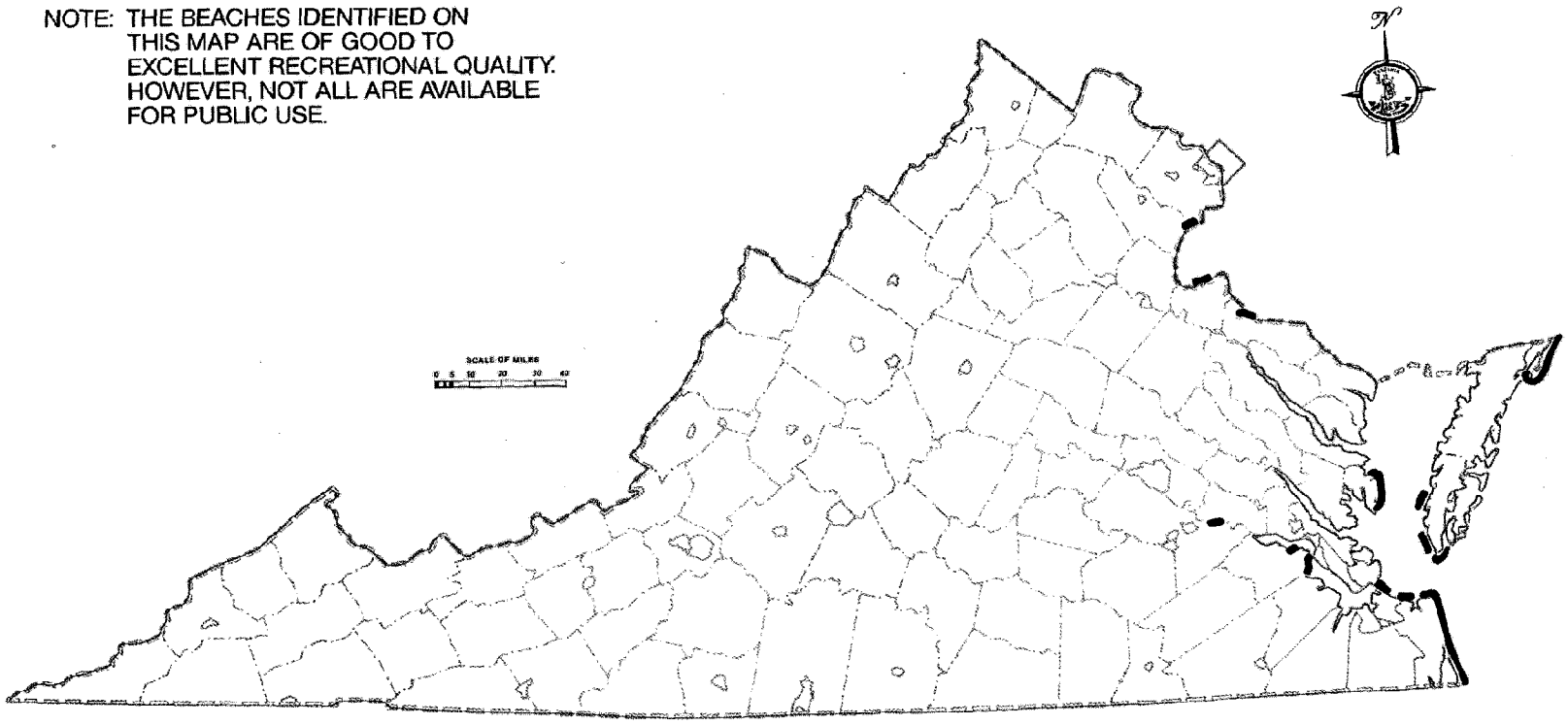


Plate 15

Recommendations

Implementation of the following recommendations should help to achieve increased utilization of public beaches:

- The U.S. Fish and Wildlife Service should consider ways in which it's beach resources can be made available for public use while meeting its mandate to protect wildlife and wildlife habitat. [P1-C]
- The state should place a priority on maximizing the use potential of state park beaches. [P1-B]
- Military installations should be encouraged to increase the amount of beach available to the public. [P1-C]
- The cities of Norfolk and Virginia Beach should work toward improving access to their public beaches by providing vehicular parking along Ocean View, Atlantic Avenue, and Shore Drive. [P1-C, P1-F]
- The state should acquire public beach front as part of any state park acquisition program. [P1-B]

Other State Properties

Throughout the Commonwealth, there are about 629,000 acres of land belonging to state agencies and institutions. The vast majority of these resources are committed to specific public functions. However, there are lands belonging to some agencies that have been identified as underutilized and potentially surplus. A Joint Legislative Audit and Review Commission (JLA&RC) study indicated that there may be as much as 15,000 acres of such lands statewide.

Article XI of the State Constitution, **The Virginia Outdoors Plan**, the JLA&RC study, and the Department of General Services all set goals and objectives encouraging the wise use of the Commonwealth's land resources. Multiple use has been an alternative that has been recommended by the Department of Conservation and Recreation, as well as a number of other groups and agencies, as one way of obtaining additional public benefit from these properties.

The Outdoor Recreation Demand Survey points out that Virginians are demanding more and more in the way of recreational areas and facilities. Although the major responsibility for acquiring and developing these facilities rests with the Department of Conservation and Recreation, the Department of Game and Inland Fisheries, and local units of government, there appear to be many instances where existing state-owned lands which have a nonrecreation primary use might be utilized to some degree for recreation. More efficient use could be made of such properties by permitting compatible recreational developments to occur on certain of the underutilized or potentially surplus areas.

The Division of Engineering and Buildings is the state agency with legislative responsibility for coordinating the review and disposition of state-owned properties. Over the past few years, the Division has developed maps and descriptions of the real property belonging to 17 land managing agencies and institutions. The almost 300,000 acres of property inventoried, excluding highway department right-of-way and state owned bottoms, host a full range of functions including conservation, recreation, education, health and corrections.

Of the 300,000 acres, 15,000 were identified by the JLA&RC study, and subsequently by the Department of Forestry and the Division of Engineering and Buildings, as resources that may have potential for future multiple use, including compatible recreation. It should be pointed out that a parcel of public land which has been identified as underutilized or potentially surplus is not automatically suitable for public recreation. Nevertheless, uncommitted public lands need to be evaluated to determine if recreational use would be a compatible alternative.

The Department of Conservation and Recreation has statewide responsibility for affecting a comprehensive plan for long-range acquisition and development of a complete state recreation system. All previous **Outdoors Plans** advocated multiple use of public lands as a wise and beneficial use of the resources of the Commonwealth. The Division of Planning and Recreation Resources staff is in a position to coordinate with other state agencies and local units of government in order to help evaluate the recreation potential of public properties and to suggest arrangements that might help to open up selected parcels for various recreational activities.

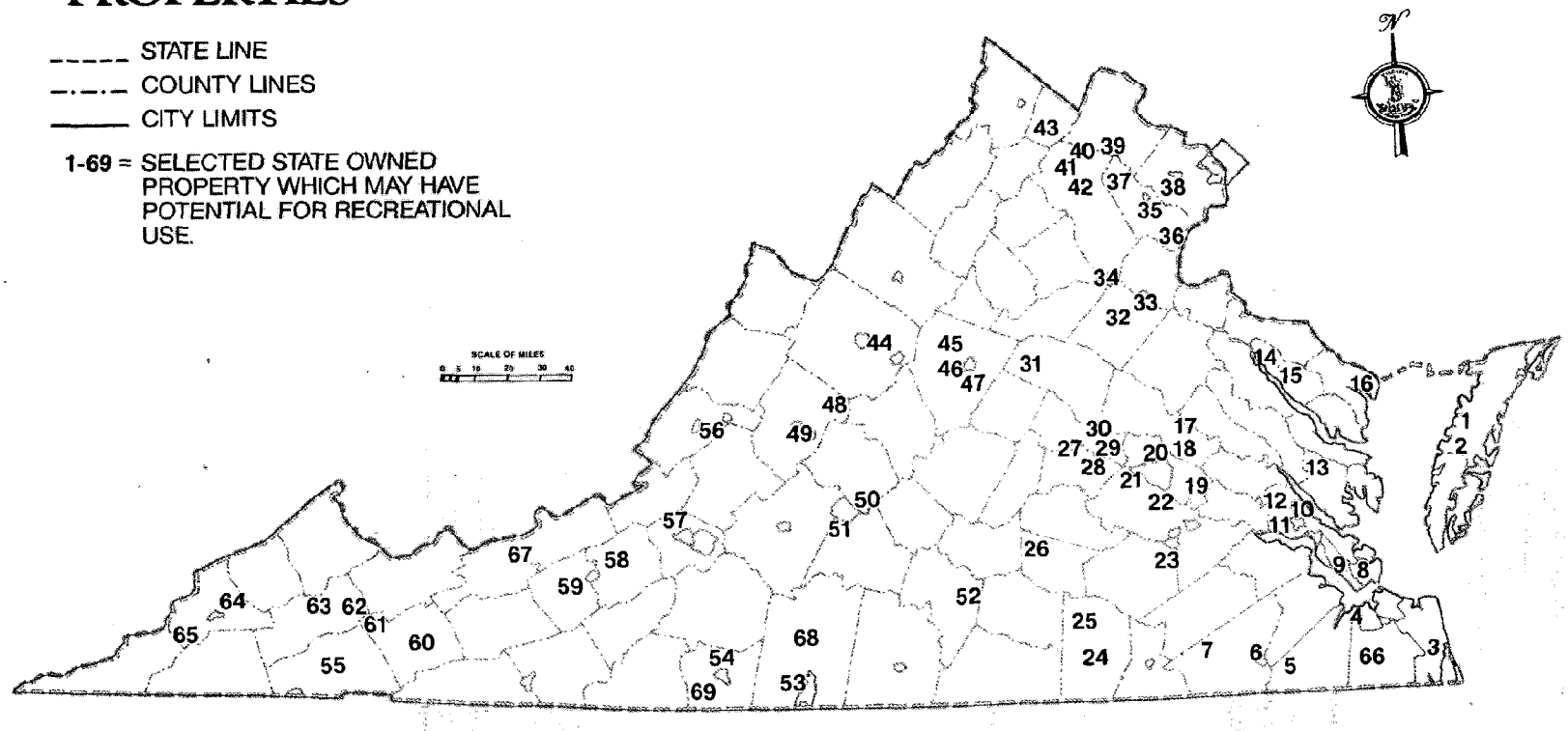
OTHER STATE PROPERTIES

_____ STATE LINE

_.-._.- COUNTY LINES

_____ CITY LIMITS

1-69 = SELECTED STATE OWNED PROPERTY WHICH MAY HAVE POTENTIAL FOR RECREATIONAL USE.



1. EASTERN SHORE COMMUNITY COLLEGE
2. *VIRGINIA TRUCK RESEARCH STATION (VPI)*
3. TIDEWATER COMMUNITY COLLEGE
4. TIDEWATER COMMUNITY COLLEGE (FREDERICK CAMPUS)
5. TIDEWATER RESEARCH STATION (VPI)
6. *PAUL D. CAMP COMMUNITY COLLEGE*
7. SOUTHAMPTON CORRECTION CENTER
8. THOMAS NELSON COMMUNITY COLLEGE
9. VIRGINIA ASSOCIATION RESEARCH CAMPUS (W&M)
10. WILLIAM & MARY AIRPORT TRACT
11. WILLIAM & MARY/EASTERN STATE HOSPITAL
12. EASTERN STATE HOSPITAL
13. RAPPAHANNOCK COMMUNITY COLLEGE (SOUTH CAMPUS)
14. *FOREST MANAGEMENT STATION (VPI)*
15. RAPPAHANNOCK COMMUNITY COLLEGE
16. *VIRGINIA OUTDOORS FOUNDATION (KNOLS TRACT)*
17. HANOVER LEARNING CENTER
18. BARRETT LEARNING CENTER
19. ELKO TRACT
20. *J. SARGENT REYNOLDS COMMUNITY COLLEGE*
21. BON AIR LEARNING CENTER
22. JOHN TYLER COMMUNITY COLLEGE
23. RICHARD BLAND COLLEGE
24. *MEDIUM SECURITY INSTITUTE #1*
25. SOUTHSIDE COMMUNITY COLLEGE (CHRISTIANA CAMPUS)
26. PIEDMONT GERIATRIC HOSPITAL
27. BEAUMONT LEARNING CENTER
28. POWHATAN CORRECTIONAL CENTER
29. JAMES RIVER CORRECTIONAL CENTER
30. *J. SARGENT REYNOLDS COMMUNITY COLLEGE (WESTERN CAMPUS)*
31. RECEIVING AND CLASSIFICATION CENTER
32. HAMLET TRACT (MARY WASHINGTON COLLEGE)
33. OLD BROMPTON TRACT (MARY WASHINGTON COLLEGE)
34. *GERMANNA COMMUNITY COLLEGE*
35. NORTHERN VIRGINIA COMMUNITY COLLEGE (MANASSAS)
36. NORTHERN VIRGINIA COMMUNITY COLLEGE (WOODBRIDGE)
37. CURRY HOUSE
38. GEORGE MASON UNIVERSITY
39. VIRGINIA FOREST RESEARCH STATION (VPI)
40. VIRGINIA OUTDOORS FOUNDATION #1
41. VIRGINIA OUTDOORS FOUNDATION #2
42. VIRGINIA OUTDOORS FOUNDATION #3
43. BLANDY FARM (UVA)
44. WESTERN STATE HOSPITAL (NEW SITE)
45. BIRDWOOD PROPERTY (UVA)
46. PIEDMONT COMMUNITY COLLEGE
47. BLUE RIDGE HOSPITAL
48. *McCORMICK FARM*
49. WHITE TRACT (VMI)
50. LYNCHBURG TRAINING SCHOOL & HOSPITAL
51. CENTRAL VIRGINIA COMMUNITY COLLEGE
52. SOUTHSIDE VIRGINIA COMMUNITY COLLEGE
53. DANVILLE COMMUNITY COLLEGE
54. PATRICK HENRY COMMUNITY COLLEGE
55. VIRGINIA HIGHLANDS COMMUNITY COLLEGE
56. DABNEY LANCASTER COMMUNITY COLLEGE
57. CATAWBA HOSPITAL PROPERTY
58. FISHBURN TRACT
59. NEW RIVER COMMUNITY COLLEGE
60. SOUTHWESTERN STATE HOSPITAL
61. GEOLOGY FIELD CAMP (VPI)
62. SOUTHWEST VIRGINIA COMMUNITY COLLEGE
63. APPALACHIAN LEARNING CENTER
64. MOUNTAIN EMPIRE COMMUNITY COLLEGE
65. CLINCH VALLEY COLLEGE
66. ST. BRIDGIS CORRECTION CENTER
67. BLAND CORRECTIONAL FARM
68. FIELD UNIT 15
69. FIELD UNIT 28

Plate 16

Recommendations

The following recommendations should be implemented in order to evaluate state-owned property and identify opportunities for recreational use:

- The Division of Engineering and Buildings should consider compatible recreational activities as a potential use for surplus or underutilized public lands. [P1-C]
- Before disposing of real estate through public sales or auction; the Division of Engineering and Buildings should check with the Department of Conservation and Recreation, the Department of Game and Inland Fisheries, and local parks and recreation directors to see if the parcel(s) have potential for present or future recreational use. [P1-C]
- The Department of Conservation and Recreation should work with all land managing agencies which have underutilized lands, to evaluate recreational potential and help develop cooperative agreements, use permits, or leases, on those lands where recreation is compatible. Such mechanisms would enable the Commonwealth to retain title to the land while permitting some form of recreational use. [P2-A]

Local and Regional Parks

One of the most important elements of an adequate outdoor recreation system for the Commonwealth is a system of local and regional parks. Today, the types of recreation facilities most in demand are those which people can use on a daily basis. American adults utilize city or community parks more than any other type of outdoor recreation area. Over 40% of this population visits local parks more than 10 times per year. Providing close-to-home park and open space areas is a basic responsibility of local government.

Studies have revealed that a majority of the population feels more parks and recreation areas are needed near large cities. The three most often expressed needs were: 1) more facilities for both organized sports and for unscheduled freeplay, 2) more local parks, and 3) more local recreation programs. This expressed desire for expanded facilities and opportunities, coupled with the fact that 80% of American adults consider outdoor recreation an important or very important aspect of family life, emphasizes the significant role which local government plays in satisfying the recreation demand in Virginia. Approximately one-third of the population is participating in more recreation than they did five years ago. Younger single adults and couples are spending more time recreating.

As a general rule, a locality should provide a minimum of ten acres of park land per thousand population. However, acreage alone should not be used as an indicator of adequacy. Distribution is also an important factor. A properly planned park and recreation system should include three types of areas, each serving a particular set of needs. Because the needs which they are intended to meet are different, so are their size, facilities, and service radii.

The first of the three types of areas which a locality should provide for its citizens is the neighborhood park. Ideally, a neighborhood park should provide about three acres of park land per thousand population and be within 5-15 minutes or ½ to 1½ miles walking distance of those it is intended to serve. The park should be intensely developed and include playground equipment, game courts, and play fields. If possible the neighborhood park should be located near a school and/or a neighborhood center. Smaller parks could be considered to meet a specific need for a specific population.

In combination, neighborhood and community parks should provide for a majority of the citizen's close-to-home recreational needs. Community parks are designed to serve two or more neighborhoods and generally provide those facilities which require more space than can normally be accommodated at a neighborhood park. A planning standard of three acres per thousand population, with a minimum size of 20± acres, is recommended for community parks. Facilities should include such things as lighted game fields and court complexes, a swimming pool, a picnic area, and walking and jogging trails. These should be within 15 minutes driving time of the client population. If possible it should be located near the center of the community and have good access and service by public transportation.

The district park is the largest of the three types of parks for which local governments should be responsible. Four acres per thousand population, with a minimum size of 50 acres, should be used as a planning standard. In addition to providing many of the same facilities often found in community parks, the district park should provide substantial undeveloped open space to accommodate passive or unstructured recreational opportunities and enhance visual amenities in the area. Ideally, a district park would be located within 15 to 20 minutes driving time of anyone in the target population. They should be served by mass transit means, where appropriate, and be accessible by pedestrians and/or bikes.

Although not necessarily exclusively the responsibility of individual local units of government, regional parks are nonetheless an important element of an adequate outdoor recreation system. With a recommended service radius of

25 miles and a minimum of 100 acres in size, regional parks may best be provided by two or more units of government working together. Regional parks should have a wide variety of developed facilities in order to provide recreational opportunities for all age groups. Undeveloped open space to accommodate unstructured recreational pursuits should also be available.

Although specific local park sites are not identified in **The Virginia Outdoors Plan,** they are included in the inventory of facilities maintained by the Department of Conservation and Recreation. The Plan does identify several general areas of opportunity which localities should consider when planning the development of a park and recreation system. Among these areas are stream valleys, landfills, flood plains, and abandoned railroad right-of-way corridors. Because development is usually restricted, stream valleys frequently offer excellent opportunities for trail construction. Utility corridors and abandoned railroad rights-of-way should also be considered for trail development. These linear corridors provide opportunities for communities to work together to provide greenbelt or greenway parks. They can provide protection to the resource base while linking cultural, historical, recreational, and natural areas into a unified open space system. Opportunities for partnerships with private enterprise to assist in meeting community recreational demands should also be fully explored.

Local Recreation Programs

One hundred and seventeen full-time local parks and recreation departments operate within Virginia. Of the 96 counties in the state, 54 have full-time departments as well as all cities and 16 incorporated towns. Thirteen percent of the state's population remains unserved by a local recreation program, with the largest voids present in Recreation Regions 5, 7, 8, 9, and 11.

The majority of local departments place greater priority on the provision of recreation programs and activities than on the acquisition of park properties. Recreation budgets, when compared to other local services, are often very limited, meeting primarily payroll and operating expenditures. Opportunities for parkland acquisition are often limited to the availability of state and federal funding and private donations.

While many departments work cooperatively with school systems to provide community level programs throughout the jurisdiction, more localities need to consider the implementation of the school/park concept. The school/park concept promotes the schools and surrounding land and facilities as community recreation centers during nonschool hours. The concept requires the close cooperation of school and recreation personnel throughout facility planning, development, and renovation to ensure that a balance of recreational and educational features are provided. An operating agreement between the school board and the governing body should be established to encourage full utilization of all available resources.

The following recommendations are made with respect to local and regional park providers in the state:

- Government recreation providers should make efforts to increase public awareness of the facilities and programs which they offer. According to recent studies, a lack of information on available opportunities is the single largest deterrent to the citizens' use of public recreation areas, facilities, and programs. [P2-G]
- Localities should make use of available state planning and technical assistance in their efforts to maximize the use of existing public and private resources. [P1-H]
- Every city, town, county, and planning district should prepare and adopt an open space and recreation plan and an action program for developing a comprehensive system of open space and outdoor recreation opportunities. These plans should be consistent with **The Virginia Outdoors Plan** and should be periodically updated to reflect changing conditions and circumstances. [P2-E]
- Local governments should make the necessary commitments to preserve important scenic, recreation, cultural/historic, and open space resources, including floodplains, stream valleys, scenic roads, and scenic rivers. Floodplains and stream valleys are particularly valuable as recreation and open space resources. If managed for passive recreation, floodplains and stream valleys are protected from more intense uses which can result in environmental and public safety concerns, and can provide educational and recreational opportunities as well as water access. [P1-C]
- Local governments should make stronger budgetary commitments to parks and recreation system maintenance management and development where possible, and seek alternative methods of funding such as set-aside ordinances, fees and charges and private partnerships. [P1-I]
- Cities and other urban areas should consider providing access to certain outlying recreation areas, by means of public transit. [P1-F]
- Local governments should make their parks and programs accessible to special populations, including senior adults and persons with disabilities. [P1-E, P1-F]
- Local governments should consider the implementation of the school/park concept when possible. As a minimum, school systems should involve the participation of local recreation personnel in developing and renovating school facilities. [P2-C]
- Localities should comply with House Joint Resolution 12 (January 1988) requesting school systems and local recreation departments to enter into cooperative use agreements. [P2-C]
- Local governments should solicit the participation of school authorities when developing a parks and recreation system. [P1-C]
- Adjacent counties and towns not currently providing local recreation opportunities should explore possibilities for combining resources to meet regional demands cooperatively. Existing systems may need to re-evaluate services and facilities and combine opportunities where duplication occurs, or where certain demands can not be met through one jurisdiction's resources alone. [P2-A]
- Cities, towns, and counties should consider the creation of a park authority composed of several area political jurisdictions. Frequently, such an authority can provide areas and facilities, the scope of which is beyond the capabilities of its individual members. Larger metropolitan areas particularly are in need of such cooperative mechanisms. [P2-A]
- Local governments should consider entering into cooperative management agreements for the recreational use of private, corporate, state, or federally owned lands. [P2-A]
- Local government should consider the adoption of special ordinances providing for special tax assessments for open space properties adjacent to public lands identified in this **Plan** which are consistent with the local comprehensive plan. [P1-C, P1-H, P2-E]

Private Sector

Since 1980, Virginia has grown 10.4% as compared to 7.4% for the nation. Each year thousands of houses are constructed and thousands of acres of land are transformed into subdivisions, offices, and other areas of intensive use. Growth is a reality and can be a positive force. As new areas are constructed we must look for new ways to shape our environment and provide the parks necessary for recreation and relaxation.

In order to protect the critical areas in a community, government at both state and the local level need to identify key elements of their recreational, natural, and cultural heritage.

There are several stages which outline the process communities can take to control growth. These include:

1) Identify prime assets and set goals to protect them.

2) Specify growth areas where damage does not accrue to prime assets.

3) Establish a public planning process.

4) Work with local officials to use growth-shaping tools to direct growth.

One single protection method does not always provide the solution. Most localities find that several tools may be necessary to establish a successful protection program. Commitments to funding key land acquisitions, good planning and strong regulation options, and the use of existing government powers are all important elements in a state and local protection program.

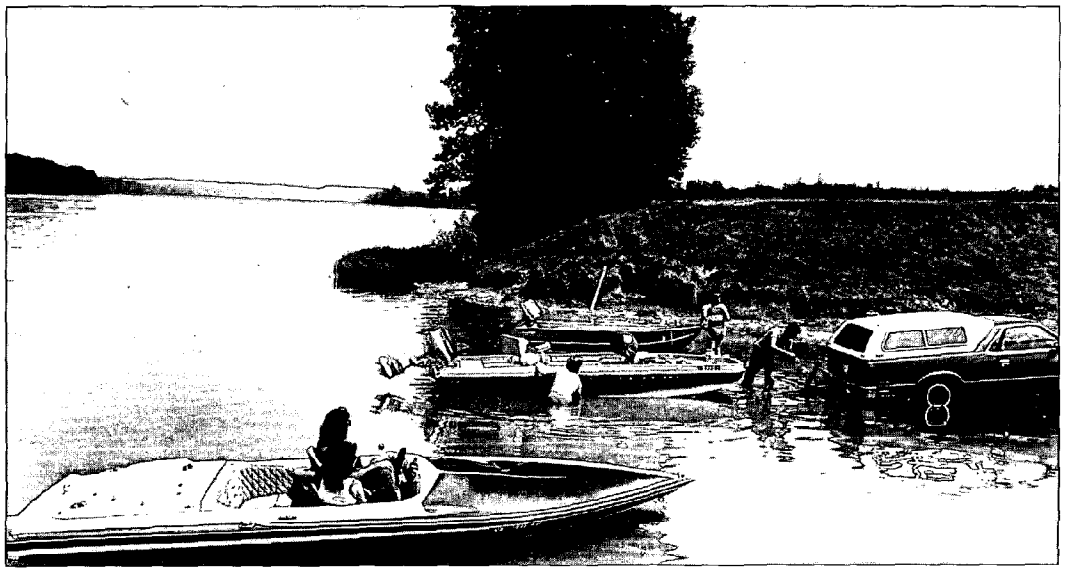
Private enterprise working within government can accomplish protection of critical resources. This occurs when you have cluster housing development which permits dedication of community open space and greenway trail links to other recreation areas. Private developers must produce high quality designs and sell the quality concept to the residents and planners. Planners in review of development plans must reward creativity and innovation. Creative partnership permits citizens to gain open space while the private sector gains profits through higher quality development of recreation and cultural amenities. Governments gain by receiving parks, higher quality development, and a working relationship between citizens, governments, and the private developer.

State government's role in this process includes identifying the critical state and regional resources. The state grants localities the authority to protect, manage, and plan for critical resources. States should help through planning, technical assistance, and other means to ensure good planning can and does take place at the local level. Finally, the state must exercise a coordinated approach in directing funding for land protection, as well as development of roads, schools, and other growth programs.

General tools exist for shaping growth. These include:

- Identification of critical open spaces, unique habitats, and sensitive areas under local planning programs or state programs for specific resources, such as rivers, historic sites, wetlands, or coastal zones. Natural heritage programs identify unique biological resources such as the habitats of rare and endangered plants and wildlife.

- Zoning and other regulations that limit development in hazardous or environmentally sensitive areas, such as prime farmlands, estuaries, wetlands, flood plains, or other natural areas necessary to protect rare or endangered plants and animals.
- Acquisition of critical lands and waters which need complete protection, including purchase of development or use rights in lieu of full fee-simple acquisitions, where such less-than-fee approaches are beneficial to both the public and private property owners.
- Land Trusts that can employ the full range of land protection tools, including acquisition of land rights, or easements, voluntary landowner agreements, monitoring and stewardship. Local trusts or nonprofit groups working with landowners can identify mutually acceptable protection options, and can act more swiftly than governments if acquisition is required.
- Preferential taxation to owners of private agricultural, forest, and open space lands when they commit to keeping their lands free of development. Senate Bill 181 of the 1988 General Assembly expanded the opportunities for special assessment for land preservation. It now includes properties of two acres or more adjacent to a scenic river, a scenic highway, a Virginia byway, or public property in **The Virginia Outdoors Plan.** Most preferential taxation schemes provide only interim protection; landowners can later opt for more intensive development if they are willing to pay previously "forgiven" taxes.
- Impact Fees and Mandatory Dedication Ordinances which require developers of land to provide for recreation and other facilities essentially linked to new residential, commercial, or industrial developments. This has resulted in the dedication of lands in many communities throughout the state.



- Transfers of Development Rights (TDRs) are a relatively new tool based on the concept of land ownership as a complex bundle of rights including personal use, physical access, minerals, and the right to further development. This can allow transfers of development rights from areas of low growth to areas of more intensive development, providing landowners in restricted growth areas with compensation for developments which are prohibited. TDR programs work well only in conjunction with strong growth planning and zoning. Their usefulness may also be enhanced by establishment of TDR "banks" to buy, sell, and broker transfers between landowners and developers.
- A Land Preserve can be a means of protecting a region containing a variety of natural, historic, cultural, and recreational resources. Private landowners, along with local, state, and federal government provide for acquisition, management, and development of the resource base. Private ownership utilizing open space easements in concert with appropriate tax incentives establish the land ownership patterns. The private and public sector work together to provide the management plan which permits utilization and growth, while recognizing and protecting sensitive properties critical to maintaining the integrity of the Land Preserve. The Pinelands National Reserve is New Jersey and the Piedmont Reserve in Virginia are models of this protection tool.

Recommendation

- Protection can only take place in a partnership environment. It will require a partnership between state and local government, as well as the public and private sector. [P2-A]

CHAPTER XIX:
Indoor Recreation Facilities

For the first time, this plan includes a chapter addressing the need for indoor recreational facilities. Outdoor recreational resources provide for a large portion of the total demand for recreational opportunity, but by no means satisfy a community's entire leisure wants and needs. The desire for instructional classes, organized indoor sports leagues, community theatre, and meeting space for special interest groups can only be satisfied by access to indoor facilities. This need can be met in a variety of ways including building new community recreational facilities; maximizing the use of existing public and private facilities; revitalizing and renovating outdated facilities; and planning future public facilities for multipurpose community usage.

A growing population has made it increasingly difficult for individuals and families to locate and utilize indoor facilities that meet their needs. Overcrowding and lack of funding for developing new facilities severely limits opportunities. Unlike outdoor opportunities that may be available to a family literally in the backyard, indoor facilities for leisure activities are not so prevalent. The provision of specific use facilities for instructional programs, sports and fitness, cultural events, and community gatherings is incumbent upon local government if it wishes to improve the quality of community life.

Comprehensive planning at the local level is essential to providing a unified, well balanced

system of leisure services. Facilities should be planned to complement each other. Piecemeal planning often results in sites and facilities with no systematic function nor sense of relationship.

When including indoor facilities in the planning process, localities should first consider the existing structures that are available. Making efficient use of existing public and private resources may meet the entire need for indoor facilities in some communities. The use of neighborhood schools for recreational programs should be a priority consideration. The 1988 Virginia General Assembly passed a resolution encouraging ". . . local school boards to work closely and cooperatively with local leisure service agencies, and to establish written cooperative agreements between the two agencies, and for the school administration to provide the opportunity to local leisure agencies to comment on school construction plans, and to generally encourage the multiple use of school facilities which are a major investment on the part of taxpayers in the Commonwealth of Virginia" (HJR12). Schools, the natural focal point for many neighborhoods, are ideal locations for community, special, and cultural events, sports activities, and instructional programs for all ages. Joint use of school facilities maximizes the benefits to the community, with school children benefiting during school hours and the general public availing themselves of much needed recreational facilities before and after school hours and during summer months.

Where feasible, the community school concept should be considered and implemented. An outstanding example of this movement is found at the Thomas Jefferson Junior High School and Community Center in Arlington. The school district, in cooperation with the Parks and Recreation Department, constructed a far better education/recreation center than either agency could have independently. The facility boasts a full community recreation center including game room, canteen, dining common, clubroom, a 730-seat theatre, a 68,000 square foot field house with an ⅛ mile track, and a fully equipped arts studio, in addition to the school. Thomas Jefferson, a premiere facility concept in the Commonwealth, serves as a model concept for other jurisdictions nationwide.

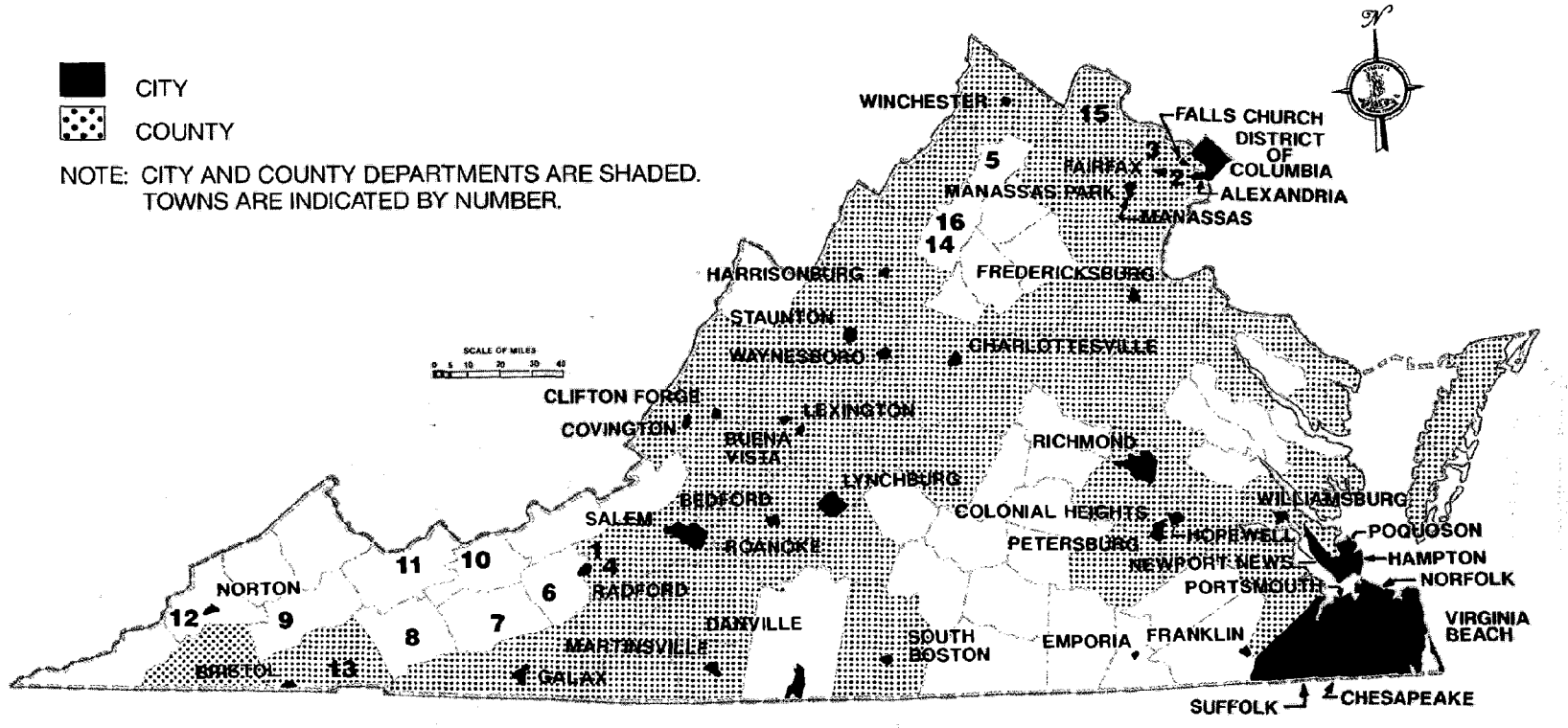
Large and growing communities are realizing pressures to provide specialized indoor facilities for meeting local recreation needs. These facilities may be developed separately or as a part of a larger park development. Most popular is the demand for recreation centers. A recreation center located at the neighborhood level should be between 15,000 and 20,000 square feet and serve up to approximately 8,000 people. The facility should include multipurpose rooms, an arts and crafts area, game room, kitchen, lounge or lobby, restrooms, and office. If gymnasium facilities are not provided at a nearby school, the center should include gymnasium and locker room facilities.

Recreation centers serving an entire community or city should be between 20,000 and 40,000 square feet and include several multipurpose rooms, gymnasium, locker room facilities, game room, arts and crafts area, auditorium or theatre, classrooms, larger meeting room, restrooms, office, lounge or lobby, and specialized areas such as ceramics workshop or weightroom. Large community centers may also house special use facilities such as racquetball courts, tennis courts, swimming pools, skating areas, and running tracks, depending on the availability of these facilities at other locations and the local demand.

Summary

In summary, a well balanced leisure service system provides a combination of indoor and outdoor facilities where the public can satisfy a variety of recreational interests. In addition to open spaces for outdoor experiences, people need places to learn a craft, exercise, attend dramas, play a game of basketball, or simply meet and socialize. Local governments will be challenged to provide diversified facilities to meet the public's many needs as communities continue to grow.

FULL-TIME PARKS AND RECREATION DEPARTMENTS



1. BLACKSBURG
2. VIENNA
3. HERNDON
4. CHRISTIANSBURG
5. FRONT ROYAL
6. PULASKI
7. WYTHEVILLE
8. MARION
9. RICHLANDS
10. BLUEFIELD
11. TAZEWELL
12. BIG STONE GAP
13. ABINGTON
14. STANLEY
15. LEESBURG
16. LURAY

Plate 17

CHAPTER XX: Regional Analysis and Recommendations

Introduction

The purpose of this chapter is to examine each of the eleven recreation planning regions and evaluate them according to their particular needs, as determined by an updated **1987 Outdoor Recreation Demand Survey** and the **1987 Outdoor Recreation Areas and Facilities Inventory.** Following each regional discussion is a set of recommendations which, if implemented, would help to meet major state recreational needs. These recommendations are keyed by number to the regional maps which show major existing and potential facilities.

The specific proposals contained in this chapter relate primarily to those facilities which are considered to be of national, state, or regional significance. Items of a purely local nature are felt to be the responsibility of local government and should be included in local recreation plans. General recommendations for local facilities, however, are made and a chart, ranking activities by percent participation and broken down by PDC, is included in each regional narrative. This should aid planners in prioritizing needs at the local level.

Another item of importance is the difference in the amount of facility needs shown in this **Plan** as compared to those shown in previous **Outdoors Plans.** As a result of an updated demand survey, better facilities inventory, and revised capacity standards, the state's current facility needs are realistic and serve as a better guide in the planning process.

In looking at the facility needs tables in each region, it is important to keep several factors in mind. First, the facility inventory does not include pools or tennis courts located within apartment or townhouse complexes. These facilities meet a significant demand in the state's

urban areas. Therefore, the actual need for pools and tennis courts in areas with significant numbers of apartment complexes that provide these facilities is actually less than that indicated in the table.

Second, in the previous **Plan,** there was a double count of facilities in the football/soccer field category. The inventory combined football and soccer fields as one item. In the **1989 Plan,** soccer participation rates and demand have been identified and presented in a realistic fashion for each facility with a needs table for each region.

The recommendations in this chapter are directed primarily towards more efficient use of existing recreational sites. Each locality should carefully examine what they have and determine how, through multiple use, cooperative agreements, leases, etc., they can increase recreational opportunity without expensive acquisitions. This is particularly important in meeting the high demands for bicycling and jogging facilities which can take place on existing low volume roads, provided signed routes are developed and shoulders are maintained in good condition. Acquisition should be considered for those critical resources which may be lost to development or some other pressure. Acquisition with deferred or limited development may be the preferred option.

Finally, one should recognize that although a recreation region or PDC may have a sufficient number of facilities, there may be deficiencies at the local level. Not only are the number of facilities important, but also their distribution. People are not willing to travel more than 10 or 15 minutes to participate in many activities. Therefore, they need to have a variety of opportunities within their neighborhood. The issues to be served by the recommendations in this chapter are as follows: P1-B, P1-C, P1-D, P1-E, P1-F, P1-H, and P2-A.

REGION 1: Northern Virginia

Recreation Planning Region 1 is the most populous in the state, with approximately 1.5 million people and two planning districts: Northern Virginia (PD 8) and RADCO (PD 16). The demographics, and consequently the recreational demands of the two areas, are significantly different. Planning District 8 is largely urban in nature, and contains approximately 90% of the region's population. Although Planning District 16 lies within Virginia's "urban corridor," and has approximately the same amount of land as PD 8, it remains primarily a rural area, with only 10% of the region's population.

Although PD 8 generates greater levels of demand than any other in the state, there has always been an unusually high degree of commitment on the part of local units of government to meet those demands. Due to past accomplishments, the district is over 95% adequate in its supply of park and open space lands. However, the region continues to experience exceptional population growth. Local and regional park acquisition plans should specifically address the open space needs generated in the major growth areas.

Currently, the most pressing needs in PD 8 are for jogging trails, beach/outdoor swimming facilities, jogging, hiking, and biking trails, picnicking, and camping facilities. Needs for soccer, softball, baseball, and basketball facilities are also significant. There is a need for bicycling facilities both for pleasure and for commuting to work and school.

With the possible exception of camping and hunting, the satisfaction of all of the area's most critical needs appropriately falls to the localities. It is felt that the information provided in Table 17, and other places in the Plan will be extremely useful to local and regional planners in the development of project funding priorities.

Planning District 16 has an adequate amount of park and open space lands. However, a number of facility needs remain unmet. While the greatest facility need is for jogging trails, in terms of overall percent deficiency, the need for basketball, softball/baseball, tennis, football, and swimming pool facilities is also very significant. It is suggested that those activities for which formal facilities are a necessity receive funding and development priority.

As was mentioned earlier, the most significant and pressing needs in Region 1 are for close-to-home recreation opportunities which are best provided by local government. Following are recommendations involving resources which have the potential to contribute significantly to park and open space opportunities at the regional and state level. These key resources are identified by systems, with recommendations as to how they can best be protected, developed, and/or utilized to satisfy present and future park and open space needs.

State Parks

1. **Lake Anna State Park** in Spotsylvania County has been partially developed. The park should be further developed in order to help satisfy the need for water based recreation facilities in the region. The highest priority is the

construction of a beach and related day use and waterfront activity areas.

2. **Leesylvania State Park,** consisting of almost 500 acres, fronting on the Potomac River in Prince William County is under development. The site will provide 1.2 miles of river frontage, as well as areas for other forms of water enhanced recreation. This site should be completely developed as quickly as funds permit.

3. In Fairfax County, the 1,804-acre **Mason Neck State Park** has been acquired by the Division of State Parks. This fragile area should be further developed to take advantage of the unique natural resources of the Potomac estuary. A priority should be placed on the construction of access for nonmotorized watercraft, as well as in environmental education facilities. The park should connect its existing and proposed trail system with trails located in the adjoining management areas.

4. A visitor center, trails, picnic, and other appropriate facilities should be developed at **Caledon Natural Area.** This site should be developed with interpretive education facilities as soon as possible. Limited recreation facilities should be constructed in a manner to support the educational programs of the park.

Regional Parks

Now that most of the planned regional park land acquisitions have been completed, emphasis should be placed on developing them to meet the region's most pressing facility needs. Particular emphasis should be given to developing water oriented facilities.

5. **Barnesfield Park** has been initially developed. Additional facilities should be added based on demand and the availability of funds.

6. **Meadowlark Gardens Regional Park** in Fairfax County should be further developed with landscaping, interpretive displays, gazebos, a visitor center and a conservatory.

7. **Balls Bluff Regional Park** in Loudoun County should be developed into a battlefield park, including restoration of the battlefield and development of road and parking areas, trails, interpretive displays, and a picnic area.

Scenic Highways, Byways, and Parkways

8. **Routes 208 and 613** in Spotsylvania County from Fredericksburg to the Orange County line, through the battlefield area.

Public Water and Beach Access

9. Additional boating and fishing access should be provided at **Lake Anna.**

10. Canoeing access should be provided to the popular **North Anna River** in Caroline County.

11. Boating, fishing, and beach access to the **Potomac River** should be increased significantly, particularly in the stretch below Occoquan.

12. Additional access to the **Rappahannock River** in King George and Stafford Counties should be developed.

Public Game and Fish Management

13. Public fishing lakes should be acquired and developed in Loudoun and Prince William Counties.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found worthy of inclusion in the Virginia Scenic Rivers System:

14. **Rappahannock River** from Deep Run to the City Dock in Fredericksburg.

15. **Rapidan River** from the Orange/Spotsylvania County line to the Rappahannock River.

16. **North Anna River** from Lake Anna to the Pamunkey River.

The following rivers or sections of rivers merit evaluation in the future to determine their suitability for inclusion in the Virginia Scenic Rivers System:

17. **The Rappahannock River** in Stafford, Spotsylvania, King George and Caroline Counties, between Fredericksburg and the King George/Westmoreland County line, should be evaluated in the future to determine its suitability for inclusion in the Virginia Scenic Rivers system.

Trails

An effort should be made by all localities to link existing trails into a regional trail network, connecting the numerous public park and recreation areas.

The following trails are existing or suggested components of the Statewide Trails System:

18. Additional protection is needed for those sections of the Appalachian **National Scenic Trail** that cross private property.

19. Potential exists for the development of a **Rappahannock Trail** on land owned by the City of Fredericksburg as well as private indi-

viduals adjacent to the river upstream from Fredericksburg.

20. Completion of the **Potomac National Heritage Trail** along the Potomac is encouraged.

21. The development of a **Bull Run Mountain Trail** traversing the beautiful Bull Run Mountains in Loudoun and Fauquier Counties would greatly enhance the State Trails System.

22. Potential exists for the development of a trail utilizing the abandoned **Dahlgren Junction Railroad** spur.

23. In northwest Fairfax County, a trail from the **W&OD to the Potomac River** should be constructed.

24. Along the **Accotink Stream Valley,** a trail from Fairfax City to Pohick Bay/Gunston Cove should be constructed.

Hostels

The following general areas in Northern Virginia are suggested as hostel locations:

25. **Thoroughfare Gap**

26. **Manassas**

27. **Burke Lake Park**

28. **Prince William Forest Park**

29. **Fredericksburg**

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

30. **Accokeek Creek** in Stafford County.

31. **Chotank Creek** in King George County is a very significant freshwater marsh area with mature upland hardwoods surrounding it. The area supports several active eagle nests.

32. **The Bull Run Mountains** in Prince William and Fauquier Counties offer attractive mountain terrain. There is an intensive effort by state and local governments, in cooperation with private interests, to preserve this unique mountain area through land acquisition and open space easements. Once protection is provided for this area, a master plan should be developed which will provide for compatible day use recreation.

33. **Ruther Glen Wetlands** in Caroline County is an unusual wetland community containing many rare plant species.

34. **Meadow Creek Pond** in Caroline County contains both bog and marsh communities with many rare aquatic and wetland plant species.

35. **The Turkey Track Creek** area in Caroline County supports an old growth upland hardwood forest with rare plant locations.

36. **Rappahannock River Hemlock Bluff** is an area along the river in Caroline County that is dominated by a disjunct montane plant community, mixed with a very rich, mesic hardwood forest.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

37. **George Mason University,** Fairfax County.

38. **Curry House,** Prince William County.

39. **Northern Virginia Community College,** Woodbridge, Prince William County.

40. **Hamlet Tract,** Mary Washington, College, Spotsylvania County.

41. **Old Brompton Tract,** Mary Washington College, Spotsylvania County.

Bicycle Trails

42. Mapping and signing of the **Virginia Loop Bicycle Trail** in Caroline, Spotsylvania, Prince William and Fairfax Counties should be completed. Any road maintenance and reconstruction operations along the route should be done with cyclist safety and convenience in mind.

REGION 1
NORTHERN
VIRGINIA
Bears Den
Appalachian National Scenic Trail
RT.690
Catoctin Creek
Furnace Mtn. Preserve
RT.662
RT.665
RT.719
RT.15
Leesburg Hostel
Balls Bluff Regional Park
LOUDOUN
RT.704
RT.734
Red Rock Regional Park
Oatlands
Potomac Heritage Trail
Algonkian Regional Park
Upper Potomac Regional Park
Fraser Preserve
Goose Creek
Washington & Old Dominion Trail
Riverbend Park
Great Falls Park & Natural Area
Scotts Run Nature Preserve
Turkey Run Farm Park
Wolf Trap Farm Park
FAIRFAX
RT.193
George Washington Mem. Parkway
Ellanor C. Lawrence Park
Lake Fairfax Park & P.F.L.
Potomac Overlook Regional Park
I-66 Bikeway
Conway Robinson Memorial Forest
MeadowLark Gardens
Lake Accotink
Arlington Co. Bike Trail
Manassas National Battlefield Park
Twin Lakes Park
WASHINGTON D.C.
Ben Lomand Park
Burke Lake Park & P.F.L.
Bull Run - Occoquan Regional Park
George Washington Memorial Parkway
Occo. Rvr.
South Run Dist. Park
Huntley Meadows Park
PRINCE WILLIAM
Lake Ridge Park
Mount Vernon
Washington's Grist Mill S.P.
Prince William Forest Park
Pohick Bay Regional Park
Quantico Marine Corps Base
Mason Neck S.P. & N.A.
Mason Neck W.L.R.
Lunga Reservoir
Potomac Shoreline Regional Park
Marumsco N.W.R.
Featherstone N.W.R.
Curtis Park & P.F.L.
Leesylvania S.P.
STAFFORD
Rapidan River
FREDERICKSBURG
Potomac River
Barnesfield Park
Fredericksburg & Spotsylvania National Military Park
Rappahannock River
Caledon State Park & N.A.
Lake Anna State Park
Berger Memorial Sanctuary
KING GEORGE
SPOTSYLVANIA
Pettigrew W.M.A.
Lands End Wildlife Refuge
Fort A.P. Hill
East Coast Bike Trail
North Anna River
CAROLINE
LEGEND
EXISTING
POTENTIAL OR PROPOSED
PARK OR RECREATION AREA
FOREST
WILDLIFE MGT. AREA
NATURAL AREA *
PUBLIC FISHING LAKE
PUBLIC BOAT LANDING
HISTORIC AREA
SCENIC HWY., BYWAY, PKWY.
SCENIC RIVER
TRAIL
HOSTELS
BEACH
KEY NUMBERS REFER TO TEXT
* INCLUDES WILDERNESS AREA

REGION 1 TABLE 17

Projected 1990 Population: 1485515

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	19.54	15609	9614	8592	5995	18406	8792	21433	11819	SITES
FISHING	21.26	19568	70785	1410	+51217	22136	+48649	24720	+46065	ACRES
CANOEING, ETC.	9.21	219	258	0	+39	271	13	330	72	STREAM MILES
SAILING	6.53	11746	51712	414	+39966	15289	+36423	19290	+32422	ACRES
POWER BOATING	10.93	21702	51712	414	+30010	24375	+27337	27116	+24596	ACRES
WATER SKIING	6.10	30040	51712	414	+21672	38983	+12729	49223	+2489	ACRES
POOL SWIMMING	50.50	497	177	144	320	561	384	626	449	POOLS
SWIMMING OUTDOORS	33.76	380	65	34	315	443	378	505	440	BEACH ACRES
BEACH USE, SUNNING	29.43	370	65	34	305	417	352	465	400	ACRES
HIKING, BACKPACKING	21.54	1257	532	44	725	1482	950	1722	1190	MILES
JOGGING	30.22	2280	34	0	2246	2547	2513	2818	2784	MILES
BICYCLING/WORK, SCH	9.15	154	0	0	154	194	194	239	239	MILES
BICYCLING PLEASURE	33.28	1051	365	22	686	1201	836	1361	996	MILES
HORSEBACK RIDING	4.67	161	140	23	21	179	39	196	56	MILES
FOUR WHEEL O.R.V.	3.89	213	7	1	206	242	235	273	266	MILES
MOTORCYCLE OFF ROAD	3.74	95	7	1	88	107	100	121	114	MILES
HUNTING	6.89	341362	136083	4780	205279	379776	243693	418279	282196	ACRES
PICNICKING	46.50	10603	7021	1393	3582	11962	4941	13319	6298	TABLES
GOLF	11.83	92	44	30	48	104	60	115	71	COURSES
TENNIS	25.45	966	680	176	286	1140	460	1322	642	COURTS
SOFTBALL, BASEBALL	20.68	1144	607	31	537	1299	692	1456	849	FIELDS
BASKETBALL	17.88	1150	367	24	783	1371	1004	1609	1242	COURTS
SOCCER	7.78	614	342	8	272	787	445	982	640	FIELDS
FOOTBALL	14.70	502	342	8	160	567	225	632	290	FIELDS
ICE SKATING	12.33	56	0	0	56	68	68	80	80	RINKS
SKIING	8.00	150	0	0	150	192	192	238	238	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 8 TABLE 18

Projected 1990 Population: 1327608

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	19.54	11258	1588	571	9670	13300	11712	15484	13896	SITES
FISHING	21.26	16520	30686	1122	+14166	18560	+12126	20616	+10070	ACRES
CANOEING, ETC.	9.21	155	87	0	68	190	103	232	145	STREAM MILES
SAILING	6.53	8820	12897	40	+4077	11430	+1467	14374	1477	ACRES
POWER BOATING	10.93	15311	12897	40	2414	17205	4308	19099	6202	ACRES
WATER SKIING	6.10	21066	12897	40	8169	27550	14653	34892	21995	ACRES
POOL SWIMMING	50.44	449	158	128	291	503	345	558	400	POOLS
SWIMMING OUTDOORS	33.76	312	7	7	305	361	354	413	406	BEACH ACRES
BEACH USE, SUNNING	29.43	313	7	7	306	352	345	391	384	ACRES
HIKING, BACKPACKING	21.54	1030	437	29	593	1214	777	1410	973	MILES
JOGGING	30.22	1726	24	0	1702	1917	1893	2110	2086	MILES
BICYCLING/WORK, SCH	9.15	138	0	0	138	171	171	211	211	MILES
BICYCLING PLEASURE	33.28	877	320	20	557	995	675	1119	799	MILES
HORSEBACK RIDING	4.67	131	117	16	14	146	29	159	42	MILES
FOUR WHEEL O.R.V.	3.89	188	6	0	182	214	208	240	234	MILES
MOTORCYCLE OFF ROAD	3.74	81	6	0	75	90	84	102	96	MILES
HUNTING	6.89	228285	28005	900	200280	253558	225553	278844	250839	ACRES
PICNICKING	46.50	9162	5287	168	3875	10296	5009	11429	6142	TABLES
GOLF	11.83	81	39	26	42	91	52	100	61	COURSES
TENNIS	25.35	855	611	159	244	1002	391	1157	546	COURTS
SOFTBALL, BASEBALL	20.55	1024	545	22	479	1156	611	1289	744	FIELDS
BASKETBALL	17.88	1035	335	22	700	1226	891	1432	1097	COURTS
SOCCER	7.72	547	304	8	243	697	393	866	562	FIELDS
FOOTBALL	14.63	451	304	8	147	507	203	564	260	FIELDS
ICE SKATING	12.33	50	0	0	50	60	60	70	70	RINKS
SKIING	8.00	134	0	0	134	169	169	210	210	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 16 TABLE 19

Projected 1990 Population: 157907

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	19.54	4351	8026	8021	+3675	5106	+2920	5949	+2077	SITES
FISHING	21.26	3048	40099	288	+37051	3576	+36523	4104	+35995	ACRES
CANOEING, ETC.	9.21	64	171	0	+107	81	+90	98	+73	STREAM MILES
SAILING	6.53	2926	38815	374	+35889	3859	+34956	48916	10101	ACRES
POWER BOATING	10.93	6391	38815	374	+32424	7170	+31645	8017	+30798	ACRES
WATER SKIING	6.10	8974	38815	374	+29841	11433	+27382	14331	+24484	ACRES
POOL SWIMMING	50.97	48	19	16	29	58	39	68	49	POOLS
SWIMMING OUTDOORS	33.76	68	58	27	10	82	24	92	34	BEACH ACRES
BEACH USE, SUNNING	29.43	57	58	27	+1	65	7	74	16	ACRES
HIKING, BACKPACKING	21.54	227	95	15	132	268	173	312	217	MILES
JOGGING	30.22	554	10	0	544	630	620	708	698	MILES
BICYCLING/WORK, SCH	9.15	16	0	0	16	23	23	28	28	MILES
BICYCLING PLEASURE	33.28	174	45	2	129	206	161	242	197	MILES
HORSEBACK RIDING	4.67	30	23	7	7	33	10	37	14	MILES
FOUR WHEEL O.R.V.	3.89	25	1	1	24	28	27	33	32	MILES
MOTORCYCLE OFF ROAD	3.74	14	1	1	13	17	16	19	18	MILES
HUNTING	6.89	113077	108078	3880	4999	126218	18140	139435	31357	ACRES
PICNICKING	46.50	1441	1734	1225	+293	1666	+68	1890	156	TABLES
GOLF	11.83	11	5	4	6	13	8	15	10	COURSES
TENNIS	26.24	111	69	17	42	138	69	165	96	COURTS
SOFTBALL, BASEBALL	21.75	120	62	9	58	143	81	167	105	FIELDS
BASKETBALL	17.88	115	32	2	83	145	113	177	145	COURTS
SOCCER	8.20	67	38	0	29	90	52	116	78	FIELDS
FOOTBALL	15.34	51	38	0	13	60	22	68	30	FIELDS
ICE SKATING	12.33	6	0	0	6	8	8	10	10	RINKS
SKIING	8.00	16	0	0	16	23	23	28	28	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 2: **Richmond**

The Richmond Planning Region, third most populous in Virginia, has more than 733,180 people. Eighty-five percent of the population lives in Chesterfield and Henrico Counties and the City of Richmond while Hanover, New Kent, James City, Goochland, and Powhatan Counties remain mostly rural in character. In the next ten years, the population in this region is projected to increase 15%. Demand for recreational facilities will increase proportionally and add to facility deficiencies which currently exist in the region.

Region 2 is deficient in almost every type of outdoor recreation facility, particularly the close-to-home facilities such as game fields, swimming pools, bicycle trails, tennis courts, and picnic areas. When acreage standards are applied, a 26% deficiency in local and regional park and recreation acreage is revealed. To meet this need, over 3,200 additional acres of recreation and park land should be acquired for local and regional use. Table 20, on page 202 lists the top 12 activities in the region, ranked by rate of participation.

Based on the 1987 Outdoor Recreation Demand/Supply/Needs Analysis, the most popular activity in the region is pool swimming with 50.8% of the population participating. This great demand has created a 78% deficiency in swimming pools in the region and there currently exists a need for 160 additional pools. Picnicking is the second most popular activity and interestingly this region is one of the few in the state with a need for additional tables. The need for 2,338 picnic tables should be addressed in all local park planning, and existing parks should be evaluated for their potential as picnicking areas.

Region 2 has high demand for beach use, sunbathing, and outdoor swimming. Opportunities to increase water access should be pursued. Bicycling for pleasure and jogging are also very popular activities in the Richmond Region. Over 36% of the residents bicycle for pleasure and more than 28% jog. These popular activities take place mostly on local streets or sidewalks. The

implementation of the Richmond Regional Bicycle Plan would increase safe bicycling opportunities.

Tennis, softball/baseball, and basketball are the most popular outdoor games in the region and the supply of facilities for tennis and softball/baseball are nearly adequate. However, there appears to be a substantial shortage of basketball courts to meet the current need, 370 more courts are needed. Soccer is a sport currently experiencing rapid increases in popularity. New fields will be a must in most localities.

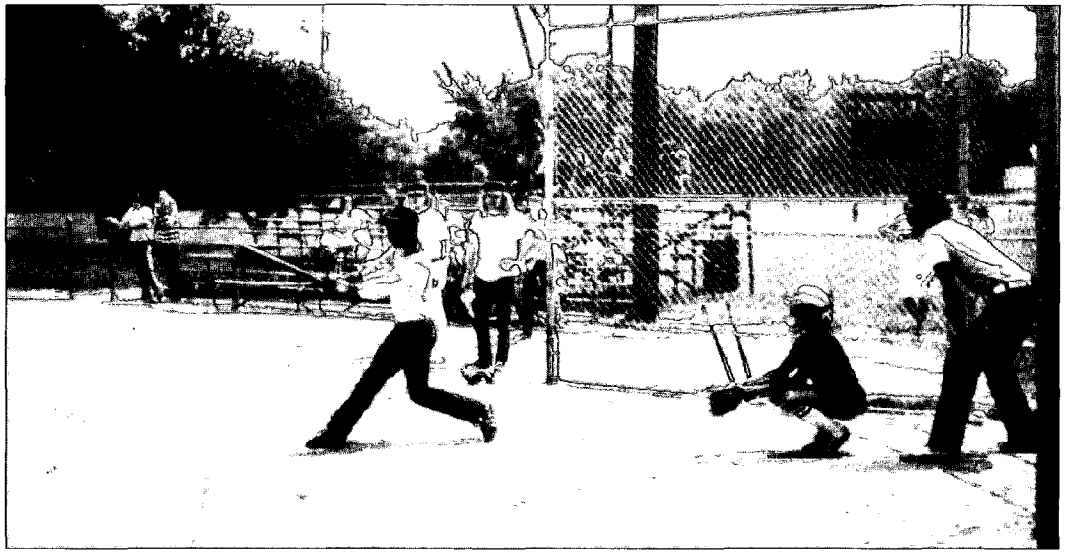
Camping is a very popular activity in the region, but there is only a 14% sufficiency in campsites. Over 8,000 more sites are needed just to meet current demand. Planning for the near future should specifically include camping.

The following significant resources contribute, or have the potential to contribute, to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are identified by recreation system with recommendations as to how they can best meet existing and future demand.

State Parks

1. **Pocahontas State Park** is scheduled to have a new master plan developed to ensure that the park is meeting the needs of the rapidly growing metropolitan area, while still protecting the resource values of the site.

2. **James River** lands between Richmond and Hopewell should be considered for a state park. It could provide a variety of traditional offerings, access to the river, as well as an area for cooperative development with the localities for local programs and facilities.



Regional Parks

3. 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. It is recommended that the park be extended westward through Henrico and Chesterfield Counties as a part of the Regional Open Space Program.

4. The acquisition and development of a site south of the James River in **Western Chesterfield County** would create a rugged, heavily forested shoreline park with significant ecological features and natural beauty.

5. The old canal locks and railroad embankments, recalling the **Gayton Coal Mines** and other historic interests, plus the heavily wooded swamps and ravines along **Tuckahoe Creek** would provide a natural setting for outdoor recreation and ecological study serving Henrico and Goochland Counties.

6. The **Belmont Park Horse Swamp** area in Henrico County would actually be a combination of two sites linked by trails. Both areas are easily accessible and particularly attractive for regional recreational development.

7. **White Oak Swamp**, in Henrico County, is of historical and ecological significance. The area contains swamp land that is rich in plant and animal life, and gently rolling uplands suitable for a variety of recreational activities.

8. The densely wooded valleys and swamps along **Four Mile Creek** in Henrico County have considerable potential for recreational development and use. The county has acquired two large tracts of land along Four Mile Creek. One park will be developed for active recreational pursuits, and the Four Mile Creek Park will be used for

more passive activities, such as environmental study. These two sites and the **Deep Bottom Boat Landing** on the James will be linked by trails.

9. A large potential park site exists along **Otterdale Branch** on Swift Creek Reservoir in Chesterfield County.

10. The lands along the scenic **South Anna River** in Hanover County have potential for regional park development.

11. The land adjacent to the whitewater fall line section of the **Little River** in Hanover County is especially scenic and is suitable for regional park development.

12. The natural area along **Big Creek** on the Pamunkey River in New Kent County includes several hundred acres of natural waterways, swamps, and marshlands, which provide considerable opportunity for water oriented recreational pursuits.

13. A regional park located along the scenic **Chickahominy River** near Providence Forge would compliment the existing state owned Chickahominy River Wildlife Management Area farther downstream and help to preserve an important natural resource.

14. **Diascund Reservoir,** in New Kent County, is located in natural, forested surroundings. It possesses potential for the development of numerous water oriented and water enhanced recreational facilities.

15. During the 1988 session of the General Assembly, the **James River Batteau Festival Trail** was officially designated from Lynchburg through the City of Richmond. Localities along the route should work towards protection and rehabilitation of navigation structures remaining from the days of the bateaux. The City of Richmond should consider renovation of canals and navigation structures within the City to permit the passage of canal boats and bateaux by the Falls of the James and through the downtown area and into the tidal portion of the James River. The annual James River Bateaux Race and numerous other events would benefit from the availability of a functional canals and navigation system around the dams and falls of the city.

Scenic Highways, Virginia Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

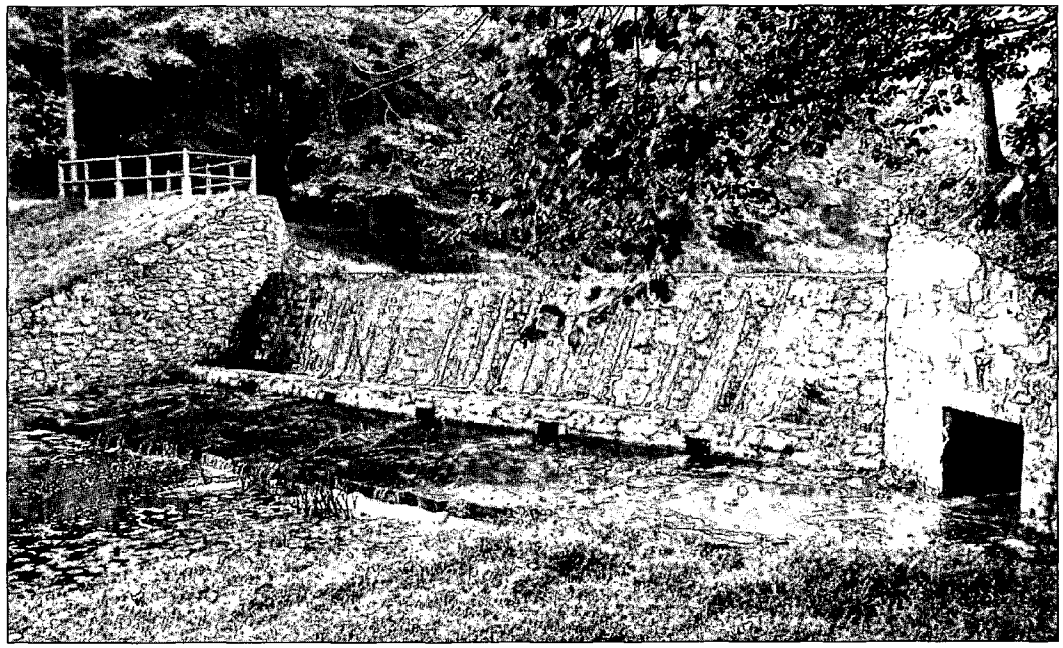
16. **Route 604** in Chesterfield and Powhatan Counties from the Amelia/Powhatan County line to the proposed extension of the Powhite Parkway.

17. **Lee's Retreat Route** in Chesterfield County, **Routes 36, 602, and 603,** from Petersburg to the Amelia County line.

18. **Route 156** in Hanover, Henrico, and Charles City Counties — Battlefield Route from Mechanicsville to the James River.

Public Water Access Areas

Although Region 2 is rich in water resources, public access to those resources is inadequate and needs to be substantially increased. In all instances where public highway crossings of fishable and/or floatable waters are scheduled for



renovation or relocation, the potential for providing parking areas and boat launching facilities should be evaluated. Public access to the James River is needed between Richmond and Hampton Roads. Access sites should also be provided on the North Anna, South Anna, Pamunkey, and Chickahominy Rivers in Region 2.

Public Fish and Game Management Areas

19. More than 5,000 acres have been acquired at the **Chickahominy Wildlife Management Area** in Charles City County. Consideration should be given to expanding recreational opportunities, particularly along the Morris Creek portion of the property.

20. Recreational developments should be considered at the **Powhatan Wildlife Management Area** in Powhatan County. Opportunities exist for increasing water oriented recreation at the two lakes within the area and along the Appomattox River.

Scenic Rivers

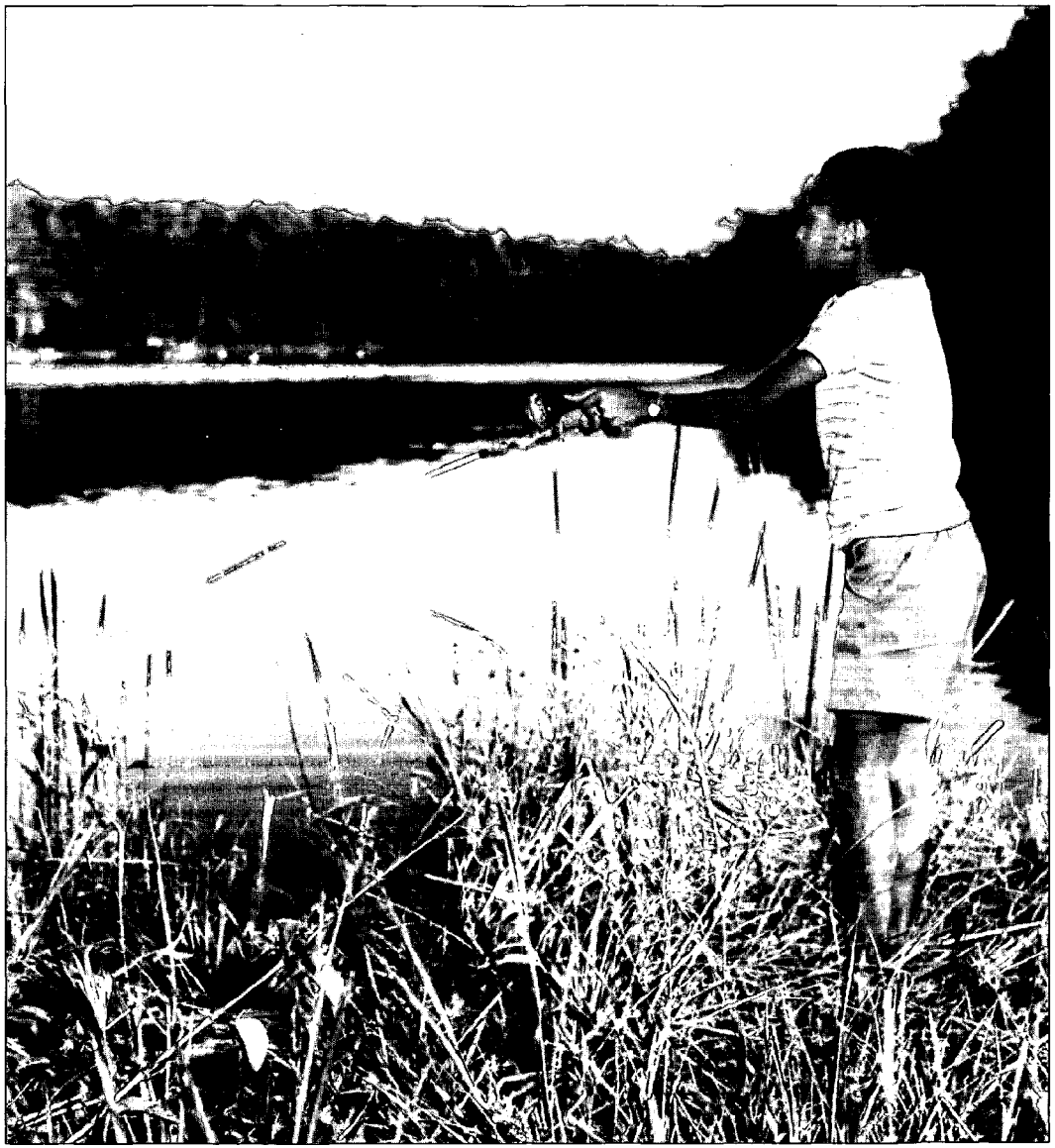
The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System.

21. The **James River** from Columbia to Maidens in Goochland and Powhatan County and from Hopewell to the Chickahominy confluence.

22. The **South Anna River** from Route 673 to Route 686 in Hanover County.

23. The **Chickahominy River** from Route 609 to Route 618 in New Kent County.

24. The **North Anna River** from Route 738 to Route 1 in Hanover County.



The following river segments merit evaluation in the future to determine their suitability for inclusion in the Virginia Scenic Rivers System.

25. The **Chickahominy River** from Route 630 to Route 609 in New Kent County and from Route 613 to the James River in Charles City County.

26. The **James River** from Richmond to the Benjamin Harrison Bridge and from Maidens to Watkins Landing in Goochland and Powhatan Counties.

27. The **South Anna River** from the Hanover County line to Route 673 and from Route 686 to the Pamunkey River in Hanover County.

28. The **North Anna River** from Lake Anna to Route 748 and from Route 1 to the Pamunkey River in Hanover County.

29. The **Pamunkey River,** the entire river in the region.

State Forests

30. **Pocahontas State Forest** in Chesterfield County could accommodate additional recreational opportunities. The development of the master plan for Pocahontas State Park will address the entire 7,400-acre tract to determine future recreation uses and resource management programs.

31. The 2,350-acre state owned **Elko Tract** in eastern Henrico County is presently managed by the Department of Forestry but is not open to the public. Because of its proximity to the densely populated Richmond area, some recreational or environmental education use should be accommodated at this site. The wetlands and natural area portions of the tract should be managed by the Department of Conservation and Recreation in cooperation with other on-site state agencies.

Trails

The following trail proposals are suggested as components of the State Trails System:

32. The proposed **James River Trail** would traverse the state from Richmond to Irongate.

33. The **Rivanna River Trail** would parallel the James and Rivanna Rivers through Goochland, Fluvanna, and Albemarle Counties.

Hostels

34. The Richmond Region should be considered as a location for a hostel.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

35. **John Tyler Community College** in Chesterfield County has 151 acres which may have potential for recreation.

36. The **James River Correctional Center** has 25 acres which may have recreational potential.

37. The **Correctional Center for Women** has 266 acres of surplus land.

38. **J. Sargeant Reynolds Community College** in Goochland has 110 acres, some of which could be used for local recreational development.

39. The **Hanover Learning Center** has 1,100 acres of land in Hanover County which may be suitable for recreation use.

40. The **Powhatan Correctional Center** has 2,595 acres which should be studied for its potential to provide recreation.

41. The **Beaumont Learning Center** has 1,203 acres which may be suitable for recreation.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion in the State Natural Areas System:

42. **Parsons Island** is located along the Chickahominy River adjacent to the Chickahominy Wildlife Management Area. Protection of this highly significant tidal marsh should be given serious consideration.

43. **Weynoke Point** is a prime wetland and swamp forest area in southern Charles City County.

44. **The Elko Area** in Henrico County contains old growth bottomland hardwood swamp forest with adjacent sphagnous seepage areas with several rare plants.

45. **The floodplain swamp along the Chickahominy River** in Hanover, Henrico, New Kent, and Charles City Counties is extremely rich and diverse in both plant and animal life and serves as an important natural resource and water conservation area in the region.

46. **Lily Point Marsh** in New Kent County contains a combination of freshwater marshes and swamp forests with several rare plant species.

47. **West Island** in New Kent County is a 475-acre freshwater marsh and hardwood swamp forest.

48. **Terrapin Point** is located in the York River watershed in New Kent County. This extensive tidal marsh area is inhabited by both osprey and eagles.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

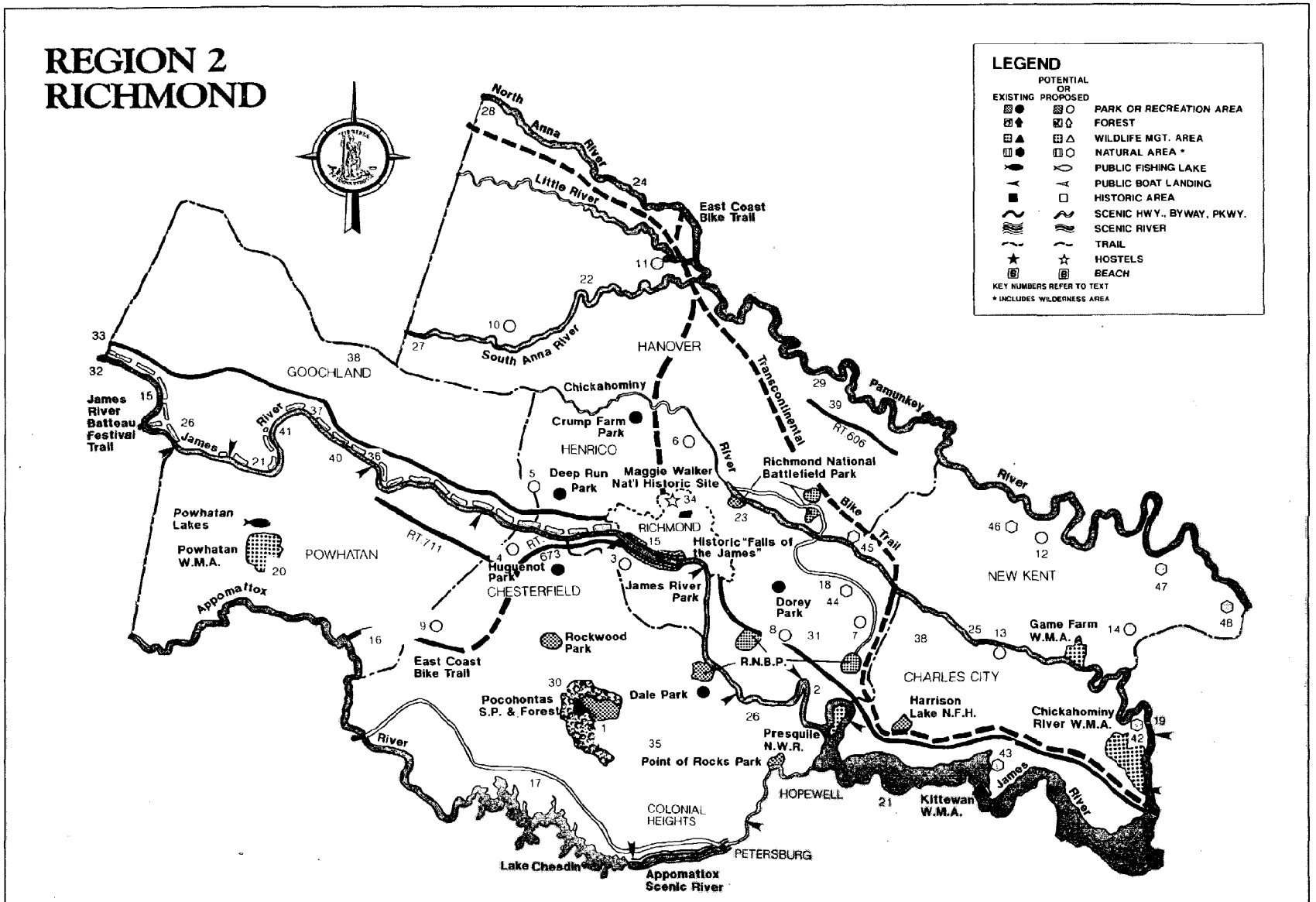

REGION 2
RICHMOND
LEGEND
POTENTIAL OR
EXISTING PROPOSED
PARK OR RECREATION AREA
FOREST
WILDLIFE MGT. AREA
NATURAL AREA *
PUBLIC FISHING LAKE
PUBLIC BOAT LANDING
HISTORIC AREA
SCENIC HWY., BYWAY, PKWY.
SCENIC RIVER
TRAIL
HOSTELS
BEACH
KEY NUMBERS REFER TO TEXT
* INCLUDES WILDERNESS AREA
North Anna River
Little River
East Coast Bike Trail
South Anna River
HANOVER
GOOCHLAND
Chickahominy
Crump Farm Park
HENRICO
Deep Run Park
Maggie Walker Nat'l Historic Site
Transcontinental
Pamunkey River
RT 606
Richmond National Battlefield Park
Bike Trail
James River Batteau Festival Trail
James River
Powhatan Lakes
Powhatan W.M.A.
POWHATAN
RT 711
RICHMOND
Historic "Falls of the James"
Huguenot Park
CHESTERFIELD
James River Park
Dorey Park
NEW KENT
Game Farm W.M.A.
Appomattox River
East Coast Bike Trail
Rockwood Park
R.N.B.P.
CHARLES CITY
Pocohontas S.P. & Forest
Dale Park
Harrison Lake N.F.H.
Chickahominy River W.M.A.
Presquile N.W.R.
Point of Rocks Park
HOPEWELL
Kittewan W.M.A.
James River
COLONIAL HEIGHTS
PETERSBURG
Lake Chesdin
Appomattox Scenic River

Plate 19

REGION 2 TABLE 20

Projected 1990 Population: 733180

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	25.10	9479	1296	1201	8183	10970	9674	12570	11274	SITES
FISHING	31.79	15064	30605	5461	+15541	16824	+13781	18632	+11973	ACRES
CANOEING, ETC.	7.95	84	140	26	+56	103	+37	126	+14	STREAM MILES
SAILING	9.81	5603	23126	341	+17523	6961	+16165	8471	+14655	ACRES
POWER BOATING	15.43	18625	23126	341	+4501	20753	+2373	22917	+209	ACRES
WATER SKIING	9.98	18662	23126	341	+4464	22925	+201	27668	4542	ACRES
POOL SWIMMING	50.77	206	46	35	160	231	185	254	208	POOLS
SWIMMING OUTDOORS	50.26	246	12	12	234	278	266	315	303	BEACH ACRES
BEACH USE, SUNNING	37.35	162	12	12	150	181	169	202	190	ACRES
HIKING, BACKPACKING	19.76	371	114	17	257	431	317	499	385	MILES
JOGGING	28.08	1033	12	0	1021	1128	1116	1226	1214	MILES
BICYCLING/WORK, SCH	8.14	39	0	0	39	49	49	59	59	MILES
BICYCLING PLEASURE	36.41	654	123	1	531	745	622	844	721	MILES
HORSEBACK RIDING	4.51	105	38	26	67	116	78	129	91	MILES
FOUR WHEEL O.R.V.	8.79	64	0	0	64	71	71	79	79	MILES
MOTORCYCLE OFF ROAD	5.00	56	0	0	56	61	61	69	69	MILES
HUNTING	10.05	173923	15211	2168	158712	193118	177907	212675	197464	ACRES
PICNICKING	46.80	3903	1565	508	2338	4362	2797	4828	3263	TABLES
GOLF	9.58	26	23	22	3	29	6	31	8	COURSES
TENNIS	29.39	755	423	120	332	875	452	1003	580	COURTS
SOFTBALL, BASEBALL	24.24	423	309	6	114	377	68	422	113	FIELDS
BASKETBALL	23.59	309	264	4	45	854	590	990	726	COURTS
SOCCER	13.72	152	126	1	26	184	58	218	92	FIELDS
FOOTBALL	14.76	199	126	1	73	223	97	249	123	FIELDS
ICE SKATING	8.57	15	0	0	15	19	19	24	24	RINKS
SKIING	17.20	96	6	6	90	117	111	135	129	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 15 TABLE 21

Projected 1990 Population: 733180

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	25.10	9479	1296	1201	8183	10970	9674	12570	11274	SITES
FISHING	31.79	15064	30605	5461	+15541	16824	+13781	18632	+11973	ACRES
CANOEING, ETC.	7.95	84	140	26	+56	103	+37	126	+14	STREAM MILES
SAILING	9.81	5603	23126	341	+17523	6961	+16165	8471	+14655	ACRES
POWER BOATING	15.43	18625	23126	341	+4501	20753	+2373	22917	+209	ACRES
WATER SKIING	9.98	18662	23126	341	+4464	22925	+201	27668	4542	ACRES
POOL SWIMMING	50.77	206	46	35	160	231	185	254	208	POOLS
SWIMMING OUTDOORS	50.26	246	12	12	234	278	266	315	303	BEACH ACRES
BEACH USE, SUNNING	37.35	162	12	12	150	181	169	202	190	ACRES
HIKING, BACKPACKING	19.76	371	114	17	257	431	317	499	385	MILES
JOGGING	28.08	1033	12	0	1021	1128	1116	1226	1214	MILES
BICYCLING/WORK, SCH	8.14	39	0	0	39	49	49	59	59	MILES
BICYCLING PLEASURE	36.41	654	123	1	531	745	622	844	721	MILES
HORSEBACK RIDING	4.51	105	38	26	67	116	78	129	91	MILES
FOUR WHEEL O.R.V.	8.79	64	0	0	64	71	71	79	79	MILES
MOTORCYCLE OFF ROAD	5.00	56	0	0	56	61	61	69	69	MILES
HUNTING	10.05	173923	15211	2168	158712	193118	177907	212675	197464	ACRES
PICNICKING	46.80	3903	1565	508	2338	4362	2797	4828	3263	TABLES
GOLF	9.58	26	23	22	3	29	6	31	8	COURSES
TENNIS	29.39	755	423	120	332	875	452	1003	580	COURTS
SOFTBALL, BASEBALL	24.24	423	309	6	114	377	68	422	113	FIELDS
BASKETBALL	23.59	309	264	4	45	854	590	990	726	COURTS
SOCCER	13.72	152	126	1	26	184	58	218	92	FIELDS
FOOTBALL	14.76	199	126	1	73	223	97	249	123	FIELDS
ICE SKATING	8.57	15	0	0	15	19	19	24	24	RINKS
SKIING	17.20	96	6	6	90	117	111	135	129	LIFTS

NOTE: Chesterfield County is also a member of Planning District 19. However, all demand, supply, and needs analyses for Chesterfield County are shown in Planning District 15 and are therefore shown in Region 2.
+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 3
Hampton Roads

The heavily developed communities around the mouth of the James River make up outdoor recreation Region 3. The north side of the Hampton Roads Harbor consists of the Cities of Newport News, Hampton, Poquoson, and Williamsburg plus the Counties of York and James City. The southern part of the region consists of the Cities of Virginia Beach, Norfolk, Portsmouth, Chesapeake, Franklin, and Suffolk plus Isle of Wight and Southampton Counties. Two Planning District Commissions (PDC's) coordinate planning for the region. PDC 21 directs planning for the north side of Hampton Roads and PDC 20 coordinates planning on the south side.

In 1986, the total residential population was about 1.34 million for the region. The Department of Planning and Budget projects a growth rate of 4.5% by 1990 with some localities exceeding this rate. Hampton Roads region will then be home to 1.4 million people. In addition to the large residential population, Region 3 is also an extremely popular tourist destination for Virginia residents as well as visitors from other states. The region also hosts a substantial military population which can vary due to the worldwide mission of the Navy, Army, and Air Force.

The Hampton Roads area is a water oriented recreational fun spot. There are more than 157,000 acres of tidal waters adjacent to the localities of the region. State and federal agencies and the private sector control about 129,000 acres of park land, providing a wide variety of land based recreational opportunities. Almost every locality within Region 3 has an aggressive and progressive parks and recreation department. The 1987 Outdoor Recreation Inventory identified over 39,000 acres of land and water that is supplied by local units of government for park purposes.

Based on the standards in **The Virginia Outdoors Plan,** Region 3 has an adequate supply of locally provided park acres for swimming outdoors and beach use. Table 22 on page 212 shows the 26 outdoor recreation activities for Region 3 as measured in the Outdoor Recreation Demand Survey. Although there is an abundance of beach acres within the region, public access is, in some instances, limited. Military activities and the U.S. Fish & Wildlife Service policy severely restrict public use of some sites while the absence of public access and the lack of adequate support facilities, such as public parking and restroom facilities, limit optimum use of other prime beach resources. According to PDC estimates, the available and usable beaches in the region only meet about 15% of the total demand.

Pool swimming, bicycling, picnicking, and jogging all showed significant deficiencies in both segments of the region. Cycling for pleasure and jogging are demands which can be met in part by designating routes within local neighborhoods along streets or other public rights-of-way. The construction of swimming pools will require significant capital outlays at the local level while some of the additional picnicking demand might be satisfied by expanding the facilities within each local or regional park.

Basketball, tennis, softball/baseball, and soccer show some local deficiencies, which will affect development priorities within the affected localities.

Fishing and powerboating are also among the more popular activities within the region, and there is ample resource to support many times more than the anticipated total demand. However, in many cases, public access is limited. Additional launch ramps and/or marina slips are needed in most of the localities.

Region 3 is a major importer of outdoor recreational demand. The private sector supplies a significant amount of the recreational facilities that support the large influx of visitors. Swimming pools, camping, tennis, picnicking, golf, and water access for fishing and beach use are among the resources supplied by private enterprise. There may be as many as 30,000 resident trailerable boats competing for use of just over 100 ramps.

Continued close cooperation between the local governments is essential if adequate outdoor recreational opportunities are to be provided in Region 3 to support both the residential population and the large numbers of visitors entering the area annually.

The following significant resources contribute, or have the potential to contribute to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are identified by recreation systems with recommendations, when appropriate, as to how they might best meet existing or future demand.

National Wildlife Refuges

In 1988, the U.S. Fish and Wildlife Service proposed a substantial expansion of the Back Bay National Wildlife Refuge. The announced purpose of the proposed expansion was to acquire critical habitat to the north and west of the present refuge. The Service is concerned that continued development pressure could threaten the fragile areas within the refuge. The Service should consider the acute needs of the region for additional water and beach recreational access for the resident population as well as the large influx of visitors who travel to Virginia shores during the summer months. The recreational needs of the public to use the water and beach resources must be balanced with the Service's mandate to preserve wildlife habitat.

State Parks

1. The 4,321-acre **False Cape State Park** in Virginia Beach, stretching six miles along the Atlantic Ocean from the Back Bay National Wildlife Refuge to the North Carolina line, has been acquired. The site is now open for limited use and trails and primitive camping are now available. The park will provide recreational opportunities to thousands of Virginians when adequate access and support facilities are developed. An equitable arrangement to permit public access through the Back Bay National Wildlife Refuge will speed the process of making these beaches more available to the public.

2. **Seashore State Park and Natural Area** in Virginia Beach is the state's most popular and overused park. The need for additional land and facilities at this park could be met by the acquisition of all or part of Fort Story. The federal government should declare Fort Story surplus and turn it over to the state as soon as possible. The park is scheduled to have a new master plan developed to ensure that the park is meeting the needs of the rapidly growing metropolitan area, while still protecting the resource.

3. A site on the lower **Blackwater River** in Southampton County, or Suffolk, near the North Carolina line, should be acquired for future development. A site in this area featuring the dense swamp and dark fishing waters of the river would not only provide a needed recreational facility, but would help to preserve this interesting natural area.

4. **York River State Park** in James City County affords outstanding opportunities for water oriented and water enhanced recreation in a large tidal wetlands upland forest environment. Due to its close proximity to urban areas and popular visitor attractions, the site is likely to receive heavy use pressure. Additional facilities for day use activities, such as trails, picnicking, and swimming should be considered for future development.

Regional Parks

The localities of Region 3 have a large number of parks that can be considered "regional in scope." These major resources include lands surrounding water supply reservoirs, as well as resources acquired to provide local recreational opportunities. Each site should be analyzed to determine if there is any potential to provide additional compatible recreational resources. The sites listed below are among those that may have potential for additional recreational development.

5. **Northwest River Park** in Chesapeake on the Northwest River, offers a large natural setting. Parts of the site are already developed.

6. **Newport News Park,** an 8,500-acre site protecting a city water supply, has extensive developments in place, but may offer additional opportunities around the periphery.

7. **Grandview Park** in Hampton, offers a significant bay front resource with extensive marshes for wildlife habitat.

8. The **Lone Star Lakes** in Suffolk provide more than 1,100 acres of land and freshwater with potential for additional developments. This site could also afford good saltwater access where it fronts on the Nansemond River.

9. **Waller Mill Park** in James City County is a major freshwater oriented park near Williamsburg. It is connected to the local bike trails network.

10. **New Quarter Park** in York County is a 550-acre site on the York River.

11. **Little Creek Reservoir,** a new Newport News water supply in Western James City County, contains about 1,800 acres and offers opportunities for additional water enhanced recreation.

12. **Lake Prince, Lake Cohoon, Lake Mead, Lake Kilby, Lake Burnt Mills, Spaetes Run Lake, and Western Branch Reservoir** are all water supply reservoirs located within Suffolk, but belonging to adjacent cities. They now offer only limited use for freshwater fishing. Perhaps additional compatible recreational resources like hiking trails and picnicking could be developed at some of these lakes.

13. Ware Creek Reservoir, scheduled to be constructed in James City County, will provide the opportunity to develop a significant park facility in conjunction with the Development of the reservoir.

Scenic Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

14. **Routes 10 and 32** in Isle of Wight County, from the Surry County line to the James River Bridge.

15. **Route 35** in Southampton County, from Courtland to Sussex County Line.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

16. The **Dismal Swamp Wildlife Refuge,** consisting of about 84,000 acres in the cities of Suffolk and Chesapeake is managed by the U.S. Fish and Wildlife Service. The 1986 Environmental Impact Statement (EIS) on the master plan for the refuge called for a number of improvements within the Dismal Swamp, including to conserve resources, improve wildlife habitat, and provide for additional recreational opportunities. The Service should move toward the implementation of the strategies identified in the EIS as soon as possible, including the ". . . construction of visitor contact facilities at Washington Ditch, Highway 17, and Jerico Lane."

17. **Goodwin Islands** in York County consist of low lying land and tidal marshes at the mouth of the York River. These marshes provide ideal habitat for many species of birds, including the osprey.

18. The **North Landing River** in the Cities of Virginia Beach and Chesapeake is bordered by quality swamp forests and contains extensive freshwater and brackish marshes with many plants and animals reaching the northern limits of their distribution in this area. The North Landing and three of its major tributaries have been added to the State Scenic River System.

19. An area of the **Northwest River** in Chesapeake, between Routes 168 and 17, is of primary concern for Natural Area preservation. This area is a lowland forest subject to repeated flooding and should not be intensely developed. Its primary value in Southeastern Virginia, which is a growing metropolitan area, is open space. As this area develops, the Northwest River and its environs will be important in preserving vital open space. Recreational development should be limited to the portion of the river below Route 168. Much of the area is still in its natural state but encroachments are occurring and some parcels are being coverted to agricultural uses.

20. A portion of the **Lower Blackwater River** in Southhampton County and Suffolk and its immediate environs should be kept in its natural state.

21. **Powhatan Creek** in James City County contains a large freshwater marsh area in a relatively undisturbed state. The marsh should be protected in its natural condition.

22. **Passmore Creek/Yarmouth and Gordon Islands** in James City County are freshwater marshes with hardwood areas. There are known osprey nests on the islands.

23. **Chisel Run and Long Hill Swamp** in James City County contain bottomland swamp forest and upland hardwoods with rare plant locations.

24. **Blackwater Ecological Preserve** in Isle of Wight County is an area with a mature longleaf pine-turkey oakheath community with many rare plants, and is near the Blackwater River and adjacent swamp forests. Much of this area was recently acquired by The Nature Conservancy and turned over to Old Dominion University for administration.

25. **Assamoosick Swamp** in Sussex and Southhampton Counties contains old growth bottomland and hardwood swamp forest with possible rare plant locations.

The Heritage Program under the Department of Conservation and Recreation updates a list of sites needing protection and should be contacted before making land use decisions.

Public Game and Fish Management Areas

26. A potential **Blackwater Wildlife Management Area** in Southhampton County and Suffolk has been identified. Such a facility would help meet the needs for additional hunging lands in this region.

27. **Ragged Island,** located in Isle of Wight County on the James River, was acquired by the Department of Game and Inland Fisheries. This 1,473-acre site offers limited water oriented recreational potential. Consideration should be given to the acquisition of adjacent highland areas to increase the recreational potential of the site. This site is being developed with raised board walks and interpretive trails.

Water and Beach Access

28. **Additional Public Water Access Areas** are needed thoughout the region. Priority should be given to the development of additional access to tidal portions of the James and York Rivers as well as to the Hampton Roads and Chesapeake Bay areas. The freshwater areas on the Blackwater and Nottoway Rivers also need additional access points. There is also a need for additional marinas and/or marina slips on most of the tidal waters in the region.

29. Throughout the region, there are many miles of outstanding beaches. However, access is limited to certain areas of the beaches because of either inadequate support facilities or military control which severely limits public use. Additional access must be provided to the Chesapeake Bay and Atlantic Coast beaches through the development of necessary support facilities and/or cooperative agreements with the numerous area military installations if present and future demands are to be met.

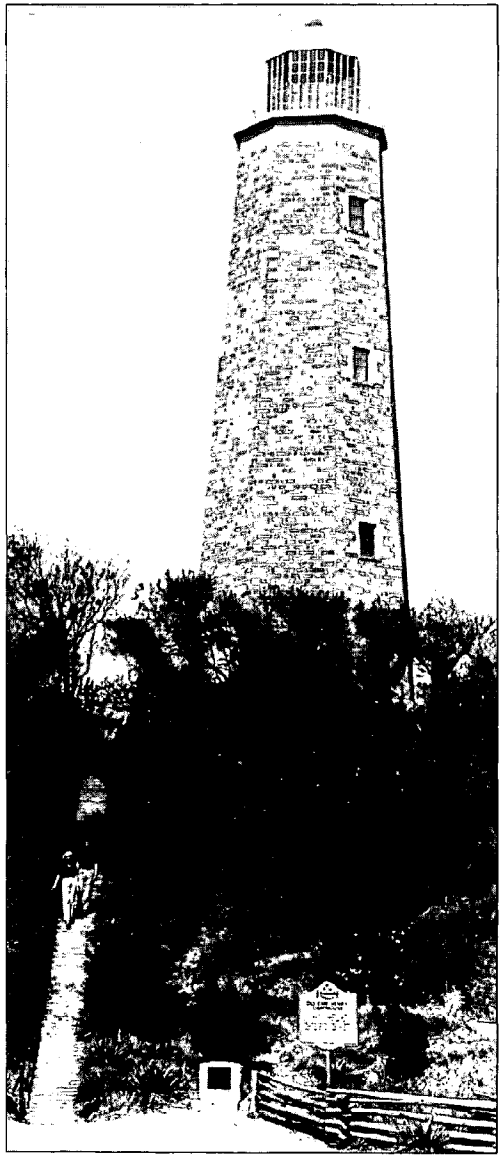
Scenic Rivers

The following river sections have been evaluated and qualify for inclusion in the Virginia Scenic Rivers System:

30. The **Blackwater River** in Isle of Wight and Southhampton Counties between Zuni and Franklin.

31. The **Blackwater River** in Isle of Wight and Southhampton Counties, from the Surry County line to the town of Zuni.

32. The **Chickahominy River** in James City County from Providence Forge to the James River.



33. The **Northwest River** in Chesapeake — the entire stream to the North Carolina state line.

34. The **James River,** from the Charles City/James City County line to Hampton Roads. Part of this reach has been recognized by the General Assembly as a historic river.

35. The **Nottoway River** in Southampton County.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

36. **Eastern State Hospital** in James City County has over 300 acres of open space.

37. **Eastern State Hospital/William and Mary Tract** in James City County contains over 100 acres that are not developed.

38. The **William and Mary Airport Tract** in York County has over 150 wooded acres.

39. **Thomas Nelson Community College** in Hampton contains a wooded tract east of the campus.

40. The **Virginia Association Research Campus** in Newport News contains about 350 acres that are partly undeveloped.

41. The **Tidewater Research Station** in Suffolk has about 80 acres of open space.

42. **Tidewater Community College** in Virginia Beach has over 100 acres that are not fully developed.

43. The **Tidewater Community College,** Frederick Campus, has a large tract on the James River.

44. **Paul D. Camp Community College** in the City of Franklin contains over 70 acres of open space.

45. **Saint Bridges Correctional Center** in Chesapeake has over 200 acres of open space.

46. **The State Military Reservation** (Camp Pendleton), owned by the Virginia Army National Guard, is a large tract with beach frontage. Portions of this property are undeveloped and have potential for use as recreational lands.

Trails

The following trail proposals are suggested as components of the State Trails System:

47. The **James River Trail** would traverse Virginia from Newport News to Iron Gate in Alleghany County, along the James River.

48. **Virginia Southside Trail** would extend from Virginia Beach to Mount Rogers. A portion of this trail will utilize the right-of-way of the Lake Gaston/Virginia Beach water pipeline.

Hostels

The following general locations are suggested for the establishment of hostels:

49. **Williamsburg/Yorktown Area.**

50. **Virginia Beach Area.**

51. **Feeder Ditch Area** of the Dismal Swamp.

REGION 3
HAMPTON ROADS

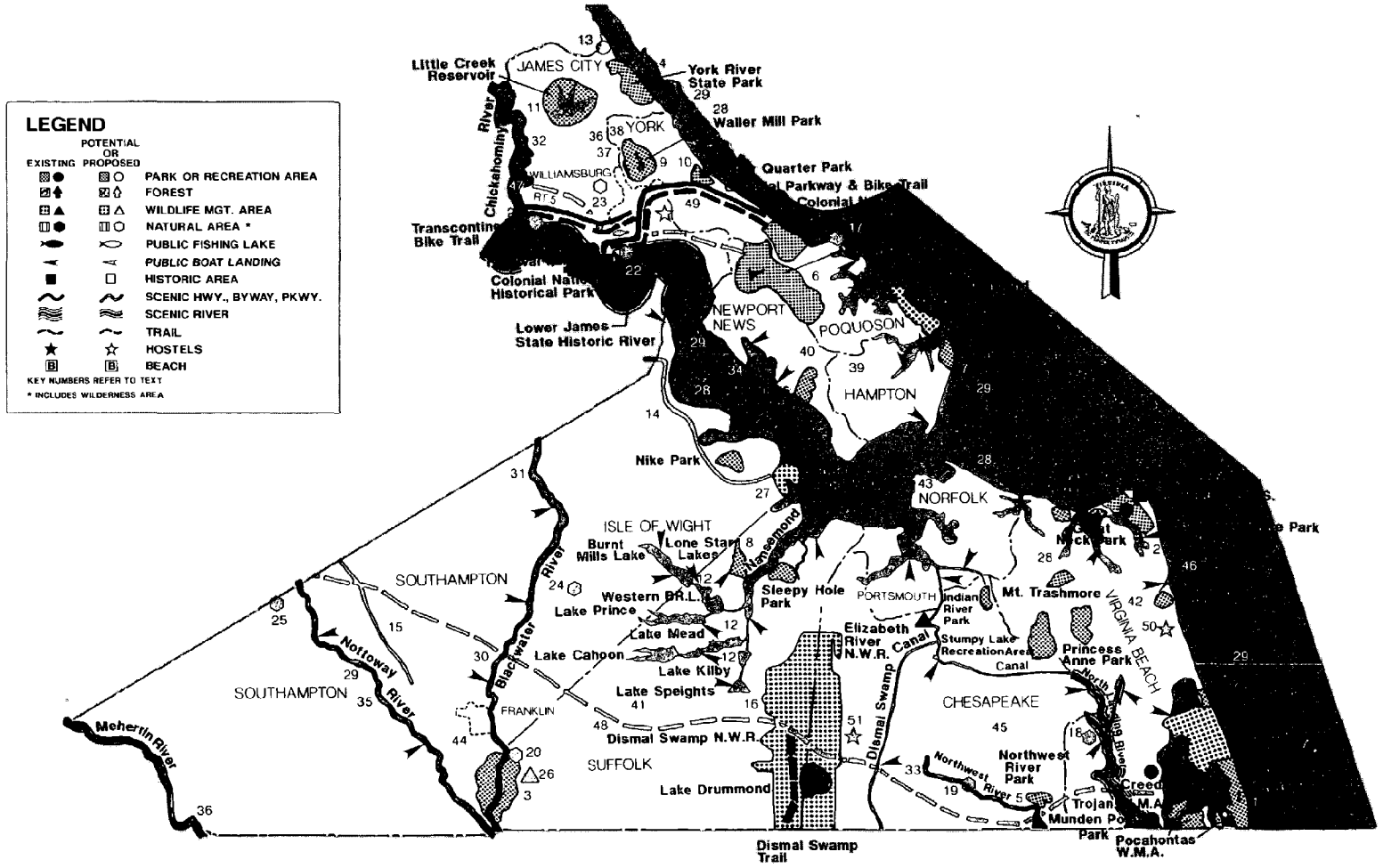


Plate 20

REGION 3 TABLE 22

Projected 1990 Population: 1393302

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	13904	6363	5507	7541	15918	9555	18057	11694	SITES
FISHING	26.15	39160	168727	351	+129567	42848	+125879	46520	+122207	ACRES
CANOEING, ETC.	8.88	238	49	2	189	289	240	345	296	STREAM MILES
SAILING	11.07	25179	169341	320	+144162	30293	+139048	35869	+133472	ACRES
POWER BOATING	16.71	44821	169341	320	+124520	48873	+120468	52991	+116350	ACRES
WATER SKIING	8.95	75675	169341	320	+93666	91805	+77536	109492	+59849	ACRES
POOL SWIMMING	48.19	493	93	62	400	540	447	590	497	POOLS
SWIMMING OUTDOORS	55.34	1567	798	185	769	1734	936	1907	1109	BEACH ACRES
BEACH USE, SUNNING	51.48	1008	798	185	210	1100	302	1188	390	ACRES
HIKING, BACKPACKING	16.89	716	322	58	394	825	503	946	624	MILES
JOGGING	35.24	6895	88	0	6807	7476	7388	8058	7970	MILES
BICYCLING/WORK, SCH	12.77	144	0	0	144	169	169	197	197	MILES
BICYCLING PLEASURE	39.76	1558	226	32	1332	1745	1519	1941	1715	MILES
HORSEBACK RIDING	6.15	333	194	138	139	363	169	392	198	MILES
FOUR WHEEL O.R.V.	7.61	239	4	2	235	260	256	279	275	MILES
MOTORCYCLE OFF ROAD	4.96	121	4	2	117	130	126	141	137	MILES
HUNTING	7.89	348469	953	549	347516	381657	380704	414842	413889	ACRES
PICNICKING	38.89	8608	4828	1563	3780	9440	4612	10276	5448	TABLES
GOLF	10.43	74	32	15	42	78	46	89	57	COURSES
TENNIS	22.19	1424	863	104	561	1641	778	1873	1010	COURTS
SOFTBALL, BASEBALL	22.58	931	685	66	246	1020	335	1108	423	FIELDS
BASKETBALL	22.36	2367	1219	88	1148	2692	1473	3039	1820	COURTS
SOCCER	14.31	677	457	22	220	797	340	929	472	FIELDS
FOOTBALL	20.56	428	457	22	+29	469	12	512	55	FIELDS
ICE SKATING	7.64	19	0	0	19	24	24	27	27	RINKS
SKIING	9.58	101	0	0	101	123	123	147	147	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 20 TABLE 23

Projected 1990 Population: 1001501

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	8438	3066	2467	5372	9737	6671	11117	8051	SITES
FISHING	26.15	24896	47480	228	+22584	27448	+20032	29976	+17504	ACRES
CANOEING, ETC.	8.88	173	45	0	128	211	166	254	209	STREAM MILES
SAILING	11.07	14945	48364	234	+33419	17998	+30366	21329	+27035	ACRES
POWER BOATING	16.71	24155	48364	234	+24209	26417	+21947	28737	+19627	ACRES
WATER SKIING	8.95	42282	48364	234	+6082	51548	3184	61736	13372	ACRES
POOL SWIMMING	48.24	333	64	40	269	368	304	405	341	POOLS
SWIMMING OUTDOORS	55.34	1067	578	7	489	1182	604	1304	726	BEACH ACRES
BEACH USE, SUNNING	51.48	679	578	7	101	742	164	803	225	ACRES
HIKING, BACKPACKING	16.89	476	234	28	242	551	317	635	401	MILES
JOGGING	35.24	4480	70	0	4410	4847	4777	5215	5145	MILES
BICYCLING/WORK, SCH	12.77	104	0	0	104	122	122	143	143	MILES
BICYCLING PLEASURE	39.76	954	118	23	836	1069	951	1189	1071	MILES
HORSEBACK RIDING	6.15	237	143	138	94	259	116	281	138	MILES
FOUR WHEEL O.R.V.	7.61	186	4	2	182	203	199	219	215	MILES
MOTORCYCLE OFF ROAD	4.96	96	4	2	92	104	100	112	108	MILES
HUNTING	7.89	250480	953	549	249527	276058	275105	301648	300695	ACRES
PICNICKING	38.89	5860	3048	684	2812	6478	3430	7097	4049	TABLES
GOLF	10.43	51	21	9	30	55	34	63	42	COURSES
TENNIS	22.24	991	630	74	361	1150	520	1319	689	COURTS
SOFTBALL, BASEBALL	22.73	643	500	39	143	705	205	768	268	FIELDS
BASKETBALL	22.36	1725	1032	75	693	1958	926	2204	1172	COURTS
SOCCER	14.38	458	375	19	83	541	166	632	257	FIELDS
FOOTBALL	20.65	279	375	19	+96	305	+70	331	+44	FIELDS
ICE SKATING	7.64	14	0	0	14	17	17	20	20	RINKS
SKIING	9.58	73	0	0	73	89	89	107	107	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 21 TABLE 24

Projected 1990 Population: 391801

ACTIVITY	PCNT. PART.	1990				2000		2010		UNIT
		TOTAL DEMAND	TOTAL SUPPLY	PRIVATE SUPPLY	NEED	DEMAND	NEED	DEMAND	NEED	
CAMPING	21.31	5466	3297	3040	2169	6181	2884	6940	3643	SITES
FISHING	26.15	14264	121247	123	+106983	15400	+105847	16544	+104703	ACRES
CANOEING, ETC.	8.88	65	4	2	61	78	74	91	87	STREAM MILES
SAILING	11.07	10234	120977	86	+110743	12295	+108682	14540	+106437	ACRES
POWER BOATING	16.71	20666	120977	86	+100311	22495	+98482	24254	+96723	ACRES
WATER SKIING	8.95	33393	120977	86	+87584	40257	+80720	47756	+73221	ACRES
POOL SWIMMING	48.07	160	29	22	131	172	143	185	156	POOLS
SWIMMING OUTDOORS	55.34	500	220	178	280	552	332	603	383	BEACH ACRES
BEACH USE, SUNNING	51.48	329	220	178	109	358	138	385	165	ACRES
HIKING, BACKPACKING	16.89	240	88	30	152	274	186	311	223	MILES
JOGGING	35.24	2415	18	0	2397	2629	2611	2843	2825	MILES
BICYCLING/WORK, SCH	12.77	40	0	0	40	47	47	54	54	MILES
BICYCLING PLEASURE	39.76	604	108	9	496	676	568	752	644	MILES
HORSEBACK RIDING	6.15	96	51	0	45	104	53	111	60	MILES
FOUR WHEEL O.R.V.	7.61	53	0	0	53	57	57	60	60	MILES
MOTORCYCLE OFF ROAD	4.96	25	0	0	25	26	26	289	289	MILES
HUNTING	7.89	97989	0	0	97989	105599	105599	113194	113194	ACRES
PICNICKING	38.89	2748	1780	879	968	2962	1182	3179	1399	TABLES
GOLF	10.43	23	11	6	12	23	12	26	15	COURSES
TENNIS	22.07	433	233	30	200	491	258	554	321	COURTS
SOFTBALL, BASEBALL	22.19	288	185	27	103	315	130	340	155	FIELDS
BASKETBALL	22.36	642	187	13	455	734	547	835	648	COURTS
SOCCER	14.12	219	82	3	137	256	174	297	215	FIELDS
FOOTBALL	20.31	149	82	3	67	164	82	181	99	FIELDS
ICE SKATING	7.64	5	0	0	5	7	7	7	7	RINKS
SKIING	9.58	28	0	0	28	34	34	40	40	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 4
Roanoke/Lynchburg

Recreation Region 4, composed of Planning Districts 5 and 11, has a projected 1990 population of approximately 480,000. Almost 40% of this total is concentrated in the Roanoke and Lynchburg metropolitan areas. The remainder of the region is sparsely populated, with land use devoted primarily to agriculture and forestry.

A significant percentage of the land in Planning District 5 lies within the George Washington and Jefferson National Forests. For this reason, the region as a whole contains an adequate or nearly adequate supply of horseback and hiking trails, and hunting acreage. However, significant facility and/or acreage shortages exist for nine of the twelve most popular outdoor recreation activities participated in by residents of the region. A majority of these activities are the type normally participated in close-to-home. This type of facility provision is primarily the responsibility of local government.

Planning District 5 has an adequate supply of local and regional park acreage. However, 75% of the total acreage is in the protected watershed surrounding Carvin Cove Reservoir. Under present policy, recreational use of the area is very limited and adds little to the local supply of available outdoor recreational opportunities. If the acreage at Carvin Cove is subtracted from the current supply, Planning District 5 has a deficit of local and regional park acreage. However, because the district does have 75% of the amount of local and regional park and open space acreage recommended, primary emphasis should be on

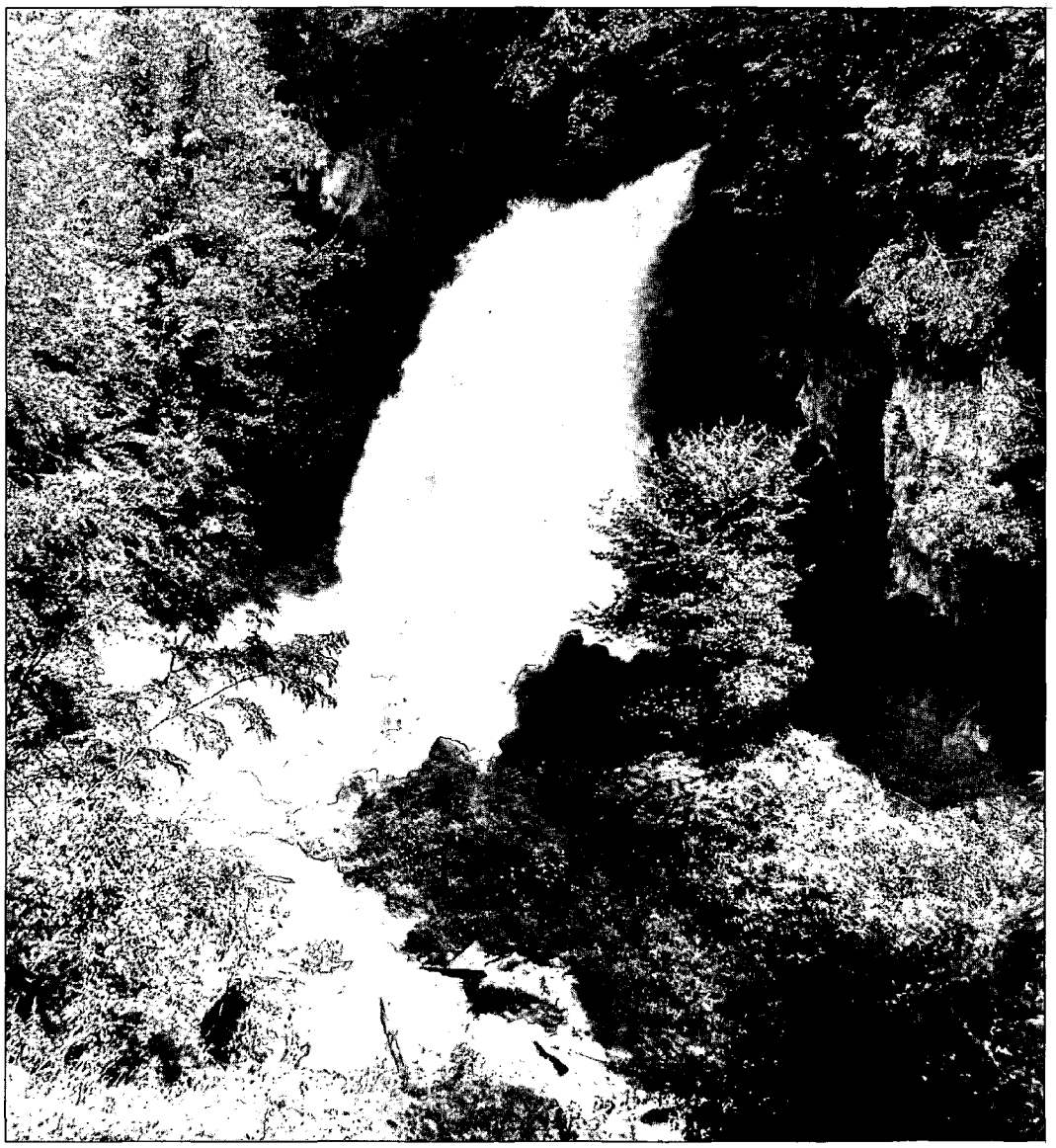
facility development rather than land acquisitions.

The most acute shortages in the supply of outdoor recreation opportunities in Planning District 5 exist in the Roanoke/Salem metropolitan area, where over 40% of the population is located. The greatest need is for close-to-home activities requiring special areas and/or facilities, such as swimming, basketball, picnicking, and softball/baseball.

Though special circumstances may exist in some areas, generally speaking, local park and recreation department priorities in Planning District 5 should reflect the above referenced needs. Table 26 also shows facility deficiencies for jogging and biking. However, these activities do not usually require special facilities and do not, therefore, constitute priority needs.

Much of the need for local outdoor recreational opportunity in Planning District 11 is generated in and near the City of Lynchburg. The greatest area and/or facility needs are for outdoor swimming, softball/baseball, basketball, and biking. In all probability a significant amount of the current facility needs can be satisfied with additional development of existing areas. In view of the fact that Planning District 11 has 86% of the recommended amount of local and regional park acreage, primary emphasis in most localities should be on facility development rather than land acquisition.

A major recreation and open space proposal for this region is called the Explore Project. It will be developed as a result of a collaboration between the public and private sector. This program calls for action on the part of federal, state, and local governments. The Explore Project consists of a parkway developed along the Roanoke River connecting the Blue Ridge Parkway to the Cities of Roanoke, Salem, Booker T. Washing-



ton Monument, and Smith Mountain Lake. It will include a regional zoo and a major theme park focusing on the westward expansion of the United States. The Commonwealth has allocated funds for the development of plans and land acquisition. Nearly 800 acres of the 1,200 acres proposed for the project have been acquired.

The 1988 General Assembly directed a study of the area which included the Counties of Alleghany and Bath to develop a marketing approach to expand recreational opportunities. The study will specifically focus on the resources of the U.S. Forest Service, Lake Moomaw, the Gathright State Wildlife Management Area, and Douthat State Park. The private recreational opportunities, such as the Homestead, will be included in the assessment. The study will provide direction for any future developments in the area as they relate to existing and future park development and acquisition.

The U.S. Forest Service has begun a program to identify scenic roads within forest lands. These may be evaluated and included in the Virginia Byway System. The following are being studied at this time. The first is the **Dolly Ann Discovery Byway,** which would lie primarily within National Forest lands and connect the cities of Covington and Clifton Forge via Dolly Ann Drive (Route 625) eastward from Covington, which becomes Forest Service Road 125. This route follows Pounding Mill Creek into the center of a large forest area before connecting with State Route 606 north of Clifton Forge.

A second possible scenic road is the **Highlands Scenic Byway.** This byway would form a loop road along the boundary between Rockbridge County and Alleghany County. It begins at Exit 10 of Interstate 64 at Longdale Furnace and proceeds east on State Route 850 (old Route 60), passing under Interstate 64, Exit 11, and climbing to the top of North Mountain on Forest Service Road 447 and then on to State Route 770 to the point of beginning. It is entirely on National Forest land.

Both of these proposals may be recommended to the Commonwealth to be evaluation for inclusion in the designated State Byway System.

The satisfaction of the needs thus far discussed is primarily the responsibility of local government. This **Plan** does not attempt to make site-specific recommendations for local parks and recreation developments. The following recommendations involve resources which have the potential to contribute significantly to park and open space opportunities at the regional and state level. These key resources are identified by systems, with general recommendations as to how they can best be protected, developed and/or utilized to satisfy present and future park and open space needs.

State Parks

1. Completion of the much needed facilities at **Smith Mountain Lake State Park** should be a priority. In view of the fact that land acquisition has been completed and a basic facility has been developed, the additional recreation units should be developed to meet current demand.

The following site is identified for future consideration should circumstances warrant:

2. The **James River** and its environs in the vicinity of Lynchburg offer significant potential for the development of water oriented and water enhanced recreational opportunities in the immediate proximity of a major population center. Acquisition of a state park site should be considered.

Regional Parks

3. Additional developments at **Mowles Spring Park,** south of Salem, could help to meet current and future facility needs in the region.

4. Consideration should be given to the establishment of a new regional park in the vicinity of **Poor Mountain/Bent Mountain,** southwest of the Roanoke/Salem area.

Scenic Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

5. **Route 220** in Alleghany County from the north side of Covington to the Bath/Alleghany County line and in Botetourt County from Clifton Forge to Route 615.

6. **Route 606** in Bath and Alleghany Counties from north of Clifton Forge, northwest to the intersection with Route 220.

7. **Route 311** in Roanoke, Craig, and Alleghany Counties, north from Salem, Virginia to White Sulphur Springs, West Virginia.

8. **Route 501** in Bedford County from Lynchburg to the Bedford/Rockbridge County line.

9. **Routes 460, 24, 614, 626** in Appomattox County, from the Appomattox/Campbell County line to the Buckingham Appomattox County line.

10. **Route 629** in Alleghany and Bath Counties from Clifton Forge, north through Douthat State Park.

11. **Roanoke River Parkway.** This proposal will connect the Roanoke area to the site of the proposed Explore Project situated along the Blue Ridge Parkway.

12. **Route 43** in Botetourt County from Eagle Rock to the Town of Bedford.

13. **Route 614** in Botetourt County from Interstate 81, through Arcadia to the Blue Ridge Parkway.

14. **Route 606** in Botetourt and Craig Counties from Fincastle to the intersection with Route 615.

15. **Route 615** in Botetourt and Craig Counties from Eagle Rock to New Castle.

16. **Route 633** in Botetourt County from Route 220 to Baldwin.

17. **Route 42** in Craig County from Route 311 to the Montgomery County line.

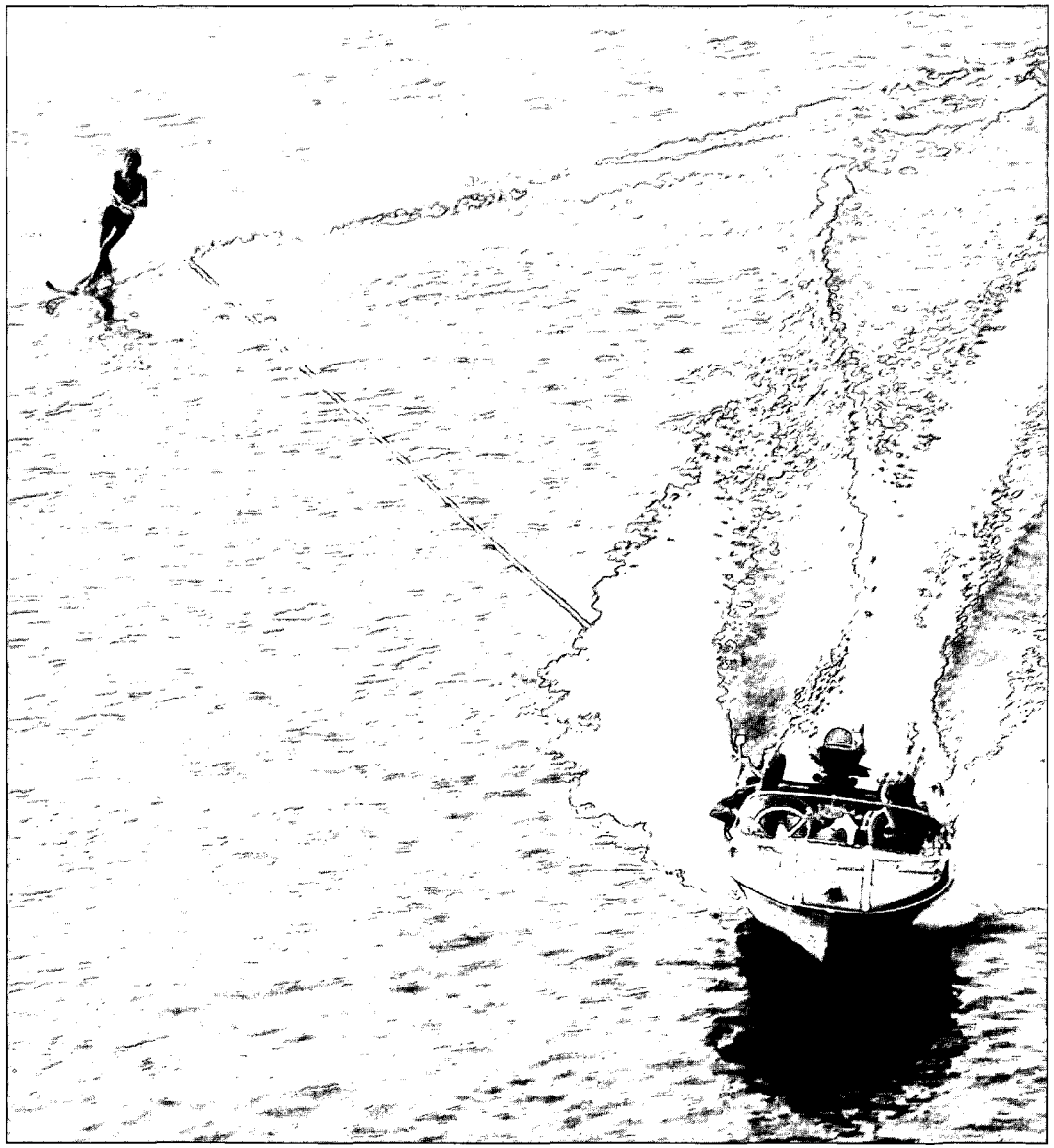
18. A **James River Byway** consisting of roads that closely parallel the James River Bateau Festival Trail. The corridor would includes Route 6 in Goochland and Fluvanna Counties, Route 626 in Albemarle, Route 622 in Nelson and Amherst Counties, Route 130 in Amherst and Rockbridge Counties, Route 11 in Rockbridge county, and Routes 43 and 220 in Botetourt and Alleghany Counties.

19. **Route 159** in Alleghany County from Route 311 to Covington.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

20. **Tobacco Row Mountain** in Amherst County



is a unique Piedmont landmark that is scenic and largely undeveloped. Protective measures are needed to ensure the preservation of its natural and scenic qualities.

21. The scenic, natural environment of the **Candler Mountain/Long Mountain** area provides a natural greenbelt for the Lynchburg metropolitan area. The area is suitable for a variety of recreational activities such as hunting and trail riding, and should be protected because of its proximity to a major population center.

22. **Warm River Cave** in Alleghany County contains both a warm water stream and a cold water stream, which merge at Falling Spring. This phenomenon is believed to be unique east of the Rocky Mountains and should be preserved.

23. **Statons Creek Gorge** and **Lacy Falls** in Amherst County comprise a unique scenic area. The steep topography of the area is responsible for a fragile microclimate in which two rare plant species have been found. The Forest Service owns the gorge and should develop the necessary protective measures as an element of their unit management planning.

24. **Potts Pond** in Alleghany County is a natural mountaintop pond whose environs support rare plant species.

25. **Dunlap Creek Shale Barrens** in Alleghany County are several scenic shale cliffs with well developed shale barren plant communities containing several rare plant species.

26. **Castle-Craig Depressions** in Campbell County are a unique geological formation which support a relict disjunct plant community containing many unusual plant species.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Public Water Access

27. Public Water Access Areas are needed on the **James River** between Eagle Rock and Snowden; between Lynchburg and Bent Creek; on **Johns Creek** above New Castle; and on Craig Creek between New Castle and Strom.

28. The U.S. Forest Service and the Department of Game and Inland Fisheries should cooperate 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** in Region 4.

29. Water based recreation facilities along with expanded access opportunities should be considered for **Lake Moomaw** in Alleghany County.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System:

30. The **James River** in Botetourt, Rockbridge, Amherst, and Bedford Counties and from Rocky Point to Snowden.

31. **John's Creek** in Craig County from Craig Springs to New Castle.

32. **Craig Creek** in Craig and Botetourt Counties from New Castle to Strom.

The following river segments merit evaluation in the future to determine their suitability for inclusion in the Virginia Scenic Rivers system:

33. The **James River** in Botetourt County from Springwood to Rocky Point.

34. The **James River** in Campbell, Amherst, and Appomattox Counties from Lynchburg to Bent Creek.

35. **Craig Creek** in Craig County from the Montgomery/Craig County line to the Town of New Castle.

Other State Properties

The following state owned properties contain significant acreage of undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

36. The **Lynchburg Training School and Hospital** site in Amherst contains approximately 100 acres of undeveloped land.

37. Approximately 58 acres of the **Central Virginia Community College** tract in Campbell County are undeveloped and may have potential for recreational use.

38. The **Dabney Lancaster Community College** in Alleghany County near Clifton Forge has some 55 acres of undeveloped land.

Trails

The following trail proposals are suggested as components of the State Trails System:

39. In Region 4, the **Appalachian National Scenic Trail** stretches from northern Amherst County to southern Craig County. Several of the sections in this region are in need of improvement and protection. Localities should continue to cooperate with and encourage the federal government and the Appalachian Trail Conference

Clubs in their efforts to protect and maintain the trail.

40. **Cumberland to Appomattox Trail.** A trail should be developed which ties together the Cumberland State Forest with the Appomattox Courthouse National Historical Park via the Buckingham/Appomattox State Forest. The existing Willis River Trail could be linked by current forest roads and short sections of trail across private land to join these resources together.

41. The **Roanoke Area Trail** is a proposed loop connection to the Appalachian Trail that would provide urban residents with much needed hiking opportunities.

42. The proposed **Alleghany Trail** traverses the Craig County/West Virginia line and cuts across the southwest corner of Alleghany County before entering West Virginia. The trail, which is under construction in West Virginia, will serve as an alternate loop trail for the Appalachian National Scenic Trail.

43. Consideration should be given to the recreational trail development of the abandoned **C&O Railroad** right-of-way between New Castle and Eagle Rock in Craig and Botetourt Counties. The right-of-way is already in state ownership and would serve as a means of connecting Camp Mitchell, the recently constructed high school, the Jefferson National Forest and several other local recreation areas.

44. **Roanoke-Lexington Horse Trail.** The Blue Ridge Parkway and the National Forest staff have been working with horse enthusiasts in the acquisition and development of an equestrian trail between Roanoke and Lexington. The trail will connect the recently constructed equine center near Lexington with trail resources in the national forests.

45. **The C&O Line** between Clifton Forge and Charlottesville should be acquired upon abandonment and developed as a greenway. It holds potential as a multi-use trail corridor while providing linkage to several major recreation systems.

46. A **James River Trail** from the City of Richmond to Iron Gate in Alleghany County should be considered. This trail would be on existing rights-of-way, using public and private lands and waters.

REGION 4
ROANOKE-LYNCHBURG

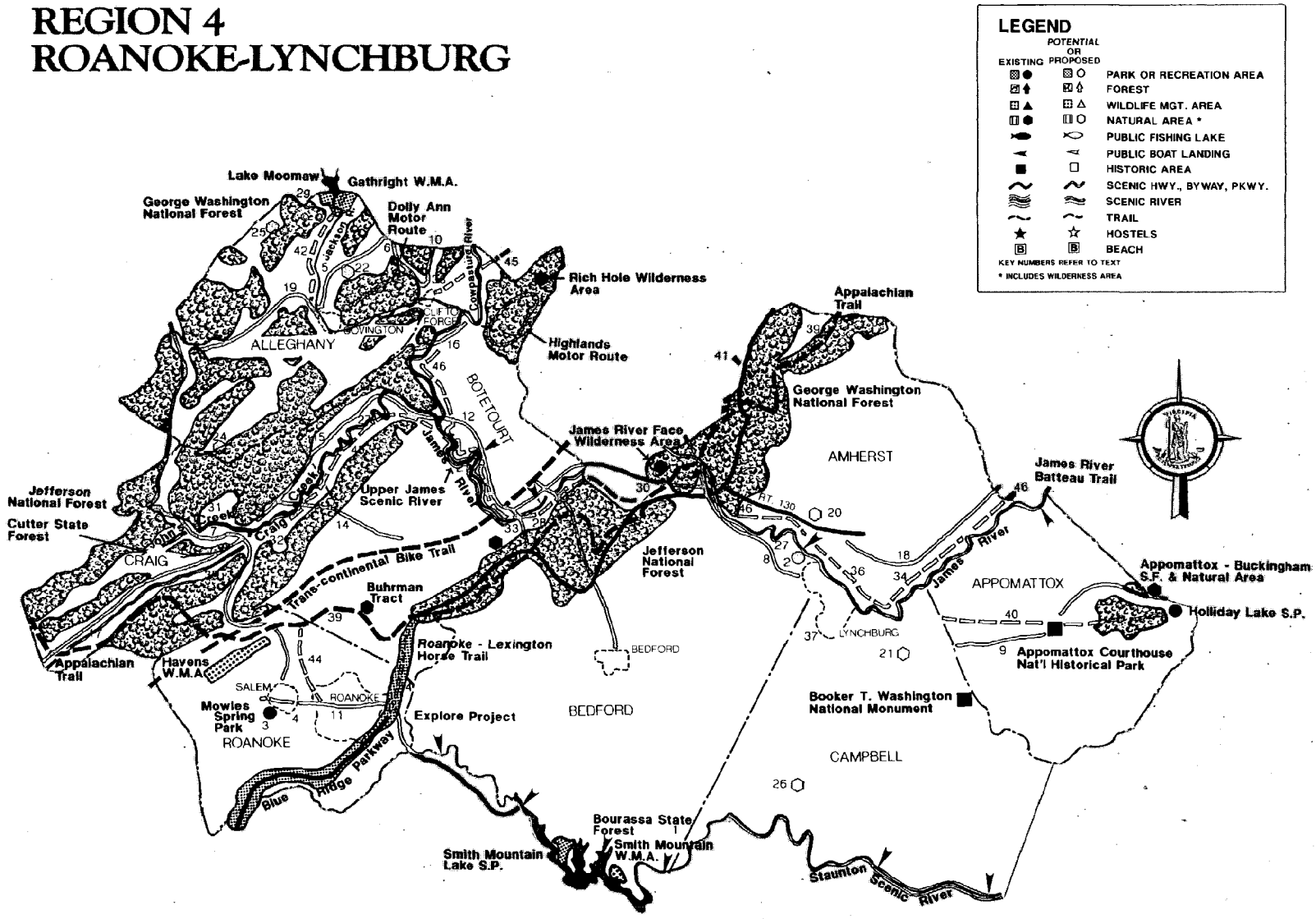


Plate 21

REGION 4 TABLE 25

Projected 1990 Population: 479206

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	25.77	6526	3598	3014	2928	7157	3559	7818	4220	SITES
FISHING	29.14	8064	17620	10444	+9556	8504	+9116	8952	+8668	ACRES
CANOEING, ETC.	6.91	82	201	0	+119	99	+102	117	+84	STREAM MILES
SAILING	3.58	1145	15321	11635	+14176	1522	+13799	1935	+13386	ACRES
POWER BOATING	15.08	16071	15321	11635	750	16826	1505	17584	2263	ACRES
WATER SKIING	9.28	18353	15321	11635	3032	21328	6007	24499	9178	ACRES
POOL SWIMMING	38.96	111	42	33	69	116	74	123	81	POOLS
SWIMMING OUTDOORS	55.58	217	26	21	191	228	202	247	221	BEACH ACRES
BEACH USE, SUNNING	32.76	90	26	21	64	97	71	100	74	ACRES
HIKING, BACKPACKING	24.32	704	511	107	193	768	257	839	328	MILES
JOGGING	29.28	1370	53	1	1317	1445	1392	1519	1466	MILES
BICYCLING/WORK, SCH	7.02	82	0	0	82	101	101	117	117	MILES
BICYCLING PLEASURE	30.45	255	71	7	184	276	205	301	230	MILES
HORSEBACK RIDING	4.23	148	78	77	70	156	78	163	85	MILES
FOUR WHEEL O.R.V.	12.89	70	1	1	69	74	73	76	75	MILES
MOTORCYCLE OFF ROAD	13.00	86	1	1	85	90	89	94	93	MILES
HUNTING	12.00	325447	417402	2552	+91955	341803	+75599	358276	+59126	ACRES
PICNICKING	47.00	3378	2747	1217	631	3547	800	3718	971	TABLES
GOLF	9.63	34	18	17	16	37	19	37	19	COURSES
TENNIS	14.15	273	304	60	+31	306	2	345	41	COURTS
SOFTBALL, BASEBALL	23.18	485	326	28	159	509	183	530	204	FIELDS
BASKETBALL	21.42	731	232	13	499	799	567	869	637	COURTS
SOCCER	8.34	158	167	10	+9	190	23	219	52	FIELDS
FOOTBALL	10.97	431	167	10	264	450	283	466	299	FIELDS
ICE SKATING	5.25	3	0	0	3	5	5	5	5	RINKS
SKIING	7.80	34	0	0	34	40	40	49	49	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 5 TABLE 26

Projected 1990 Population: 263713

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	25.77	3725	1980	1660	1745	4072	2092	4436	2456	SITES
FISHING	29.14	4448	5080	91	+632	4632	+448	4808	+272	ACRES
CANOEING, ETC.	6.91	45	122	0	+77	54	+68	64	+58	STREAM MILES
SAILING	3.58	469	3210	0	+2741	625	+2585	792	+2418	ACRES
POWER BOATING	15.08	8610	3210	0	5400	8975	5765	9342	6132	ACRES
WATER SKIING	9.28	9665	3210	0	6455	11178	7968	12782	9572	ACRES
POOL SWIMMING	38.96	63	28	21	35	65	37	68	40	POOLS
SWIMMING OUTDOORS	55.58	119	13	9	106	125	112	134	121	BEACH ACRES
BEACH USE, SUNNING	32.76	51	13	9	38	53	40	55	42	ACRES
HIKING, BACKPACKING	24.32	442	341	89	101	479	138	521	180	MILES
JOGGING	29.28	792	43	0	749	827	784	859	816	MILES
BICYCLING/WORK, SCH	7.02	45	0	0	45	55	55	62	62	MILES
BICYCLING PLEASURE	30.45	163	62	3	101	174	112	188	126	MILES
HORSEBACK RIDING	4.23	99	75	74	24	104	29	107	32	MILES
FOUR WHEEL O.R.V.	12.89	33	0	0	33	34	34	34	34	MILES
MOTORCYCLE OFF ROAD	13.00	42	0	0	42	43	43	45	45	MILES
HUNTING	12.00	208295	332641	665	+124346	218148	+114493	228063	+104578	ACRES
PICNICKING	47.00	2264	1036	237	1228	2352	1316	2440	1404	TABLES
GOLF	9.63	22	11	9	11	24	13	24	13	COURSES
TENNIS	14.15	171	173	33	+2	189	16	213	40	COURTS
SOFTBALL, BASEBALL	23.18	330	211	9	119	342	131	352	141	FIELDS
BASKETBALL	21.42	507	117	1	390	548	431	589	472	COURTS
SOCCER	8.34	102	103	3	+1	121	18	140	37	FIELDS
FOOTBALL	10.97	309	103	3	206	319	216	327	224	FIELDS
ICE SKATING	5.25	2	0	0	2	2	2	2	2	RINKS
SKIING	7.80	19	0	0	19	21	21	26	26	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 11 TABLE 27

Projected 1990 Population: 215493

ACTIVITY	PCNT. PART.	1990				2000		2010		UNIT
		TOTAL DEMAND	TOTAL SUPPLY	PRIVATE SUPPLY	NEED	DEMAND	NEED	DEMAND	NEED	
CAMPING	25.77	2801	1618	1354	1183	3085	1467	3382	1764	SITES
FISHING	29.14	3616	12540	10353	+8924	3872	+8668	4144	+8396	ACRES
CANOEING, ETC.	6.91	37	79	0	+42	45	+34	53	+26	STREAM MILES
SAILING	3.58	676	12111	11635	+11435	897	+11214	1143	+10968	ACRES
POWER BOATING	15.08	7461	12111	11635	+4650	7851	+4260	8242	+3869	ACRES
WATER SKIING	9.28	8688	12111	11635	+3423	10150	+1961	11717	+394	ACRES
POOL SWIMMING	39.05	48	14	12	34	51	37	55	41	POOLS
SWIMMING OUTDOORS	55.58	98	13	12	85	103	90	113	100	BEACH ACRES
BEACH USE, SUNNING	32.76	39	13	12	26	44	31	45	32	ACRES
HIKING, BACKPACKING	24.32	262	170	18	92	289	119	318	148	MILES
JOGGING	29.28	578	10	1	568	618	608	660	650	MILES
BICYCLING/WORK, SCH	7.02	37	0	0	37	46	46	55	55	MILES
BICYCLING PLEASURE	30.45	92	9	4	83	102	93	113	104	MILES
HORSEBACK RIDING	4.23	49	3	3	46	52	49	56	53	MILES
FOUR WHEEL O.R.V.	12.89	37	1	1	36	40	39	42	41	MILES
MOTORCYCLE OFF ROAD	13.00	44	1	1	43	47	46	49	48	MILES
HUNTING	12.00	117152	84761	1887	32391	123655	38894	130213	45452	ACRES
PICNICKING	47.00	1114	1711	980	+597	1195	+516	1278	+433	TABLES
GOLF	9.63	12	8	8	4	13	5	13	5	COURSES
TENNIS	14.26	102	131	27	+29	117	+14	132	1	COURTS
SOFTBALL, BASEBALL	23.38	155	115	19	40	167	52	178	63	FIELDS
BASKETBALL	21.42	224	115	12	109	251	136	280	165	COURTS
SOCCER	8.47	56	64	7	+8	69	5	79	15	FIELDS
FOOTBALL	11.01	122	64	7	58	131	67	139	75	FIELDS
ICE SKATING	5.25	1	0	0	1	3	3	3	3	RINKS
SKIING	7.80	15	0	0	15	19	19	23	23	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 5
Southwest Virginia

Southwest Virginia's rugged topography with its green valleys, clear, cool streams, and expansive stretches of ridge top forests provides some of the most spectacular scenery and best recreational opportunities in the Commonwealth. Even though only 10.5% of the state's population lives in this vast region, it has more than 27% of the state's national forest land and one-fourth of its state park lands. The Mount Rogers National Recreation Area, consisting of approximately 110,000 acres; the segment of the Blue Ridge Parkway which traverses the region with 5,300 acres; the Cumberland Gap National Historic Park consisting of 7,498 acres; the John W. Flannagan Dam and Reservoir with 7,507 acres; and Breaks Interstate Park consisting of 10,689 acres in Virginia and Kentucky, are all recreational areas of more than regional significance. These major sites attract outdoor enthusiasts from all over the state as well as substantial numbers of out-of-state visitors.

In 1984, **The Virginia Outdoors Plan** identified deficiencies within Region 5 for close-to-home recreational facilities for most of the region's population. Since then, much has been done by localities within Region 5 to meet local needs. Of particular note has been the number of swimming pools, softball/baseball fields, tennis courts, and playing fields constructed. The number of picnic tables and trail miles has also increased. The Town of Blacksburg for example, has developed many miles of bicycle trail, substantially reducing the deficit of bicycle trail miles needed in Planning District 4. Development of the 55-mile New River Trail State Park will increase available nonmotorized trail opportunities in the region.

In many areas of Region 5, mined land is being reclaimed. Much of this land is suitable for recreational use and consideration should be given to converting some of it for this purpose. In

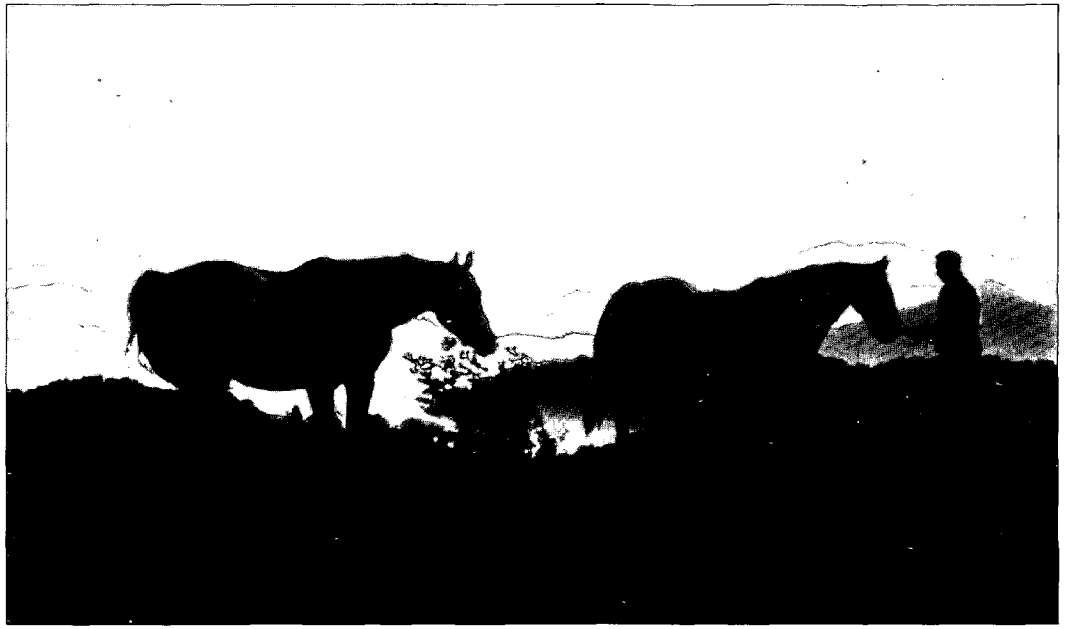
particular, off-road, four-wheel drive and motorcycle riding are very popular sports in Region 5. Unfortunately, there is a 50% deficiency of suitable places to ride or drive these vehicles. Constructing a challenging off-road course could be one form of strip mine reclamation that would help satisfy this demand.

Fishing is the fifth most popular activity in Region 5, based on the 1987 Outdoor Recreation Demand Survey, and is only surpassed in popularity by picnicking. Many quality rivers traverse the region and provide opportunities for the development of additional access for both canoe and bank fishing. Through the close cooperation of state, planning district, county, local, and federal agencies, it would be possible to develop, along the major stream valleys, a system of access points with some sites being set aside for picnicking, parking, and camping. Such developments could provide increased opportunity for water enhanced recreation on good fishing and canoeing streams.

Table 28 on page 233 lists, in order of regional participation rates, 24 outdoor recreational activities. Of those listed which require special facilities, softball/baseball fields and basketball courts seem to be of highest need region wide. Swimming pools are needed in three planning districts.

Operation Cornerstone

In 1988, the U.S. Forest Service initiated a new marketing program for the national forests called "Operation Cornerstone," with the "Cornerstone" of the National Forest being recreation and tourism. The concept is that the national forest is a significant economic asset to local economies and produces more than timber and mineral resources. The Jefferson National Forest staff is



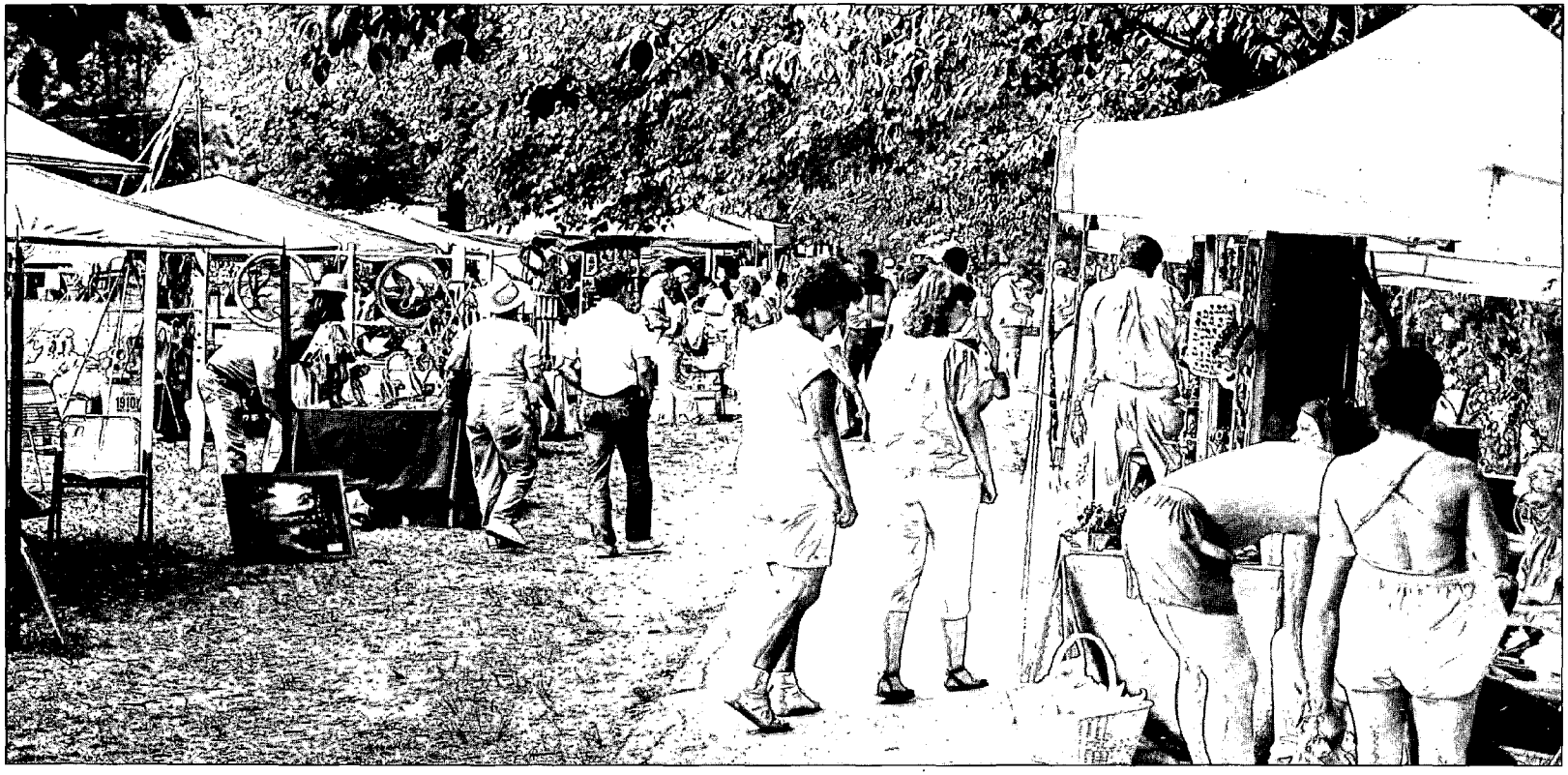
working with private individuals, chambers of commerce, business leaders, local governments, and colleges to develop a coordinated and combined recreation and tourism marketing strategy for southwestern Virginia that emphasizes the interrelationship of the forest with other attractions in the region. This program should do much to encourage tourism and recreational use of the national forest as well as public and private parks and attractions. Local economies will accrue many secondary economic benefits. Local parks and recreation departments, chambers of commerce, and service industries that benefit from tourist attractions should become involved in the development of this opportunity.

The following significant resources contribute, or have potential to contribute, to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are identified by recreation system with recommendations as to how they can best meet existing and future demand.

State Parks

1. At **Claytor Lake State Park** in Pulaski County plans are being developed for additional picnic facilities, increasing marina capacity and improvement of the beach and related facilities. This should be implemented as soon as possible.

2. **Grayson Highlands State Park** in Grayson County should cooperate with the New River Trail State Park and the Mount Rogers NRA to develop a connector trail between the Virginia Creeper Trail and the New River Trail State Park.



3. **Hungry Mother State Park** in Smyth County near Marion has acquired Hemlock Haven Conference Center and opened it for use. This facility should do much to meet the needs of large groups, business, family groups, and government units for accommodations in an outdoor recreation setting.

4. **New River Trail State Park** was donated to the state in December 1986 by Norfolk Southern Corporation. The 55 miles of railroad right-of-way is known as the Carolina Branch. This newest state park parallels the New River for much of its length and ties together the may towns and people of the New River Valley from Fries and Galax to the outskirts of Pulaski. Local citizens have worked together to build the park, clean up trash, landscape, and deck bridges. A master plan should be prepared to guide development of canoe access, camping, fishing, and picnic areas as well as trail access sites and parking areas. Funding to complete construction, and acquire access sites is needed.

5. **Natural Tunnel State Park** has undergone extensive expansion and development to increase its responsiveness to the recreation needs of the region. A new tramway will provide access to the base of Natural Tunnel from the visitor center.

6. **Breaks Interstate Park** should investigate opportunities to acquire land along Russell Fork in Virginia that could be used in the development of a whitewater rafting industry associated with planned releases from Flannagan Dam. Also, lands owned by the U.S. Forest Service known as the Pinnacles or Towers in the scenic viewshed of the park should be considered for acquisition.

National Forests

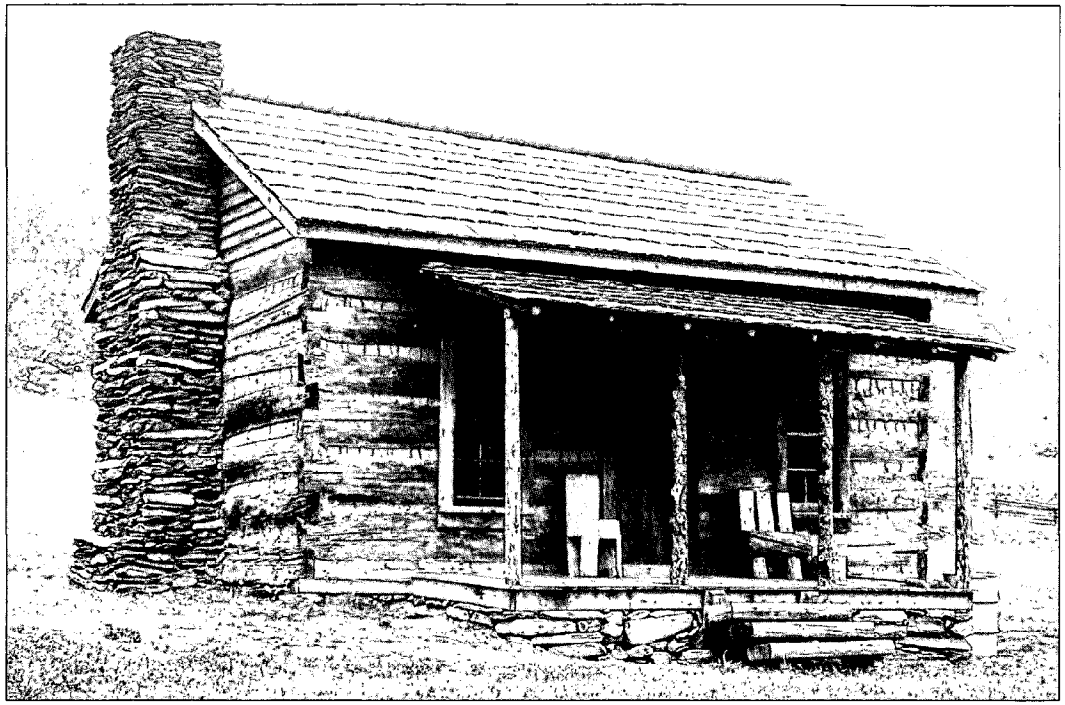
7. **Mount Rogers National Recreation Area** (NRA) has opened Beartree Campground. In doing so, the Forest Service has substantially increased the number of visitors the NRA can serve. The completion of Ravens Cliff and the New River areas will help meet the increasing demands of the future. Because of the NRA's proximity to Grayson Highlands State Park and New River Trail State Park, it is advisable to have Forest Service and state park coordinate and share information on each other's facilities and activities, particularly with respect to publications, maps, and trail development activities. Any development which will provide access to water resources for swimming, fishing, or canoeing should also receive priority. The NRA should continue to pursue opportunities to consolidate its boundaries when lands become available for acquisition. Development of additional facilities as specified in the 1980 Final Management Plan and Environmental Impact Statement for the Mount Rogers NRA should be completed using private investors if necessary. The Virginia Creeper Trail should be connected to the New River Trail State Park, linking both ends of the NRA.

Virginia Byways, Scenic Highways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

8. **Route 75** in Washington County from Abingdon to the Virginia/Tennessee line.

9. **Route 58** in Washington and Grayson Counties from Interstate 81 to Volney.



10. **Route 16** in Grayson, Smyth, and Tazewell Counties from Volney to the intersection with Route 61.

11. **Route 603** in Grayson County from Konnarock to Route 16.

12. **Routes 700, 604, and 42** in Giles County from the Intersection of Routes 700-460 to Route 604, and from there by Routes 604, 601, and 42 to the intersection of Routes 42-460. Access to Mountain Lake is via Route 700.

13. **Route 660** in Pulaski County from I-81 to Claytor Lake State Park.

14. **Route 348** in Smyth County within and in the vicinity of Hungry Mother State Park.

15. **Routes 61 and 666** in Tazewell County would complete a loop between Burkes Garden and Tazewell.

16. **Route 739** in Dickenson County provides additional access to Flannagan Reservoir.

17. **Route 61** in Giles and Bland Counties from Narrows to Rocky Gap.

18. **Routes 693 and 672** in Pulaski and Montgomery Counties from Route 8 to the access road at I-81.

19. **Route 8** in Montgomery and Floyd Counties from Christiansburg to the Blue Ridge Parkway.

20. **Routes 58, 781, and 648** in Floyd and Carroll Counties.

21. **Route 58** in Lee, Scott, and Wise Counties from Cumberland Gap to Abingdon.

22. **Routes 80 and 63** in Dickenson, Buchanan, Russell, and Washington Counties from Breaks to Flannagan Reservoir.

23. **Routes 709, 614, 802, 689, 613, and 747** in Scott and Washington Counties from Weber City to Laurel Bed Lake.

24. **Routes 19, 16, 42, 621, and 21-52** in Russell, Tazewell, Smyth, Bland, and Wythe Counties from Route 80 to Wytheville.

25. **Route 635** in Giles County, from the New River to White Rocks and the West Virginia state line.

26. **Route 738** in Pulaski and Bland Counties from Pulaski to Route 42.

27. **Route 700** in Washington County from the intersection with Route 745 to the intersection with Route 58.

Natural Parks

28. The Nature Conservancy's **Falls Ridge Preserve** was established in 1975. It consists of 655 acres which the Conservancy designated with an ecological rating of "Rare Ecosystem." One of the prime attractions of the Preserve is a spectacular 30 meter travertine waterfall. Other distinguishing features include an old lime kiln and several caves near the waterfall. The Preserve is noted for its outstanding display of spring wildflowers and diversity of wildlife. A geologic fault runs through this natural area creating two soil types and, consequently, differences in vegetation. With its proximity to Blacksburg, it has become a valuable research area for scientists from Virginia Polytechnic Institute and State University. It is also popular with garden clubs, scouts, botanists, bird watchers, and amateur naturalists.

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

29. The **Clinch Mountain** area along the Washington, Russell, Smyth County lines contains the state's fourth highest peak, almost 4,700 feet. The climate of the higher elevations of the Clinch Mountain area is similar to that of Southern Canada. Winters are harsh and revegetation is slower, due to the shorter growing season. Scenic vistas from the higher ridges provide impressive views to the Mount Rogers National Recreation Area, North Carolina, Tennessee, and Kentucky. The unusual floral and faunal associations of this area should be preserved.

30. **Clinch River** in Russell County has pools and shoal areas inhabited by a large diversity of rare mollusk and fish species.

31. **Laurel Bed Creek Headwaters** in Russell and Tazewell Counties has extensive high elevation wetlands and beaver pond areas with associated unique flora and fauna.

32. **Burkes Garden** in Tazewell County is a unique physiographic feature in itself with scenic mountain terrain and abundant wetland habitats. Also contains a unique cave system and unusual plant community with several rare plants and animals.

33. **Buffalo Mountain** in Floyd County has unique geologic feature with an exposed rock bald, several rare plants and animals, and unusual, virgin forest community.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Public Water Access Areas

Although Region 5 is rich in water resources, public access to them is inadequate and needs to be substantially increased. In all instances where public highway crossings of fishable and/or floatable waters are scheduled for renovation, relocation, or wherever feasible, the potential for providing parking areas and boat launching ramps should be evaluated.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System:

34. **Craig Creek** from the headwaters to the Montgomery County line.

35. **Russell Fork** in Breaks Interstate Park.

36. **Clinch River** in Russell County from Puckett's Hole to Nash Ford.

37. **Whitetop Laurel Creek** from Creek Junction to near Damascus in Grayson and Washington Counties.

38. The **New River** from Buck Reservoir to Allisonia and from Whitethorne to Bluff City in Montgomery and Giles Counties.

39. **Big Reed Island Creek** from Route 753 to near Route 693 in Carroll and Pulaski Counties.

40. The **Little River** from Route 8 to Route 787 in Floyd and Montgomery Counties.

The following river segments merit evaluation to determine their suitability for inclusion in the Virginia Scenic Rivers System:

41. The **North Fork Holston River** from Plasterco to the Tennessee state line through Washington County.

42. The **Clinch River** from Blackford to Puckett's Hole, and Nash Ford to Cleveland in Russell County.

43. The **Middle Fork Holston River** from Seven Mile Fork to South Holston Lake in Washington County.

44. **South Fork Holston River** from Sugar Grove to the South Holston Lake.

45. **Cripple Creek** from Speedwell to the New River in Wythe County.

46. **Laurel Fork** from the headwaters to Big Reed Island Creek in Carroll County.

47. **Walker Creek** from Point Pleasant to the New River in Bland and Giles County.

48. **Little Stony Creek** from its headwaters to the New River in Giles County.

Historic Preserves

49. **Ingle's Ferry** on the New River in Montgomery and Pulaski Counties should be preserved in connection with a potential county park and other recreational developments.

50. **Daniel Boone Historic Trail** was officially designated by the 1988 session of the General Assembly. The trail is along Route 23 from the Tennessee state line to its junction with Route 58 at Duffield and then along Route 58 to the Cumberland Gap. Sites of historic significance along the route should be identified and interpreted in a publication made available to visitors to the area.

Trails

The following trail proposals are suggested as components of the State Trails System:

51. Sections of the **Appalachian National Scenic Trail** need additional protection and improvements. Future considerations should include a spur trail which will provide access from the Blacksburg area.

52. **Breaks Trail** is proposed as a spur off the Trans-Virginia Trail and would run from Hungry Mother State Park to Breaks Interstate Park and connect with Kentucky's Little Shepherd Trail.

53. **Cumberland Mountain Trail** from Cumberland Gap to the Breaks Interstate Park should be developed jointly by the National Park Service, U.S. Forest Service, state and local governments, and trail enthusiasts.

54. **Guest River Gorge Trail** should be developed along the bed of the old Interstate Railroad in Wise County.

Other Recreation Areas

55. **Fisher's Peak in Carroll County,** a recreational development planned by the National Park Service, is included in the Blue Ridge Parkway Master Plan.

56. The **Jefferson National Forest** will upgrade facilities at the North Fork Reservoir in Wise County.

Hostels

The following general areas are suggested for the establishment of hostels:

57. **Galax.**

58. **Honaker.**

59. **Adney Gap.**

60. **Fancy Gap.**

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements should be developed where appropriate.

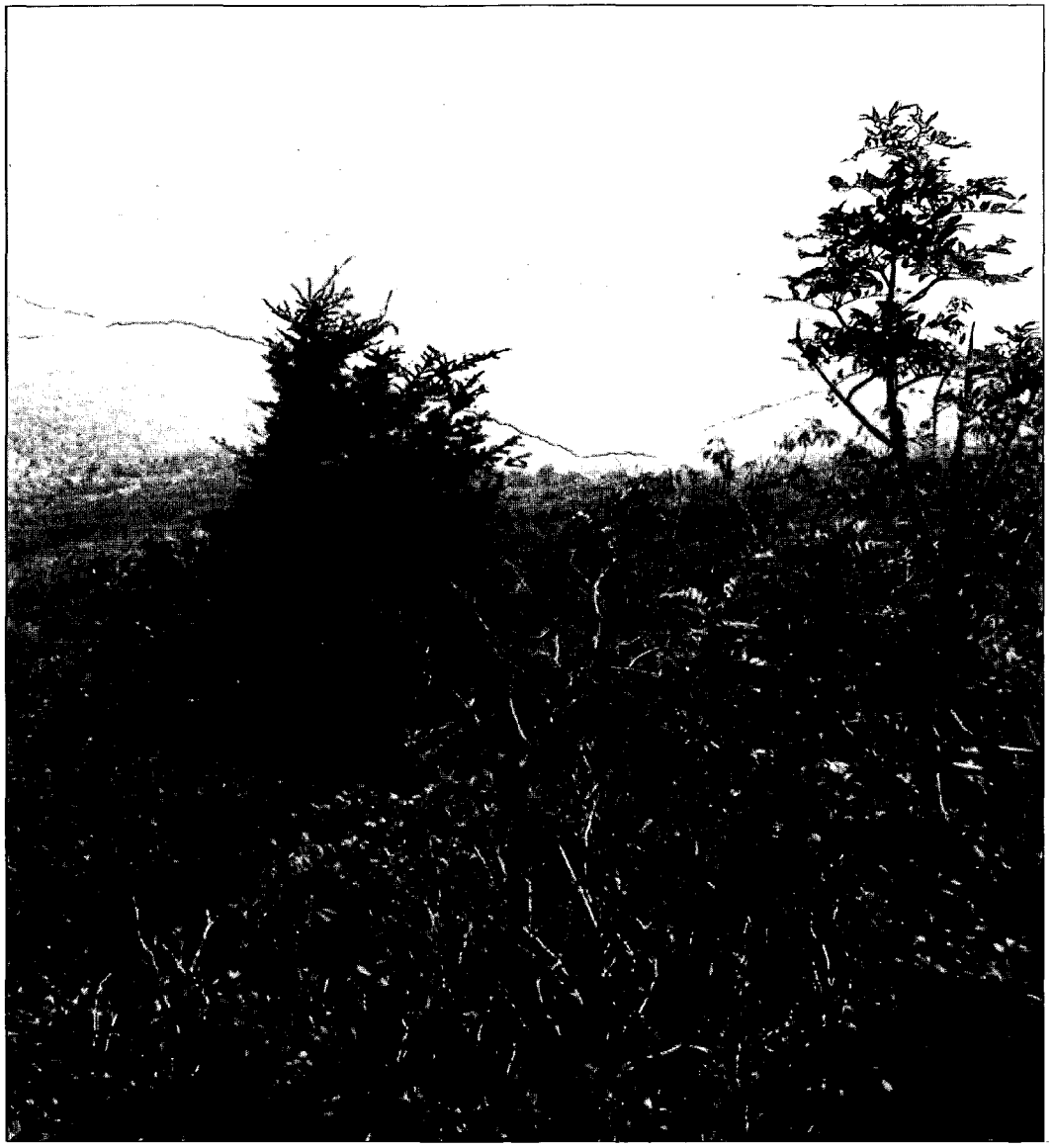
61. **New River Community College,** Pulaski County, has 100 acres suitable for game field and tennis court development.

62. **Fishburn Tract,** a VPI&SU property in Montgomery County is a picturesque parcel suitable for the provision of a variety of dispersed recreational opportunities on its 1,200 acres of forested land.

63. **Mountain Empire Community College** in Wise County has 100 acres of land suitable for recreational enjoyment on which recreational development could take place.

64. **Southwest Virginia Community College** in Russell County has 99 acres of land on which some development potential may exist.

65. **Virginia Highlands Community College** in Washington County has a 100-acre tract suitable for outdoor recreation development.



REGION 5
SOUTHWEST VIRGINIA

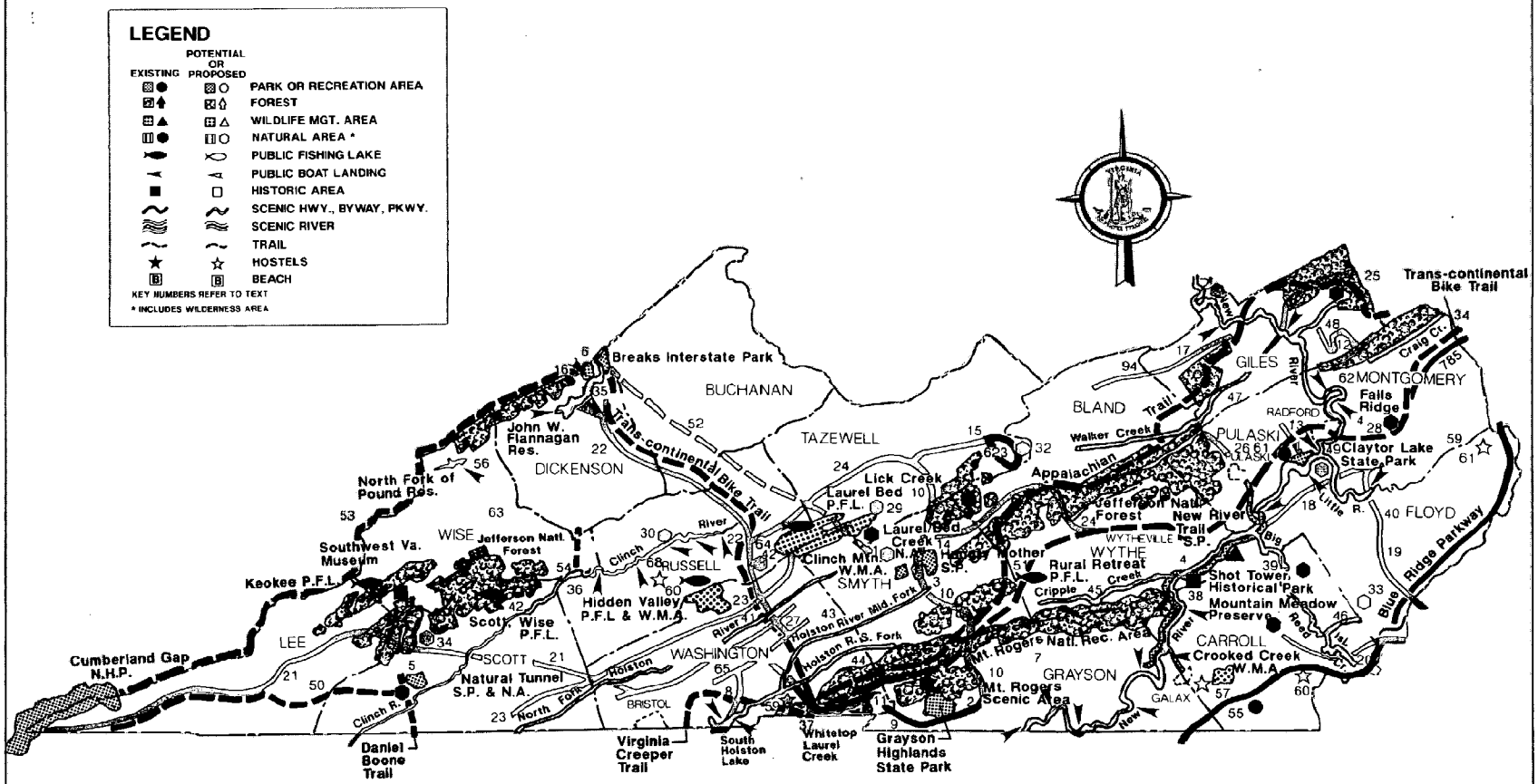


Plate 22

REGION 5 TABLE 28

Projected 1990 Population: 604222

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	5597	4219	2297	1378	6249	2030	6953	2734	SITES
FISHING	34.99	22896	9986	723	12910	24312	14326	25696	15710	ACRES
CANOEING, ETC.	6.55	67	201	0	+134	83	+118	100	+101	STREAM MILES
SAILING	3.86	1681	7344	152	+5663	2245	+5099	2856	+4488	ACRES
POWER BOATING	6.81	7173	7344	152	+171	7621	277	8070	726	ACRES
WATER SKIING	5.63	9233	7344	152	1889	11505	4161	13982	6638	ACRES
POOL SWIMMING	37.39	116	67	36	49	126	59	131	64	POOLS
SWIMMING OUTDOORS	46.43	332	104	87	228	358	254	385	281	BEACH ACRES
BEACH USE, SUNNING	33.54	218	104	87	114	235	131	248	144	ACRES
HIKING, BACKPACKING	30.89	651	600	34	51	721	121	789	189	MILES
JOGGING	30.76	829	16	0	813	870	854	919	903	MILES
BICYCLING/WORK, SCH	13.63	88	0	0	88	102	102	116	116	MILES
BICYCLING PLEASURE	25.84	289	270	0	19	318	48	351	81	MILES
HORSEBACK RIDING	7.63	346	143	30	203	372	229	394	251	MILES
FOUR WHEEL O.R.V.	21.69	544	77	0	467	573	496	607	530	MILES
MOTORCYCLE OFF ROAD	7.20	275	77	0	198	291	214	306	229	MILES
HUNTING	12.94	186331	308267	822	+121936	197188	+111079	208181	+100086	ACRES
PICNICKING	39.05	3590	4083	662	+493	3795	+288	4008	+75	TABLES
GOLF	11.46	31	21	17	10	35	14	36	15	COURSES
TENNIS	15.24	385	233	54	152	435	202	488	255	COURTS
SOFTBALL, BASEBALL	39.71	146	177	25	+31	158	+19	165	+12	FIELDS
BASKETBALL	25.29	711	144	20	567	783	639	859	715	COURTS
SOCCER	7.21	336	61	6	275	404	343	483	422	FIELDS
FOOTBALL	11.15	233	61	6	172	246	185	262	201	FIELDS
ICE SKATING	1.82	0	0	0	0	0	0	0	0	RINKS
SKIING	3.22	8	2	2	6	13	11	15	13	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 1 TABLE 29

Projected 1990 Population: 109104

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	914	418	0	496	1028	610	1148	730	SITES
FISHING	34.99	4136	815	12	3321	4448	3633	4760	3945	ACRES
CANOEING, ETC.	6.55	10	21	0	+11	13	+8	16	+5	STREAM MILES
SAILING	3.86	284	797	10	+513	385	+412	495	+302	ACRES
POWER BOATING	6.81	1236	797	10	439	1327	530	1418	621	ACRES
WATER SKIING	5.63	1567	797	10	770	1983	1186	2440	1643	ACRES
POOL SWIMMING	37.82	21	15	5	6	23	8	24	9	POOLS
SWIMMING OUTDOORS	46.43	56	7	1	49	61	54	67	60	BEACH ACRES
BEACH USE, SUNNING	33.55	38	7	1	31	41	34	43	36	ACRES
HIKING, BACKPACKING	30.89	102	133	4	+31	113	+20	125	+8	MILES
JOGGING	30.76	128	1	0	127	138	137	146	145	MILES
BICYCLING/WORK, SCH	13.63	16	0	0	16	19	19	22	22	MILES
BICYCLING PLEASURE	25.84	50	0	0	50	57	57	63	63	MILES
HORSEBACK RIDING	7.63	61	29	9	32	66	37	70	41	MILES
FOUR WHEEL O.R.V.	21.69	47	0	0	47	51	51	54	54	MILES
MOTORCYCLE OFF ROAD	7.20	18	0	0	18	18	18	19	19	MILES
HUNTING	12.94	29036	63600	0	+34564	31046	+32554	33076	+30524	ACRES
PICNICKING	39.05	625	712	142	+87	670	+42	716	4	TABLES
GOLF	11.46	4	2	2	2	6	4	6	4	COURSES
TENNIS	15.58	68	27	8	41	78	51	88	61	COURTS
SOFTBALL, BASEBALL	43.80	26	16	2	10	28	12	30	14	FIELDS
BASKETBALL	25.29	117	11	2	106	130	119	145	134	COURTS
SOCCER	7.41	60	1	0	59	72	71	87	86	FIELDS
FOOTBALL	11.38	38	1	0	37	40	39	43	42	FIELDS
ICE SKATING	1.81	0	0	0	0	0	0	0	0	RINKS
SKIING	3.22	0	0	0	0	1	1	1	1	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 2 TABLE 30

Projected 1990 Population: 151113

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	1227	375	163	852	1372	997	1527	1152	SITES
FISHING	34.99	5728	2389	202	3339	6128	3739	6520	4131	ACRES
CANOEING, ETC.	6.55	18	81	0	+63	21	+60	26	+55	STREAM MILES
SAILING	3.86	400	1257	80	+857	535	+722	682	+575	ACRES
POWER BOATING	6.81	1711	1257	80	454	1830	573	1949	692	ACRES
WATER SKIING	5.63	2171	1257	80	914	2735	1478	3350	2093	ACRES
POOL SWIMMING	37.85	27	13	9	14	30	17	31	18	POOLS
SWIMMING OUTDOORS	46.43	77	1	1	76	84	83	91	90	BEACH ACRES
BEACH USE, SUNNING	33.54	53	1	1	52	56	55	59	58	ACRES
HIKING, BACKPACKING	30.89	136	61	10	75	151	90	166	105	MILES
JOGGING	30.76	129	0	0	129	137	137	147	147	MILES
BICYCLING/WORK, SCH	13.63	22	0	0	22	26	26	29	29	MILES
BICYCLING PLEASURE	25.84	70	53	0	17	77	24	86	33	MILES
HORSEBACK RIDING	7.63	83	10	5	73	91	81	97	87	MILES
FOUR WHEEL O.R.V.	21.69	65	0	0	65	69	69	75	75	MILES
MOTORCYCLE OFF ROAD	7.20	23	0	0	23	26	26	27	27	MILES
HUNTING	12.94	30720	25664	0	5056	32765	7101	34816	9152	ACRES
PICNICKING	39.05	785	832	74	+47	840	8	894	62	TABLES
GOLF	11.46	8	4	4	4	8	4	8	4	COURSES
TENNIS	15.60	95	51	9	44	108	57	121	70	COURTS
SOFTBALL, BASEBALL	44.09	36	30	3	6	40	10	41	11	FIELDS
BASKETBALL	25.29	158	19	1	139	176	157	194	175	COURTS
SOCCER	7.42	82	1	0	81	100	99	120	119	FIELDS
FOOTBALL	11.40	51	1	0	50	55	54	59	58	FIELDS
ICE SKATING	1.82	0	0	0	0	0	0	0	0	RINKS
SKIING	3.22	0	0	0	0	1	1	2	2	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 3 TABLE 31

Projected 1990 Population: 191309

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	1725	2116	1259	+391	1898	+218	2093	+23	SITES
FISHING	34.99	7248	1835	426	5413	7560	5725	7856	6021	ACRES
CANOEING, ETC.	6.55	23	80	0	+57	29	+51	34	+46	STREAM MILES
SAILING	3.86	498	240	12	258	654	414	821	581	ACRES
POWER BOATING	6.81	2167	240	12	1927	2258	2018	2351	2111	ACRES
WATER SKIING	5.63	2747	240	12	2507	3372	3132	4044	3804	ACRES
POOL SWIMMING	37.28	37	24	13	13	40	16	41	17	POOLS
SWIMMING OUTDOORS	46.43	122	88	81	34	128	40	136	48	BEACH ACRES
BEACH USE, SUNNING	33.54	75	88	81	+13	81	+7	85	+3	ACRES
HIKING, BACKPACKING	30.89	218	297	8	+79	241	+56	262	+35	MILES
JOGGING	30.76	329	11	0	318	340	329	357	346	MILES
BICYCLING/WORK, SCH	13.63	28	0	0	28	32	32	35	35	MILES
BICYCLING PLEASURE	25.84	96	161	0	+65	104	+57	112	+49	MILES
HORSEBACK RIDING	7.63	113	84	1	29	119	35	124	40	MILES
FOUR WHEEL O.R.V.	21.69	365	77	0	288	383	306	403	326	MILES
MOTORCYCLE OFF ROAD	7.20	210	77	0	133	222	145	234	157	MILES
HUNTING	12.94	98001	218253	72	+120252	102896	+115357	107899	+110354	ACRES
PICNICKING	39.05	1195	1703	337	+508	1237	+466	1284	+419	TABLES
GOLF	11.46	10	7	7	3	12	5	12	5	COURSES
TENNIS	15.15	121	63	25	58	134	71	149	86	COURTS
SOFTBALL, BASEBALL	38.70	45	59	18	+14	49	+10	50	+9	FIELDS
BASKETBALL	25.29	234	46	14	188	253	207	274	228	COURTS
SOCCER	7.17	107	24	5	83	126	102	149	125	FIELDS
FOOTBALL	11.10	80	24	5	56	83	59	87	63	FIELDS
ICE SKATING	1.82	0	0	0	0	0	0	0	0	RINKS
SKIING	3.22	7	2	2	5	10	8	11	9	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

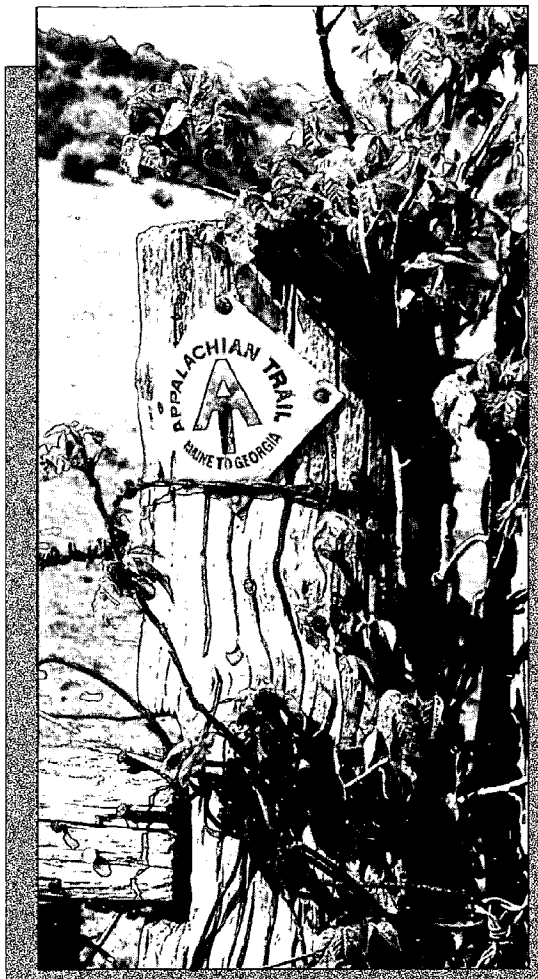
PLANNING DISTRICT 4 TABLE 32

Projected 1990 Population: 152696

ACTIVITY	PCNT. PART.	1990				2000		2010		UNIT
		TOTAL NEED	TOTAL SUPPLY	PRIVATE SUPPLY	NEED GAP	NEED	NEED GAP	NEED	NEED GAP	
CAMPING	21.31	1731	1310	875	421	1951	641	2185	875	SITES
FISHING	34.99	5784	4947	83	837	6176	1229	6560	1613	ACRES
CANOEING, ETC.	6.55	16	19	0	+3	20	1	24	5	STREAM MILES
SAILING	3.86	499	5050	50	+4551	671	+4379	858	+4192	ACRES
POWER BOATING	6.81	2059	5050	50	+2991	2206	+2844	2352	+2698	ACRES
WATER SKIING	5.63	2748	5050	50	+2302	3415	+1635	4148	+902	ACRES
POOL SWIMMING	36.75	31	15	9	16	33	18	35	20	POOLS
SWIMMING OUTDOORS	46.44	77	8	4	69	85	77	91	83	BEACH ACRES
BEACH USE, SUNNING	33.55	52	8	4	44	57	49	61	53	ACRES
HIKING, BACKPACKING	30.89	195	109	12	86	216	107	236	127	MILES
JOGGING	30.76	243	4	0	239	255	251	269	265	MILES
BICYCLING/WORK, SCH	13.63	22	0	0	22	25	25	30	30	MILES
BICYCLING PLEASURE	25.84	73	56	0	17	80	24	90	34	MILES
HORSEBACK RIDING	7.63	89	20	15	69	96	76	103	83	MILES
FOUR WHEEL O.R.V.	21.69	67	0	0	67	70	70	75	75	MILES
MOTORCYCLE OFF ROAD	7.20	24	0	0	24	25	25	26	26	MILES
HUNTING	12.94	28574	750	750	27824	30481	29731	32390	31640	ACRES
PICNICKING	39.05	985	836	109	149	1048	212	1114	278	TABLES
GOLF	11.46	9	8	5	1	9	1	10	2	COURSES
TENNIS	14.73	101	92	12	9	115	23	130	38	COURTS
SOFTBALL, BASEBALL	33.73	39	72	2	+33	41	+31	44	+28	FIELDS
BASKETBALL	25.29	202	68	3	134	224	156	246	178	COURTS
SOCCER	6.94	87	35	1	52	106	71	127	92	FIELDS
FOOTBALL	10.81	64	35	1	29	68	33	73	38	FIELDS
ICE SKATING	1.82	0	0	0	0	0	0	0	0	RINKS
SKIING	3.22	1	0	0	1	1	1	1	1	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.



REGION 6
Shenandoah Valley

Recreation Region 6 contains the communities of the Shenandoah Valley, a small component of the James River watershed, and a segment of the Blue Ridge and Alleghany Mountain ranges. Planning Districts 6 and 7 are within this recreation region.

The region abounds with beautiful landscapes and diverse natural resources that are tourist attractions of national significance. Within the region, there are over 870,000 acres of state and federal lands that are available for almost all forms of outdoor recreation. These resources include Shenandoah National Park, Skyline Drive, Blue Ridge Parkway, George Washington National Forest, Lake Moomaw, Douthat State Park, as well as Gathright, Highland, Goshen, and Little North Mountain Wildlife Management areas.

In addition to the vast amount of state and federal recreational resources, the private sector provides significant amounts of intensively developed recreational facilities, such as golf courses, snow skiing areas, campgrounds with swimming pools, picnicking, and fishing opportunities. Although these resources were developed primarily to serve the large influx of tourists, in some cases they also meet a portion of the local recreational needs. Region 6 contains most of the ski areas within the Commonwealth. Three of the state's four snow ski resorts are located in the higher elevations along the Blue Ridge and the Alleghanies. All of the resorts are provided by private enterprise.

The 1987 Outdoor Recreation Demand, Supply, and Needs Analysis indicates that overall, Region 6 has a surplus of local park acres. However, a close look at Table 33 reveals area and facility deficiencies for a number of resource oriented activities. Close-to-home needs for activities like jogging and bicycling for pleasure are likely to be satisfied primarily on existing streets and will not require a large amount of locally provided resources, although signed bike routes and jogging trails are needed throughout the region. Within the two planning districts priorities will differ, but it appears that local emphasis should be placed upon providing swimming pools, outdoor swimming areas with beaches, basketball courts, ball fields, fitness trails, and similar activities that will help to meet close-to-home needs.

The Division of Planning and Budget has projected a 14% population increase for the region between 1990 and 2000. This will in effect eliminate most of the surpluses that now exist in the close-to-home facilities normally provided by local units of governments. Tables 33 on page 245 projects regional needs from 1990 to 2010 for all measured outdoor recreation activities.

The following significant resources contribute, or have the potential to contribute, to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are identified by recreation systems with recommendations, when appropriate, as to how they might best meet existing or future demand.

State Parks

1. The acquisition and development of a state park along the **Shenandoah River** in Region 6 is needed. A consultant's study conducted in 1986 identified 6 sites in Page, Warren, and Clarke Counties suitable for the development of a state park. Such a park could provide a wide variety of water oriented and water enhanced facilities in a mountain setting within 50 miles of the Northern Virginia metropolitan area.

2. **Cedar Creek** in Frederick and Shenandoah Counties offers beautiful scenery, excellent fishing and canoeing opportunities, several caves, and historic features, including the Cedar Creek Battlefield in Frederick County. The area provides a rare opportunity for the acquisition and development of a multipurpose river park. There is a possibility that such a state park could be developed in conjunction with Belle Grove, a property of the National Trust for Historic Preservation.

Other Recreational Areas

3. Lands surrounding **Lake Moomaw** in Bath and Alleghany Counties offer additional opportunities for water based and water enhanced recreation. The U.S. Forest Service operates the reservoir and lands around the lake. Because of the instant popularity of the lake, they are beginning plans for expanding existing facilities which are already being used to capacity. A concession operated marina and swimming area is now in the planning stages. The Department of Game and Inland Fisheries operates the Gathright Wildlife Management Area, which surrounds the lake. They are cooperating with the Corps of Engineers and the U.S. Forest Service in the management of the wildlife and fishery resources.

4. The Virginia Power Company's **Bath County Pump Storage Hydroelectric Project** on Back Creek includes the provision of an extensive multipurpose recreation area along Back Creek below the dam. Fishing, swimming, boating, and picnicking facilities will be provided adjacent to two ponds, totaling approximately 85 acres. Hiking and stream fishing opportunities are provided in conjunction with the project.

Scenic Highway, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byways System:

5. **Route 250** in Highland and Augusta Counties from Monterey to Staunton.

6. **Routes 924 and 257** in Rockingham County from the Virginia/West Virginia line to Harrisonburg.

7. **Routes 211, 675, 678, and 55** in Shenandoah, Warren, and Page Counties from New Market to Strasburg.

8. **Routes 618 and 687** in Bath County between Route 220 and Warm Springs.

9. **Route 629** in Bath County from Douthat

State Park to Route 39.

10. Numerous roads in **Clarke County** have been recommended for consideration for Virginia Byway designation.

11. **Route 501** in Rockbridge County from Glasgow to Buena Vista.

12. **Route 60** in Rockbridge County from Buena Vista to the Blue Ridge Parkway.

13. **Route 220** in Bath and Highland Counties from Monterey to the Bath/Alleghany County line.

14. **Route 780** in Rockbridge County from Route 39 to Route 60.

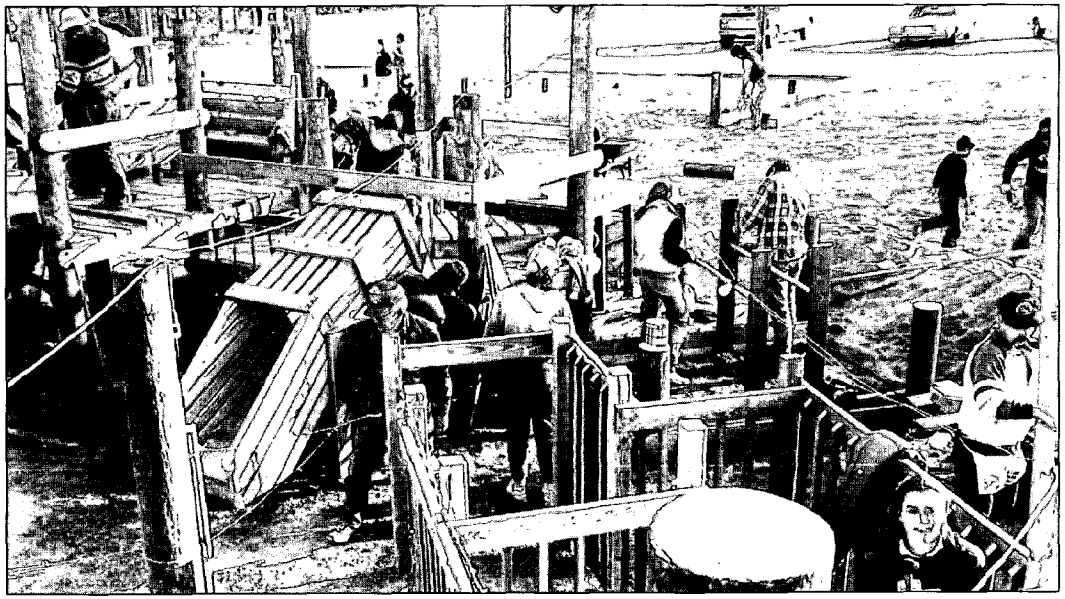
15. **Route 56** in Rockbridge County from the Rockbridge/Nelson County line to Vesuvius.

16. **Route 42** in Rockingham, Augusta, and Rockbridge Counties from Route 11 at Mount Crawford to the intersection with Route 39 in Goshen.

Natural Areas

The following areas are significant natural resources which are already under some level of protection and should be considered for inclusion into the State Natural Areas System:

17. Scenic and historic **Goshen Pass,** protected as a component of the State Natural Areas System, should be evaluated for improvements to trails, picnic grounds, and visitor services, however, additional development should be kept to a minimum in order to maintain the natural integrity of the area. Additional land for this site could be provided by combining existing holdings by the Division of State Parks, the Department of Game and Inland Fisheries, and the Department of Transportation.



18. Rugged and highly scenic **Bullpasture River Gorge** in Highland County lies within the Highland Wildlife Management Area. Several significant caves occur here. Management emphasis should be placed on maintaining the natural character of this area.

19. The extensive **Butler Cave/Sinking Creek Cave System** in the Burnsville Cove Karst Area of Bath and Highland Counties includes five integrated caves and underground streams. Not only is this the largest cave in Virginia, but it ranks high among the major caverns of the world. Although a portion of this cave system is currently protected by the Butler Cave Conservation Society, Inc., additional protection is needed.

20. The **Cave Hill Area** in Augusta County includes three historically important caves: Madison's Saltpeter Cave, Grand Cavern, and Fountain Cave. These historically and naturally significant caves should be protected. Some of these sites contain subterranean crustaceans which have been placed on the federal list of threatened species.

21. **Little Laurel Run** in northwest Rockingham County, a Research Natural Area designated in 1936, contains 2,100 acres of National Forest lands.

22. The area surrounding **Laurel Fork** in northwestern Highland County is managed as a component of the George Washington National Forest.

23. The **Thunderbird Archaeological Park** in Warren County, on the banks of the South Fork of the Shenandoah River, has been identified by the Lord Fairfax Planning District Commission as a significant historic and natural area.

24. **Short Mountain** in Shenandoah County is a scenic, well developed shale barren community with several rare plant species and a unique dwarf hardwood forest.

25. **White's Pond** in Frederick County contains diverse wetland habitats with rare and local plants, with several at the limit of their range. The area also is an important waterfowl congregating area.

26. **Madison Run and Deep Run Ponds** in Rockingham County are natural ponds with many rare plant species and relict flora.

27. **South River Wet Meadows** of Augusta County contains unique inland wetlands with diverse flora and several rare plant species. It is also an important staging area for transient marsh, shore birds, and waterfowl.

28. The **Maple Flat Sinkhole Ponds** of Augusta County have interesting geologic features producing many natural ponds, each with its own unique flora, rare species, and relict plant communities.

29. **Magnolia Swamp** in Augusta County has relict wetland flora with many rare and disjunct plant species.

30. **Green Pond** in Augusta County displays a unique mountain bog with unusual plants in an interesting geologic setting near the headwaters of the Saint Mary's River.

31. **Short Hills** area of Rockbridge County is a mountaintop valley with forested wetland and a rare plant species location.

32. **Shale Slopes** near Millboro in Bath County was the first location discovered for many rare shale barren plant species. It contains an extensive area of well developed shale barrens.

33. The **Massanutten Wetlands** in Shenandoah County contain many small, but very unique wetlands with northern plant associations and rare species.

34. The **Devil's Backbone,** in northwest Highland County, is a remote rugged area within the National Forest.

The recent Wilderness Act passed by Congress added over 31,000 acres of wilderness to the George Washington National Forest. Those areas include:

35. The **Ramsey's Draft** area in Highland County which contains over 6,500 acres.

36. **Richhole Wilderness** area in Alleghany and Rockbridge Counties (partially in Region 4) contains over 6,400 acres.

37. The **Rough Mountain Wilderness** in Bath County has 9,300 acres.

38. The **Saint Mary's Wilderness** contains about 10,000 acres of mountain sides in southern Augusta County.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Water and Beach Access

39. Additional **Public Water Access** sites are needed on the James and Maury Rivers in Rockbridge County, the North Fork of the Shenandoah River in Shenandoah County, the South Fork of the Shenandoah in Page County, and Cedar Creek in Shenandoah or Warren County.

40. The possibility of adding beaches and outdoor swimming areas to any publicly owned flat water body should be explored. The U.S. Forest Service should expand beach opportunities at Lake Moomaw.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

41. **Western State Hospital** in Augusta County contains about 200 acres. The site appears to be about 50% developed.

42. **Blandy Experimental Farm** in Clarke County houses the 150 acre Orland E. White Arboretum, the State Arboretum of Virginia. Plans are being developed for a visitor's center with indoor public meeting facilities, an outdoor amphitheater, picnic facilities, additional gardens, and garden walks, designed for handicapped participation.

43. **McCormick Farm** in Rockbridge County contains over 600 acres of open space. The Cyrus McCormick Museum is operated on the farm.

44. **The White Tract** owned by Virginia Military Institute (VMI) in Rockbridge County contains over 60 acres of undeveloped land.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found worthy of inclusion in the Virginia Scenic Rivers System:

45. **Back Creek** in Bath County from Boiling Springs to Lake Moomaw.

46. **Jackson River** in Bath County from Route 623 to Lake Moomaw.

47. **Maury River** in Rockbridge County from the Head of Goshen Pass to Limekiln Bridge.

48. The **Calfpasture River** in Bath County from Marble Valley to Goshen Pass.

49. The **James River** in Rockbridge County, the entire stream.

50. The **South Fork of the Shenandoah River** in Page County from Goods Mill to Overall.

The following river sections are identified as being worthy of future evaluation and possible inclusion in the Virginia Scenic Rivers System:

51. **Cedar Creek** in Shenandoah, Frederick and Warren Counties, the entire stream.

52. **Cowpasture River** in Highland and Bath Counties from Panta to Route 42.

53. **South Fork of the Shenandoah River** in Rockingham, Page, and Warren Counties, from Port Republic to the end of Route 684 in Page County, and from Overall to Front Royal.

54. **North Fork of the Shenandoah River** in Shenandoah and Warren Counties from New Market to Riverton.

55. **Laurel Fork** in Highland County, the entire stream.

Trails

The following trail proposals are suggested as components of the State Trails System:

56. The **Virginia Loop Bicycle Trail** traverses the Shenandoah Valley from Harpers Ferry to Waynesboro, using existing low volume roads. The route should be signed and mapped.

57. The **Big Blue Trail** begins in Shenandoah National Park goes west through the Manassas Mountains to the Alleghanies and then north into West Virginia and Maryland. The trail has been developed and is managed and maintained by members of the Potomac Appalachian Trail Club.

Hostels

The following general areas are suggested as potential hostel locations:

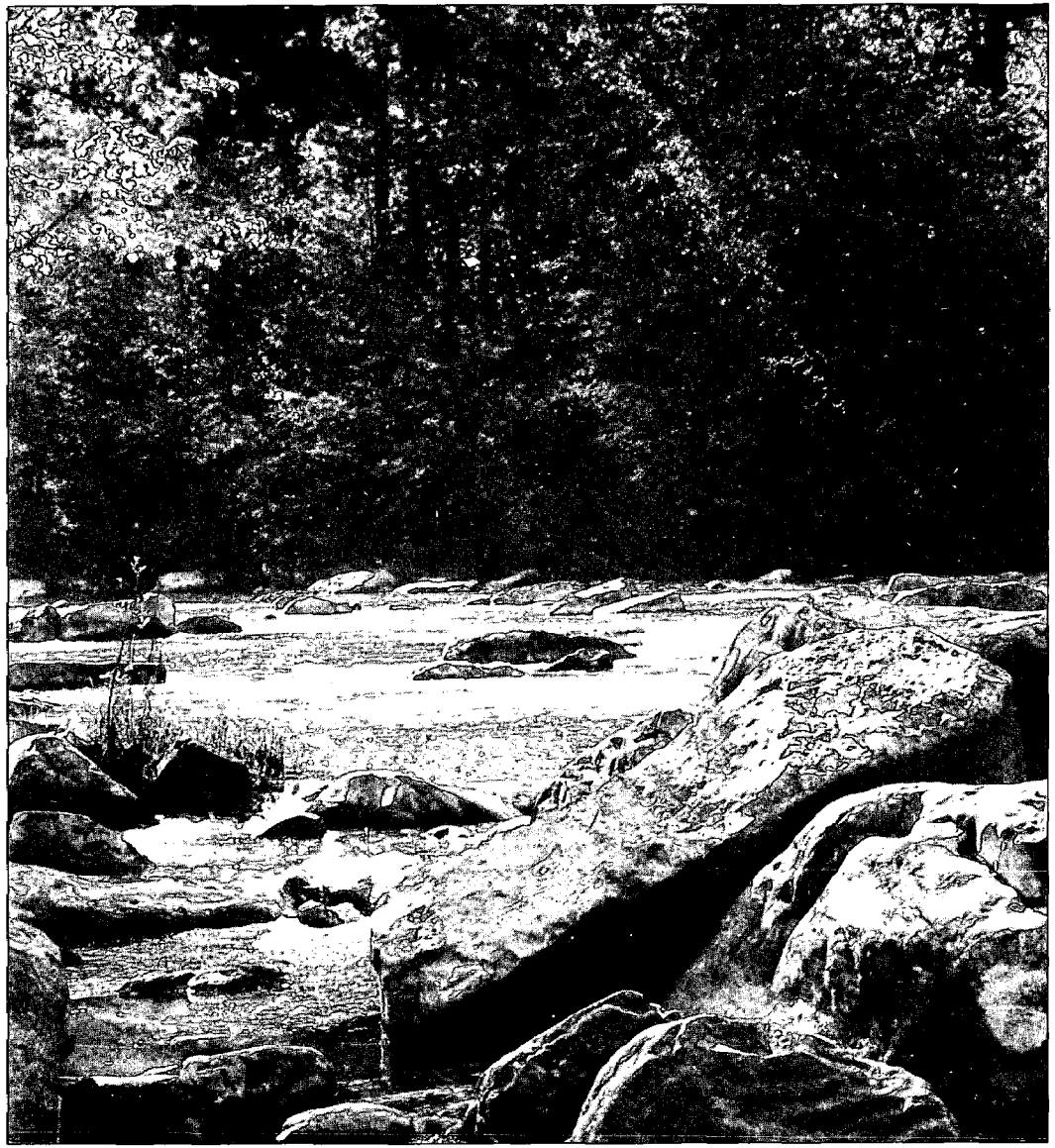
58. **Natural Bridge.**

59. **Waynesboro.**

60. **Winchester.**

Other Property

61. The **Old Remount Station** near Front Royal contains several thousand acres, is administered by the National Zoo in Washington, DC, and is largely undeveloped. There is an opportunity for local government to explore a use agreement which could secure a parcel for a community park. The Northern Virginia 4-H Educational Center has been developed on land acquired from the federal government. Facilities at the center are available for 4-H campers, groups, and local citizens. The center's equestrian facilities have helped to meet the needs of horsemen in the area. The Appalachian Trail passes through the center and trail hikers frequently stop to use the pool, shower, and other facilities.



REGION 6
SHENANDOAH VALLEY

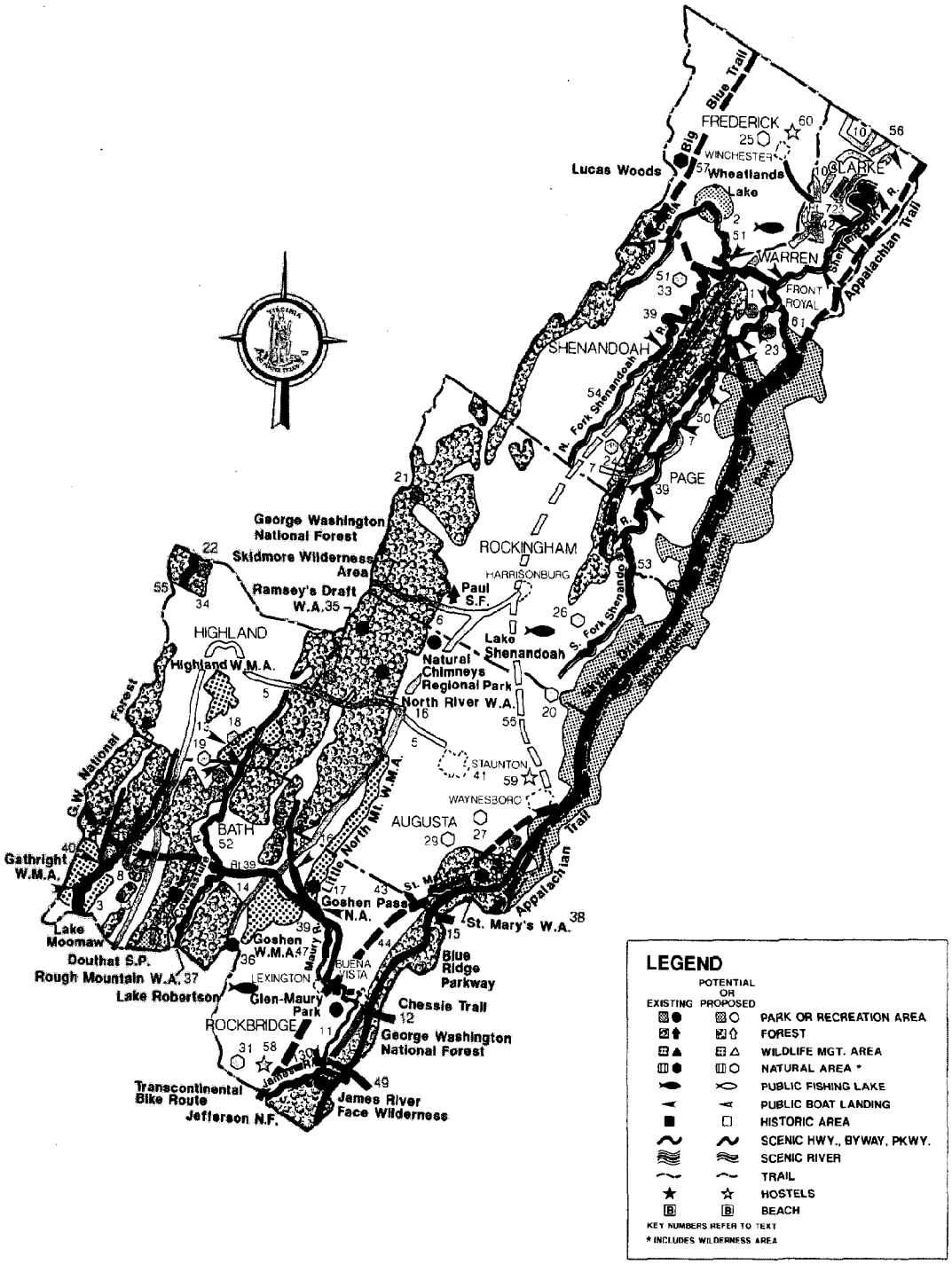


Plate 23

REGION 6 TABLE 33

Projected 1990 Population: 373972

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	24.27	7054	7078	5948	+24	7999	921	9001	1923	SITES
FISHING	23.82	7096	8840	966	+1744	7568	+1272	8072	+768	ACRES
CANOEING, ETC.	8.45	148	641	8	+493	179	+462	218	+423	STREAM MILES
SAILING	1.67	1475	396	4	1079	2544	2148	3745	3349	ACRES
POWER BOATING	12.80	4923	396	4	4527	5261	4865	5606	5210	ACRES
WATER SKIING	5.94	1703	396	4	1307	2114	1718	2569	2173	ACRES
POOL SWIMMING	48.40	141	63	44	78	151	88	161	98	POOLS
SWIMMING OUTDOORS	34.07	94	42	28	52	105	63	115	73	BEACH ACRES
BEACH USE, SUNNING	30.54	92	42	28	50	97	55	105	63	ACRES
HIKING, BACKPACKING	25.56	824	896	308	+72	927	31	1037	141	MILES
JOGGING	26.38	854	9	1	845	925	916	994	985	MILES
BICYCLING/WORK, SCH	9.38	60	0	0	60	70	70	84	84	MILES
BICYCLING PLEASURE	24.73	266	203	75	63	293	90	326	123	MILES
HORSEBACK RIDING	8.38	284	173	115	111	305	132	324	151	MILES
FOUR WHEEL O.R.V.	12.64	212	10	0	202	222	212	232	222	MILES
MOTORCYCLE OFF ROAD	11.51	124	10	0	114	130	120	138	128	MILES
HUNTING	16.90	457816	584971	32285	+127155	487712	+97259	518451	+66520	ACRES
PICNICKING	45.79	4268	4667	1322	+399	4594	+73	4923	256	TABLES
GOLF	5.57	30	22	21	8	32	10	35	13	COURSES
TENNIS	13.62	221	204	72	17	253	49	286	82	COURTS
SOFTBALL, BASEBALL	21.68	271	187	28	84	291	104	309	122	FIELDS
BASKETBALL	25.29	549	97	20	452	608	511	669	572	COURTS
SOCCER	13.73	80	65	5	15	93	28	108	43	FIELDS
FOOTBALL	11.55	120	65	5	55	127	62	135	70	FIELDS
ICE SKATING	8.88	9	0	0	9	12	12	14	14	RINKS
SKIING	12.88	85	18	18	67	104	86	121	103	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 6 TABLE 34

Projected 1990 Population: 373972

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	24.27	3636	3005	2273	631	4052	1047	4493	1488	SITES
FISHING	23.82	4248	5410	591	+1162	4488	+922	4752	+658	ACRES
CANOEING, ETC.	8.45	74	338	6	+264	87	+251	107	+231	STREAM MILES
SAILING	1.63	883	133	0	750	1506	1373	2202	2069	ACRES
POWER BOATING	12.80	2963	133	0	2830	3140	3007	3321	3188	ACRES
WATER SKIING	5.94	1069	133	0	936	1319	1186	1595	1462	ACRES
POOL SWIMMING	48.34	93	35	20	58	98	63	104	69	POOLS
SWIMMING OUTDOORS	34.06	54	21	10	33	61	40	66	45	BEACH ACRES
BEACH USE, SUNNING	30.54	55	21	10	34	57	36	61	40	ACRES
HIKING, BACKPACKING	25.56	473	473	130	0	525	52	579	106	MILES
JOGGING	26.38	537	3	0	534	575	572	611	608	MILES
BICYCLING/WORK, SCH	9.38	36	0	0	36	41	41	49	49	MILES
BICYCLING PLEASURE	24.73	184	151	23	33	201	50	221	70	MILES
HORSEBACK RIDING	8.38	178	109	79	69	188	79	199	90	MILES
FOUR WHEEL O.R.V.	12.64	179	10	0	169	186	176	194	184	MILES
MOTORCYCLE OFF ROAD	11.51	105	10	0	95	110	100	115	105	MILES
HUNTING	16.90	316529	471394	17363	+154865	333660	+137734	351599	+119795	ACRES
PICNICKING	45.79	2759	2424	651	335	2940	516	3124	700	TABLES
GOLF	5.57	17	13	12	4	18	5	19	6	COURSES
TENNIS	13.54	140	119	36	21	159	40	178	59	COURTS
SOFTBALL, BASEBALL	21.48	181	120	14	61	192	72	203	83	FIELDS
BASKETBALL	25.29	376	56	8	320	413	357	451	395	COURTS
SOCCER	13.48	54	47	1	7	61	14	71	24	FIELDS
FOOTBALL	11.46	90	47	1	43	94	47	100	53	FIELDS
ICE SKATING	8.88	4	0	0	4	7	7	8	8	RINKS
SKIING	12.88	55	13	13	42	68	55	78	65	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

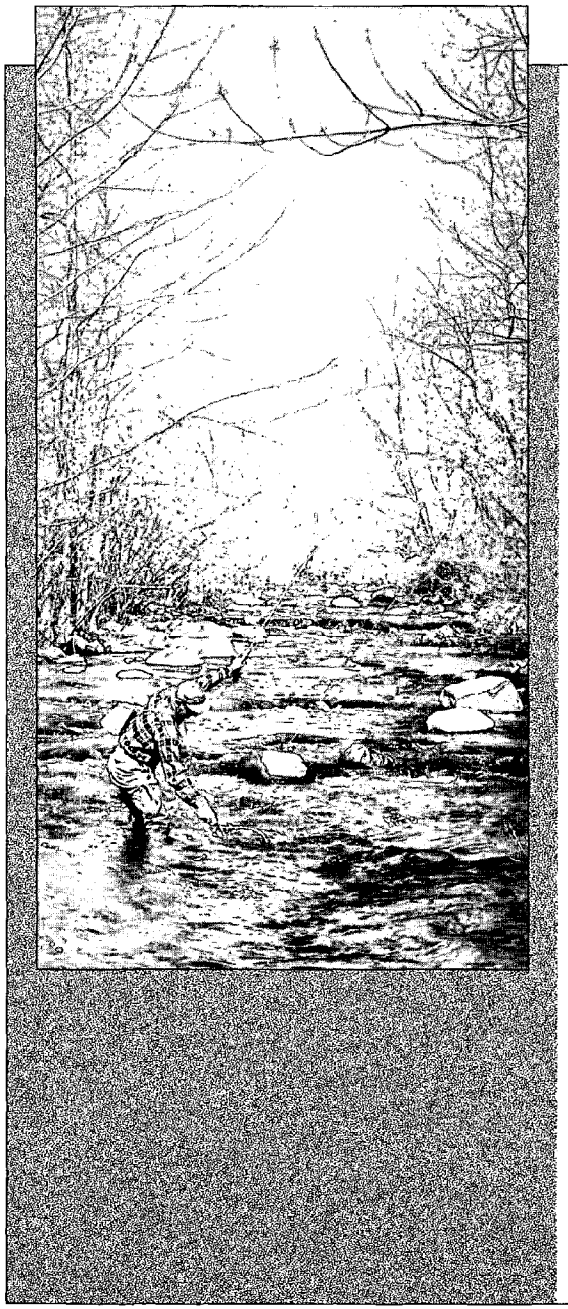
PLANNING DISTRICT 7 TABLE 35

Projected 1990 Population: 150386

ACTIVITY	PCNT. PART.	1990 TOTAL NEED	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED GAP	2000 NEED	2000 NEED GAP	2010 NEED	2010 NEED GAP	UNIT
CAMPING	24.27	3418	4073	3675	+655	3947	+126	4508	435	SITES
FISHING	23.82	2848	3430	375	+582	3080	+350	3320	+110	ACRES
CANOEING, ETC.	8.45	74	303	2	+229	92	+211	111	+192	STREAM MILES
SAILING	1.62	592	263	4	329	1038	775	1543	1280	ACRES
POWER BOATING	12.80	1960	263	4	1697	2121	1858	2285	2022	ACRES
WATER SKIING	5.94	634	263	4	371	795	532	974	711	ACRES
POOL SWIMMING	48.50	48	28	24	20	53	25	57	29	POOLS
SWIMMING OUTDOORS	34.07	40	21	18	19	44	23	49	28	BEACH ACRES
BEACH USE, SUNNING	30.54	37	21	18	16	40	19	44	23	ACRES
HIKING, BACKPACKING	25.56	351	423	178	+72	402	+21	458	35	MILES
JOGGING	26.38	317	6	1	311	350	344	383	377	MILES
BICYCLING/WORK, SCH	9.38	24	0	0	24	29	29	35	35	MILES
BICYCLING PLEASURE	24.73	82	52	52	30	92	40	105	53	MILES
HORSEBACK RIDING	8.38	106	64	36	42	117	53	125	61	MILES
FOUR WHEEL O.R.V.	12.64	33	0	0	33	36	36	38	38	MILES
MOTORCYCLE OFF ROAD	11.51	19	0	0	19	20	20	23	23	MILES
HUNTING	16.90	141287	113577	14922	27710	154052	40475	166852	53275	ACRES
PICNICKING	45.79	1509	2243	671	+734	1654	+589	1799	+444	TABLES
GOLF	5.57	13	9	9	4	14	5	16	7	COURSES
TENNIS	13.73	81	85	36	+4	94	9	108	23	COURTS
SOFTBALL, BASEBALL	21.98	90	67	14	23	99	32	106	39	FIELDS
BASKETBALL	25.29	173	41	12	132	195	154	218	177	COURTS
SOCCER	14.10	26	18	4	8	32	14	37	19	FIELDS
FOOTBALL	11.67	30	18	4	12	33	15	35	17	FIELDS
ICE SKATING	8.88	5	0	0	5	5	5	6	6	RINKS
SKIING	12.88	30	5	5	25	36	31	43	38	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.



REGION 7
Northern Piedmont

Recreation Region 7 is the largest in the state, and includes three planning districts. Geographically, the region stretches from Fauquier County in the north to Charlotte County in the south, and the coastal plain in the east to the eastern slope of the Blue Ridge in the west, taking in a majority of Virginia's Piedmont physiographic province. The region contains large acreage of both federal and state owned recreation land which satisfies resident demands for hunting, fishing, and hiking/backpacking. The regional area and facility surpluses which exist for these activities also help to satisfy needs in adjacent regions. Additional developments at existing state and/or federal areas could help satisfy some local shortages of outdoor swimming areas, picnic sites and hunting areas. However, the greatest needs which exist in Region 7 are for the types of areas and facilities that are traditionally provided by local units of government. For the most part, each of the three planning districts is more than 50% deficient in facilities for jogging, outdoor swimming, basketball, and football/soccer, as indicated in the accompanying table.

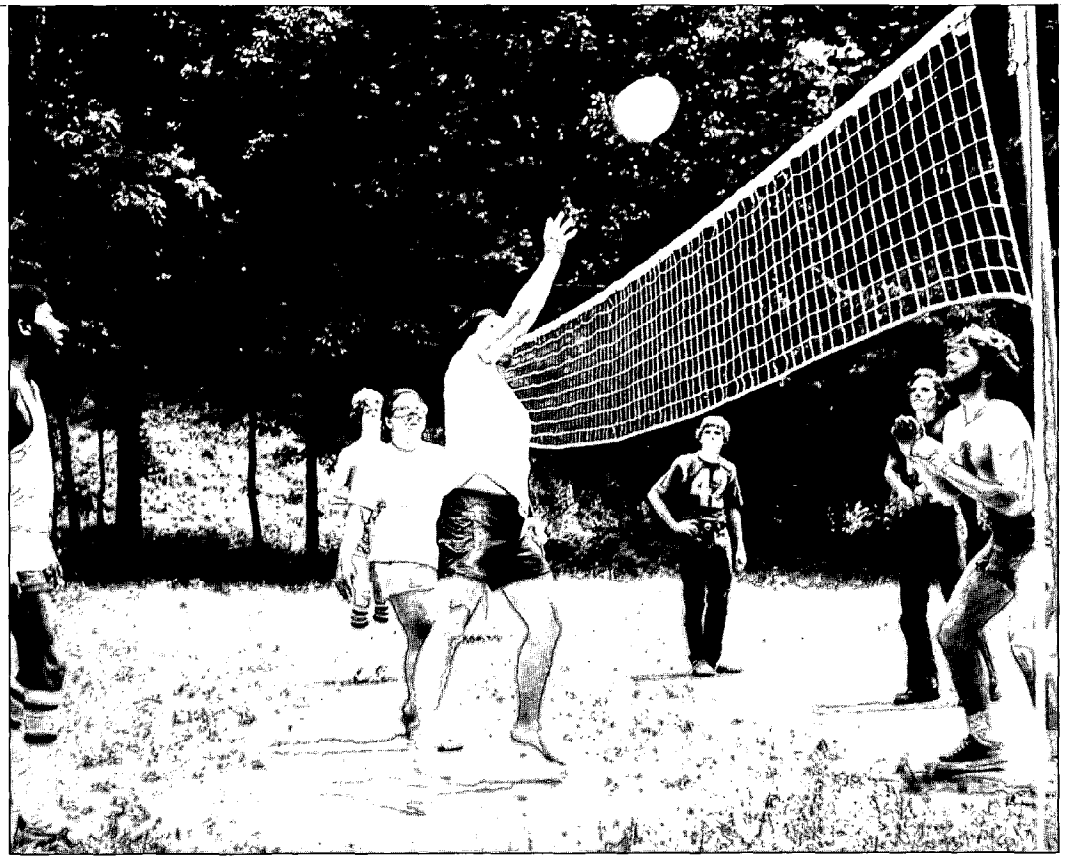
Planning District 9 is 80% deficient in the amount of local park and open space land available to its residents. The acquisition and development of several county parks over the next five years should be a priority for area localities.

The largest single area/facility deficiency in Planning District 9 is for public swimming beaches. However, this deficiency is due to a lack of water resources suitable for the development of large swimming areas. Consequently, the resident population will have to continue satisfying their demand for outdoor swimming outside the region. Overall, the most pressing local needs are for basketball courts, football/soccer fields, picnic sites and swimming pools.

Planning District 10 has an adequate supply of local park land and is less deficient in the supply of facilities than are the other two planning districts in the region. Still, significant deficiencies exist in the supply of swimming beaches, football/soccer fields, basketball courts, and swimming pools. In general, local priorities over the next five years should be aimed primarily at satisfying the demand for these activities by increasing facility development at existing parks rather than acquiring additional park sites.

The largest and least populous of the planning districts in Region 7, is Planning District 14. With less than 30% of the recommended amount of local and regional park land, the localities in this district, like those in Planning District 9, should place their emphasis on the acquisition and development of county parks. Current demand figures indicate that the greatest needs in the area are for basketball courts, football/soccer fields, bicycle trails, and swimming beaches.

The following recommendations involve significant resources which contribute, or have the potential to contribute, to regional recreation and/or open space opportunities and, therefore, merit special attention. These resources are identified by system with recommendations, where appropriate, as to how they can best satisfy current and projected needs.



State Parks

1. Appropriate outdoor recreation facilities and opportunities should be developed at **Sky Meadows State Park** in Fauquier County.

The following site is identified as worthy of consideration as a state park:

2. Potential exists for the acquisition and development of a state park in the vicinity of the **Rapidan Wildlife Management Area** in Madison County.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion in the State Natural Areas System:

3. **Byrd Creek Hemlock Bluffs** in Fluvanna County are a very diverse, relict, montane plant community.

4. **The Ivy Creek Headwaters** in Albemarle County support a montane hemlock forest which contains rare plants.

5. **Spy Rock** in Nelson County is an exposed rock bald with an associated plant community which contains several rare species.

6. The **James River Arbor/Vitae Bluff** in Buckingham County is an unusual geologic feature that supports a disjunct montane plant community.

7. The rich hardwood slopes of the **Bent Creek Ravines** in Buckingham County support several rare plant species.

8. **Willis Mountain** in Buckingham County is a very scenic and unique geologic feature, a mountain monadnock, which supports several unusual plants.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Scenics Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byways System:

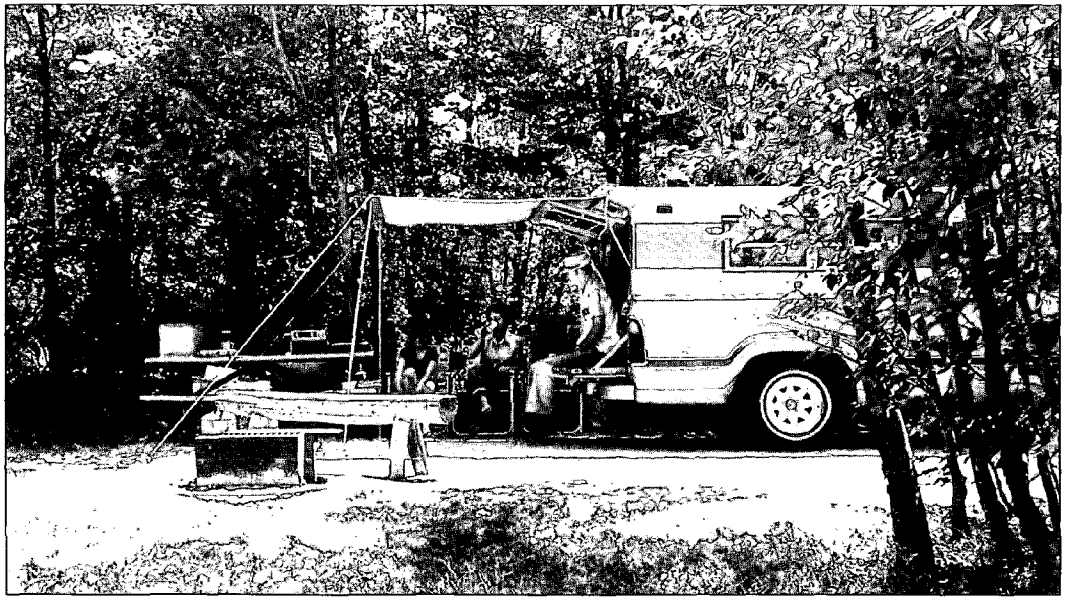
9. **Route 53** in Albemarle and Fluvanna Counties from Route 20 in Albemarle County to Route 15 in Fluvanna County.

10. **Routes 712 and 692** in Albemarle County from Scottsville to Route 29.

11. **Routes 229** in Culpepper County from Route 802 to Culpepper.

12. **Route 522** in Orange and Culpeper Counties from the Orange/Spotsylvania County line to the Town of Culpeper.

13. **Routes 636, 642, 656, 45, 460, 600, 617, and 307,** Lee's Retreat Route through Buckingham,



Prince Edward, Nottoway, and Amelia Counties, from the Appomattox/Buckingham County line to the Amelia/Chesterfield County line.

14. **Route 604** in Amelia County from Chula to the Amelia/Powhatan County line.

15. **Route 622** in Cumberland County from the Buckingham/Cumberland County line through Cumberland State Forest to the intersection of Route 60.

16. **Route 696** in Prince Edward County from Route 460 to Route 360.

17. **Route 729** in Rappahannock County from Route 211 to Route 522.

18. **Route 15** in Fluvanna County from the Louisa County line to Bremo Bluff; and in Culpeper, Madison, and Orange Counties from Culpeper to Route 20.

19. **Route 810** in Albemarle and Greene Counties.

20. **Route 626** in Albemarle County.

21. **Route 522** in Culpeper and Rappahannock Counties from Chester Gap to Washington.

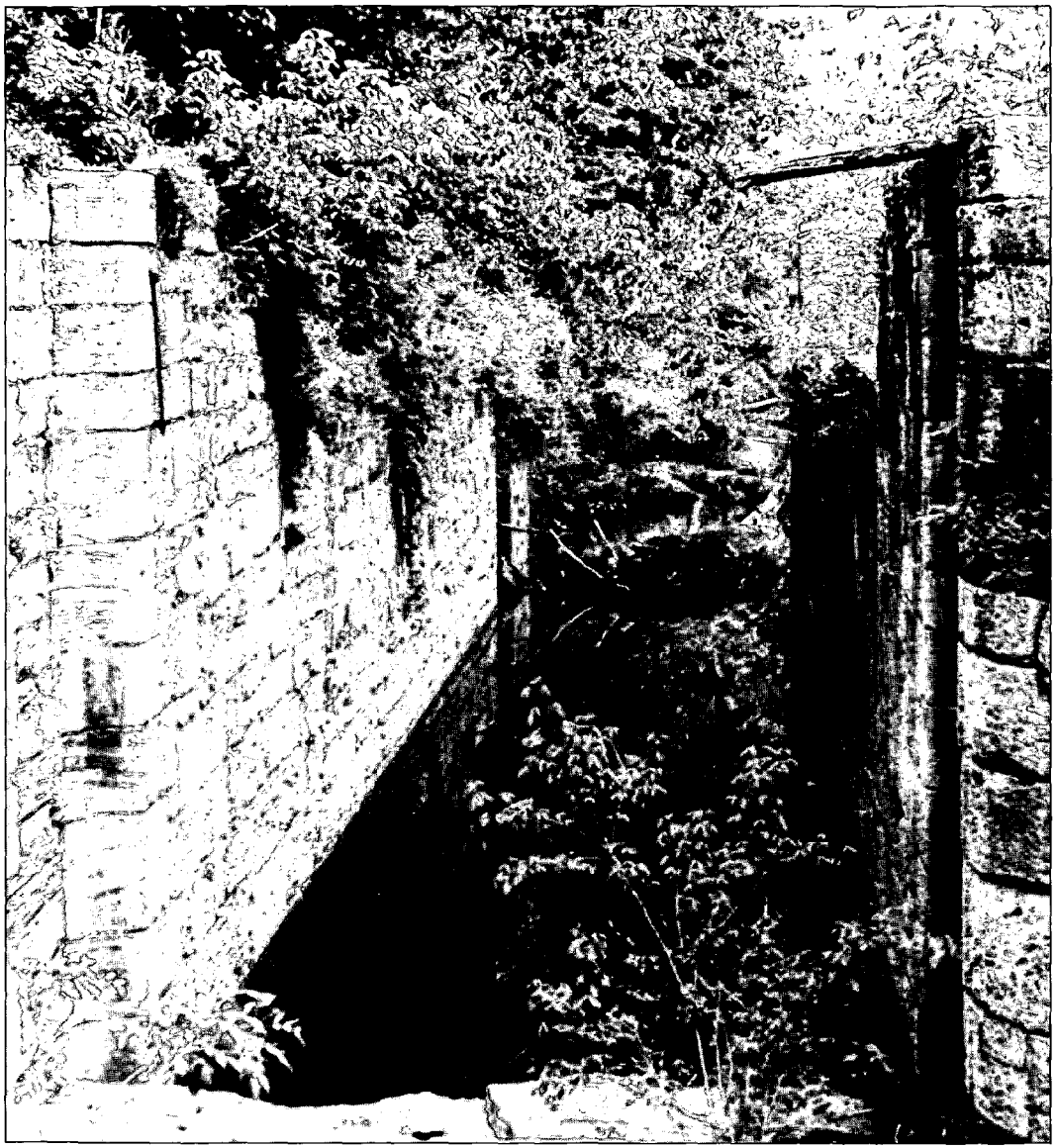
22. **Route 688** in Fauquier County from Route 211 to Route 17.

23. **Route 647** in Rappahannock and Fauquier Counties from Flint Hill to I-66.

24. **Route 709** in Fauquier County from Route 50 to Route 17.

25. **Route 712** in Fauquier County from Route 17 to Route 50.

26. Numerous additional road segments in Rappahannock and Fauquier Counties include all



or portions of **Routes 635, 691, 702, 713, 623, 628, and 606.**

27. The designation of a **James River Byway** consisting of roads that closely parallel the James River Bateau Festival Trail should be considered. The corridor would include Route 6 in Goochland and Fluvanna Counties, Route 626 in Albemarle, Route 622 in Nelson County and Amherst Counties, Route 130 in Amherst and Rockbridge, Route 11 in Rockbridge, and Route 43 and 220 in Botetourt and Alleghany County.

Public Game and Fish Management Areas

28. Consolidation of the **Rapidan Wildlife Management Area** in Madison County should be completed through the exchange of lands with the Shenandoah National Park and the acquisition of private inholdings.

29. Consideration should be given to increasing the range of recreational opportunities currently available at the **Chester Phelps Wildlife Management Area** through the accommodation of compatible nonhunting activities, such as hiking, river access, and primitive canoe-in camping.

30. The **Amelia Wildlife Management Area** in Amelia County has the potential to accommodate additional recreational development, such as trails and river access opportunities, which would be beneficial in meeting some of the recreational needs in Region 2 to the east.

Public Access

31. **Public Recreational Access** to the rivers and lakes in Region 7 should be expanded. Additional access is specifically needed on the Rappa-

hannock, Rivanna, James, and Slate Rivers and on Lake Anna.

32. The **Chester Phelps, Hardware River, James River, and Amelia Wildlife Management Areas,** as well as other large tracts of publicly and privately owned lands on major rivers in Region 7 have the potential of accommodating primitive canoe-in only camping and picnicking opportunities. The feasibility of providing such opportunities should be investigated.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System:

33. The **Robinson River** from headwaters to its junction with the Rapidan River.

34. The **Thornton River** in Rappahannock and Culpeper Counties from Sperryville to the Hazel River.

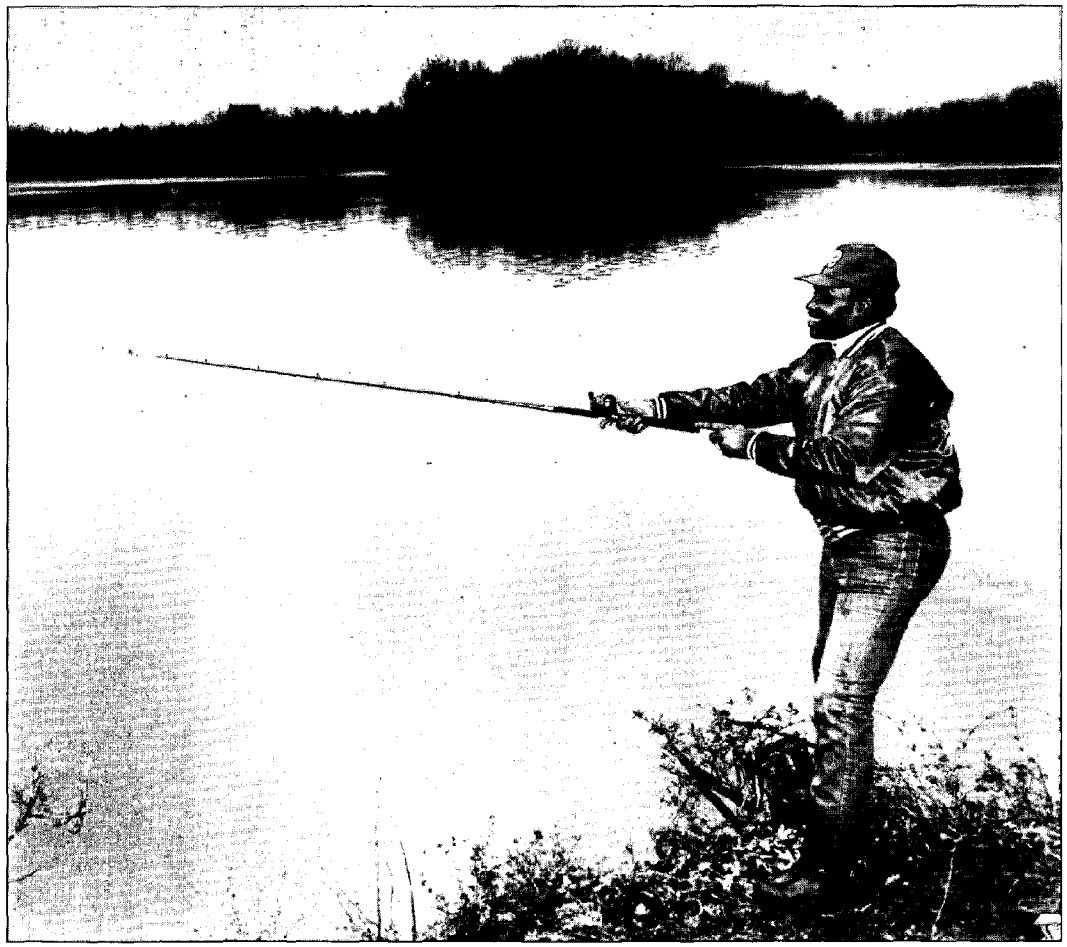
35. The **Upper Appomattox River** in Buckingham and Prince Edward Counties from Route 612 to Route 603.

36. The **James River** in Nelson, Buckingham, Albemarle, Fluvanna, and Cumberland Counties from Wingina to Columbia.

37. The **Slate River** in Buckingham County from Route 20 to the James River.

38. The **Rapidan River** in Green, Madison, Orange, Culpeper, and Spotsylvania Counties from its headwaters to the Town of Rapidan and from Germanna Ford to its confluence with the Rappahannock.

39. The **Staunton River** in Charlotte and Halifax Counties from the Campbell County line to Kerr Reservoir.



The following rivers or section of rivers should be evaluated for inclusion in the Scenic Rivers System:

40. **Rockfish River** from Schuyler to the junction with the James River.

41. **Goose Creek** from its headwaters to the Loudoun County line.

42. **Hughes River** in Rappahannock and Culpeper Counties.

43. **Hazel River** starting in Rappahannock County to the confluence with the Rappahannock River in Culpeper County.

Other State Properties

The following state owned properties contain significant acreage of undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements should be developed where appropriate.

44. The **Virginia Outdoors Foundation** owns three tracts of forested land in Fauquier County, totaling approximately 400 acres, which may have potential for recreational use.

45. **Germanna Community College** in Orange County has approximately 60 acres of undeveloped land.

46. The **Birdwood Property** in Albemarle County is a 148-acre tract of undeveloped land, owned by the University of Virginia.

47. Undeveloped portions of the **Piedmont Community College Campus** in Albemarle County may have recreation potential.

48. Approximately 97 acres of the **Blue Ridge Hospital** property in Albemarle County is undeveloped and may have recreation potential.

49. The **Department of Corrections** owns a 194-acre undeveloped tract in Louisa County.

50. There is a 90-acre tract of undeveloped timberland at the **Piedmont Geriatric Hospital** in Nottoway County.

Historic Preserves

51. **Point of Fork** in Fluvanna County is the site of a significant Revolutionary War Arsenal. Located near the confluence of the Rivanna Scenic River and the James River, the site has considerable potential for acquisition and development as a park site.

Trails

The following trail proposals are suggested as components of the State Trails System:

52. **Appalachian National Scenic Trail** is in need of additional protection.

53. **Rivanna River Trail** in Fluvanna and Albemarle Counties would connect the Point of Fork area and the Trans-Virginia Trail with the Appalachian Trail.

54. A **James River Trail** from the City of Richmond to Iron Gate in Alleghany County should be considered. This trail would be on existing rights-of-way, using public and private lands and waters.

55. **Cumberland-Appomattox Trail** in Cumberland and Buckingham Counties would cross this region south of the James River.

56. **Rappahannock River Trail** through Fauquier County would connect the rapidly urbanizing Fredericksburg area with the Appalachian Trail.

57. **Bull Run Mountain Trail,** Fauquier County.

58. **Virginia Southside Trail** would traverse Lunenburg and Charlotte Counties and stretch across Southside Virginia from the Atlantic to Mount Rogers in Southwest Virginia.

Hostels

The following general areas are suggested as hostel locations:

59. **Thoroughfare Gap.**

60. **Charlottesville Area.**

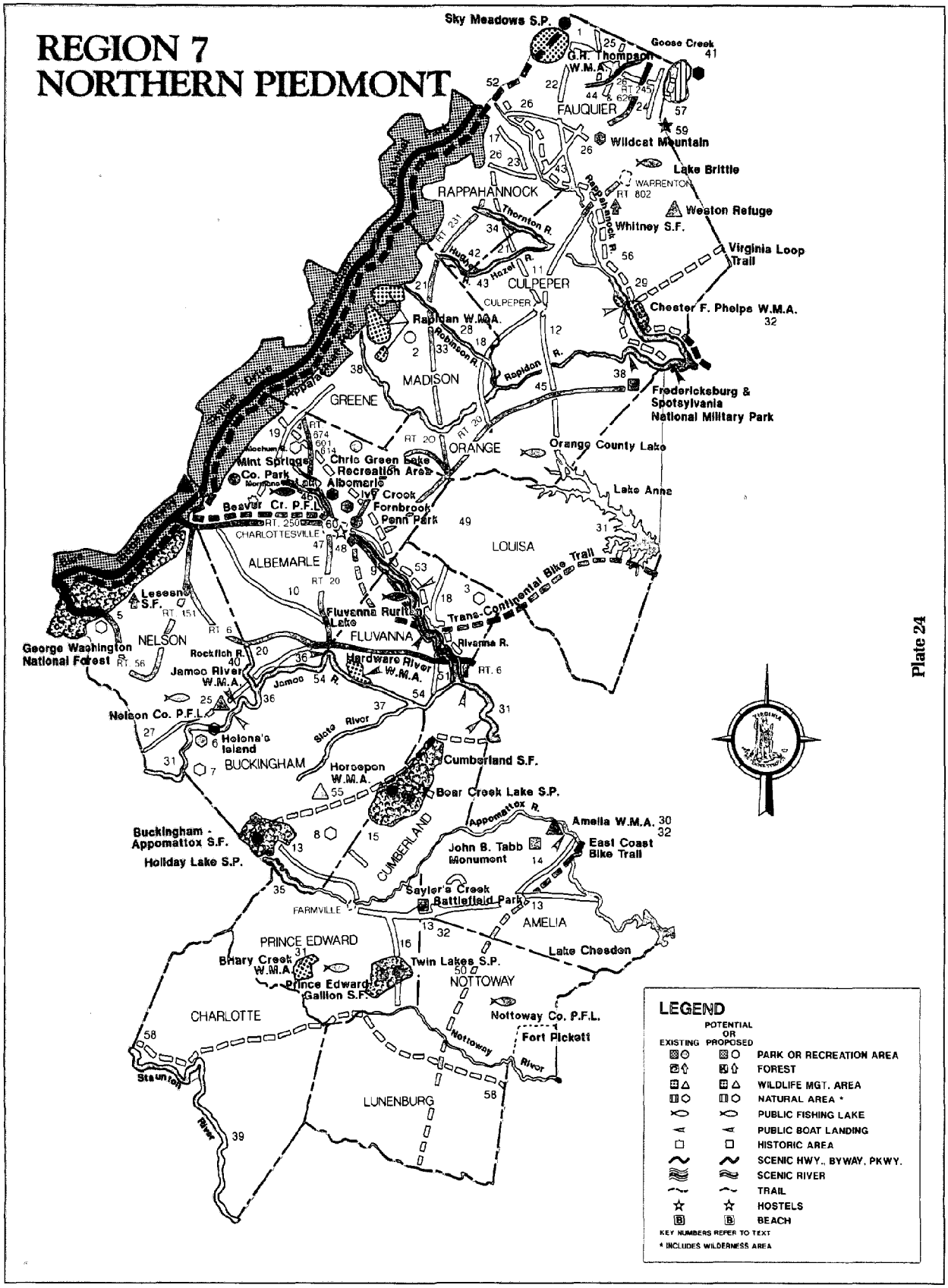

REGION 7
NORTHERN PIEDMONT
Sky Meadows S.P.
Goose Creek
G.R. Thompson W.M.A.
FAUQUIER
Wildcat Mountain
Lake Brittle
WARRENTON
RAPPAHANNOCK
Weston Refuge
Whitney S.F.
Thornton R.
Hughes R.
Hazel R.
Virginia Loop Trail
CULPEPER
Chester F. Phelps W.M.A.
Rapidan W.M.A.
Robinson R.
Rapidan R.
MADISON
GREENE
Fredericksburg & Spotsylvania National Military Park
ORANGE
Orange County Lake
Mint Springs Co. Park
Chris Green Lake Recreation Area
Albemarle
Ivy Creek
Fornbrook
Penn Park
Beaver Cr. P.F.L.
Lake Anna
CHARLOTTESVILLE
ALBEMARLE
LOUISA
Trans-Continental Bike Trail
Fluvanna Rural Lake
FLUVANNA
Rivanna R.
Leesend S.F.
George Washington National Forest
NELSON
Rockfish R.
Hardware River W.M.A.
Jamoo River W.M.A.
Nelson Co. P.F.L.
Slate River
Holona's Island
BUCKINGHAM
Horsepon W.M.A.
Cumberland S.F.
Bear Creek Lake S.P.
Buckingham - Appomattox S.F.
Holiday Lake S.P.
Appomattox R.
Amelia W.M.A.
East Coast Bike Trail
John B. Tabb Monument
CUMBERLAND
Sayler's Creek Battlefield Park
FARMVILLE
AMELIA
PRINCE EDWARD
Lake Chesdon
Briary Creek W.M.A.
Twin Lakes S.P.
Prince Edward-Gallion S.F.
NOTTOWAY
Nottoway Co. P.F.L.
Fort Pickett
CHARLOTTE
Nottoway River
Staunton River
LUNENBURG
LEGEND
POTENTIAL OR
EXISTING PROPOSED
PARK OR RECREATION AREA
FOREST
WILDLIFE MGT. AREA
NATURAL AREA *
PUBLIC FISHING LAKE
PUBLIC BOAT LANDING
HISTORIC AREA
SCENIC HWY., BYWAY, PKWY.
SCENIC RIVER
TRAIL
HOSTELS
BEACH
KEY NUMBERS REFER TO TEXT
* INCLUDES WILDERNESS AREA

Plate 24

REGION 7 TABLE 36

Projected 1990 Population: 362212

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.96	4983	2747	1807	2236	5724	2977	6515	3768	SITES
FISHING	33.98	10856	23341	14327	+12485	11888	+11453	12952	+10389	ACRES
CANOEING, ETC.	6.23	246	1257	8	+1011	303	+954	368	+889	STREAM MILES
SAILING	2.44	2174	16367	13829	+14193	3078	+13289	4112	+12255	ACRES
POWER BOATING	8.42	4641	16367	13829	+11726	5107	+11260	5577	+10790	ACRES
WATER SKIING	5.25	9134	16367	13829	+7233	11715	+4652	14611	+1756	ACRES
POOL SWIMMING	47.51	92	37	27	55	101	64	110	73	POOLS
SWIMMING OUTDOORS	46.88	144	20	11	124	161	141	179	159	BEACH ACRES
BEACH USE, SUNNING	29.82	76	20	11	56	83	63	94	74	ACRES
HIKING, BACKPACKING	26.27	620	453	71	167	712	259	807	354	MILES
JOGGING	31.89	1149	27	17	1122	1245	1218	1341	1314	MILES
BICYCLING/WORK, SCH	9.39	31	0	0	31	35	35	40	40	MILES
BICYCLING PLEASURE	31.40	482	174	32	308	537	363	595	421	MILES
HORSEBACK RIDING	9.65	274	225	37	49	300	75	323	98	MILES
FOUR WHEEL O.R.V.	13.32	173	1	0	172	189	188	207	206	MILES
MOTORCYCLE OFF ROAD	3.89	19	1	0	18	21	20	23	22	MILES
HUNTING	15.01	252631	122810	31838	129821	274884	152074	297360	174550	ACRES
PICNICKING	47.45	2549	1593	623	956	2792	1199	3038	1445	TABLES
GOLF	16.64	35	13	12	22	38	25	41	28	COURSES
TENNIS	10.86	3892	202	88	3690	469	267	551	349	COURTS
SOFTBALL, BASEBALL	32.22	215	165	34	50	236	71	256	91	FIELDS
BASKETBALL	29.06	624	150	19	474	701	551	780	630	COURTS
SOCCER	7.23	107	82	14	25	134	52	159	77	FIELDS
FOOTBALL	18.48	216	82	14	134	237	155	255	173	FIELDS
ICE SKATING	8.13	5	0	0	5	8	8	10	10	RINKS
SKIING	13.02	47	0	0	47	56	56	65	65	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 9 TABLE 37

Projected 1990 Population: 109097

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.96	1484	648	389	836	1738	1090	2009	1361	SITES
FISHING	33.98	3128	3466	41	+338	3464	+2	3800	334	ACRES
CANOEING, ETC.	6.23	64	188	0	+124	80	+108	99	+89	STREAM MILES
SAILING	2.44	408	5097	20	+4689	616	+4481	855	+4242	ACRES
POWER BOATING	8.41	731	507	20	224	818	311	906	399	ACRES
WATER SKIING	5.25	1852	507	20	1345	2446	1939	3115	2608	ACRES
POOL SWIMMING	47.67	24	13	10	11	28	15	31	18	POOLS
SWIMMING OUTDOORS	46.88	41	0	0	41	47	47	53	53	BEACH ACRES
BEACH USE, SUNNING	29.82	21	0	0	21	22	22	26	26	ACRES
HIKING, BACKPACKING	26.27	195	136	40	59	227	91	261	125	MILES
JOGGING	31.89	215	1	0	214	239	238	264	263	MILES
BICYCLING/WORK, SCH	9.39	10	0	0	10	11	11	13	13	MILES
BICYCLING PLEASURE	31.40	90	25	25	65	103	78	115	90	MILES
HORSEBACK RIDING	9.65	89	69	16	20	99	30	107	38	MILES
FOUR WHEEL O.R.V.	13.32	52	1	0	51	58	57	63	62	MILES
MOTORCYCLE OFF ROAD	3.89	13	1	0	12	14	13	15	14	MILES
HUNTING	15.01	62636	26409	10725	36227	69334	42925	76054	49645	ACRES
PICNICKING	47.45	697	275	102	422	777	502	857	582	TABLES
GOLF	16.63	10	3	3	7	12	9	12	9	COURSES
TENNIS	10.91	106	37	7	69	128	91	153	116	COURTS
SOFTBALL, BASEBALL	32.71	57	44	3	13	63	19	69	25	FIELDS
BASKETBALL	29.06	137	21	1	116	159	138	180	159	COURTS
SOCCER	7.36	29	27	2	2	36	9	43	16	FIELDS
FOOTBALL	18.57	48	27	2	21	53	26	59	32	FIELDS
ICE SKATING	8.13	2	0	0	2	3	3	4	4	RINKS
SKIING	13.02	14	0	0	14	17	17	20	20	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 10 TABLE 38

Projected 1990 Population: 165502

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.96	2451	1806	1248	645	2801	995	3174	1368	SITES
FISHING	33.98	5216	17138	14032	+11922	5800	+11338	6392	+10746	ACRES
CANOEING, ETC.	6.23	153	1008	8	+855	189	+819	227	+781	STREAM MILES
SAILING	2.44	1309	14614	13809	+13305	1843	+12771	2460	+12154	ACRES
POWER BOATING	8.42	2930	14614	13809	+11684	3236	+11378	3545	+11069	ACRES
WATER SKIING	5.25	5432	14614	13809	+9182	7009	+7605	8788	+5826	ACRES
POOL SWIMMING	47.34	47	15	10	32	52	37	57	42	POOLS
SWIMMING OUTDOORS	46.88	65	13	9	52	74	61	83	70	BEACH ACRES
BEACH USE, SUNNING	29.82	33	13	9	20	38	25	43	30	ACRES
HIKING, BACKPACKING	26.27	244	152	30	92	281	129	317	165	MILES
JOGGING	31.89	809	26	17	783	874	848	939	913	MILES
BICYCLING/WORK, SCH	9.39	14	0	0	14	16	16	18	18	MILES
BICYCLING PLEASURE	31.40	327	135	7	192	363	228	402	267	MILES
HORSEBACK RIDING	9.65	78	16	6	62	86	70	94	78	MILES
FOUR WHEEL O.R.V.	13.32	80	0	0	80	88	88	98	98	MILES
MOTORCYCLE OFF ROAD	3.89	4	0	0	4	5	5	6	6	MILES
HUNTING	15.01	88280	27503	12113	60777	96937	69434	105649	78146	ACRES
PICNICKING	47.45	1273	811	470	462	1403	592	1535	724	TABLES
GOLF	16.64	17	6	5	11	18	12	20	14	COURSES
TENNIS	10.80	201	132	64	69	244	112	287	155	COURTS
SOFTBALL, BASEBALL	31.69	108	78	9	30	121	43	132	54	FIELDS
BASKETBALL	29.06	376	120	16	256	422	302	469	349	COURTS
SOCCER	7.09	56	48	10	8	71	23	85	37	FIELDS
FOOTBALL	18.38	131	48	10	83	144	96	153	105	FIELDS
ICE SKATING	8.13	3	0	0	3	4	4	5	5	RINKS
SKIING	13.02	22	0	0	22	26	26	31	31	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 14 TABLE 39

Projected 1990 Population: 87613

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.96	1048	293	170	755	1185	892	1332	1039	SITES
FISHING	33.98	2512	2737	254	+225	2624	+113	2760	23	ACRES
CANOEING, ETC.	6.23	29	61	0	+32	34	+27	42	+19	STREAM MILES
SAILING	2.44	457	1246	0	+789	619	+627	797	+449	ACRES
POWER BOATING	8.42	980	1246	0	+266	1053	+193	1126	+120	ACRES
WATER SKIING	5.25	1850	1246	0	604	2260	1014	2708	1462	ACRES
POOL SWIMMING	47.63	21	9	7	12	21	12	22	13	POOLS
SWIMMING OUTDOORS	46.88	38	7	2	31	40	33	43	36	BEACH ACRES
BEACH USE, SUNNING	29.82	22	7	2	15	23	16	25	18	ACRES
HIKING, BACKPACKING	26.27	181	165	1	16	204	39	229	64	MILES
JOGGING	31.89	125	0	0	125	132	132	138	138	MILES
BICYCLING/WORK, SCH	9.39	7	0	0	7	8	8	9	9	MILES
BICYCLING PLEASURE	31.40	65	14	0	51	71	57	78	64	MILES
HORSEBACK RIDING	9.65	107	140	15	+33	115	+25	122	+18	MILES
FOUR WHEEL O.R.V.	13.32	41	0	0	41	43	43	46	46	MILES
MOTORCYCLE OFF ROAD	3.89	2	0	0	2	2	2	2	2	MILES
HUNTING	15.01	101715	68898	9000	32817	108613	39715	115657	46759	ACRES
PICNICKING	47.45	579	507	51	72	612	105	646	139	TABLES
GOLF	16.63	8	5	4	3	8	3	9	4	COURSES
TENNIS	10.90	85	33	17	52	97	64	111	78	COURTS
SOFTBALL, BASEBALL	32.59	50	43	22	7	52	9	55	12	FIELDS
BASKETBALL	29.07	111	9	2	102	120	111	131	122	COURTS
SOCCER	7.33	22	7	2	15	27	20	31	24	FIELDS
FOOTBALL	18.55	37	7	2	30	40	33	43	36	FIELDS
ICE SKATING	8.13	0	0	0	0	1	1	1	1	RINKS
SKIING	13.02	11	0	0	11	13	13	14	14	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 8
Tidewater

The Tidewater section of Virginia, lying between the York, Pamunkey, and the Potomac Rivers, east of the Richmond-Washington corridor and fronting on the Chesapeake Bay to the east, is entirely rural in the sense that it has no incorporated cities. Its population of 101,000 in 1980 amounted to less than 2% of the state's population. The rural nature of this region and its close association with the many acres of tidal waters lends itself to dispersed recreation. Consequently, few public recreational facilities have been developed in the region.

However, with its plentiful water resources, the region has great recreational potential. Included among the region's water assets are the tidal estuaries of such rivers as the Rappahannock, Potomac, Piankatank, and York, along with a large section of the Chesapeake Bay. Although there is an abundance of water resources, the lack of public access creates major problems. Nearly all of the beach area and the lands adjacent to the rivers and the Bay are privately owned, thus limiting public access.

Recognizing access limitations as a major obstacle to public recreational use of the Chesapeake Bay, the governors of Maryland, Pennsylvania, and Virginia included improvement of public access as a major component of the Chesapeake Bay Agreement. Funds were appropriated by the General Assembly in the 1988 session to identify and acquire public access sites. A joint project of the Chesapeake Bay Foundation and the Bay states produced a map of the Bay area depicting access points and public use areas. Region 8 should experience significant increases in visitation to water access areas as the supply of areas is increased and information on the location of these areas is disseminated.

Since the publication of **The 1984 Virginia Outdoors Plan,** some towns and counties in Region 8 have increased the number of facilities available to the public. Mathews County recently completed two Land and Water Conservation Fund (LWCF) assisted projects which significantly improved public access to the Chesapeake Bay at one site, while outdoor game fields and

picnic facilities were provided in the other new park. Gloucester County is planning the development of a new park in conjunction with its new water reservoir on Beaver Swamp.

There is still a strong demand for swimming pools in Planning District 17, and for softball/baseball fields, basketball courts, tennis courts, and football fields throughout the entire region. The region is also short on local and regional park land. Based on a standard of 10 acres of land per thousand of population, Region 8 currently has only 628 acres of a recommended 1,008 acres.

The following significant resources contribute, or have the potential to contribute, to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are listed by recreation system with recommendations as to how they can best meet existing and future demand.

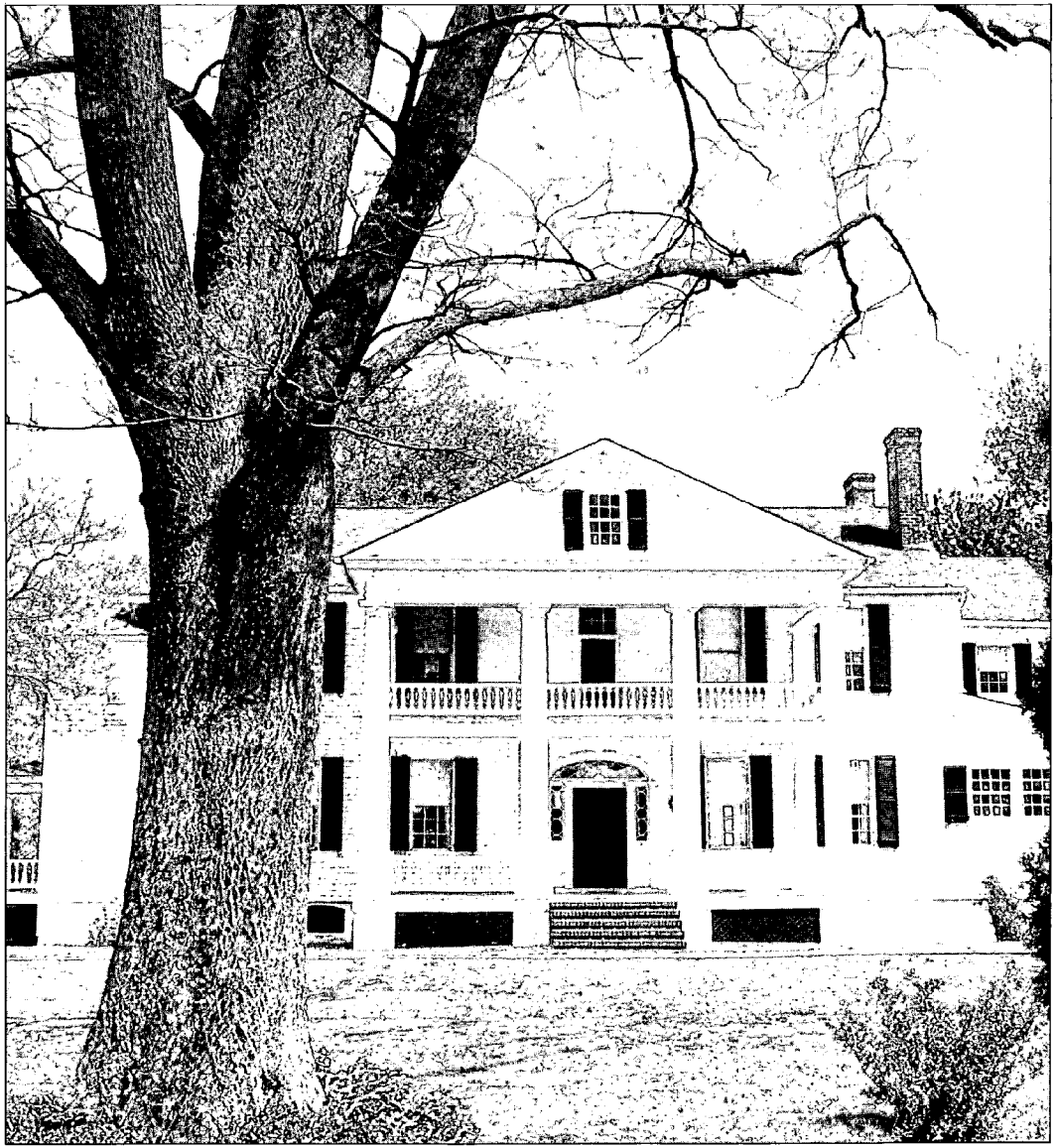
State Parks

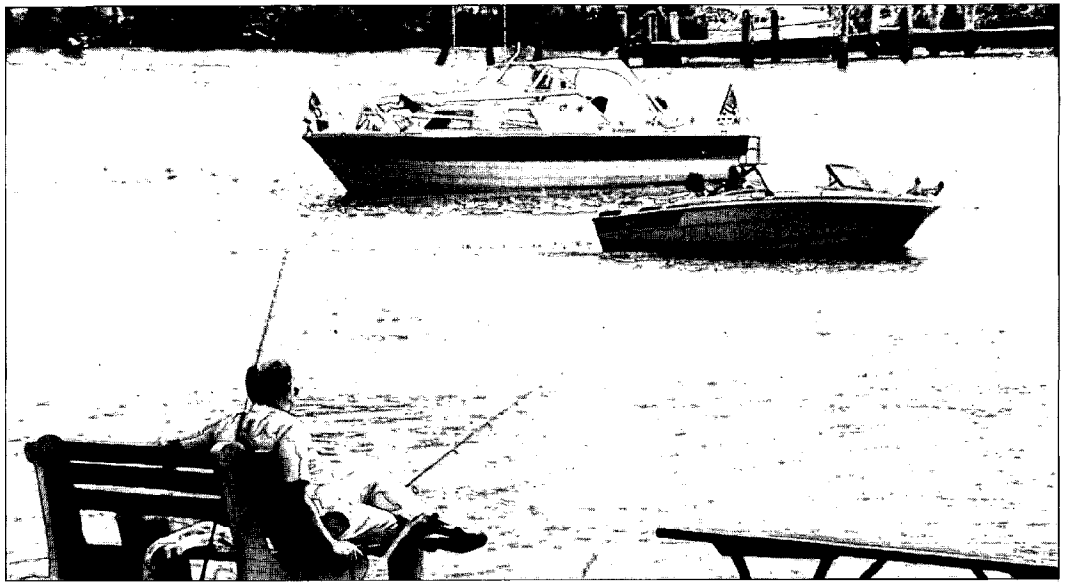
The following sites are identified as worthy of consideration for development as state parks:

1. An area near the mouth of the **Potomac River** in Northumberland County should be considered for development as a state park. The Coan River, Hull Neck, and Mob Neck areas possess considerable potential.

2. A park near the mouth of the **Rappahannock River** in Lancaster County or Middlesex County would be most desirable. This is one of the region's most popular boating and fishing areas.

3. In **Mathews County,** on the Chesapeake Bay above New Point Comfort, is another good location for a water oriented state park. A facility located in this area would help meet the needs of the Richmond and Norfolk metropolitan areas.





Scenic Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

4. **Route 3** in Westmoreland, Richmond, Lancaster, Middlesex, and Gloucester Counties, from the Westmoreland/King George County line to Route 17 in Gloucester County.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

5. **Hollis Marsh** in Westmoreland County is noted as a breeding area for the clapper rail. The secluded nature of the marsh also makes ideal habitat for osprey and there are some 20 active nests. Herons and egrets also are known to frequent the area.

6. **Currioman Bay** in Westmoreland County is another prime high tidal marsh area. It provides significant wildlife habitat and contains an eagle nest.

7. **Broad Creek Marsh,** located in Richmond County, is another example of prime tidal marsh. This site contains excellent waterfowl habitat and one known eagle nest.

8. The **Bluff Point Area** in Northumberland County has potential as a State Forest Natural Area with significant wildlife and wetlands.

9. The **Mattaponi River** in King William and King and Queen Counties contains some of the finest freshwater tidal marshes found in Tidewater Virginia. These marsh areas should be preserved in the Natural Areas System or as part of the proposed Mattaponi State Scenic River.

10. **Garnett's Marsh** in King and Queen County is an outstanding fresh water marsh area which should be preserved.

11. **Dragon Run** in Middlesex, King and Queen, and Gloucester Counties, is a prime example of old growth bottomland, hardwood swamp forest and is a prime candidate for inclusion in the State Scenic Rivers System.

12. The **Poropotank Area** in Gloucester and King and Queen Counties has significant marshland and should be protected as a State Natural Area or Wildlife Management Area.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Public Water and Beach Access

Although Region 8 is rich in water resources, public access to them is inadequate and needs to be substantially increased. In all instances where public highway crossings are scheduled for renovation or relocation, the potential for providing parking areas and boat access facilities should be evaluated.

13. A **Public Fishing Lake** in Essex County is needed to meet the demand for freshwater fishing in this region.

Additional public water access areas for beach use need to be acquired and developed wherever possible in the Tidewater Region.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System:

14. **Piankatank River** in its entirety.

15. The **Mattaponi River** in King William and King and Queen Counties from Route 628 to West Point.

16. The **Rappahannock River** from the Westmoreland/King George County line to the Chesapeake Bay.

17. The **Pamunkey River** from the King William/Caroline County line to the York River.

18. **Dragon Run,** the entire stream.

Historic Preserves

19. The remains of the **Rosewell Mansion** in Gloucester County merit efforts to preserve this historically significant ruin.

Trails

The following trail proposals are suggested as components of the State Trails System:

20. A segment of the **Potomac Heritage Trail** is proposed to run from Harpers Ferry to Smith Point in Northumberland. If completed, it would provide a trail of not only state, but also of national significance.

Hostels

21. The **Westmoreland State Park** area is suggested as a hostel location.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

22. The **Vera Knols Tract,** administered by the Virginia Outdoors Foundation in Northumberland County should be maintained as a natural area.

23. **Rappahannock Community College** in Richmond County has 118 acres of land which should be evaluated for its recreational potential.

24. **Rappahannock Community College,** South Campus in Gloucester County, has 199 acres of land which should be studied for its recreational potential.

25. The **VPI&SU Forest Management Station** in Richmond County has 55 acres of land which may be suitable for dispersed recreation, such as hiking, picnicking, and nature study.

REGION 8
TIDEWATER

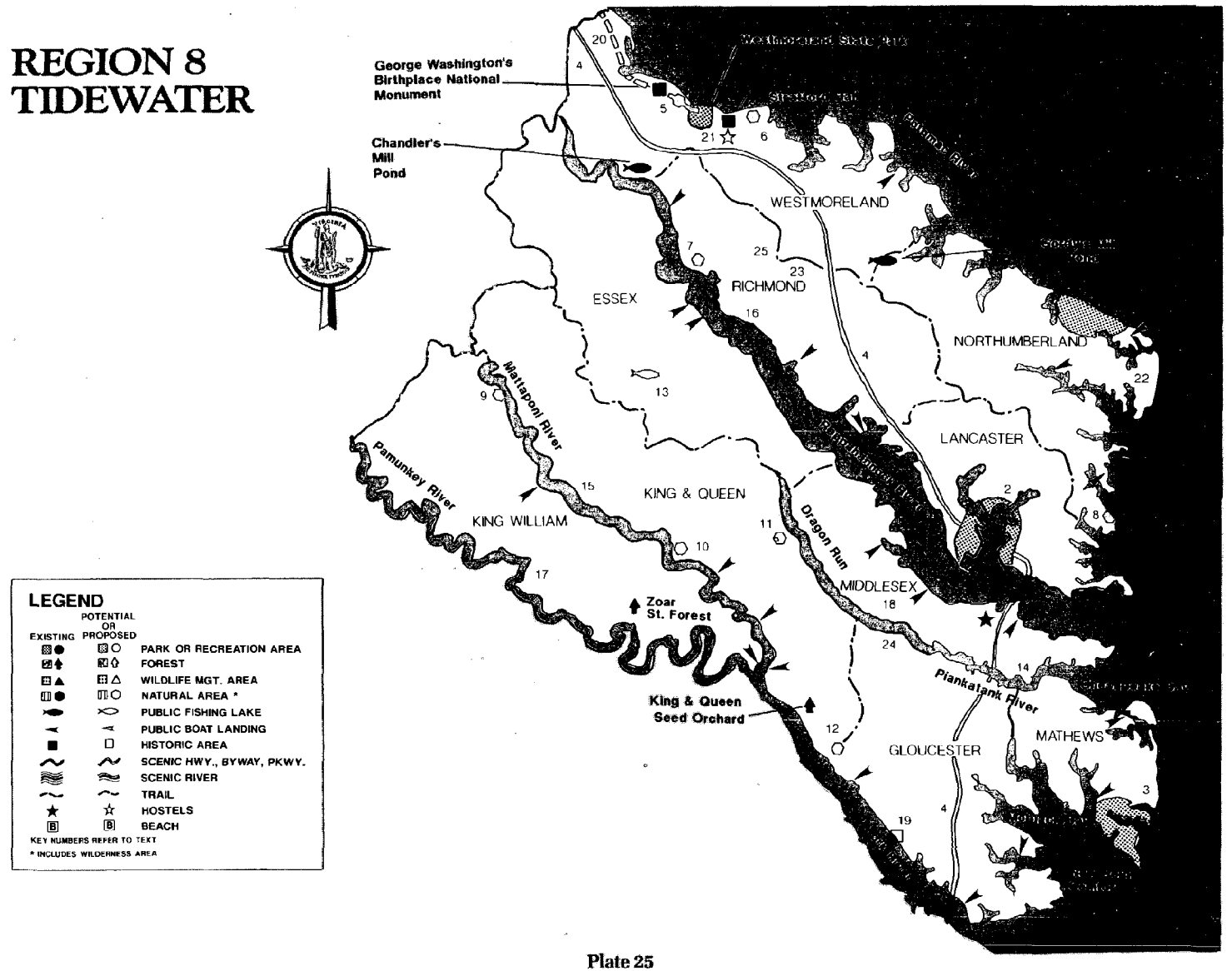


Plate 25

REGION 8 TABLE 40

Projected 1990 Population: 119906

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	5053	4120	3983	933	5833	1713	6664	2544	SITES
FISHING	31.97	17712	460506	790	+442794	19640	+440866	21752	+438754	ACRES
CANOEING, ETC.	11.15	77	110	0	+33	97	+13	118	8	STREAM MILES
SAILING	7.19	16339	458049	197	+441710	20518	+437531	25144	+432905	ACRES
POWER BOATING	27.08	36541	458049	197	+421508	40272	+417777	44035	+414014	ACRES
WATER SKIING	11.38	52584	409	197	52175	64465	64056	77603	77194	ACRES
POOL SWIMMING	37.73	34	21	17	13	36	15	38	17	POOLS
SWIMMING OUTDOORS	42.95	96	51	18	45	109	58	120	69	BEACH ACRES
BEACH USE, SUNNING	44.04	76	51	18	25	86	35	95	44	ACRES
HIKING, BACKPACKING	8.94	94	53	27	41	111	58	128	75	MILES
JOGGING	24.27	50	0	0	50	54	54	61	61	MILES
BICYCLING/WORK, SCH	7.99	3	0	0	3	7	7	9	9	MILES
BICYCLING PLEASURE	38.62	89	8	6	81	99	91	113	105	MILES
HORSEBACK RIDING	7.67	37	12	12	25	40	28	44	32	MILES
FOUR WHEEL O.R.V.	9.77	38	1	1	37	41	40	44	43	MILES
MOTORCYCLE OFF ROAD	5.10	13	1	1	12	15	14	16	15	MILES
HUNTING	15.12	94918	1200	1200	93718	106037	104837	117238	116038	ACRES
PICNICKING	34.60	717	326	72	391	806	480	895	569	TABLES
GOLF	13.54	10	4	4	6	12	8	13	9	COURSES
TENNIS	12.23	72	35	17	37	88	53	102	67	COURTS
SOFTBALL, BASEBALL	27.80	124	19	10	105	138	119	152	133	FIELDS
BASKETBALL	21.26	117	9	2	108	137	128	159	150	COURTS
SOCCER	19.48	30	13	4	17	35	22	43	30	FIELDS
FOOTBALL	18.20	30	13	4	17	33	20	38	25	FIELDS
ICE SKATING	10.69	9	0	0	9	9	9	12	12	RINKS
SKIING	7.41	3	0	0	3	7	7	9	9	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 17 TABLE 41

Projected 1990 Population: 44406

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	1876	1614	1477	262	2165	551	2474	860	SITES
FISHING	31.98	7680	292451	185	+284771	8424	+284027	9176	+283275	ACRES
CANOEING, ETC.	11.15	17	11	0	6	22	11	26	15	STREAM MILES
SAILING	7.19	7808	291921	0	+284113	9846	+282075	12104	+279817	ACRES
POWER BOATING	27.08	16642	291921	0	+275279	18238	+273683	19852	+272069	ACRES
WATER SKIING	11.38	23950	291921	0	+267971	29318	+262603	35260	+256661	ACRES
POOL SWIMMING	37.61	9	5	4	4	9	4	10	5	POOLS
SWIMMING OUTDOORS	42.95	34	33	1	1	39	6	43	10	BEACH ACRES
BEACH USE, SUNNING	44.04	30	33	1	+3	33	0	36	3	ACRES
HIKING, BACKPACKING	8.94	39	24	1	15	45	21	52	28	MILES
JOGGING	24.27	18	0	0	18	19	19	21	21	MILES
BICYCLING/WORK, SCH	7.99	2	0	0	2	3	3	3	3	MILES
BICYCLING PLEASURE	38.62	31	2	0	29	35	33	38	36	MILES
HORSEBACK RIDING	7.67	10	0	0	10	12	12	12	12	MILES
FOUR WHEEL O.R.V.	9.77	8	0	0	8	8	8	9	9	MILES
MOTORCYCLE OFF ROAD	5.10	0	0	0	0	0	0	0	0	MILES
HUNTING	15.12	35154	1200	1200	33954	37334	36134	39579	38379	ACRES
PICNICKING	34.60	304	282	52	22	330	48	358	76	TABLES
GOLF	13.54	4	3	3	1	5	2	5	2	COURSES
TENNIS	12.17	26	13	9	13	31	18	34	21	COURTS
SOFTBALL, BASEBALL	27.67	46	9	5	37	49	40	51	42	FIELDS
BASKETBALL	21.26	43	1	1	42	49	48	54	53	COURTS
SOCCER	19.22	10	3	0	7	12	9	14	11	FIELDS
FOOTBALL	18.09	12	3	0	9	12	9	13	10	FIELDS
ICE SKATING	10.69	3	0	0	3	3	3	4	4	RINKS
SKIING	7.41	2	0	0	2	3	3	3	3	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

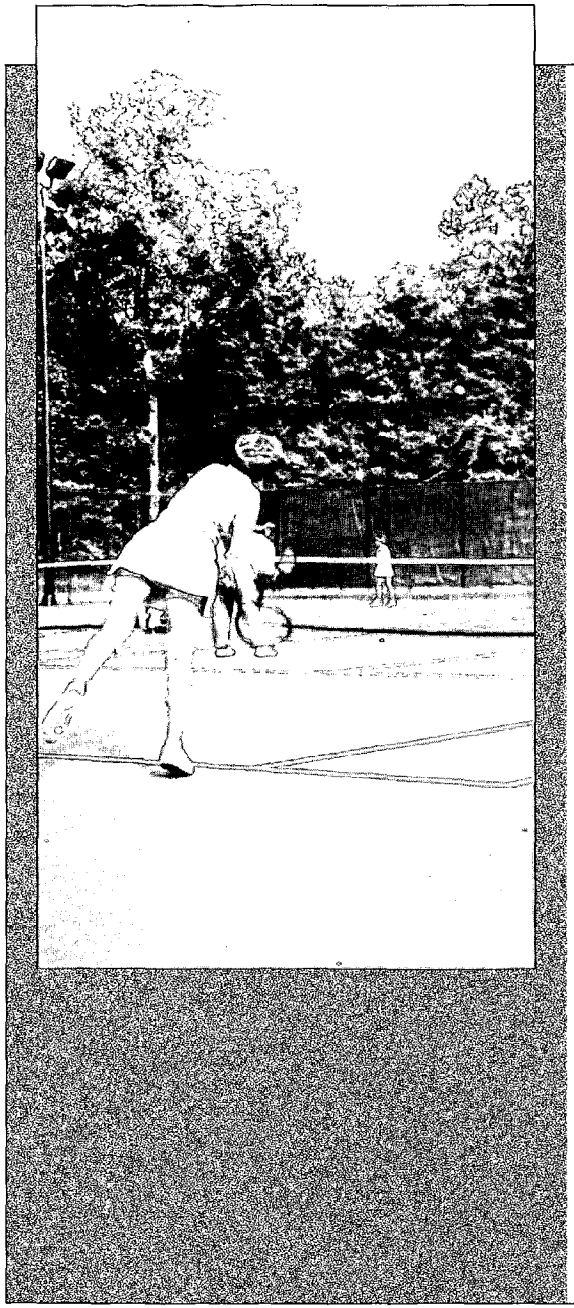
PLANNING DISTRICT 18 TABLE 42

Projected 1990 Population: 75500

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	3177	2506	2506	671	3668	1162	4190	1684	SITES
FISHING	31.97	10032	168055	605	+158023	11216	+156839	12576	+155479	ACRES
CANOEING, ETC.	11.15	60	99	0	+39	75	+24	92	+7	STREAM MILES
SAILING	7.19	8531	166128	197	+157597	10672	+155456	13040	+153088	ACRES
POWER BOATING	27.07	19899	166128	197	+146229	22034	+144094	24183	+141945	ACRES
WATER SKIING	11.38	28634	166128	197	+137494	35147	+130981	42343	+123785	ACRES
POOL SWIMMING	37.80	25	16	13	9	27	11	28	12	POOLS
SWIMMING OUTDOORS	42.95	62	18	17	44	70	52	77	59	BEACH ACRES
BEACH USE, SUNNING	44.05	46	18	17	28	53	35	59	41	ACRES
HIKING, BACKPACKING	8.94	55	29	26	26	66	37	76	47	MILES
JOGGING	24.27	32	0	0	32	35	35	40	40	MILES
BICYCLING/WORK, SCH	7.99	1	0	90	1	4	4	6	6	MILES
BICYCLING PLEASURE	38.62	58	6	6	52	64	58	75	69	MILES
HORSEBACK RIDING	7.67	27	12	12	15	28	16	32	20	MILES
FOUR WHEEL O.R.V.	9.77	30	1	1	29	33	32	35	34	MILES
MOTORCYCLE OFF ROAD	5.10	13	1	1	12	15	14	16	15	MILES
HUNTING	15.12	59764	0	0	59764	68703	68703	77659	77659	ACRES
PICNICKING	34.60	413	44	20	369	476	432	537	493	TABLES
GOLF	13.54	6	1	1	5	7	6	8	7	COURSES
TENNIS	12.26	46	22	8	24	57	35	68	46	COURTS
SOFTBALL, BASEBALL	27.87	78	10	5	68	89	79	101	91	FIELDS
BASKETBALL	21.25	74	8	1	66	88	80	105	97	COURTS
SOCCER	19.64	20	10	4	10	23	13	29	19	FIELDS
FOOTBALL	18.26	18	10	4	8	221	211	25	15	FIELDS
ICE SKATING	10.69	6	0	0	6	6	6	8	8	RINKS
SKIING	7.41	1	0	0	1	4	4	6	6	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.



REGION 9
Petersburg/Hopewell

Recreation Region 9 consists of the Cities of Petersburg, Colonial Heights, Emporia, and Hopewell, plus five counties in south central Virginia. This region's boundaries coincide with Planning District 19. The heavily populated areas in the north evolved around an industrial, commercial, and military employment base. Outside the developed areas surrounding the principal cities, the region consists of sparcely settled communities that are almost entirely oriented toward agriculture or timbering and related support industries. Emporia is the regional trade center for the southern part of Region 9.

Within the region, there are a limited number of state and federal recreation resources. The 1987 Outdoor Recreation Areas and Facilities Inventory identified about 20,500 acres of state and federal lands that receive recreation use. Included in this total are about 12,300 acres of military lands at Fort Lee and Fort Pickett. While these lands are opened for some public use, they are frequently closed to avoid conflicts with military missions.

There have been a number of important recreational accomplishments in Region 9. Chippokes Plantation State Park has been opened to the public; picnicking facilities, the visitor center, and a swimming pool are available for use. The park also hosts several regional festivals, and is home to the Model Farm Foundation, a museum and educational center that demonstrates past and present farming technology. Prince George County and Surry County have developed significant county park facilities to serve the residential populations. Colonial Heights has developed two major waterfront parks, one on the Appomattox River and the other on Swift Creek. Emporia has completed a river front park on the Meherrin River that provides trails and picnicking. In 1988, The Nature Conservancy acquired the Powell Creek Preserve in Prince George County. This important 3,400 acre natural area is a major eagle roosting and nesting area.

Region 9, as a whole, provides about 89% of the local and regional park acreage needed to satisfy local demand. Based upon results of the 1987

Outdoor Recreation Demand Study, Table 43 on page 273 shows the 26 measured outdoor recreational activities participated in by the people of the region and converts this demand to facility needs. Although Region 9 has most of the land mass needed to support a balanced recreational delivery system, every locality needs to provide more facilities for its residents. Some extremely popular activities such as bicycling for pleasure and jogging, will not require a major local commitment to new facilities since much of the demand may be satisfied by signed shared-lane bike routes and jogging trails on local streets. Priorities should include swimming facilities, picnicking areas, tennis courts, and ball fields.

The following significant resources contribute or have potential to contribute, to the regional open space and/or recreational opportunities within Region 9 and therefore, merit special attention. Each resource is identified within a system with recommendations, when appropriate, as to how they might meet existing or future recreational demand.

State Parks

1. **Chippokes Plantation State Park.** In the next five years, a new Model Farm Educational Center will be constructed near the Visitor Center. Camping and additional day use facilities will also be developed in the park.

Regional Parks

2. The **Appomattox River Park** below Lake Chesdin in Dinwiddie County has been developed by the City of Petersburg. This facility should be expanded to provide a variety of recreational uses, and ultimately should connect with the Petersburg waterfront via trails along the old canal towpath.

3. The **Tri-Cities Park** in the Petersburg/Hopewell/Fort Lee area is proposed and will have Appomattox River frontage. There is potential for enlargement, using an adjacent landfill site.

4. **Prince George County** should develop a regional park along the James River in the historic plantation area to provide both land and water based recreational facilities.

5. **Surry County** should take advantage of the beautiful natural setting of forest, water, and marsh along the James River near the Town of Surry.

6. The **Nottoway River** and its environs in Sussex County offer an ideal location for various woodland and water oriented recreational activities.

7. The acquisition of the **Slage Lake** property would be a major contribution to the recreational resources of the region due to its historical significance and proximity to the town of Jarratt.

Scenic Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byways System:

8. **Routes 142, 613 and 627** in Dinwiddie County from Petersburg to the intersection of Route 627 and Route 1.

9. **Routes 10 and 156** in Prince George and Surry Counties from Hopewell to the Surry/Isle of Wight County line.

10. **Route 35** in Sussex County.

11. **Route 40** in Sussex and Surry Counties from Route 301 to Route 10.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

12. The **Blackwater River Swamp** in Prince George and Surry Counties contains an extensive area of old growth bottomland hardwood swamp forest. This resource should be conserved.

13. **Skippers Wetlands** in Greensville County contains small relict plant communities with many rare and local plant communities of the southeastern coastal plain near the northern limit of their range.

14. The **Nottoway River** in Sussex and Greensville Counties contains extensive swamp and forest areas similar to the Blackwater River Swamp.

15. The **James River Ravines** in Surry County is an area of old growth upland hardwood forest with many disjunct montane plants occurring in the coastal plain.

16. **Sunken Meadow** in Surry County. Although developments are encroaching, significant marsh communities remain.

17. **Upper Chippokes** in Surry and Prince George Counties, along the James River, is a prime freshwater marsh surrounded by a large, near-mature hardwood forest.

18. The **Sussex Schoolhouse Tract** in central Sussex County contains a breeding colony of red cockaded woodpeckers.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Water and Beach Access

19. A number of **Public Water Access Sites** are needed for the region. They include: James River in Hopewell, Prince George and Surry Counties, Blackwater River in Surry County, Nottoway River in Dinwiddie and Sussex Counties, Meherrin River west of Emporia, and Meherrin River east of Emporia.

20. The **Meherrin River,** east of Emporia, has the potential of becoming a major recreational resource for Emporia, Greensville, and Southampton Counties. In order to achieve its potential, the numerous log jams would have to be removed and additional access opportunities provided.

Scenic Rivers

The following rivers or sections of rivers should be evaluated for inclusion in the Virginia Scenic Rivers System:

21. The **Blackwater River** from its headwaters in Prince George County to the Surry/Isle of Wight County line.

22. The **Nottoway River** in Dinwiddie, Sussex, and Greensville Counties. About 33 miles of the Nottoway in Sussex County have been added to the Virginia Scenic River System. The remainder of the stream should be studied to determine if it should also be considered for inclusion.

23. The **James River** between Hopewell and the Surry/Isle of Wight County line. The Surry County Reach was designated a historic river by the 1988 General Assembly.

State Forests

24. The Department of Forestry should establish a state forest between Chippokes Plantation State Park and Hog Island Wildlife Management Area. A cooperative effort among the Department of Forestry, Department of Conservation and Recreation, and the Department of Game and Inland Fisheries should be made to protect the environs of the state park and the view from Jamestown Island, and to screen the Surry Nuclear Power Plant.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

25. **Richard Bland College** in Dinwiddie County contains almost 700 acres. About 20% of the property has been developed.

Trails

The following trail proposals are suggested as components of the State Trails System:

26. **Petersburg** is planning a trail along the old **Virginia Electric and Power Company Canal** adjacent to the Appomattox Scenic River. This trail would connect the City of Petersburg and the Appomattox River Park to the west.

27. The *proposed* **Virginia Southside Trail** would traverse Greensville and Sussex County *and could be accommodated to a large extent on* abandoned railroad rights-of-way and the development of the Virginia Beach water pipeline.

National Park Service

28. **Appomattox Manor** and adjacent waterfront lands in the City Point area of Hopewell have been purchased as part of an expansion of the Petersburg National Battlefield Park. The site was originally the debarkation point for men and materials during the siege of Petersburg and the manor house was used as General Grant's headquarters. This constitutes an important addition to the facilities at the National Park.

29. The National Park Service, the City of Petersburg, and Dinwiddie County should work together to provide additional trail opportunities within the **Petersburg National Battlefield Park** and adjacent communities.

Public Game and Fish Management Areas

30. **Hog Island Wildlife Management Area,** in Surry County, is being considered for expansion. Recent developments include a much needed boat landing. Several miles of trails are proposed. The area has potential for picnic area development and includes some good, natural beach. The site offers excellent opportunity for water oriented recreation.

REGION 9
PETERSBURG-HOPEWELL

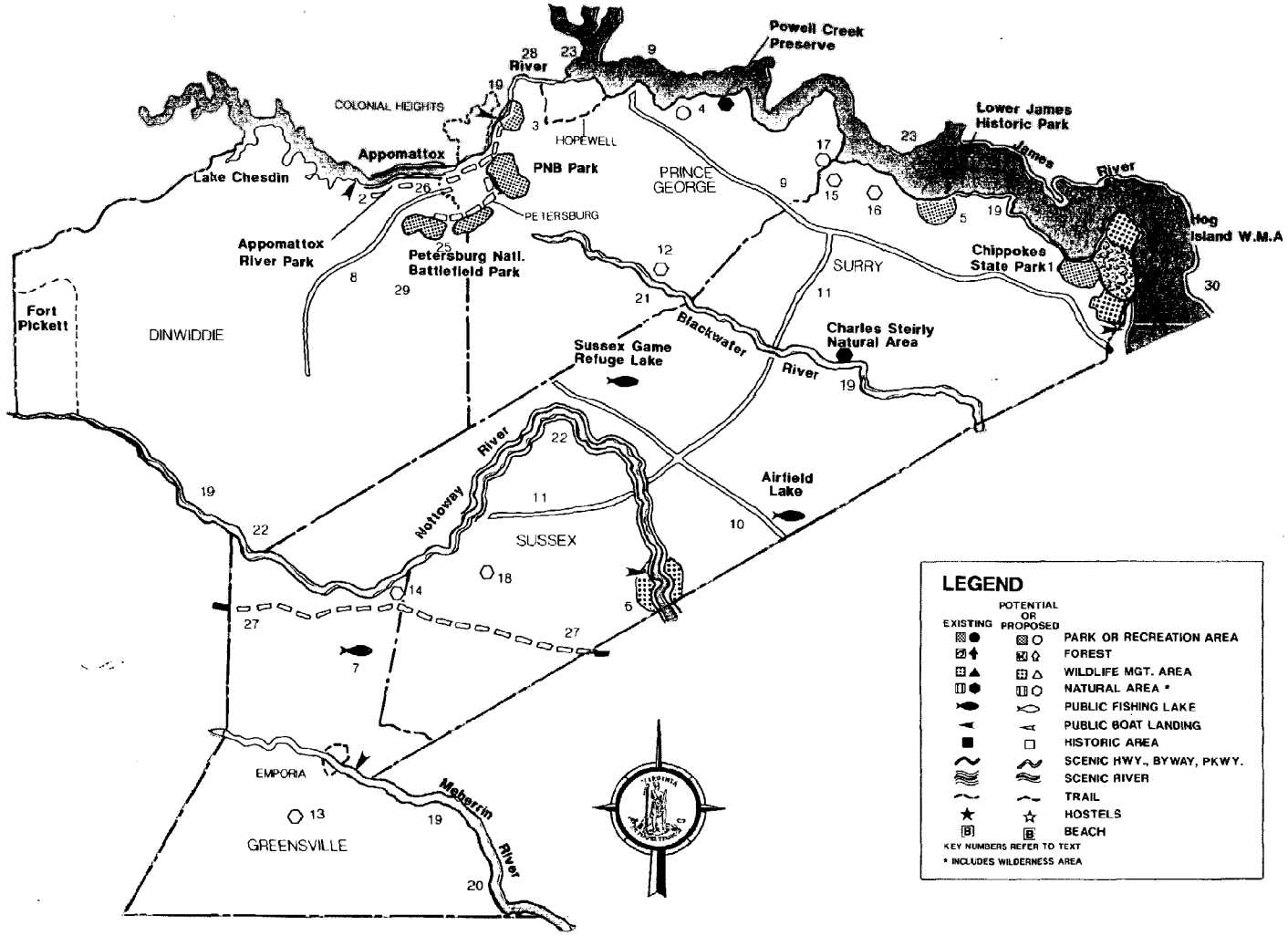


Plate 26

REGION 9 TABLE 43

Projected 1990 Population: 164003

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.98	2526	946	945	1580	2840	1894	3179	2233	SITES
FISHING	32.51	5272	26780	1448	+21508	5560	+21220	5872	+20908	ACRES
CANOEING, ETC.	6.85	18	0	0	18	21	21	26	26	STREAM MILES
SAILING	2.00	3754	25051	368	+21297	4998	+20053	6344	+18707	ACRES
POWER BOATING	19.57	8999	25051	368	+16052	9634	+15417	10304	+14747	ACRES
WATER SKIING	11.43	10179	25051	368	+14872	12253	+12798	14544	+10507	ACRES
POOL SWIMMING	39.67	65	9	4	56	68	59	71	62	POOLS
SWIMMING OUTDOORS	36.36	127	30	15	97	139	109	149	119	BEACH ACRES
BEACH USE, SUNNING	32.20	64	30	15	34	69	39	74	44	ACRES
HIKING, BACKPACKING	13.83	251	83	16	168	282	199	320	237	MILES
JOGGING	25.20	921	9	0	912	980	971	1044	1035	MILES
BICYCLING/WORK, SCH	6.85	6	0	0	6	8	8	9	9	MILES
BICYCLING PLEASURE	36.77	200	26	0	174	219	193	238	212	MILES
HORSEBACK RIDING	4.81	162	37	3	125	169	132	177	140	MILES
FOUR WHEEL O.R.V.	12.83	45	0	0	45	45	45	46	46	MILES
MOTORCYCLE OFF ROAD	3.91	9	0	0	9	10	10	10	10	MILES
HUNTING	14.24	119054	30745	15450	88309	126375	95630	134120	103375	ACRES
PICNICKING	23.32	774	270	102	504	830	560	890	620	TABLES
GOLF	3.72	22	5	3	17	23	18	23	18	COURSES
TENNIS	23.07	202	72	4	130	222	150	245	173	COURTS
SOFTBALL, BASEBALL	19.17	169	89	8	80	183	94	194	105	FIELDS
BASKETBALL	15.74	413	90	1	323	455	365	499	409	COURTS
SOCCER	7.00	109	19	0	90	128	109	151	132	FIELDS
FOOTBALL	20.25	66	19	0	47	70	51	74	55	FIELDS
ICE SKATING	4.37	3	0	0	3	4	4	5	5	RINKS
SKIING	13.04	29	0	0	29	31	31	35	35	LIFTS

NOTE: Chesterfield County is also a member of Planning District 19. However, all demand, supply, and needs analyses for Chesterfield County are shown in Planning District 15 and are therefore shown in Region 2.
+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

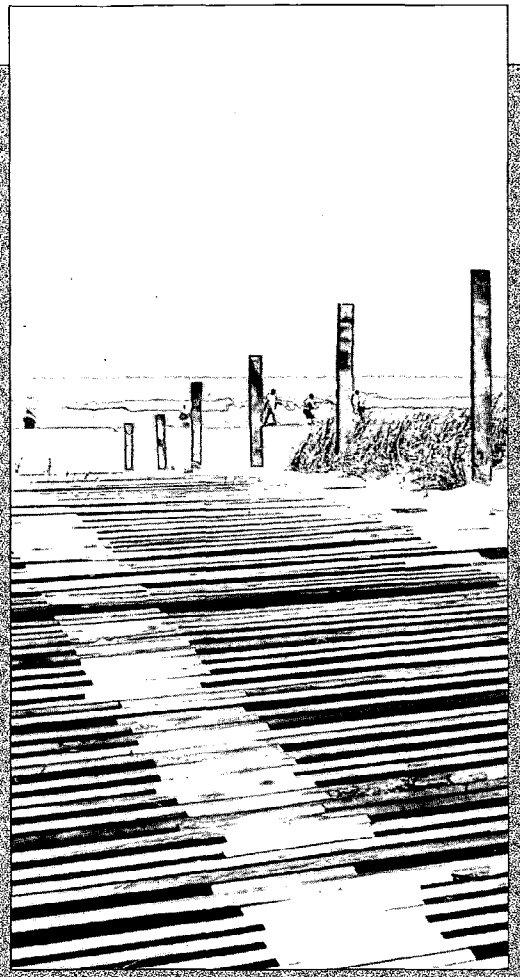
PLANNING DISTRICT 19 TABLE 44

Projected 1990 Population: 164003

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.98	2526	946	945	1580	2840	1894	3179	2233	SITES
FISHING	32.51	5272	26780	1448	+21508	5560	+21220	5872	+20908	ACRES
CANOEING, ETC.	6.85	18	0	0	18	21	21	26	26	STREAM MILES
SAILING	2.00	3754	25051	368	+21297	4998	+20053	6344	+18707	ACRES
POWER BOATING	19.57	8999	25051	368	+16052	9634	+15417	10304	+14747	ACRES
WATER SKIING	11.43	10179	25051	368	+14872	12253	+12798	14544	+10507	ACRES
POOL SWIMMING	39.67	65	9	4	56	68	59	71	62	POOLS
SWIMMING OUTDOORS	36.36	127	30	15	97	139	109	149	119	BEACH ACRES
BEACH USE, SUNNING	32.20	64	30	15	34	69	39	74	44	ACRES
HIKING, BACKPACKING	13.83	251	83	16	168	282	199	320	237	MILES
JOGGING	25.20	921	9	0	912	980	971	1044	1035	MILES
BICYCLING/WORK, SCH	6.85	6	0	0	6	8	8	9	9	MILES
BICYCLING PLEASURE	36.77	200	26	0	174	219	193	238	212	MILES
HORSEBACK RIDING	4.81	162	37	3	125	169	132	177	140	MILES
FOUR WHEEL O.R.V.	12.83	45	0	0	45	45	45	46	46	MILES
MOTORCYCLE OFF ROAD	3.91	9	0	0	9	10	10	10	10	MILES
HUNTING	14.24	119054	30745	15450	88309	126375	95630	134120	103375	ACRES
PICNICKING	23.32	774	270	102	504	830	560	890	620	TABLES
GOLF	3.72	22	5	3	17	23	18	23	18	COURSES
TENNIS	23.07	202	72	4	130	222	150	245	173	COURTS
SOFTBALL, BASEBALL	19.17	169	89	8	80	183	94	194	105	FIELDS
BASKETBALL	15.74	413	90	1	323	455	365	499	409	COURTS
SOCCER	7.00	109	19	0	90	128	109	151	132	FIELDS
FOOTBALL	20.25	66	19	0	47	70	51	74	55	FIELDS
ICE SKATING	4.37	3	0	0	3	4	4	5	5	RINKS
SKIING	13.04	29	0	0	29	31	31	35	35	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

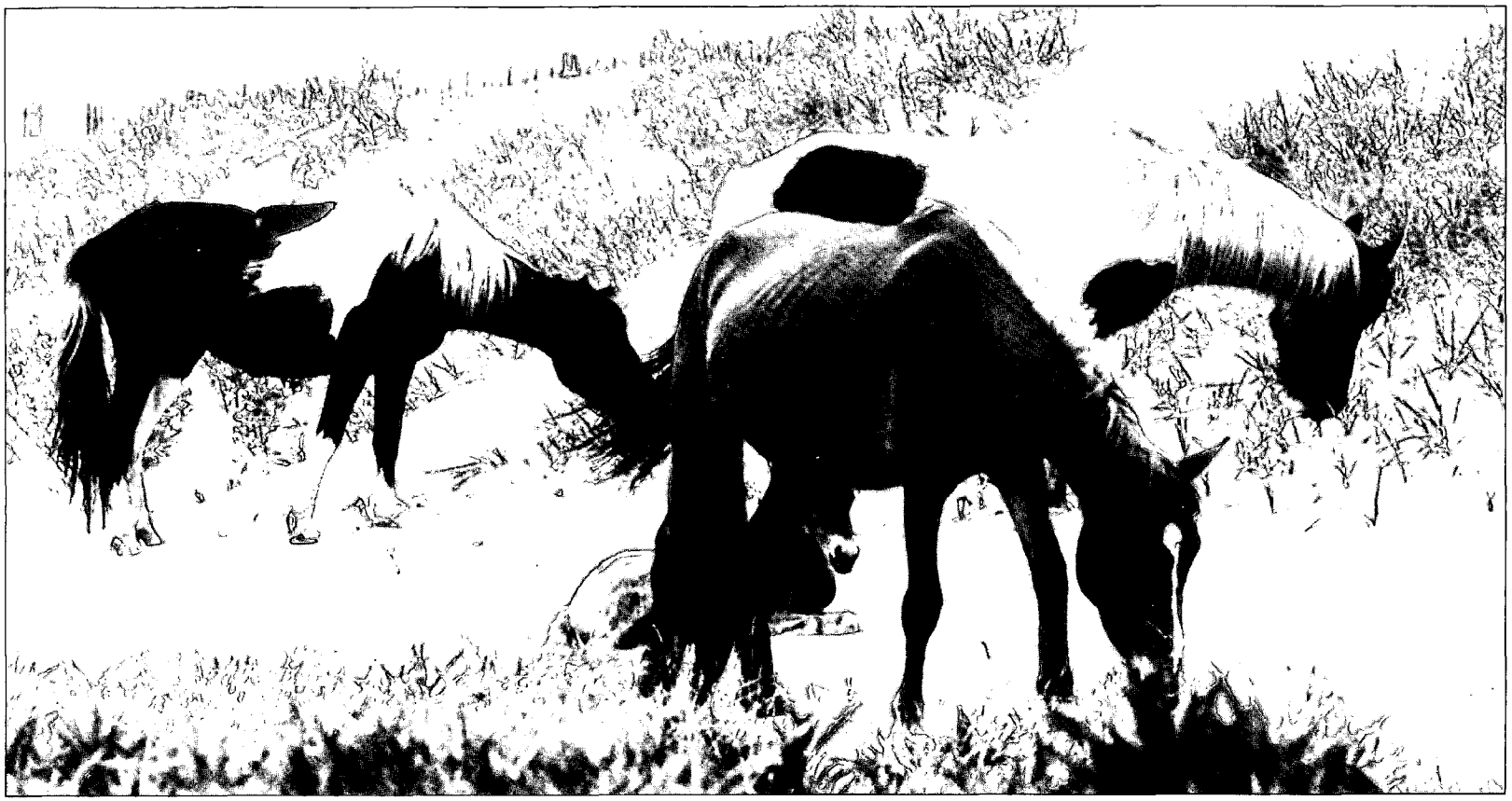


REGION 10
Eastern Shore

Although the Eastern Shore of Virginia has less than 1% of the state's population, it embraces a large percentage of the state's saltwater shores, including most of the ocean frontage. To a very large extent, the frontage is relatively unspoiled. Islands and inlets, and some marshlands, with sandy beaches toward the southern end, are on the Chesapeake Bay side. Wide expanses of marshland, shallow bays, and winding channels, all guarded by a chain of barrier islands with unspoiled beaches, are on the seaward side. The whole region is a vast incubating and feeding ground for bird and sea life, and is of vital importance to fish and wildlife interests far beyond the borders of Virginia.

Due largely to the efforts of private organizations, nearly all of the barrier islands of Virginia have been acquired and are being preserved in their natural state for perpetual protection and limited public recreation. All or part of 13 islands have been acquired by The Nature Conservancy. Three islands are administered by federal agencies and one island is maintained by the state as a natural area. There are two state controlled marshland areas on the bay side. One is maintained for wildlife management and hunting. The other is a protected natural area. The state also owns extensive wetlands for wildlife management between the mainland and barrier islands on the ocean side.

Although there is an abundance of water and open space in the region, access to and use of much of it is very limited. Many of the beach areas for instance are either privately owned or are very difficult to get too, as is the case with barrier island beaches. There is a need for access



to the Barrier Island beaches, but access should be regulated to protect these fragile resource areas. In addition to the need for better access to area beaches, recent studies identified several close-to-home types of activities for which significant facility needs exist. According to the table on page 280, the most pressing such needs are for jogging, bicycle and horseback trails, soccer, softball/baseball fields and basketball courts. While this table indicates a surplus supply of picnic facilities, it should be pointed out the only inground pool and a majority of the picnic tables are located at commercial campgrounds and are not available for use by local residents.

Recent studies have been completed which identify a need for more passive recreational areas (parks, trails, picnic areas, etc.) as well as increased bay and ocean access. A study of the existing recreational resources and facilities suggests that a major state park be placed in the Chesapeake Bay between the community of Cape Charles and the Bay Bridge Tunnel. Several potential sites have been identified and are shown on the map on page 279. As indicated in the recommendations below, the Commonwealth should place a high priority on the acquisition and development of a major water oriented destination park site on the Eastern Shore. It should be developed in a way that preserves a

significant portion of the Eastern Shore's natural heritage and features the Eastern Shore's cultural and recreational opportunities.

Local priorities on the Eastern Shore should be toward the development of a number of small community parks and at least two district parks, providing game fields and courts, picnic sites, swimming, and trail opportunities. Some of the current needs may be satisfied by further developing existing parks.

The following significant resources have the potential to contribute to regional outdoor recreational opportunities, and therefore, merit special attention. These resources are identified by system, with recommendations as to how they can best meet current and projected needs.

State Parks

The acquisition of a new state park site is a high priority during this planning cycle. The following sites have been identified for consideration.

1. **Brown and Root** is a large tract of land near Cape Charles with a wide beach and numerous freshwater ponds. It has extensive open and forested lands which lend themselves to the development of a variety of day use and overnight facilities.

2. **Picketts Harbor** has a long beach and wide wooded section along the shore. Its frontage has a long vegetated dune line. The site can support a variety of day use and overnight facilities.

3. **Kiptopeke Beach** is composed of open fields and forests. The forests create a wide meandering edge along the shoreline of the Bay. The old Chesapeake Bay ferry landing site, with its dock, is included in the site.

4. **Savage Neck** consists of a peninsula with Bay and tidal creek frontages. It has both open and forested land which is suitable for a variety of day use and overnight facilities. It has a fine beach and offers excellent water oriented opportunities.

5. The potential exists for a state park in the area between **Occahannock and Pungoteague Creek** of southern Accomack County which would offer abundant shoreline on the Chesapeake Bay, as well as on several large creeks in the area. The excellent marshes and beaches found here could contribute greatly to the Eastern Shore's supply of accessible water oriented recreational opportunities.

Regional Parks

6. A regional park should be acquired and developed in both Accomack and Northampton Counties. Both sites should provide trails, swimming, beach access, and facility development for softball and basketball. Accomack County has identified a potential regional park site near Onancock which is centrally located and has good development potential.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion in a State Natural Areas System:

7. **The Pitts Creek** area contains a freshwater marsh and adjacent cypress/white cedar hardwood swamp and is the best developed habitat of its type on the Eastern Shore. This area should be considered for inclusion in the State Natural Areas System.

8. The **Barrier Islands,** off Accomack and Northampton Counties, are almost totally in public or Nature Conservancy ownership. The delicate nature of most of the islands requires that they be left in a relatively undisturbed state. Plans, however, should be developed and implemented which would allow for public recreational use where compatible.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

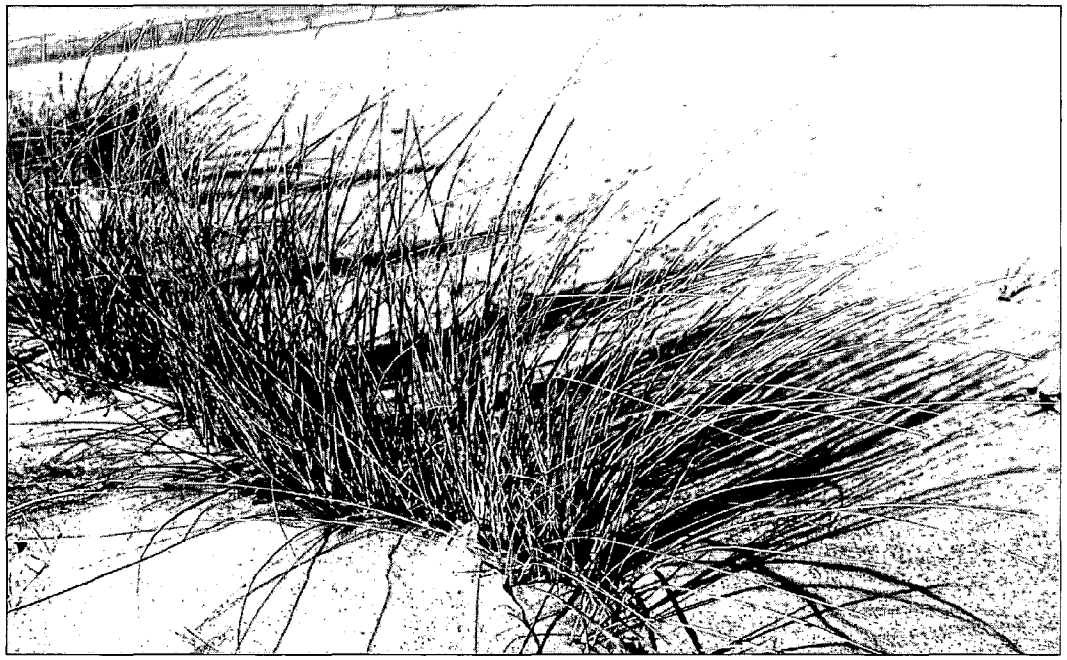
Scenic Highways, Virginia Byways, and Parkways

The following roads or sections of roads should be considered as components of the Virginia Byway System:

9. **Route 180** in Accomack County from Pungoteague to Wachapreague.

10. **Route 605** in Accomack County from Wachapreague to Accomac.

11. **Route 718** and **Route 178** in Accomack County from Onancock to Accomac.



12. **Route 600** in Accomack and Northampton Counties from Painter to Kiptopeke.

Public Water and Beach Access

Although its rich and plentiful water resources are the Eastern Shore's primary recreation attractions, public access to them for boating and beach use is very limited and should be increased.

13. The **Department of Game and Inland Fisheries** should continue its program of providing additional public hunting, fishing, and boating access to the ocean, bays, and marshes on the Eastern Shore.

14. The U.S. Fish and Wildlife Service should investigate the possibilities of providing some limited parking and day use recreation facilities on **Fishermans Island.**

15. The **Eastern Shore National Wildlife Refuge** in Northampton County should be considered as a possible access point to those barrier islands suitable for some type of recreational use.

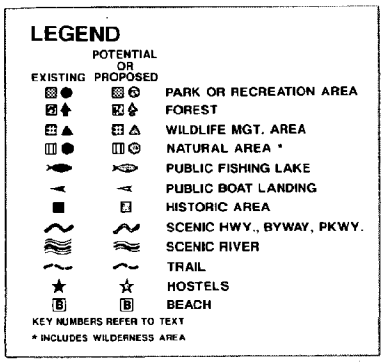
Hostels

The following general areas are suggested as potential hostel locations:

16. **Assateague Island.**

17. **Cape Charles Area.**

REGION 10
EASTERN SHORE



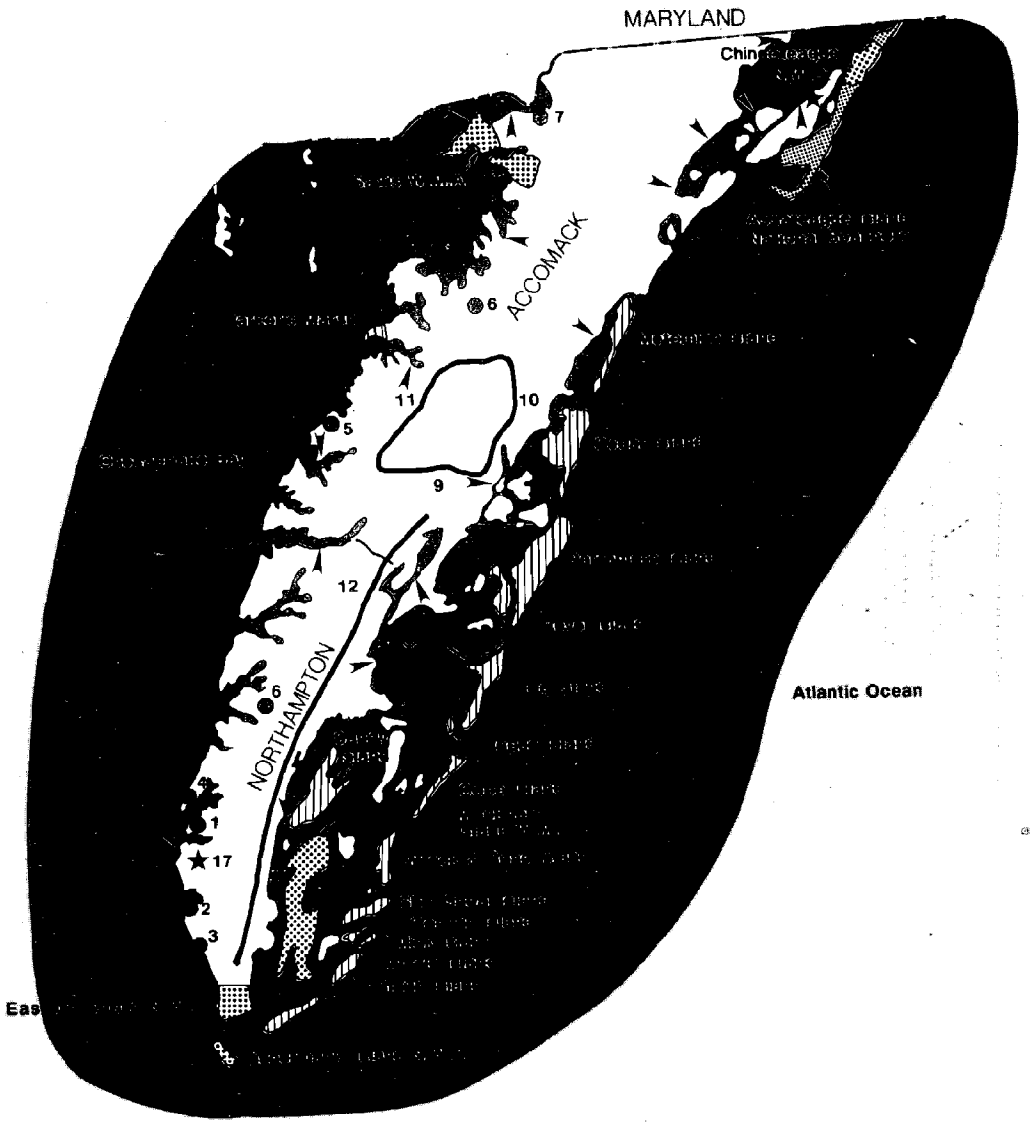


Plate 27

REGION 10 TABLE 45

Projected 1990 Population: 47204

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	1774	5404	5353	+3630	2031	+3373	2304	+3100	SITES
FISHING	37.35	568	53571	0	+53003	616	+52955	663	+52908	ACRES
CANOEING, ETC.	4.07	7	0	0	7	9	9	10	10	STREAM MILES
SAILING	6.85	6483	428528	2	+422045	8010	+420518	9687	+418841	ACRES
POWER BOATING	27.25	12451	428528	2	+416077	13418	+415110	14393	+414135	ACRES
WATER SKIING	8.30	18818	428528	2	+409710	22852	+405676	27281	+401247	ACRES
POOL SWIMMING	24.28	7	6	5	1	7	1	7	1	POOLS
SWIMMING OUTDOORS	35.93	78	274	39	+196	86	+188	96	+178	BEACH ACRES
BEACH USE, SUNNING	38.89	56	274	39	+218	62	+212	67	+207	ACRES
HIKING, BACKPACKING	7.61	22	31	2	+9	25	+6	29	+2	MILES
JOGGING	29.01	54	0	0	54	54	54	55	55	MILES
BICYCLING/WORK, SCH	11.31	13	0	0	13	14	14	15	15	MILES
BICYCLING PLEASURE	34.79	32	2	0	30	34	32	35	33	MILES
HORSEBACK RIDING	4.54	4	2	0	2	4	2	4	2	MILES
FOUR WHEEL O.R.V.	9.20	6	0	0	6	7	7	7	7	MILES
MOTORCYCLE OFF ROAD	8.91	6	0	0	6	6	6	6	6	MILES
HUNTING	13.84	23657	16071	25	7586	25655	9584	27741	11670	ACRES
PICNICKING	22.64	151	762	700	+611	166	+596	181	+581	TABLES
GOLF	4.62	2	2	2	0	2	0	2	0	COURSES
TENNIS	13.97	12	14	3	+2	14	0	15	1	COURTS
SOFTBALL, BASEBALL	24.89	39	4	1	35	40	36	41	37	FIELDS
BASKETBALL	15.65	64	2	0	62	69	67	74	72	COURTS
SOCCER	16.64	7	3	0	4	7	4	8	5	FIELDS
FOOTBALL	9.73	7	3	0	4	7	4	7	4	FIELDS
ICE SKATING	9.83	1	0	0	1	1	1	1	1	RINKS
SKIING	6.51	7	0	0	7	9	9	10	10	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 22 TABLE 46

Projected 1990 Population: 47204

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	21.31	1774	5404	5353	+3630	2031	+3373	2304	+3100	SITES
FISHING	37.35	568	53571	0	+53003	616	+52955	663	+52908	ACRES
CANOEING, ETC.	4.07	7	0	0	7	9	9	10	10	STREAM MILES
SAILING	6.85	6483	428528	2	+422045	8010	+420518	9687	+418841	ACRES
POWER BOATING	27.25	12451	428528	2	+416077	13418	+415110	14393	+414135	ACRES
WATER SKIING	8.30	18818	428528	2	+409710	22852	+405676	27281	+401247	ACRES
POOL SWIMMING	24.28	7	6	5	1	7	1	7	1	POOLS
SWIMMING OUTDOORS	35.93	78	274	39	+196	86	+188	96	+178	BEACH ACRES
BEACH USE, SUNNING	38.89	56	274	39	+218	62	+212	67	+207	ACRES
HIKING, BACKPACKING	7.61	22	31	2	+9	25	+6	29	+2	MILES
JOGGING	29.01	54	0	0	54	54	54	55	55	MILES
BICYCLING/WORK, SCH	11.31	13	0	0	13	14	14	15	15	MILES
BICYCLING PLEASURE	34.79	32	2	0	30	34	32	35	33	MILES
HORSEBACK RIDING	4.54	4	2	0	2	4	2	4	2	MILES
FOUR WHEEL O.R.V.	9.20	6	0	0	6	7	7	7	7	MILES
MOTORCYCLE OFF ROAD	8.91	6	0	0	6	6	6	6	6	MILES
HUNTING	13.84	23657	16071	25	7586	25655	9584	27741	11670	ACRES
PICNICKING	22.64	151	762	700	+611	166	+596	181	+581	TABLES
GOLF	4.62	2	2	2	0	2	0	2	0	COURSES
TENNIS	13.97	12	14	3	+2	14	0	15	1	COURTS
SOFTBALL, BASEBALL	24.89	39	4	1	35	40	36	41	37	FIELDS
BASKETBALL	15.65	64	2	0	62	69	67	74	72	COURTS
SOCCER	16.64	7	3	0	4	7	4	8	5	FIELDS
FOOTBALL	9.73	7	3	0	4	7	4	7	4	FIELDS
ICE SKATING	9.83	1	0	0	1	1	1	1	1	RINKS
SKIING	6.51	7	0	0	7	9	9	10	10	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

REGION 11
Southern Piedmont

The south central portion of Virginia is considered by many to be the premiere inland water playground in the Commonwealth. The U.S. Army Corps of Engineers and major power companies have created a series of large reservoirs for flood control, electrical power generation, and recreation. John H. Kerr Reservoir and Lake Gaston, on the Virginia/North Carolina border, have a combined total of more than 73,000 acres of water within Virginia. Three other major impoundments — Leesville Lake, Smith Mountain Lake, and Philpott Reservoir — add another 24,600 acres of water based recreational opportunity to the region. In addition to the lakes, this region has many large rivers with a great deal of untapped recreational potential. Three state parks, three wildlife management areas, the Blue Ridge Parkway, and the Army Corps of Engineers' lands provide over 58,000 land acres of recreational opportunity in the region.

Town, city, and county parks in this region provide an additional 3,400 acres of park and open space area. Much of this land is developed and meets 45% of the demand for close-to-home recreation. Overall, Region 11 has a 3,578-acre deficiency for local and regional open space acreage, based on a standard of 20 acres per 1,000 population. This deficiency is most serious in Planning District 13, which has an 80% deficiency and needs 1,337 acres of local and regional land.

Based on the Outdoor Recreation Demand Study, the most popular outdoor recreational activity in the region was pool swimming. Planning District 12 has a 30% deficiency in pools and needs 12 more to meet the demand. Twenty-one of the twenty-six pools identified in Planning District 13 are privately owned, however, and therefore not available to the general public. More public swimming pools are needed to meet the demand in this region. There is a significant shortage of beach acreage in the region and steps should be taken towards providing more beach areas on the major impoundments. Table 47 on page 287 lists recreation activities in the region, ranked by participation rate.

Developed facilities for close-to-home recreation like basketball courts and tennis courts are also needed. The Demand Study indicated that the majority of people did not want to travel more than 15 minutes away from home for most outdoor game activities. These facilities should be provided close to population concentrations. The following significant resources contribute, or have the potential to contribute, to regional open space and/or recreational opportunities and, therefore, merit special attention. These resources are identified by recreation system with recommendations for how they can best meet existing and future demand.

Regional Parks

1. Improved release schedules from Leesville Reservoir have substantially improved the recreational attractiveness of the **Staunton River.** A regional park should be developed in Pittsylvania, Campbell, Halifax, or Charlotte counties to provide access and use of this improved resource.

2. A regional park site at **Elkhorn Lake** in eastern Pittsylvania County should be acquired to help meet the day use needs of the area.

Scenic Highways, Byways, and Parkways

The following roads or sections of roads have potential for consideration and possible designation as components of the Virginia Byway System:

3. **Route 8** from Route 58 to Blue Ridge Parkway in Patrick County.

4. **Route 58** from Route 8 to Blue Ridge Parkway in Patrick County.

5. **Route 623** in Patrick and Franklin Counties from its junction with Route 57 in Ferrum.

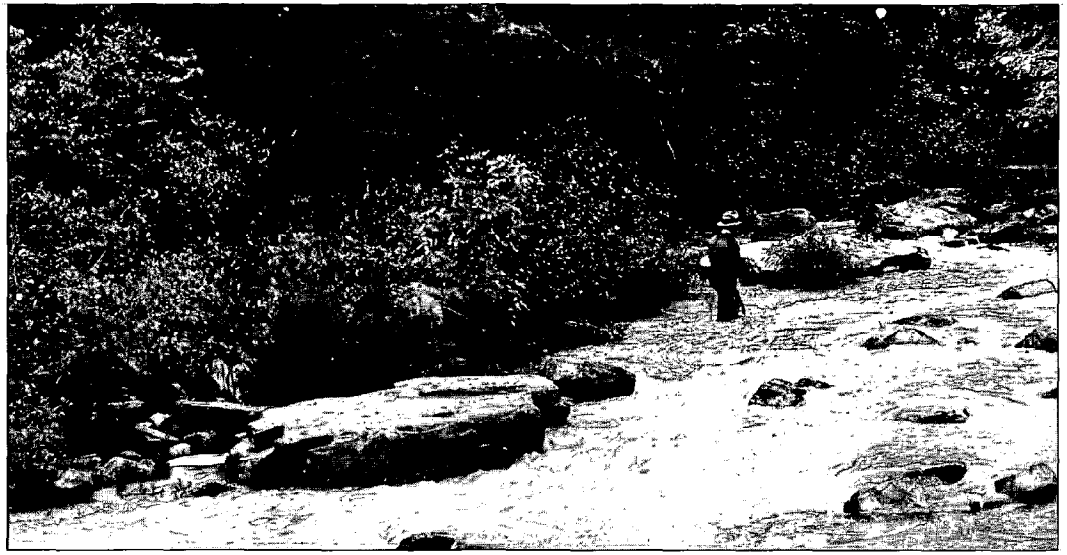
6. **Routes 108 and 890** in Henry and Franklin Counties from Martinsville to Penhook.

7. **Route 344** in Halifax County, from intersection of Routes 304 and 344 to Staunton River State Park.

8. **Routes 4, 615, 637, and 626** in Mecklenburg and Brunswick Counties.

9. **Routes 748 and 640** in Franklin County from Ferrum to Blue Ridge Parkway.

10. **Route 863** from Route 58 to the North Carolina state line in Pittsylvania County.



11. **Route 602** in Franklin County from Ferrum to Route 221 at Adney Gap.

12. **Route 659** in Halifax County between the Pittsylvania County line and Route 729.

13. **Route 614** in Patrick County from the Blue Ridge Parkway to Route 645.

14. **Route 648** in Patrick County from Route 103 to the end.

Natural Areas

The following is a current listing (as of 1989) of significant natural resources and should be considered for inclusion into the State Natural Areas System:

15. **Busted Rock** in Patrick County offers distinctive natural and scenic features and contains 10,000 acres.

16. The **Pinnacles of Dan** in Patrick County display spectacular gorges and wilderness along the headwaters of the Dan River. More than 4,400 acres should be considered for preservation.

17. **Turkey Cock Mountain** in Franklin and Henry Counties contains numerous beaver colonies. There are more than 20,000 acres in this unique area, 2,680 acres of which have been acquired by the Game Commission.

The Heritage Program under the Department of Conservation and Recreation continually updates a list of sites needing protection and should be contacted before making land use decisions.

Public Water Access

Although Region 11 is rich in water resources, public access to them is inadequate and needs to

be substantially increased. In all instances where public highway crossings of fishable and/or floatable waters are scheduled for renovation, relocation, or wherever feasible, the potential for providing parking areas and boat launching ramps should be evaluated. A comprehensive river access guide should be developed for the region. The Dan River Canoe Trail should be extended into Virginia from North Carolina.

Scenic Rivers

The following rivers or sections of rivers have been evaluated and found to qualify for inclusion in the Virginia Scenic Rivers System:

18. **Nottoway River** in Brunswick County, Route 609 to Route 630 in Sussex County.

19. The **South Mayo River** in Patrick and Henry Counties from Route 653 to the North Carolina line.

20. The **North Mayo River** in Henry County from Route 695 to North Carolina line.

21. The **Meherrin River** in Brunswick County from Route 635 to North Carolina line.

The following river segments merit evaluation in the future to determine their suitability for inclusion in the Virginia Scenic Rivers System:

22. The **Smith River** from Route 8 to Route 704 in Patrick County.

23. The **Staunton River** from Brookneal to Kerr Reservoir and from Leesville Reservoir to Long Island.

24. The **Blackwater River** from Route 220 to Smith Mountain Lake in Franklin County.

25. **Sandy River** in Pittsylvania County.

26. **Dan River** in its entirety.

National Park Service

27. **Pine Spur** in Franklin County has potential for major recreation area development. This location is included in the Blue Ridge Parkway master plan.

Other State Properties

The following state owned properties contain significant undeveloped land which may have potential for recreational use. Each site should be assessed and cooperative use agreements developed where appropriate.

28. **Medium Security Institute #1** in Brunswick County has 700 acres of undeveloped land which should be studied for its potential for meeting local recreational demand.

29. **Southside Virginia Community College** in Brunswick County has 62 acres of land that should be evaluated for its potential as a recreation site.

30. **Department of Corrections Field Unit 15** in Pittsylvania County has a 200-acre site with recreational potential which should be considered in local planning.

31. **Department of Corrections Field Unit 28** in Henry County has 90 acres of land, 45 of which are wooded and may be suited for recreational use.

32. **Danville Community College** has 40 acres of wooded land which could be evaluated for its recreational potential.

33. **Patrick Henry Community College** in Henry County has 80 acres of wooded land which may prove to be ideally suited for recreational development.

Trails

The following trail proposals are suggested as components of the State Trails System:

34. The **Southern Extension of the East Coast Bicycle Route** connects with the North Carolina Bicycle Trail at Okoneechee State Park.

35. North Carolina is developing a **Dan River Trail**, which should be continued into Virginia, with its terminus at Staunton River State Park.

Public Game and Fish Management Areas

Substantial additional acquisitions are planned for recreational development, including an extensive trails system at the **White Oak Mountain Wildlife Management Area** in Pittsylvania County.

37. Additional acquisitions are planned along the Lake Gaston shoreline at **Elm Hill Wildlife Management Area** in Mecklenburg County.

38. Additional river access sites are needed on the **Dan, the Sandy, and the Staunton River systems.**

Corps of Engineers Impoundments

39. **John H. Kerr Reservoir** is located in Halifax and Mecklenburg Counties. Further development of existing project lands around this great lake could make available for recreation more than 18,000 acres of land and water. Much of this is not currently designated for recreational use. Developments can be by the Corps of Engineers, or by state, regional, or local agencies, or private enterprise, under lease from the Corps. Such developments could help significantly in making up for the deficiencies in local acreage. They would also help to relieve the pressure from other, more urban, regions.

40. **Philpott Reservoir** is in Franklin, Patrick, and Henry Counties. Potential exists for additional recreational developments on nearly 6,000 acres of unused government land. These lands are not currently designated for recreational use.

REGION 11
SOUTHERN PIEDMONT

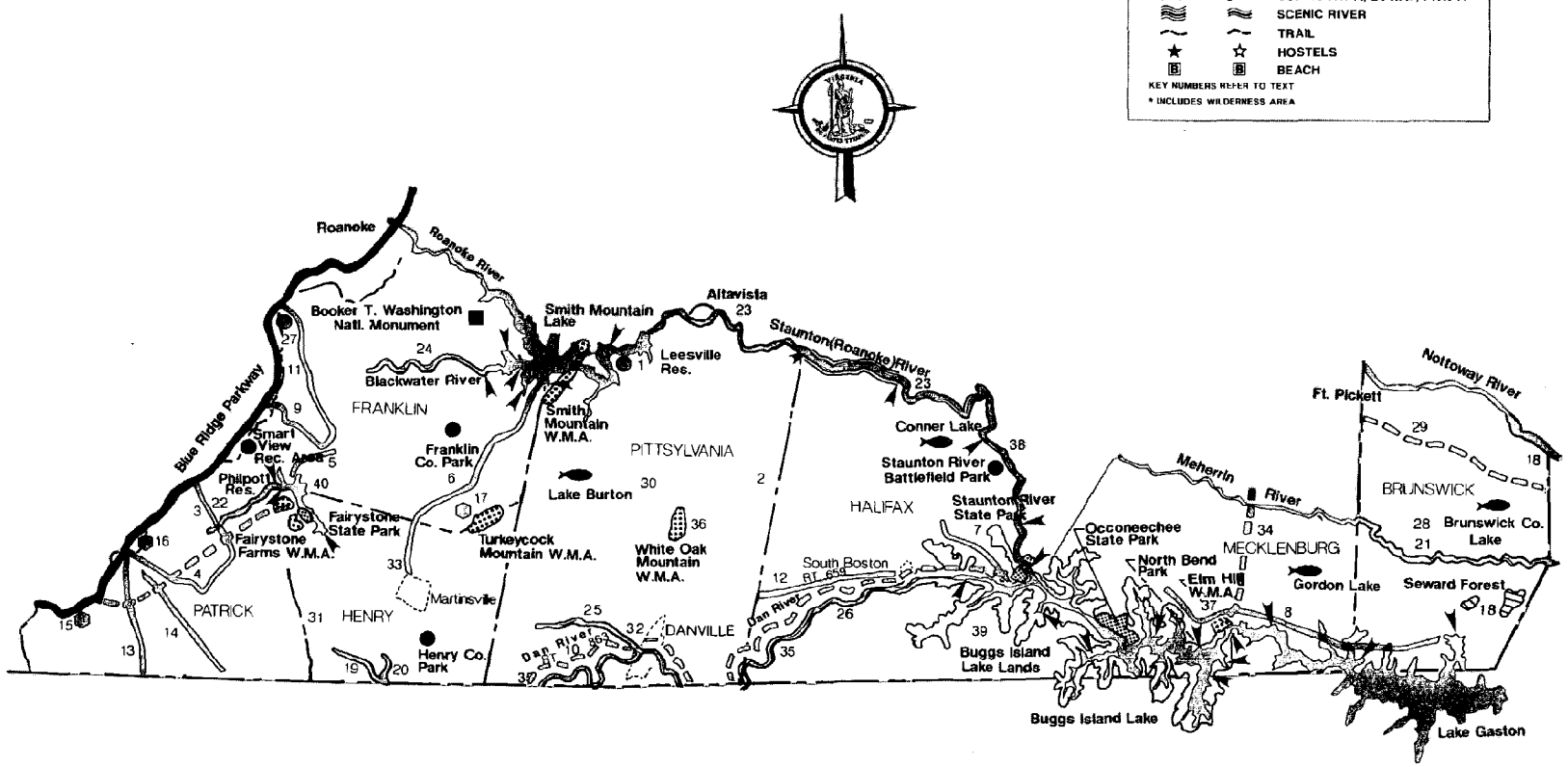


Plate 28

REGION 11 TABLE 47

Projected 1990 Population: 334000

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	19.07	4220	5398	3705	+1178	4670	+728	5144	+254	SITES
FISHING	29.83	13992	31762	28143	+17770	14344	+17418	14696	+17066	ACRES
CANOEING, ETC.	5.39	33	31	2	2	42	11	49	18	STREAM MILES
SAILING	2.54	3159	90944	34201	+87785	4197	+86747	5312	+85632	ACRES
POWER BOATING	10.77	10087	90944	34201	+80857	10627	+80317	11174	+79770	ACRES
WATER SKIING	10.76	19207	90944	34201	+71737	22132	+68812	25256	+65688	ACRES
POOL SWIMMING	45.36	68	55	47	13	71	16	72	17	POOLS
SWIMMING OUTDOORS	27.01	82	31	9	51	86	55	92	61	BEACH ACRES
BEACH USE, SUNNING	28.48	61	31	9	30	64	33	67	36	ACRES
HIKING, BACKPACKING	16.90	194	115	16	79	213	98	234	119	MILES
JOGGING	31.73	495	4	0	491	510	506	522	518	MILES
BICYCLING/WORK, SCH	9.84	14	0	0	14	14	14	15	15	MILES
BICYCLING PLEASURE	28.99	169	10	5	159	179	169	189	179	MILES
HORSEBACK RIDING	8.06	122	50	15	72	125	75	130	80	MILES
FOUR WHEEL O.R.V.	12.69	40	0	0	40	40	40	42	42	MILES
MOTORCYCLE OFF ROAD	5.30	57	0	0	57	57	57	59	59	MILES
HUNTING	14.34	310281	52208	3046	258073	318981	266773	327737	275529	ACRES
PICNICKING	41.32	1988	3096	1473	+1108	2046	+1050	2111	+985	TABLES
GOLF	11.32	38	23	22	15	41	18	41	18	COURSES
TENNIS	16.45	217	187	70	30	234	47	255	68	COURTS
SOFTBALL, BASEBALL	16.25	230	192	38	38	235	43	241	49	FIELDS
BASKETBALL	22.25	830	200	26	630	885	685	942	742	COURTS
SOCCER	9.66	101	71	7	30	112	41	126	55	FIELDS
FOOTBALL	12.99	194	71	7	123	199	128	202	131	FIELDS
ICE SKATING	1.70	2	0	0	2	4	4	6	6	RINKS
SKIING	3.91	23	0	0	23	33	33	39	39	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

PLANNING DISTRICT 12 TABLE 48

Projected 1990 Population: 249292

ACTIVITY	PCNT. PART.	1990				2000		2010		UNIT
		TOTAL DEMAND	TOTAL SUPPLY	PRIVATE SUPPLY	NEED	DEMAND	NEED	DEMAND	NEED	
CAMPING	19.07	2479	2140	1559	339	2713	573	2957	817	SITES
FISHING	29.83	10208	11378	8141	+1170	10456	+922	10712	+666	ACRES
CANOEING, ETC.	5.39	24	20	1	4	31	11	36	16	STREAM MILES
SAILING	2.54	1095	17382	14201	+16287	1505	+15877	1938	+15444	ACRES
POWER BOATING	10.77	5153	17382	14201	+12229	5324	+12058	5496	+11886	ACRES
WATER SKIING	10.76	10704	17382	14201	+6678	12078	+5304	13513	+3869	ACRES
POOL SWIMMING	45.31	47	29	26	18	49	20	50	21	POOLS
SWIMMING OUTDOORS	27.01	57	27	5	30	60	33	65	38	BEACH ACRES
BEACH USE, SUNNING	28.48	43	27	5	16	46	19	47	20	ACRES
HIKING, BACKPACKING	16.90	133	60	6	73	144	84	156	96	MILES
JOGGING	31.73	397	3	0	394	407	404	416	413	MILES
BICYCLING/WORK, SCH	9.84	11	0	0	11	11	11	12	12	MILES
BICYCLING PLEASURE	28.99	130	5	0	125	137	132	147	142	MILES
HORSEBACK RIDING	8.06	93	40	15	53	95	55	99	59	MILES
FOUR WHEEL O.R.V.	12.69	29	0	0	29	29	29	31	31	MILES
MOTORCYCLE OFF ROAD	5.30	43	0	0	43	43	43	45	45	MILES
HUNTING	14.34	222919	19337	1646	203582	228808	209471	234686	215349	ACRES
PICNICKING	41.32	1495	1934	939	+439	1535	+399	1575	+359	TABLES
GOLF	11.32	29	16	16	13	30	14	30	14	COURSES
TENNIS	16.42	169	164	58	5	181	17	199	35	COURTS
SOFTBALL, BASEBALL	16.19	176	154	28	22	181	27	185	31	FIELDS
BASKETBALL	22.25	669	175	24	494	715	540	762	587	COURTS
SOCCER	9.62	77	62	7	15	86	24	97	35	FIELDS
FOOTBALL	12.97	156	62	7	94	160	98	163	101	FIELDS
ICE SKATING	1.70	2	0	0	2	4	4	4	4	RINKS
SKIING	3.91	17	0	0	17	24	24	29	29	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.

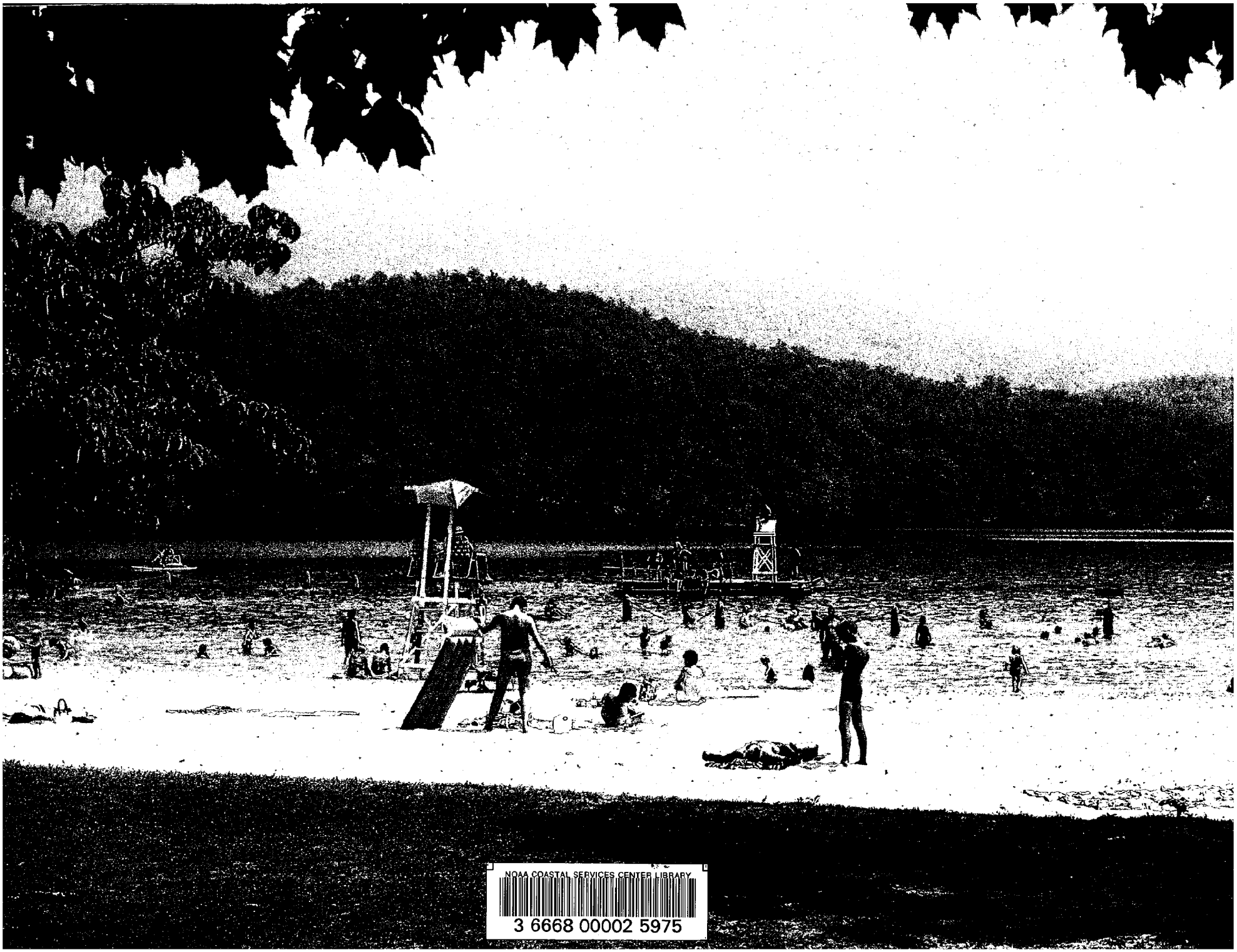
PLANNING DISTRICT 13 TABLE 49

Projected 1990 Population: 84708

ACTIVITY	PCNT. PART.	1990 TOTAL DEMAND	1990 TOTAL SUPPLY	1990 PRIVATE SUPPLY	1990 NEED	2000 DEMAND	2000 NEED	2010 DEMAND	2010 NEED	UNIT
CAMPING	19.07	1741	3258	2146	+1517	1957	+1301	2187	+1071	SITES
FISHING	29.83	3784	20384	20002	+16600	3888	+16496	3984	+16400	ACRES
CANOEING, ETC.	5.39	9	11	1	+2	11	0	13	2	STREAM MILES
SAILING	2.54	2064	73562	20000	+71498	2692	+70870	3374	+70188	ACRES
POWER BOATING	10.77	4934	73562	20000	+68628	5303	+68259	5678	+67884	ACRES
WATER SKIING	10.76	8503	73562	20000	+65059	10054	+63508	11743	+61819	ACRES
POOL SWIMMING	45.49	21	26	21	+5	22	+4	22	+4	POOLS
SWIMMING OUTDOORS	27.01	25	4	4	21	26	22	27	23	BEACH ACRES
BEACH USE, SUNNING	28.48	18	4	4	14	18	14	20	16	ACRES
HIKING, BACKPACKING	16.90	61	55	10	6	69	14	78	23	MILES
JOGGING	31.72	98	1	0	97	103	102	106	105	MILES
BICYCLING/WORK, SCH	9.84	3	0	0	3	3	3	3	3	MILES
BICYCLING PLEASURE	28.99	39	5	5	34	42	37	42	37	MILES
HORSEBACK RIDING	8.05	29	10	0	19	30	20	31	21	MILES
FOUR WHEEL O.R.V.	12.69	11	0	0	11	11	11	11	11	MILES
MOTORCYCLE OFF ROAD	5.30	14	0	0	14	14	14	14	14	MILES
HUNTING	14.34	87362	32871	1400	54491	90173	57302	93051	60180	ACRES
PICNICKING	41.32	493	1162	534	+669	511	+651	536	+626	TABLES
GOLF	11.32	9	7	7	2	11	4	11	4	COURSES
TENNIS	16.56	48	23	12	25	53	30	56	33	COURTS
SOFTBALL, BASEBALL	16.43	54	38	10	16	54	16	56	18	FIELDS
BASKETBALL	22.25	161	25	2	136	170	145	180	155	COURTS
SOCCER	9.79	24	9	0	15	26	17	29	20	FIELDS
FOOTBALL	13.05	38	9	0	29	39	30	39	30	FIELDS
ICE SKATING	1.70	0	0	0	0	0	0	2	2	RINKS
SKIING	3.92	6	0	0	6	9	9	10	10	LIFTS

+means a surplus.

TOTAL SUPPLY INCLUDES PRIVATE SUPPLY.



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