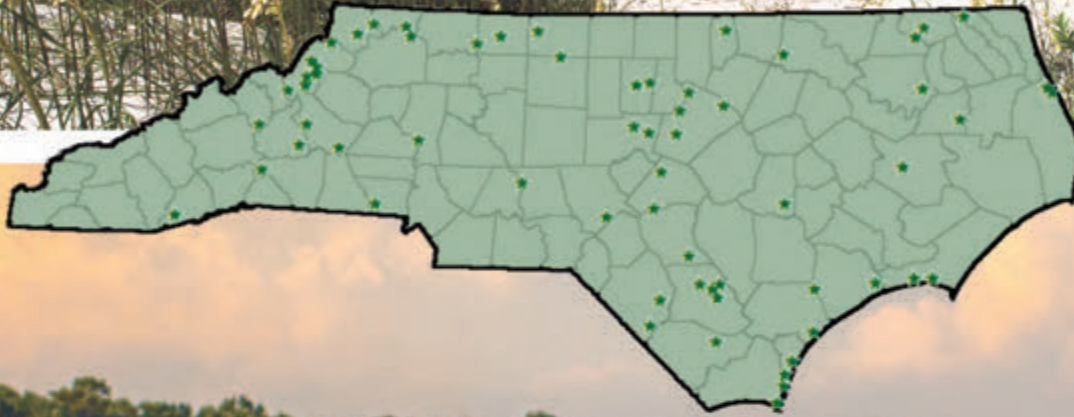


# System Wide Plan for North Carolina State Parks



**2018**  
NC Division of Parks and Recreation  
NC Department of Natural and Cultural Resources



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## Division of Parks and Recreation

NC Department of Natural and Cultural Resources

Governor Roy Cooper

Secretary Susi H. Hamilton

To the Citizens of North Carolina:

It is my pleasure to present the 2018 update for the North Carolina state parks system's Systemwide Plan. This plan is a five-year guidance document that provides a record of recent activities and accomplishments and offers strategic direction for the future of North Carolina's state parks.

In 2016, North Carolina state parks celebrated its 100<sup>th</sup> anniversary with events at parks throughout the system. In addition, North Carolina voters overwhelmingly approved a \$2 billion Connect NC Bond referendum on March 15, 2016 by a 2-to-1 margin. The bond package included \$75 million for 45 state parks projects across the state. The parks system continues to grow and improve to provide North Carolina residents access to the natural beauties of this state. North Carolinians and visitors to our state have a deep commitment, passion and support for our park system as demonstrated by the record-breaking 19.4 million visitors in 2017. These visitors came to take in the natural beauty, participate in various outdoor recreational activities and learn more about the diversity of the state's abundant natural resources. Visitors participating in the programs offered at the parks leave with a better understanding of nature and its benefits on society.

This document creates a vision and plan for meeting the needs of current visitors and those of the next generation of park users. The state parks system would not be what it is without the active participation, support, advocacy, and advice of park visitors, legislators, local governments, land trusts, friend's groups, businesses, scientists, educators, environmentalists, and many other wonderful partners.

Many improvements to the park system have been made, and they continue with new and improved camping facilities and visitor centers being built at many of our parks. North Carolinians and visitors to our park system look to us to set an example for natural resource protection, low-impact recreation and outdoor education. The dedicated state park staff are working to promote and integrate a "Park's Educational Program for Elementary Students" so every upper elementary school student in North Carolina can have a meaningful experience in a state park.

Naturalist David Polis is quoted "Must we always teach our children with books? Let them look at the mountains and the stars up above. Let them look at the beauty of the waters and the trees and flowers on earth. They will then begin to think, and to think is the beginning of a real education." With children being raised in digital generation, creating and expanding opportunities for our children to experience the outdoors is vitally important. Through this experience, their interest in preserving the natural wonders of this state will become ingrained into their lives at an early age and remain as they mature into adulthood. An outdoor experience in one of North Carolina's state parks can be a life-changing experience, especially for our children. The Division of Parks and Recreation has the obligation and opportunity to create that experience.

The agency continually strives to provide quality facilities, conserve our most special places and educate visitors about what makes this state great. We are committed to providing the best possible visitor experience and education to increase fiscal efficiency and to be a valuable partner in economic development efforts systemwide.

We invite you to visit and enjoy your extraordinary state park system and experience the resources we are diligently working to preserve, protect and make available for the enjoyment of our visitors.

Sincerely,

Dwayne Patterson, Director

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## EXECUTIVE SUMMARY

The years from 2015 through 2017 brought about several challenges and opportunities for the Division of Parks and Recreation (DPR). After a slowing in park growth in the prior five years the park system has recovered, and visitation is at an all-time high with over 19 million visitors in 2017. Growth and capital development has seen an increase with additional funding to the Parks and Recreation Trust Fund and a \$75 million allocation from the NC Connect Bond funds. From 2009 through 2015, one new unit was established, and 19,937 acres were added to the state parks system. In a shorter time-span over 7,800 acres have been added to the park system and 3 new natural areas and one new state trail have been authorized.

Like many states, North Carolina is continuing to rebound from the past economic downturn. Long term goals for the state parks system remain the same, yet the system's strategic directions have responded to the challenges currently facing the state park system. DPR continues to implement many improvements to efficiency and has contributed in significant ways to supporting job growth and economic development in North Carolina. As funding for land acquisition and capital improvements has been re-established, the demand for low impact outdoor recreation and outdoor educational opportunities is higher than ever. This is especially apparent in the record breaking 2017 visitation number of over 19 million to the park system. There still remains much to do, with identified future land acquisition needs of more than \$310 million and future facility construction and maintenance needs of more than \$420 million.

- The park system now totals 79 units with 232,108 acres (as of December 31, 2017) and an annual visitation of over 19 million visitors in 2017.
- Three new State Natural Areas were authorized by the NC General Assembly in 2017. These are Bobs Creek in McDowell County, Warwick Mill Bay in Robeson County and Salmon Creek in Bertie County.
- Several projects enhancing the visitor experience were undertaken during the past 3 years. A few of these include, but are not limited to, major repairs and renovations at Fort Macon, a new accessible picnic shelter at Hanging Rock, major improvement at Chimney Rock and Improvements to campground at Jordan Lake State Parks.

The system's statutory mandate is to protect representative examples of the state's significant archaeological, geological, scenic, recreational, and biological resources. These resources have been categorized into 108 themes in order to track how well the system is accomplishing this mandate.

- During the timeframe for this plan, representation of these themes in the state parks system has improved.
- One of these are now listed as adequately represented. Despite the recent gains several themes continue to be under-represented.

Major trends that will affect public recreation in North Carolina include projections for continued population growth and land development. North Carolina continues to experience significant immigration, and average life expectancy is increasing. In addition to population growth, outdoor recreation demand has also been fueled by increased participation. These trends underscore the importance of conserving land and water resources, providing additional recreational opportunities in appropriate places, and developing environmental education facilities and programs to enhance appreciation for the state's natural heritage and to support efforts to promote public health.

To be able to continue to grow our programs additional staffing is required for newly acquired land, new facility development and newly authorized units so that DPR can continue to create a visitor experience which will keep visitors returning to the state park system. By continuing the increase in visitation, we can continue to support economic development in the state.

## **STRATEGIC GOALS**

As North Carolina state parks system continues to grow, we have set a course to meet the increasing demands for protection of natural and scenic resources and low impact outdoor recreation. The recent additional funding available for state park land acquisition and facility development has helped DPR address some system needs to ensure a positive visitor experience. Public support for open space protection and new park units remains high. There is a continuing need to protect important natural resources and to provide outdoor recreation opportunities. It will also be important for the state parks system to continue to improve in other ways. To accomplish these goals eight strategic directions were identified:

### **1. Continue Expansion of The State Parks System**

Despite past economic challenges, the state parks system continues to grow and improve. With the authorization of the NC Connect Bond funds land acquisition and facility development has increased again. Public support for open space protection and new park units remains high (Chapter 4). North Carolina continues to be an attractive place for development, and strong population growth is anticipated in the coming decades. There is a continuing need to protect important natural resources and to provide outdoor recreation opportunities. There will be continued emphasis on careful planning and evaluation of statewide priorities to ensure the best use of funding. As the state parks system moves into the future strategic planning efforts will be implemented to meet the demands of outdoor recreation and natural resource protection.

### **2. Provide the Best Possible Visitor Experience**

DPR can improve the quality of the park visitor's experience by better coordinating all aspects of the operation to focus on connecting visitors to the state's unique natural resources in a purposeful, planned manner. The visitor experience has two components. The internal experience is the visitor's perspective, which is created by a combination of feelings, sensations and prior experiences. This is unique to every visitor. The external component consists of the many separate pieces outside the visitor – the road conditions in the park, the cleanliness of the campgrounds, the clarity and readability of park signs, and the friendliness of park staff are just a few examples. Integrating all these pieces is the key to providing great visitor experiences.

### **3. Increase Efficiency**

The recent growth of the state parks system, increased visitation, and high public interest in Division services has placed great demands on DPR's resources and capabilities. DPR operates and maintains state park units open to the public 364 days per year (all park units are closed on Christmas Day), including law enforcement, public safety, education, natural resource protection, and visitor services. In addition, much work remains to be done to acquire, plan, staff, and develop newly established park units. It will be essential to increase DPR's organizational effectiveness, and to foster efficient use of funds and resources available to the division.

#### **4. Support Local Economic Development**

The state's rural areas have been increasingly turning to ecotourism for economic growth and stability. The state parks are important regional attractions that can form the cornerstone of these local efforts. In addition, DPR can support local economic development by participating in local and regional tourism initiatives, by coordinating multi-jurisdictional recreation planning, by offering grants for local park and trail projects, and by providing environmental education opportunities for schools and universities.

The division will look for innovative ways to support local economic development, while adhering to the mission and long-term goals of the state parks system, keeping public costs reasonable, and avoiding competition with the private sector.

#### **5. Support State and Local Health and Wellness and other Initiatives through expanded marketing efforts**

Studies show the average American boy or girl spends just four to seven minutes in unstructured outdoor play each day, and more than seven hours each day in front of an electronic screen. This lack of outdoor activity has profoundly impacted the wellness of our children. Childhood obesity rates have more than doubled in the last 20 years; the United States has become the largest consumer of ADHD medications in the world; and pediatric prescriptions for antidepressants have risen precipitously. The Division will develop partnerships with public and private health organizations to explore ways to use the state parks to encourage physical activity and healthy lifestyles.

#### **6. Improve Natural and Cultural Resource Stewardship**

The ecosystems and cultural features protected by the state parks system often represent the highest quality examples of the state's natural landscape and cultural heritage. In many cases, these ecosystems and cultural features are also among the most threatened. The Division of Parks and Recreation is responsible for the protection of the natural and cultural resources within the state parks system. The primary objective of the Division's natural resource management initiatives is to correct or compensate for the disruption of natural processes caused by human activities. These initiatives include the reintroduction of natural fire regimes, restoration of natural communities, and removal of exotic invasive species. The primary goal of cultural resource management is to protect and preserve historically significant features.

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# CHAPTER ONE: ACCOMPLISHMENTS

## ESTABLISHING NEW UNITS

As North Carolina’s population continues to grow, so does the demand for recreational opportunities, as well as this growth development pressures in areas of ecological and conservation concern. The NC Division of parks and Recreation (DPR) is committed to preserving the state’s natural, cultural and recreation resources through the strategic acquisition of lands.

The North Carolina parks system has grown consistently for decades and has continued to do so from 2015 to 2017. During this timeframe, over 7,900 acres has been added to the parks system. In 2017, three new natural areas were approved by the North Carolina General Assembly, Bob’s Creek (3,500 +), Salmon Creek (994) and Warwick Mill Bay State Natural Areas (976), which when purchased will add 5,470 acres to the system.

## LAND PROTECTION

A total of 7,908 acres have been added to the state parks system from 2015 through December 31, 2017. The majority of these acquisitions have expanded our state parks, while there has been more modest, yet significant expansions, to state natural areas and state rivers as well. (Tables 1.1 through 1.6)

*Table 1.1 – State Recreation Area Land Acquisition 2015-2017*

<b>State Recreation areas</b>	<b>2015 Acres</b>	<b>2017 Acres</b>	<b>Acres Added</b>
FALLS LAKE	5,035	5,035	0
FORT FISHER	287	287	0
JORDAN LAKE	4,558	4,558	0
KERR LAKE	3,376	3,376	0
<b>Total State Recreation Areas</b>	<b>13,256</b>	<b>13,256</b>	<b>0</b>

*Table 1.2 – State Lakes Land Acquisition 2015-2017*

<b>State Lakes</b>	<b>2015 Acres</b>	<b>2017 Acres</b>	<b>Acres Added</b>
BAY TREE	1,418	1,418	0
JONES	224	224	0
PHELPS	16,600	16,600	0
WACCAMAW	8,938	8,938	0
SALTERS	315	315	0
SINGLETARY	572	572	0
WHITE	1,068	1,068	0
<b>Total State Lakes</b>	<b>29,135</b>	<b>29,135</b>	<b>0</b>

Table 1.3 - State Parks System Land Acquisition 2015 – 2017

<b>State Parks</b>	<b>2015 Acres</b>	<b>2017 Acres</b>	<b>Acres Added</b>
BAY TREE*	609	0	0
CAROLINA BEACH	420	420	0
CARVERS CREEK	4,332	4,455	123
CHIMNEY ROCK	6,270	6,899	629
CLIFFS OF THE NEUSE	892	1,026	134
CROWDERS MOUNTAIN	5,126	5,210	84
DISMAL SWAMP	14,432	14,432	0
ELK KNOB	3,672	4,157	485
ENO RIVER	4,197	4,198	1
FORT MACON	424	424	0
GOOSE CREEK	1,672	1,672	0
GORGES	7,709	7,709	0
GRANDFATHER MOUNTAIN	2,644	2,687	43
HAMMOCKS BEACH	1,155	1,611	456
HANGING ROCK	7,869	7,899	30
HAW RIVER	1,379	1,429	50
JOCKEYS RIDGE	426	426	0
JONES LAKE	1,669	1,669	0
LAKE JAMES	3,515	3,685	170
LAKE NORMAN	1,923	1,926	3
LAKE WACCAMAW	2,201	2,398	197
LUMBER RIVER	11,259	12,309	1050
MAYO RIVER	2,187	2,509	322
MEDOC MOUNTAIN	3,893	3,893	0
MERCHANTS MILLPOND	3,447	3,519	72
MORROW MOUNTAIN	4,496	4,501	5
MOUNT MITCHELL	1,996	1,996	0
NEW RIVER	2,878	3,015	137
PETTIGREW	5,830	5,945	115
PILOT MOUNTAIN	3,663	3,872	209
RAVEN ROCK	4,694	4,810	116
SINGLETARY LAKE	649	649	0
SOUTH MOUNTAINS	18,627	20,634	2007
STONE MOUNTAIN	14,351	14,351	0
WILLIAM B. UMSTEAD	5,592	5,592	0
<b>Total State Parks</b>	<b>156,098</b>	<b>161,926</b>	<b>6,438</b>

\* NC General Assembly redesignated Bay Tree State Park to a Natural Area in 2017

Table 1.4 – State Natural Area Land Acquisition 2015-2017

State Natural Area	2015 Acres	2017 Acres	Acres Added
BALDHEAD ISLAND (3)	1,260	1,260	0
BAY TREE*	0	609	609
BEAR PAW	384	384	0
BEECH CREEK BOG	120	295	175
BOB'S CREEK	0	0	0
BULLHEAD MOUNTAIN	365	442	77
BUSHY LAKE	6,343	6,396	53
CHOWAN SWAMP	6,066	6,066	0
HEMLOCK BLUFFS	97	97	0
LEA ISLAND	25	25	0
LOWER HAW RIVER	1,025	1,025	0
MASONBORO ISLAND	106	106	0
MITCHELL MILL	93	93	0
MOUNT JEFFERSON	975	1,123	148
OCCONEECHEE MTN.	190	206	16
PINEOLA BOG	91	91	0
RUN HILL	123	123	0
SALMON CREEK	0	0	0
SANDY RUN SAVANNAS	2,538	3,133	595
SUGAR MOUNTAIN BOG	102	102	0
THEODORE ROOSEVELT	265	265	0
WARWICK MILL BAY	0	0	0
WEYMOUTH WOODS	915	915	0
YELLOW MOUNTAIN	3,111	3,518	407
<b>Total State Natural Areas</b>	<b>24,194</b>	<b>26,274</b>	<b>2,080</b>

\* NC General Assembly redesignated Bay Tree State Park to a Natural Area in 2017

Table 1.5 – State Rivers Length of River 2015-2017

State Rivers	2015 Length (miles)	2017 Length (miles)
Horsepasture	0	4.5
Linville	0	13.0
Lumber	0	102.0
New	0	26.5
<b>Total State Rivers</b>	<b>0</b>	<b>146.0</b>



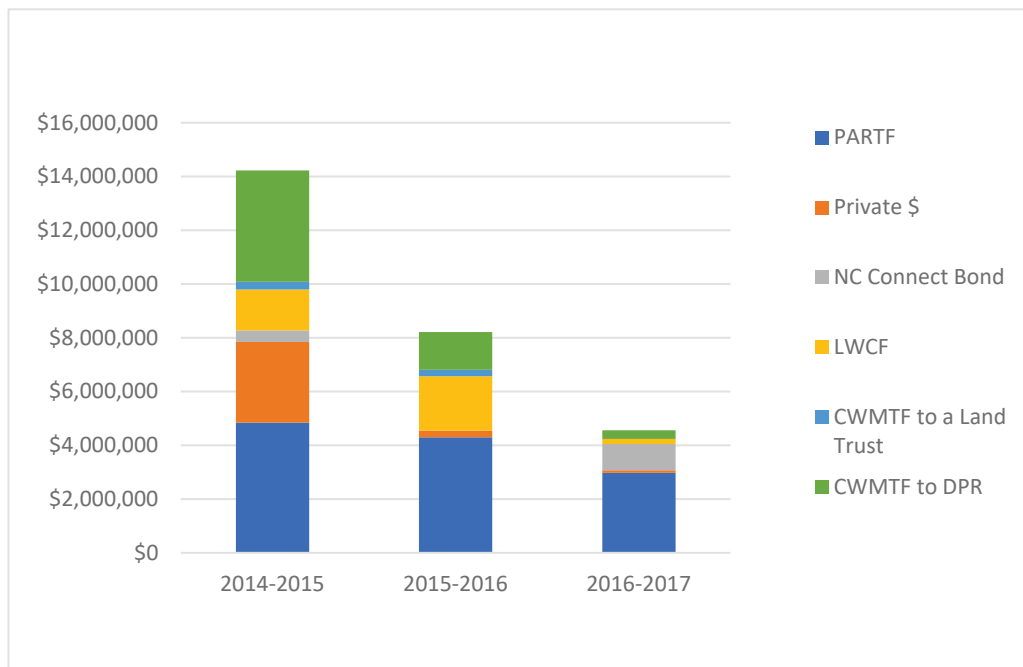
Table 1.6 – State Trails Size and Designated Length 2015-2017

State Trails	2015 Acres	2017 Acres	Planned Length (miles)	2015 Designated Length (miles)	2017 Designated Length (miles)
Deep River	1,274	1,274	90	0	0
Fonta Flora	0	0	100	0	18.7
French Broad River	0	0	117	117	117
Hickory Nut Gorge*	0	0	50	NA	0
Mountains-to-Sea	691	778	1400	611.8	668.5
Yadkin River	0	0	130	130	130
<b>Total State Trails</b>	<b>1965</b>	<b>2,052</b>	<b>1,887</b>	<b>806</b>	<b>934</b>

\*Hickory Nut Gorge Trail was Authorized in 2017

There are many funding sources that are used to procure state park lands from willing sellers. These include PARTF - Parks and Recreation Trust Fund, Private funding, North Carolina Bond Funding – Connect Bond, LWCF -Land and Water Conservation Fund and CWMTF - Clean Water Management Trust Fund. As can be seen in Figure 1.1, PARTF is the most consistent funding source for purchasing property.

Figure 1.1 - North Carolina State Parks Land Acquisition Funding Sources



## ATTENDANCE

Following a continuing trend, attendance at North Carolina state parks continues to grow. As can be seen in Table 1.7 attendance has grown an average of 3 percent a year since 2007 11% since 2015.

Table 1.7 - North Carolina State Parks Attendance

Year	Visitation
2007	13,487,740
2008	12,486,818
2009	14,251,310
2010	14,189,403
2011	14,255,859
2012	14,198,796
2013	14,172,661
2014	15,561,295
2015	17,251,862
2016	18,762,600
2017	19,390,801

## PARTNERSHIPS IN CONSERVATION ACROSS NORTH CAROLINA

Partnerships between the state parks system and conservation organizations across North Carolina have been invaluable in the effort to protect some of the state's most valuable natural resources.

Partnerships are based on a shared goal of protecting these outstanding resources for future generations. Conservation organizations, such as local land trusts, play an important role in the process by helping identify significant resources, contacting land owners and moving quickly to acquire properties on a short deadline if needed. Without these partnerships, the conservation of significant areas would be more difficult, if not impossible. Notable partnerships include:

- Audubon North Carolina and the DPR has been working on land acquisition and conservation management for Lea Island in Pender County and Warwick Mill Bay in Robeson County. Warwick Mill Bay 976 acres successfully closed.
- The Nature Conservancy has continued to partner with DPR to obtain additional properties at Carvers Creek State Park.
- The Blue Ridge Conservancy is working on several projects to expand Grandfather Mountain State Park.
- The Conservation Fund and Foothills Conservancy of North Carolina donated 989 acres to South Mountains State Park in December 2017.
- The Conservation Fund and Foothills Conservancy of North Carolina are working to establish a new state natural area - Bob's Creek State Natural Area in southeastern McDowell County. They are also looking for additional lands at South Mountains State Park.
- The Conservation Fund and DPR are working to expand Mount Mitchell State Park by 2,600 acres.

- The North Carolina Coastal Land Trust and the DPR are partnering to protect a new state natural area- Salmon Creek in Bertie County.
- DPR worked in partnership with the Blue Ridge Conservancy, the NC Wildlife Resources Commission biologists, The Conservation Fund and the US Fish and Wildlife Service Endangered Species Grant Program to successfully protect roosting and breeding sites near Beech Creek Bog in Watauga County for the endangered Virginia Big Eared Bat.
- DPR continues to be an active partner with the North Carolina Sandhills Conservation Partnership, which is geared to the preservation, restoration, and conservation of unique sandhills ecosystem and species such as the red cockaded woodpecker.
- DPR continues to work closely with the Southern Appalachian Highlands Conservancy on a number of projects at Yellow Mountain State Natural Area. These projects will total over 2,000 acres, including land to connect the state natural area with the Pisgah National Forest, and in the future a hiking trail connection to the Appalachian Trail.

## **CAPITAL IMPROVEMENTS**

Appropriations and Parks and Recreation Trust Fund monies totaling approximately \$20 million were spent at state parks from July 2014 to July 2017 for construction of new facilities, major improvements to existing facilities, and maintenance. Twenty major capital improvement projects were completed as well as numerous smaller projects. These projects included construction of campgrounds, restrooms and other support facilities.

Assisting in these improvements was the approval of the ConnectNC Bond package. The ConnectNC bond package include \$75 million for 45 state parks across the state.

The bond projects, which have been assembled to support each part of the state parks system’s mission, will enhance the visitor experience by:

- Offering newer and more diverse recreational experiences, such as expanded and upgraded campsites, picnic areas, cabins, day-use areas and facilities;
- Providing new and expended visitor centers, classrooms, auditoriums, exhibits and other learning venues and experiences, and;
- Acquiring lands to protect key natural resources for conservation and public use.

## **Building Green**

The state parks system promotes planning and construction practices of infrastructure and buildings that are environmentally responsible and healthy places to live, work and enjoy.

Sustainable and green buildings typically require additional design services and features that are not included in traditional construction. In most cases, the additional costs are recovered through energy savings and other factors. While multiple types of environmentally sound, innovative building technology may be considered, DPR is particularly interested in technologies that address:

### Ecological site design:

- On-site erosion control, water purification/ pollution reduction, and stormwater management.

### Transportation:

- Promoting bicycle, pedestrian and transit use where possible.

#### Waste reduction:

- Building reuse, job site recycling and efficient use of materials.
- On-site management of sewage and organic wastes, such as gray water systems and biological wastewater treatment.
- Energy efficiency in areas such as thermal envelopes, space and water heating, lighting, controls, and appliances.

#### Renewable energy:

- Water efficiency, both domestic and irrigation, including rainwater harvesting for irrigation and toilet flushing.

#### Materials and resources:

- Durable building envelopes and long-lived materials or assemblies, recycled-content materials, safer, less toxic materials, innovative application of natural materials.
- Indoor environmental quality, pollution reduction, worker and occupant safety, air cleaning, humidity control, and thermal comfort.

#### Operations and maintenance:

- Monitoring energy, water, waste, air quality, and transportation use along with resource-efficient operation practices.

## **PARK OPERATIONS**

### **Gold Medal**

The North Carolina state parks system has been named a national finalist in the past decade for the National Gold Medal Award for Excellence in Parks and Recreation. The National Gold Medal Award, which is administered by the American Academy for Park and Recreation Administration in partnership with the National Recreation and Parks Association (NRPA), is the most prestigious award a park and recreation agency can receive and recognizes service excellence.

The Gold Medal Award honors communities and states throughout the United States that demonstrate excellence in long-range planning, resource management, and agency recognition. Each agency is judged on its ability to address the needs of those it serves through the collective energies of citizens, staff, and elected officials.

Judges for the American Academy for Park and Recreation Administration considered criteria including the quality of long-range planning, the response to population and economic trends, the extent of public support, the quality of natural resource protection and the types of services to special population groups.

NRPA is an organization dedicated to educating professionals and the public on the essential nature of parks and recreation. Through learning opportunities, research, and communications initiatives, it strives to generate public support to advance the development of best practices and resources that help make parks and recreation indispensable elements of American communities.

## First Day Hikes offered at every North Carolina State Park Jan. 1

First Day Hikes are now offered in every North Carolina state park and state recreation area January 1st, giving everyone an opportunity to exercise and celebrate nature as a New Year's Day tradition. On New Year's Day 2017, 2,049 hikers in North Carolina joined rangers and volunteers to walk a combined 4,952 miles along trails in the state parks and state recreation areas.

## CONCESSIONS GROWTH

Recently, North Carolina state parks has seen a steady increase in revenues from gift shop sales. Prior to 2010, only a handful of parks offered merchandise available for the public to purchase, such as Mount Mitchell, Hanging Rock and Carolina Beach. In recent years, visitor centers at Cliffs of the Neuse, Raven Rock and Gorges State Parks have all been built to include designated retail areas. In addition, state parks merchandise can be purchased through the website at [www.ncparkstore.com](http://www.ncparkstore.com)

With a new focus on providing goods and merchandise to improve the customer experience and expand revenue opportunities, DPR has made a conscious effort to convert available space from visitor center lobbies into small retail areas and include concession space in all new visitor centers. Examples can be found at Kerr Lake, Dismal Swamp, Merchant's Millpond, Medoc Mountain, Goose Creek, Haw River, Stone Mountain, New River, Elk Knob, South Mountains, and Jones Lake. Closures due to facility repairs impacted concessions revenues in fiscal year 2016/17.

Sales have been brisk and comments from the public have been favorable. DPR emphasizes selling items that are educational, geared toward the souvenir seeker, camping necessities and that provide a memorable experience to our visitors.

Table 1.8 - Concession Revenues

Fiscal Year	Revenues
2009/10	\$ 468,482
2010/11	\$ 591,172
2011/12	\$ 665,040
2012/13	\$ 706,811
2013/14	\$ 785,167
2014/15	\$ 847,188
2015/16	\$ 1,040,459
2016/17	\$ 833,298



Merchant's Millpond State Park



Gorges State Park

## OPERATING CONTRACTS

DRP has a variety of contracts and lease agreements in place to run specific facilities, provide recreational opportunities and experiences and for equipment rentals. The contracts are issued through a bid process, which includes a request for proposals (RFPs) for prospective operators.

These contracts include four marina operations at Jordan Lake, Falls Lake and Kerr Lake state recreation areas, the elevator and associated facility management at Chimney Rock State Park, kayak/paddleboard rentals at Carolina Beach and Hammocks Beach State Parks, the hang gliding school at Jockey's Ridge State Park, beach equipment rental at Fort Fisher State Recreation Area and the bookstore at Fort Macon State Park. DPR receives a percentage of the gross revenues generated through each of these operations.

The Central Reservation System (CRS) was re-bid in 2017, and a new contract was awarded to Aspira in March 2018.

The new contract includes system expansion to other park units and operations, utilization of new technology as it becomes available, specific financial information security measures and other reporting measures. Like the previous contract, this turnkey centralized reservation system is funded solely through the fees collected for those who rent the campsites, shelters, cabins and other facilities.

DRP has also added new kayak/canoe concession agreements at Carolina Beach State Park and Hammocks Beach State Park. A power boat rental concession is also being negotiated at the Carolina Beach Marina.

## Volunteers

The average value of volunteer time in North Carolina was estimated at \$23.41/hr in 2017 by the *Independent Sector*, a nationally known provider that studies charitable impacts. Volunteers contributed about 62,298 hours in 2016/2017 to state parks. That equates to a value of \$1,458,396 in volunteer hours. Volunteers serve North Carolina state parks in a number of functions including oyster shell bagging, constructing picnic tables, working special events, tree planting, trail work and repairing bridges. Some familiar organizations are behind our volunteers such as AmeriCorps, Big Sweep, Boy/Girl Scouts, Eagle Scouts, the military, local universities, colleges and school systems. Each volunteer receives a hand-written thank you note and those that volunteer significant hours are awarded DPR gifts.

Table 1.9 - Volunteer Hours

Year	Volunteer Hours
2013/14	69,851
2014/15	57,210
2015/16	62,135
2016/17	62,398

## NATURAL AND CULTURAL RESOURCE PROTECTION

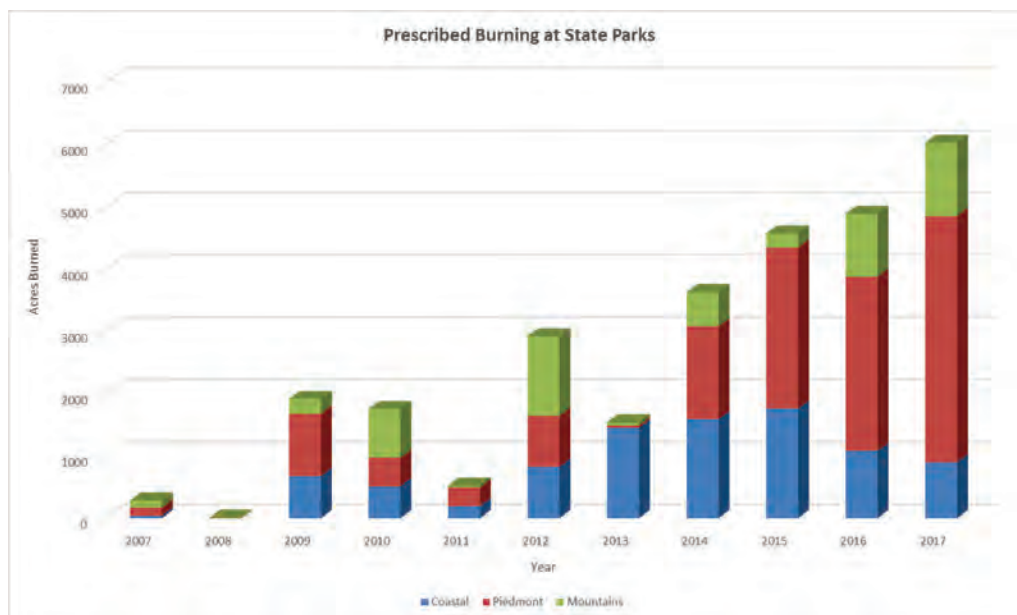
DPR is responsible for the protection of the natural and cultural resources within the state parks system. DPR's Natural Resources Program provides field staff, planning staff and construction staff with technical expertise on issues such as resource stewardship, scientific research, environmental review and compliance, and landscape planning.

This responsibility pervades all DPR's activities, from field operations and interpretive programming to the planning and construction of park facilities. The protection of these resources is mandated by the North Carolina Constitution and the State Parks Act and is directed by DPR's Natural Resource Management Policy.

### Fire

- The prescribed fire program has grown rapidly over the last few years. For much of park history DPR burned only around 500 acres per year when over 10,000 acres was necessary. In response, DPR created a position of ecological burn coordinator, hired a burn crew, greatly expanded equipment capacity and revised fire management guidelines. The results have been significant. Fire has been initiated and plans developed for 30 parks with fire at 23 parks and natural areas (Figure 1.2). In 2017, 6,029 acres at 23 state parks were burned.
- There have been 190 prescribed fires totaling 17,528 acres between 2014 and 2017.
- Initiating fire programs on parks with no recent fire history is important. Since 2014 fire has been introduced to Hammocks Beach, Bay Tree, New River, Kerr Lake, Gorges, Occoneechee Mountain, and Jockeys Ridge.
- Fire is a cooperative endeavor. DPR works with numerous partners to attain our goals. Over the last few years we have cooperatively burned with the National Park Service, U.S Forest Service, N.C. Wildlife Resources Commission and Forest Service, and The Nature Conservancy. The N.C. Forest Service has assisted us to burn at 14 state parks.

*Figure 1.2 - Prescribed Burning at State Parks 2007 -2017*





- About 30 staff are trained every year as basic fire fighters to prepare them for wildfires on their parks and to participate on prescribed fires. There have been 48 wildfires reported on state parks since 2014.

### **Invasive Species**

- Invasive species has emerged as a major threat to the health of our park's natural systems. DPR created the position of invasive species coordinator to head up control efforts. Major initiatives underway include the development of a treatment tracking process, centralized ordering of chemicals to assure proper treatment and efficient purchasing, and a database to record and store all information.
- Training of park staff is an ongoing process to keep everyone up to date on methodologies and permit requirements. Approximately 55 park staff are licensed pesticide applicators.
- Recent innovations in the program include an Invasive treatment calendar that is supplied to the parks allowing them access to the data on optimal treatment times, an invasive species prescription template so that treatments can be reviewed and an invasive treatment record process.
- Major species under management on state parks are kudzu, bamboo, phragmites, wisteria, privet, tree of heaven, hydrilla, lespedeza, Japanese stiltgrass and Japanese knotweed. Significant research on treatment techniques for microstegium are ongoing at Mitchell's Mill SNA.
- Terrestrial exotic plant control plans for high priority projects were initiated or continue on 25 state park units. DPR recently starting using domestic goats for kudzu control at Crowders Mountain and Lake James State Parks to great effect.
- Aquatic weed control, especially hydrilla, is a growing threat throughout North Carolina. In addition to the major effort at Lake Waccamaw to control hydrilla, a multi-agency effort began on the Eno River with cooperation between at least 13 different groups and governments to control hydrilla in the river. The effort has been successful and will continue over the next few years.

### **Restoration**

- Restoration of forests and streams has become a major focus of natural resources. DPR manages significant areas where previous owners had converted lands to plantations or altered streams for agriculture. Water issues outside our boundaries often affect the flows coming on to state parks. A number of forest and stream restoration projects were initiated or continue throughout the system including:
  - Pine plantation removal and hardwood forest restoration at Raven Rock State Park. This project is being prepared for its first fire after the thinning.
  - Stone Mountain State Park: A major stream restoration was completed on the East Prong Roaring River.
  - Dismal Swamp State Park. The hydrologic restoration on 1,200 acres was completed including vegetation and water level monitoring.
  - Lake Waccamaw forest restoration in longleaf pine and pocosin habitats.
  - Lake James forest shortleaf/hardwood forest restoration.

- Longleaf pine restoration at Goose Creek.
- Projects are also underway at Deep River, Sandy Run Savannahs, Carvers Creek, and Lake Waccamaw.
- A natural communities GIS data set was created allowing for mapping of different habitat types within parks thus facilitating fire and other types of natural areas management.

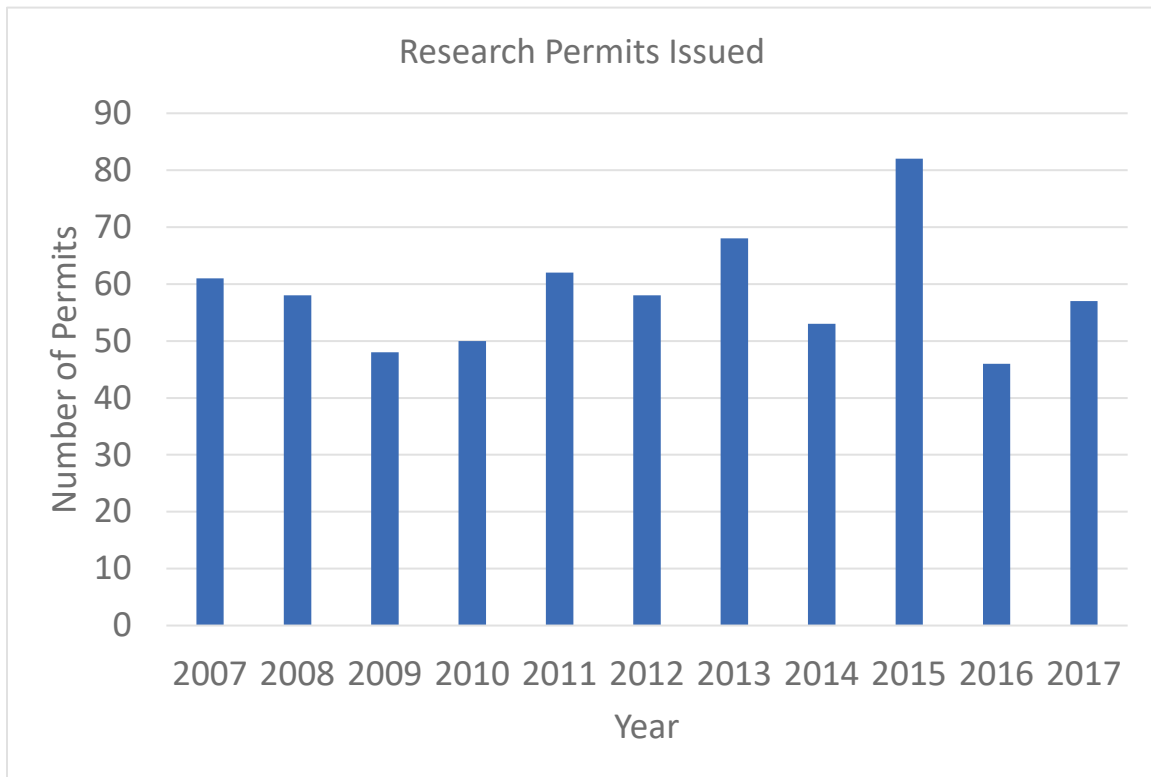
### **Natural Resource Inventory and Monitoring**

- The Natural Resource Inventory Database (NRID) has been ongoing since 2003. NRID is a place to record natural resource data from multiple park sources. It now has 255,000 entries including over 28,000 photos. Recently, the database has been enhanced so that photographs are now vetted by experts from the NC Biodiversity Project.
- Deer herd health checks have become a standard feature throughout the system with seven state parks participating so far. This allows NC Wildlife Resources Commission to have a better state-wide understanding deer health
- A Geographic Information System (GIS) dataset was created to facilitate environmental compliance and park planning. The GIS dataset contains overlays for rare species, natural heritage areas, registered natural areas and park facilities (roads, park buildings, trails, etc.).
- The Natural Resources Program conducted intensive park surveys across the system for amphibians, birds, crustaceans, insects, mammals (focusing on bats), myriapods, plants, reptiles, spiders, and terrestrial and aquatic mollusks.
- Monitoring projects in state parks expanded to include numerous species. Examples are:
  - Eastern hellbender and common mudpuppy surveys at New River State Park
  - Green salamander population monitoring at Gorges and Chimney Rock State Parks
  - Wehrle’s salamander population monitoring at Bullhead Mountain State Natural Area and Hanging Rock State Park
  - Rafinesque’s big-eared bat, southeastern Myotis roost tree, and Virginia least trillium monitoring at Merchants Millpond State Park
  - Rafinesque’s big-eared bat roost monitoring at Lumber River, Singletary Lake, and South Mountains State Parks
  - Red-cockaded woodpecker monitoring at Carvers Creek, Jones Lake, Singletary Lake State Parks, and Weymouth Woods State Natural Area.
  - Golden sedge, Cooley’s meadowrue, and Venus flytrap monitoring at Sandy Run Savannahs State Natural Area
- To date, DPR has organized 10 24-hour bio-blitzes, at Weymouth Woods Historic Nature Preserve, and Lake Waccamaw, Lake James, Goose Creek, Stone Mountain, Haw River, Mount Mitchell, Pilot Mountain and Carolina Beach State Parks, as well as a combined event covering the bay lakes of Bay Tree Lake, Jones Lake, and Singletary Lake State Parks. These events have brought together experts from a variety of fields to help add to the overall natural history of the parks.”

## Research

- DPR issued 990 scientific research and collecting permits from 2000 to Dec 17, 2017. These research projects covered a wide range of natural science topics, including: intensive bog vegetation surveys; citizen-science monitoring of Eastern Painted Buntings at coastal parks; fossil excavation at Lake Waccamaw; and hydrologic restoration work at Lake Phelps.

Figure 1.3 - Research Permits Issued 2007 - 2017



## Natural and Cultural Resources Inventories

- Park lands were included in 15 county natural heritage surveys. The Natural Heritage Trust Fund provided partial funding for these projects, which verified old records and documented new occurrences of rare species and high quality natural communities.

## INTERPRETATION AND EDUCATION

DPR offers a wide range of educational opportunities and resources. The Interpretation and Education (I&E) program focuses on special events at parks, interpretive programs at parks including guided hikes, canoe excursions and campground programs, professional development for rangers and teachers, visitor center exhibits and museums, science and cultural history field trips for students and special youth programs.

### Interpretation and Education Professional Development

- New rangers attend a four-day Basic Interpretive Training course where they gain skills needed to develop best-practice interpretation and education programs. Beginning in 2018, all rangers

and educators will become Certified Interpretive Guides through the National Association for Interpretation.

- The Advanced Interpretive Training is a series of one-day workshops for park staff and other educators to enhance their skills as park educators. Workshops include Interpretation and Environmental Education for Young Children, Astronomy Interpretation, Interpretive Writing for Exhibits and Fire Ecology.
- Several division staff are certified by the American Canoe Association as instructors in kayak, canoe and Stand Up Paddleboard. Park staff leading paddling excursion for park visitors attend a one-day workshop taught by these certified instructors.

### **Science Education and Cultural History Field Trips**

- Each park offers field trip experiences that are correlated with the North Carolina Department of Public Instruction's Essential Standards.
- The Junior Ranger activity guide offers outdoor activities for teachers and parents that are correlated with teaching standards.
- Most parks have their own unique curriculum guide, known as the Environmental Education Learning Experience, which has both park-based and classroom-based activities.
- Since 2007, DPR has operated a residential program at Haw River State Park. Over 5,000 students and adults participate in the Environmental Education Program at Haw River State Park. School groups are immersed in outdoor learning while spending up to four nights in the park cabins and lodge rooms.

### **Self-guided Interpretive Trails**

- Forty TRACK Trails across the state offer self-guided brochures and trailhead signs geared towards children. This program is a partnership with Kids In Parks of the Blue Ridge Parkway Foundation and maintains long-term engagement with families to support healthy living and nature appreciation.

### **Exhibits and Museums**

- The state parks system operates 27 exhibit halls and museums across the state.
- Every operated unit of the state park system maintains outdoor interpretive exhibits and informational signs to enhance the experience of visitors.



## Interpretation & Education Program Participants

- As can be seen in Table 1-9, school program participation varies from year to year and is on a fairly flat trend, but all program participation is trending upwards. The relatively flat trend line can be attributed to lack of additional staff at the parks to interpret and educate the continually increasing visitation numbers.

Table 1.10 – Interpretation & Education Program Participation

Year	School Program Participation	All Program Participation
2009	145,998	267,015
2010	160,384	309,240
2011	149,157	334,013
2012	152,566	385,485
2013	152,991	414,087
2014	146,602	354,912
2015	142,082	429,318
2016	132,464	357,045
2017	131,035	320,798

## PLANNING

New master plans have been completed or are nearing completion for newly acquired land at Hammocks Beach and Hanging Rock State Parks.

- In 2015, the state acquired 290 acres of property adjacent to the visitor center mainland of Hammocks Beach State Park. The master plan for Hammocks Beach, completed in August 2017, proposes numerous new program features which will support a variety of recreational and educational activities at the park.
- In 2014, two new parcels totaling 770 acres were transferred Hanging Rock State Park. The newly completed expansion master plan outlines long-term development of facilities at these historic properties which will support mixed recreational use while protecting the integrity of the parks numerous resources.

## STATE TRAILS PROGRAM

The mission of the State Trails Program is *“to promote sustainable trail planning; to conserve our natural resources; insure the responsible use of public funds; and to facilitate low infrastructure economic development opportunities across the state.”* The mission is codified in the North Carolina General Statutes as GS 143B-135.90, Short title, "North Carolina Trails System Act." (1973, c. 670, s. 1; 2015-241, ss 14.30(f), (m).). The term “Trails” is an inclusive term that includes hiking trails, bicycling trails, equestrian trails, paddle trails, off-highway vehicle trails, and multi-use greenways.

The State Trails Program consists of a program manager, three (3) regional trails specialists, a state trails planner and a grants manager.

The State Trails Program mission is accomplished by providing the following services:

- Conducting and coordinating trail planning efforts across the state to promote interagency trail planning and to establish sustainable trails and/or sustainable trail segments.

- Providing consultation and technical assistance in trail planning, trail design, contract management, as well as training and education for the development of sustainable trails
- Grants Management: The State Trails Program administers the Federal Recreational Trails Program (RTP) and has historically administered the Adopt-A-Trail funding which has been suspended due to lack of funding. The State Trails Program is responsible for coordinating the RTP grants program with DPR, Department of Environment and Natural Resources and the Federal Highway Administration. The federal allocation for RTP is currently averaging \$1.5 million per year.

## **Trail Planning - North Carolina's State Trails**

### Mountains to Sea State Trail

The Mountains-To-Sea State Trail (MST) was authorized by the General Assembly as a new unit of the state parks system in 2000. It was first envisioned more than three decades ago to cross the state from the Great Smoky Mountains in the west to Jockey's Ridge State Park on the Outer Banks. Since that time, over 659 miles have been designated, with 126 miles designated since 2010. In 2017, the General Assembly authorized a major addition to the MST, the Coastal Crescent Trail Route. This addition will roughly follow the Cape Fear River through the southern coastal plain, bringing the length of the MST to approximately 1,400 miles when it is completed.

In 2015, DPR adopted a master plan for the MST. The plan will advance the planning, construction and management of the MST by partners and future partners. Other goals include, but are not limited to: consolidation of previous planning efforts; definition and prioritization of sub-section plans and partners; development of statewide standards and guidelines; establishment of best management practices for the planning, construction, management and promotion of the MST; and the engagement of agencies, non-profit organizations and volunteers in this planning process.

### Fonta Flora State Trail

A new state trail, the Fonta Flora State Trail, was authorized by the General Assembly in 2015. It is planned to connect Morganton to Asheville, circling Lake James on the way. Initial planning for this effort was undertaken in 2014 by Burke County and was focused on the Lake James loop. Since then, Burke County and DPR have partnered to update the 2014 Lake James Loop Master Plan. There has been active collaboration between DPR, Burke County, Marion, Morganton, Black Mountain, US Forest Service, Foothills Land Conservancy and Buncombe County for planning and trail development. Since the 2015 authorization, over 15 miles of trail have been constructed and designated. Several parcels of property have been purchased using Connect NC Bond funds to further the development of the trail especially in the sections around Lake James and between Old Fort and Black Mountain.

### Deep River State Trail

The Deep River State Trail was established in 2007. Unlike the other state trails, this trail will incorporate both a land-based trail and a blueway (water based trail, e.g. river). The towns along the Deep River have a history of textile manufacturing and being connected by a once-active railroad. Planning for the trail has been completed in Randolph County, but is still needed in Chatham and Lee counties. No sections have been designated yet.

### Hickory Nut Gorge State Trail

Another new state trail, the Hickory Nut Gorge State Trail was authorized by the General Assembly in 2017. While formal planning is ongoing, preliminary plans have the trail connecting Chimney Rock State Park, Lake Lure and Bearwallow Mountain. There has also been some interest in extending the trail to connect to South Mountains State Park. DPR will partner with Conserving Carolinas Land Conservancy and Foothills Land Conservancy to embark upon formal planning for this state trail.

### Yadkin River State Trail and French Broad River State Trails

Planning is complete for the other two state trails—Yadkin River State Trail and French Broad River State Trail, which are both paddle trails (blueway). Ongoing maintenance and management of paddle accesses is essential. In the future, several additional access points on the Yadkin River may need to be planned. DPR will partner with the counties and municipalities for that planning.

### **Consultation and Technical Assistance**

State Trails Program staff provide professional level consulting and technical assistance in the areas of sustainable trail planning, sustainable trail design, and contract management. Upon request, the staff also provide training and education to agencies and volunteers.

The State Trails Program provides professional level trail design, and contract management services to state parks. Professional design services traditionally account for approximately 30 percent of a standard trail contract. With staff providing these services, parks can convert that savings into the building of more trail.

The State Trails Program staff supports local communities, non-profit organizations and regional councils, in planning, promoting and designing sustainable trails. Recent examples include:

- Assisting with the Fonta Flora State Trail Master Plan in Burke County
- Advising the Conservation Fund on a system of equestrian trails in Hoke County
- Consulting with a local nonprofit organization in Halifax County on the development of a walking trail to support their Healthy Eating/Active Living initiative

### **Grants Management**

#### **Federal Recreational Trails Program Grants**

The State Trails Program administers the Federal Recreational Trails Grant Program (RTP). The RTP in North Carolina is enabled by the Federal legislation, Fixing America's Surface Transportation (FAST) Act which reauthorized the RTP Program for fiscal years 2016 and 2020. RTP funding comes from the Federal Highways Administration (FHWA) through the N.C. Department of Transportation and is administered by the State Trails Program within the N.C. Division of Parks and Recreation. Since 1993, RTP funding in North Carolina has been used to provide recreational opportunities for hikers, equestrians, bicyclists, paddlers, and off-highway vehicle (OHV) users.

Supporting data from 1999 to 2017 indicates our state has received approximately \$55,09,144 in requests for funding. From those requests, the state has awarded \$30,617,385 to sustainable RTP trail projects statewide. These RTP funds, in combination with in-kind services and matching funds, total \$62,197,495 that have been applied to trail and greenway projects for the citizens of North Carolina.

In 2016, the state awarded 21 RTP grant awards totaling \$1.77 million and leveraged \$2.4 million in matching funds to provide economic development and recreational resources to 16 North Carolina Counties.



In 2017, the State Trails Program received 75 applications requesting \$6.3 million in funding for the \$1.5 available. The state awarded 26 projects in 17 counties within North Carolina.

### **State Adopt-A-Trail Grant Program**

The State Trails Program also administered the State's Adopt-A-Trail Grant Program (AAT), a grant program authorized in 1987 to provide funding to agencies and organizations to plan, develop, build and manage trails. This funding was instrumental in boosting low infrastructure economic development at the local level. This funding was also an asset in leveraging funding for larger grants. Total funding for the AAT program was \$108,000 annually with grants being awarded through 2012. Funding for the AAT grant program was suspended in 2013 due to state budget shortfalls.

## **IMPROVING CUSTOMER SERVICE, COMMUNICATIONS AND OUTREACH**

Working to ensure a high quality and enjoyable outdoor experience for the state parks system's 19 million annual visitors is a top priority for DPR. From 2015 through 2017, DPR initiated a variety of outreach and customer service efforts to improve visitor experience and agency efficiency and effectiveness.

### **Centralized Reservation System**

The Central Reservation System (CRS) was re-bid in 2017, and a new contract was awarded to Aspira in March 2018.

The new contract includes system expansion to other park units and operations, utilization of new technology as it becomes available, specific financial information security measures and other reporting measures. Like the previous contract, this turnkey centralized reservation system is funded solely through the fees collected for those who rent the campsites, shelters, cabins and other facilities.

Advance reservations are not required for a campsite or picnic shelter at a state park if the facility is available, and at many parks, some campsites will be set aside for walk-in registration. Reservations for most facilities can be made up to 11 months ahead. A \$2.50 surcharge per night's stay or per reservation supports the system. The state of North Carolina did not make any out-of-pocket expenditures for system development.

The state-of-the-art system helps the state parks and its rangers manage ever-growing visitation and provide valuable insight into visitor preferences and demographics. Data collected and available through the system show the average length of camping stay in North Carolina state parks is 2.76 days. Demographic information, visitor-use patterns and other critical information gathered through the system provide the agency with vital facts and figures that enhance planning and operations.

This system has increased the state parks system's exposure and led to increased visitation and revenues, which increases the opportunity to reach more citizens with the message of environmental stewardship. Visitor contact information obtained through the system provides the state park system the ability to web market facilities and services which was not available prior to launching the central reservation system. Visitors also now have the peace of mind to know, unlike before, that a campsite is available and reserved for their use upon arrival. Under previous practices, campsites and facilities were only available on a first-come, first-served basis at most parks.

## North Carolina State Parks Mobile Application

The free Pocket Ranger mobile application for North Carolina's state parks, developed for smartphones by ParksByNature Network, has been ranked among the top 100 free navigation applications by Apple's iTunes.

The mobile application, or app, was introduced in May 2011 by the N.C. Division of Parks and Recreation in partnership with Friends of State Parks and ParksByNature Network. The app was among the first such comprehensive mobile applications for state parks systems created by New York-based ParksByNature.

The downloadable application for iPhone and Android smartphones allows visitors to plan trips and explore state parks with details readily at hand about park locations, trails, facilities, reservations, events and special news alerts. It also allows GPS-aided, state-of-the-art navigation of state parks, storage of detailed topographic maps and enhanced interactive features for social media. An "alert" feature supplies GPS coordinates to designated contacts in case of emergencies.



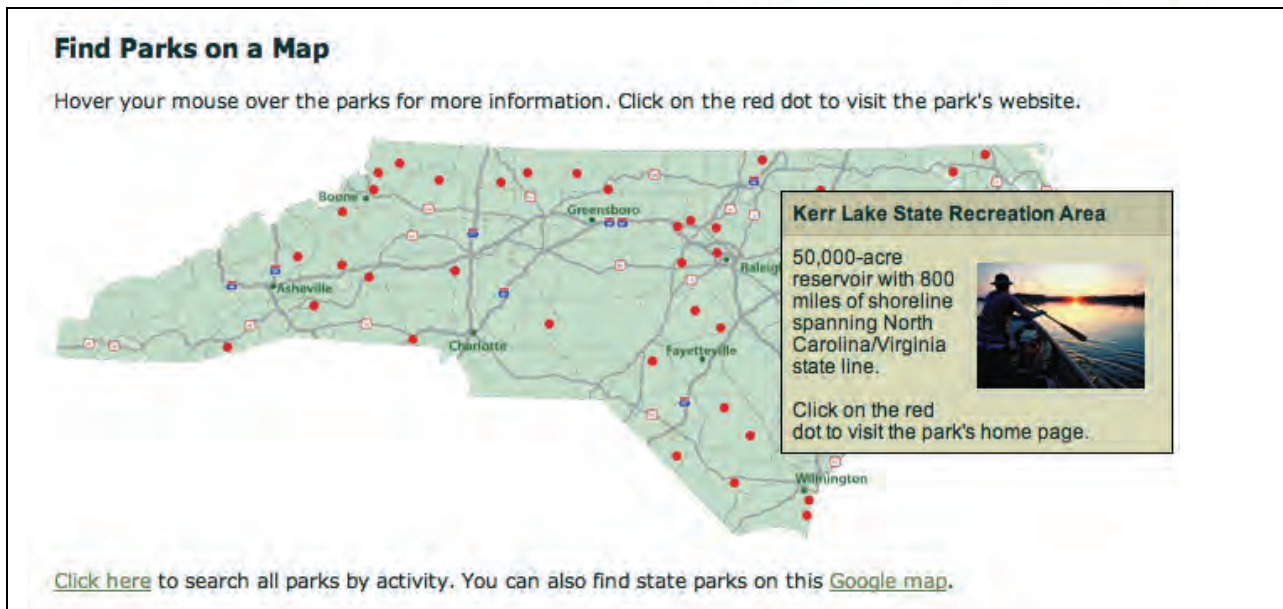
**Website and Publications**

DPR currently prints multiple different types of publications that are suited to each individual park's needs. The main three are a color brochure, a tear off map pad and a folded map.

In an effort to lower costs, the folded map was created. It combines the features that staff and visitors like about each, such as being folded down to pocket size and a color map. The folded map is inexpensive to produce and suitable for day-to-day visitor use for locating restrooms, trailheads as well as learning more about the park.

To make park information more accessible on the website, each park has a letter-sized PDF that features a park overview as well as interesting facts. Park maps are also available as PDFs to download or print to help defray the cost of publications.

The web site also includes created "Find A Park" Map feature with a clickable map of the state. When visitors hover over a park, they see a description of the park and a link to the park's home page.



The website now includes embedded Google maps, so visitors can customize their driving directions to the park. Created photo slideshows for each park, featuring scenic, activities, visitors, and volunteering have been added. Google Analytics were installed on the website to better track visitor usage.

DPR's Facebook, Twitter and Instagram pages, have continued to grow. It is a great way to disseminate information to the public in a quick and efficient manner.

**Visitor Programs**

Several programs have been implemented since the systemwide update to encourage visitors to the states parks. These include the 100 Mile Challenge, Passport Program and the Centennial Celebration that was put on to celebrate North Carolina State Parks 100<sup>th</sup> anniversary.

The **100 Mile Challenge** challenges residents and visitors to join a new health and wellness program encouraging them to complete 100 miles of hiking, walking, running, bicycling, paddling, skating, rolling their wheelchairs or riding their horses within the state.

Users keep track of their mileage as they progress toward 100 miles and earn digital badges along the way for exploring state parks and reaching milestones.

The 100 Mile Challenge is a coordinated in partnership with the Blue Cross Shield Hike NC! Program, which provides guided hikes in North Carolina State Parks.

The **Passport Program** which challenges residents and visitors to visit as many North Carolina state parks as you can by using your PASSPORT as a guide. Users can collect stamps, earn prizes and make “naturally wonderful” memories.

The **Centennial Celebration** was a celebration of the creation of the state park system in NC with the authorization of the first state park Mount Mitchell in 1916. North Carolina State Parks created the celebration to provide every North Carolinian and guests the opportunity to join the fun by hosting video premieres, creating long-lasting partnerships, holding celebration events and introducing new programs.

**STATE PARK ON-LINE RETAIL STORE**

The DPR web store has grown considerably in recent years and now offers over 400 products ranging from t-shirts and coffee mugs to hats and yearly passes. New products are added seasonally with the most popular item being hiking medallions. With the addition of more advertising through social media our Facebook page offers a “webstore Wednesday” ad of selected products. Another benefit is the ability of our warehouse to send products out via mail within 24 hours of purchase in most cases. The webstore continues to operate with an annual profit margin of over 40 percent.

*Table 1.11 - Web Store Sales*

Fiscal Year	Web Sales
2012/13	\$ 2,271
2013/14	\$ 3,695
2014/15	\$ 6,019
2015/16	\$ 13,281
2016/17	\$ 26,701



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## CHAPTER TWO

### STATE OF THE SYSTEM

#### SYSTEM UNITS

As of December 31, 2017, the North Carolina state parks system consists of 79 units, 41 of which are operated for the visiting public with on-site staff and regular gate hours. The remaining units are managed in one of the following ways: as part of an operated park, as a satellite unit, or through cooperative and partnership agreements. For example, Lake Phelps is managed as part of Pettigrew State Park. Run Hill State Natural Area is a satellite of Jockeys Ridge State Park. Hemlock Bluffs State Natural Area is leased to the town of Cary in a cooperative agreement, and the Mountains-to-Sea State Trail is an example of a partnership with other agencies and organizations.

*Table 2.1 - Size of the State Park System*

<b>SIZE OF THE NORTH CAROLINA</b>			
<b>STATE PARKS SYSTEM</b>			
<b>As of December 31, 2017</b>			
<b>Unit Type</b>	<b>Units</b>	<b>Size (Acres)</b>	<b>Length(Miles)</b>
State Parks	34	161,926	
State Recreation Areas	4	13,256	
State Natural Areas	24	26,274	
State Lakes	7	29,135	
State Rivers	4	0	146
State Trails	6	2,052	1887
<b>TOTAL</b>	<b>79</b>	<b>232,643</b>	<b>2033</b>
Land Area		203,508	
Water Area (State Lakes)		29,135	
Easements		961	
<b>TOTAL</b>		<b>233,604</b>	

Figure 2.1 – North Carolina State Parks System

# North Carolina State Parks System





Table 2.2 - State Parks System Units with Acreages (as of December 31, 2017)

State Parks	Size (acres)	State Recreation Area	Size (acres)
CAROLINA BEACH	420	FALLS LAKE	5,035
CARVERS CREEK	4,455	FORT FISHER	287
CHIMNEY ROCK	6,899	JORDAN LAKE	4,558
CLIFFS OF THE NEUSE	1,026	KERR LAKE	3,376
CROWDERS MOUNTAIN	5,210	<b>Total:</b>	<b>4</b>
DISMAL SWAMP	14,432		<b>13,256</b>
ELK KNOB	4,157	BALDHEAD ISLAND (3)	1,260
ENO RIVER	4,198	BAY TREE	609
FORT MACON	424	BEAR PAW	384
GOOSE CREEK	1,672	BEECH CREEK BOG	295
GORGES	7,709	BOB'S CREEK	0
GRANDFATHER MOUNTAIN	2,687	BULLHEAD MOUNTAIN	442
HAMMOCKS BEACH	1,611	BUSHY LAKE	6,396
HANGING ROCK	7,899	CHOWAN SWAMP	6,066
HAW RIVER	1,429	HEMLOCK BLUFFS	97
JOCKEYS RIDGE	426	LEA ISLAND	25
JONES LAKE	1,669	LOWER HAW RIVER	1,025
LAKE JAMES	3,685	MASONBORO ISLAND	106
LAKE NORMAN	1,926	MITCHELL MILL	93
LAKE WACCAMAW	2,398	MOUNT JEFFERSON	1,123
LUMBER RIVER	12,309	OCCONEECHEE MTN.	206
MAYO RIVER	2,509	PINEOLA BOG	91
MEDOC MOUNTAIN	3,893	RUN HILL	123
MERCHANTS MILLPOND	3,519	SALMON CREEK	0
MORROW MOUNTAIN	4,501	SANDY RUN SAVANNAS	3,133
MOUNT MITCHELL	1,996	SUGAR MOUNTAIN BOG	102
NEW RIVER	3,015	THEODORE ROOSEVELT	265
PETTIGREW	5,945	WARWICK MILL BAY	0
PILOT MOUNTAIN	3,872	WEYMOUTH WOODS	915
RAVEN ROCK	4,810	YELLOW MOUNTAIN	3,518
SINGLETARY LAKE	649	<b>Total:</b>	<b>24</b>
SOUTH MOUNTAINS	20,634		<b>26,274</b>
STONE MOUNTAIN	14,351	<b>State Lakes (water area only)</b>	<b>Size (acres)</b>
WILLIAM B. UMSTEAD	5,592	BAY TREE	1,418
<b>Total:</b>	<b>34</b>	JONES	224
	161,926	PHELPS	16,600
		WACCAMAW	8,938
		SALTERS	315
		SINGLETARY	572
		WHITE	1,068
		<b>Total:</b>	<b>7</b>
			<b>29,135</b>
State Rivers	Size (acres)	Length (miles)	
Horsepasture	0	4.5	
Linville	0	13	
Lumber	0	102	
New	0	26.5	
<b>Total:</b>	<b>4</b>	<b>0</b>	<b>146</b>
State Trails	Size (acres)	Planned Length (miles)	Designated Length (miles)
Deep River	1,274	90	0
Fonta Flora	0	100	18.7
French Broad River	0	117	117
Hickory Nut Gorge	0	50	0
Mountains-to-Sea	778	1400	668.5
Yadkin River	0	130	130
<b>Total:</b>	<b>6</b>	<b>2,052</b>	<b>1887</b>
			<b>934</b>

## TYPES OF UNITS

The State Parks Act of 1987 lists six types of units included in the North Carolina State Parks System: State Parks, State Natural Areas, State Recreation Areas, State Trails, State Rivers, and State Lakes.

- **State Park** - North Carolina's first State Park was established at Mount Mitchell in 1916 to protect the summit of the highest mountain in the eastern U.S. There are currently 34 State Parks in the system. Generally, State Parks are expected to possess both significant natural resource values and significant recreational values. State Parks are expected to accommodate the development of facilities but may vary in the extent of development depending upon what can be provided without damage to the scenic or natural features. Facilities are planned and constructed to keep disturbance of natural resources to a minimum and to leave a large portion of each park undisturbed and free from improvements and structures, except for trails.
- **State Natural Area** - State Natural Areas were established as a separate type of system unit in 1963 with the adoption of separate principles for management. The first State Natural Area was created that same year. There are currently 24 State Natural Areas. The purpose of State Natural Areas is focused on preserving and protecting areas of scientific, aesthetic, or ecological value. Facilities are limited to those needed for interpretation, protection, and minimum maintenance. Generally, recreational and public use facilities such as camping, swimming, picnicking and the like are not provided in State Natural Areas.
- **State Recreation Area** - State Recreation Areas are sites where the primary purpose is outdoor recreation, rather than preservation. More intensive development of facilities is provided than in State Parks. Protection and enjoyment of the natural resources are still important, and the sites are expected to contain scenic and attractive natural features. Development is planned and constructed to keep a "reasonable amount" of each area undisturbed and free from improvements and structures. The first State Recreation Area was added to the system in 1971, and principles to guide the development and operation of State Recreation Areas were adopted in 1974. There are currently four State Recreation Areas.
- **State Trail** - The North Carolina Trails System Act was passed in 1973 to help provide for the state's outdoor recreation needs and to promote public access to natural and scenic areas. The act prescribed methods for establishing a statewide system of scenic trails, recreation trails, and connecting or side trails. The Trails System includes "State Trails", which are designated and managed as units of the state parks system, and "designated trails", which are regional connector trails managed by other governmental agencies or organizations. At present there are six State Trails.
- **State River** - The Natural and Scenic Rivers System was created by the 1971 General Assembly to preserve and protect certain free flowing rivers, their water quality and their adjacent lands for the benefit of present and future generations. The Natural and Scenic Rivers Act established criteria and methods for inclusion of components to the system. Components of the Natural and Scenic Rivers System are State Rivers and are also units of the state parks system. Currently there are four State Rivers.

- State Lake** - Chapter 165 of the Laws of 1929 specified that “all lakes now belonging to the State having an area of 50 acres or more” should be “administered as provided for other recreational areas now owned by the State.” This allowed the then-Department of Conservation and Development to assume management authority for seven Coastal Plain lakes that became units of the state parks system known as State Lakes. Most of these are administratively included as part of an adjoining State Park, but one of the lakes (White Lake) has no public ownership on its shoreline.

## VISITATION

Total visitor attendance for 2017 was 19,390,801. Visitation fluctuates from year to year based on weather conditions, facility closures, and the state of the economy, but the trend over time is for increasing visitation (Figure (2.2)).

Park units with the highest attendance have been the state recreation areas located on reservoirs (Kerr Lake State Recreation Area, Jordan Lake State Recreation Area, and Falls Lake State Recreation Area) as well as coastal parks and recreation areas located in popular vacation destinations (Jockey’s Ridge State Park, Fort Macon State Park and Fort Fisher State Recreation Area). These six park units accounted for over 6 million visits (Table 2. 3). Other parks that have seen a large increase in visitation are those in close proximity to densely populated areas of the state, such as the Raleigh / Durham and Charlottesville areas. These parks include Eno River State Park, William B. Umstead State Park and Crowders Mountain State Park.

Figure 2.2 – Visitation to North Carolina State Parks

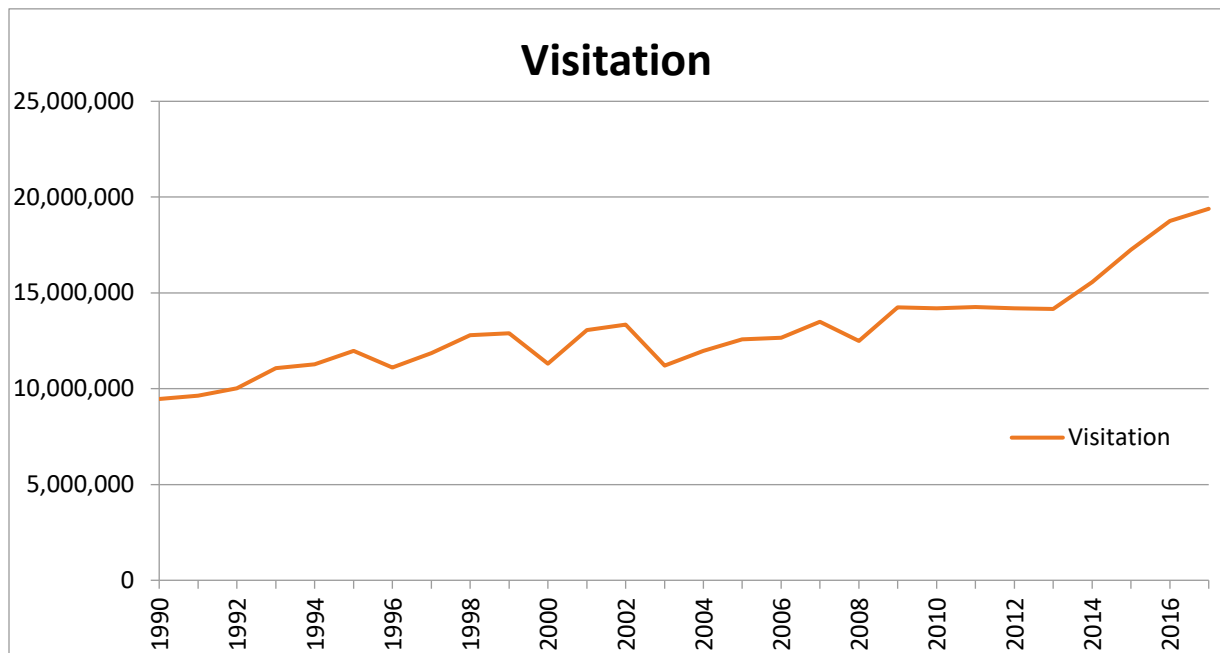


Table 2.3 - State Park Visitation by Park Unit 2017

<b>North Carolina State Parks System Unit</b>	<b>Total Visits 2017</b>
Carolina Beach State Park	797,375
Carvers Creek State Park	67,642
Chimney Rock State Park	253,715
Cliffs of the Neuse State Park	260,820
Crowders Mountain State Park	888,039
Dismal Swamp State Park	137,820
Elk Knob State Natural Area	44,825
Eno River State Park	640,172
Falls Lake State Recreation Area	1,033,861
Fort Fisher State Recreation Area	792,584
Fort Macon State Park	1,543,772
Goose Creek State Park	299,100
Gorges State Park	196,556
Grandfather Mountain State Park	87,648
Hammocks Beach State Park	175,195
Haw River State Park	65,187
Hanging Rock State Park	672,611
Jones Lake State Park	154,721
Jordan Lake State Recreation Area	1,485,956
Jockey's Ridge State Park	1,560,254
Kerr Lake State Recreation Area	1,120,837
Lake James State Park	586,215
Lake Norman State Park	962,576
Lake Waccamaw State Park	134,334
Lumber River State Park	72,731
Mayo River State Park	56,783
Merchants Millpond State Park	240,196
Medoc Mountain State Park	150,397
Mount Jefferson State Natural Area	131,498
Mount Mitchell State Park	375,471
Morrow Mountain State Park	500,869
New River State Park	253,718
Occonechee Mountain State Natural Area	168,927
Pettigrew State Park	69,453
Pilot Mountain State Park	801,954
Raven Rock State Park	236,258
Singletery Lake State Park	25,531
South Mountains State Park	296,773
Stone Mountain State Park	440,217
Weymouth Woods State Natural Area	69,380
William B. Umstead State Park	1,538,830
<b>System Total</b>	<b>19,390,801</b>

## VISITOR FACILITIES

In July 2017, the state parks system contained numerous facilities to enhance the visitor experience. This figure does not include bridges, walkways, pavement, trails, or other structures.

*Table 2.4 - Summary of Visitor Facilities in the North Carolina State Parks System*

<b>FACILITY</b>	<b>TOTAL</b>	<b>FACILITY</b>	<b>TOTAL</b>
Amphitheater	24	Interpretive Building	8
Auditorium	16	Laboratory	1
Bathhouse	18	Lodge	8
Boat Dock	70	Meeting Room	14
Boat Ramp	41	Museum	2
Boathouse	6	Museum/Exhibit Hall	24
Cabin - Group	68	Park Office	21
Cabin - Improved	20	Picnic Area	63
Campsite - Electric Hookups	511	Picnic Shelter	121
Campsite - Equestrian	20	Pier	8
Campsite - No Hookups	1319	Play Area	3
Campsite - Water & Electric	755	Play Area w/Equipment	26
Canoe Launch Point	23	Pool	2
Canoe Rental Building	1	Primitive Campsite – Boat In	30
Classroom	19	Primitive Campsite - Drive To	26
Community Building	8	Primitive Campsite - Hike In	71
Concession	11	Primitive Campsite - Paddle To	31
Dining Hall	7	Primitive Campsite - Walk In	133
Disc Golf Hole	9	Restaurant	3
District Office	1	Shelter	9
Entrance Station	24	Showerhouse	74
Environmental Ed. Center	6	Swimming Area - Freshwater	18
Fishing Pier	24	Swimming Area - Ocean or Sound	5
Group Campsite - Drive To	62	Toilet Building	113
Group Campsite - Hike In	9	Toilet Building - Flush	13
Group Campsite - Walk In	28	Toilet Building - Non-Flush	76
Group Campsite - Paddle In	9	Visitor Center	26
Historic Building	70	Water Tank	6
Information Station	6		

## FUTURE NEEDS

Park master plans and general management plans have identified future needs for land acquisition and facility development in each park. Table 2.5 shows new construction and renovation needs and Table 2.6 shows identified land acquisition needs for each park. Parks that are noted with an “\*” have current General Management Plans (GMP’s) which plan for the next 5 years of facility development.

*Table 2.5 - Construction and Repair Needs at Existing Parks (\* - Denotes Current GMP)*

Park Name	New Construction	Repair & Renovation	Total Cost
Baytree Lake*	\$200,000	\$0	\$200,000
Carolina Beach*	\$1,200,000	\$953,000	\$2,153,000
Carvers Creek	\$30,375,000	\$4,778,000	\$35,153,000
Chimney Rock	\$35,333,000	\$1,200,000	\$36,533,000
Cliffs of The Neuse*	\$767,000	\$223,000	\$990,000
Crowder's Mountain*	\$5,469,000	\$3,390,000	\$8,859,000
Deep River Trail	\$1,708,000	\$0	\$1,708,000
Dismal Swamp*	\$1,100,000	\$1,140,000	\$2,240,000
Eno River*	\$5,954,000	\$460,000	\$6,414,000
Falls Lake*	\$7,395,000	\$5,301,000	\$12,696,000
Fort Fisher*	\$850,000	\$400,000	\$1,250,000
Fort Macon*	\$632,000	\$275,000	\$907,000
Goose Creek*	\$2,100,000	\$660,000	\$2,760,000
Gorges*	\$6,500,000	\$0	\$6,500,000
Hammocks Beach	\$10,740,000	\$1,832,809	\$12,572,809
Hanging Rock	\$25,120,000	\$222,753	\$25,342,753
Haw River	\$25,983,975	\$100,304	\$26,084,279
Jockey's Ridge*	\$1,207,000	\$1,747,000	\$2,954,000
Jones Lake*	\$653,000	\$934,000	\$1,587,000
Jordan Lake*	\$493,000	\$17,600,000	\$18,093,000
Kerr Lake	\$17,062,815	\$16,849,315	\$33,912,130
Lake James*	\$11,963,000	\$433,000	\$12,396,000
Lake Norman	\$2,308,823	\$5,681,995	\$7,990,818
Lake Waccamaw	\$7,691,291	\$0	\$7,691,291
Lower Haw River	\$271,309	\$0	\$271,309
Lumber River	\$18,864,640	\$0	\$18,864,640
Medoc Mountain*	\$8,789,000	\$15,000	\$8,804,000
Merchants Mill Pond*	\$376,000	\$2,183,000	\$2,559,000
Mitchell's Mill	\$247,853	\$0	\$247,853
Morrow Mountain	\$10,225,255	\$2,453,224	\$12,678,479
Mount Mitchell*	\$600,000	\$4,670,000	\$5,270,000
Mount Jefferson	\$2,560,397	\$0	\$2,560,397
New River*	\$4,150,000	\$0	\$4,150,000
Occonechee Mountain*	\$688,000	\$0	\$688,000
Pettigrew*	\$3,295,000	\$1,055,000	\$4,350,000

Park Name	New Construction	Repair & Renovation	Total Cost
Pilot Mountain*	\$6,356,000	\$1,642,000	\$7,998,000
Raven Rock*	\$2,590,000	\$173,000	\$2,763,000
Singleary Lake	\$2,291,484	\$0	\$2,291,484
South Mountain	\$54,516,726	\$0	\$54,516,726
Stone Mountain*	\$3,034,000	\$5,928,000	\$8,962,000
Weymouth Woods*	\$1,336,000	\$1,654,000	\$2,990,000
William B. Umstead*	\$4,134,000	\$9,087,000	\$13,221,000
<b>GRAND TOTAL:</b>	<b>\$327,131,568</b>	<b>\$93,041,400</b>	<b>\$420,172,968</b>

Table 2.6 - State Parks System Land Acquisition Needs

NORTH CAROLINA STATE PARKS SYSTEM LAND ACQUISITION NEEDS						
as of July 1, 2017						
Unit	Planned Acres	Current Acres	Critical Acres	Important Acres	Total Future Needs	
					Acres	Est. Cost
Bald Head Island	1,280	1,260	0	20	20	\$200,000
Bay Tree	1,455	609	766	80	846	\$1,200,000
Bear Paw	826	384	0	442	442	\$1,200,000
Beech Creek Bog	777	120	176	481	657	\$3,250,000
Bob's Creek	6,100	0	3,750	2,350	6,100	\$8,800,000
Bullhead Mountain	1,246	442	186	618	804	\$3,460,000
Bushy Lake	7,832	6,343	774	715	1,489	\$3,100,000
Carolina Beach	562	420	143	0	143	\$5,000,000
Carvers Creek	8,316	4,347	268	3,701	3,969	\$20,000,000
Chimney Rock	11,407	6,892	857	3,658	4,515	\$17,500,000
Chowan Swamp	6,066	6,066	0	0	0	\$0
Cliffs of the Neuse	3,506	1,097	402	2,007	2,409	\$1,860,000
Crowders Mountain	5,942	5,210	347	386	732	\$5,900,000
Deep River	2,319	1,274	74	971	1,045	\$5,000,000
Dismal Swamp	14,963	14,432	354	177	531	\$500,000
Elk Knob	12,131	4,077	1,484	6,570	8,054	\$10,600,000
Eno River	6,406	4,204	1,393	809	2,202	\$19,000,000
Falls Lake	5,042	5,035	0	7	7	\$300,000
Fort Fisher	289	287	0	2	2	\$300,000
Fort Macon	582	424	0	158	158	\$1,000,000
Goose Creek	2,518	1,672	236	611	847	\$750,000
Gorges	9,431	7,709	462	1,261	1,722	\$5,000,000
Grandfather Mountain	4,651	3,436	458	756	1,215	\$3,300,000
Hammocks Beach	1,842	1,611	0	231	231	\$7,000,000
Hanging Rock	14,948	7,899	2,742	4,307	7,049	\$9,500,000
Haw River	7,220	1,429	1,779	4,012	5,791	\$19,000,000
Hemlock Bluffs	97	97	0	0	0	\$0
Jockeys Ridge	430	426	0	4	4	\$700,000
Jones Lake	1,734	1,669	0	65	65	\$100,000

Unit	Planned Acres	Current Acres	Critical Acres	Important Acres	Total Future Needs	
Jordan Lake	4,558	4,558	0	0	0	\$0
Kerr Lake	3,537	3,376	0	161	161	\$2,000,000
Lake James	6,007	3,685	540	1,783	2,322	\$4,350,000
Lake Norman	2,039	1,937	28	74	102	\$1,275,000
Lake Waccamaw	6,504	2,398	2,158	1,948	4,106	\$6,000,000
Lea Island	117	25	0	92	92	\$1,000,000
Lower Haw River	3,487	1,025	150	2,312	2,462	\$7,300,000
Lumber River	22,125	12,309	1,419	8,398	9,816	\$9,200,000
Masonboro Island	106	106	0	0	0	\$0
Mayo River	7,260	2,509	838	3,913	4,751	\$7,000,000
Medoc Mountain	6,813	3,893	945	1,975	2,920	\$10,000,000
Merchants Millpond	8,380	3,519	1,613	3,249	4,861	\$4,350,000
Mitchell Mill	149	93	0	56	56	\$450,000
Morrow Mountain	7,169	4,501	1,582	1,086	2,668	\$3,500,000
Mountains-to-Sea Trail	2,755	778	0	1,977	1,977	\$0
Mount Jefferson	2,252	1,123	335	795	1,129	\$8,200,000
Mount Mitchell	7,979	1,996	5,318	666	5,983	\$23,000,000
New River	6,891	2,929	788	3,174	3,962	\$19,000,000
Occoneechee Mtn	273	190	19	64	83	\$1,500,000
Pettigrew	10,892	5,945	103	4,844	4,947	\$7,000,000
Pilot Mountain	6,465	3,872	564	2,030	2,593	\$7,500,000
Pineola Bog	191	91	7	93	100	\$1,500,000
Raven Rock	8,151	4,810	78	3,263	3,341	\$7,400,000
Run Hill	123	123	0	0	0	\$0
Salmon Creek	1,293	0	994	299	1,293	\$4,500,000
Sandy Run Savannas	9,391	3,133	0	6,258	6,258	\$3,250,000
Singletary Lake	823	649	0	174	174	\$0
South Mountains	21,412	19,830	466	1,116	1,582	\$1,650,000
Stone Mountain	18,600	14,351	375	3,874	4,249	\$1,300,000
Sugar Mountain Bog	333	102	0	231	231	\$2,600,000
Theodore Roosevelt	265	265	0	0	0	\$0
Warwick Mill Bay	1,021	0	996	25	1,021	\$1,362,000
Weymouth Woods	1,573	915	232	426	658	\$3,500,000
William B. Umstead	5,990	5,599	340	51	391	\$3,000,000
Yellow Mountain	12,489	3,468	6,964	2,057	9,021	\$4,600,000
<b>Totals</b>	<b>337,331</b>	<b>202,974</b>	<b>43,503</b>	<b>90,863</b>	<b>134,359</b>	<b>\$310,807,000</b>



# CHAPTER THREE

## RESOURCE EVALUATION

As stated in the North Carolina Division of Parks and Recreation (DPR) mission, the significant archaeological, geologic, scenic, recreational and biological resources of North Carolina should be represented in a comprehensive state parks system. These resources have been categorized into 108 themes. Continued progress has been made in the last five years to improve the representation of these themes in the state parks system. Continual progress is being made to increase theme representation within the state park system with the ongoing land acquisition program. However, despite the recent gains several themes continue to be under-represented.

This chapter contains an evaluation of the archaeological, geologic, scenic, and biological resources in the state parks system and identifies themes inadequately protected by the system. Expansion of the state parks system to provide additional protection to these inadequately represented themes is a high priority. The provision of recreational resources will be addressed through the planning process for individual units of the state parks system. This site-specific analysis is needed to mesh the system's mission of preserving unique natural resources and providing public recreation. Public preferences for outdoor recreation activities are presented in Chapter Four.

### EVALUATION

To fulfill these mandates for the first Systemwide Plan, five committees were formed to analyze the unique resource categories cited in the Act. Committees were composed of academic and state experts and representatives of relevant citizen groups. They were charged with fulfilling the following objectives:

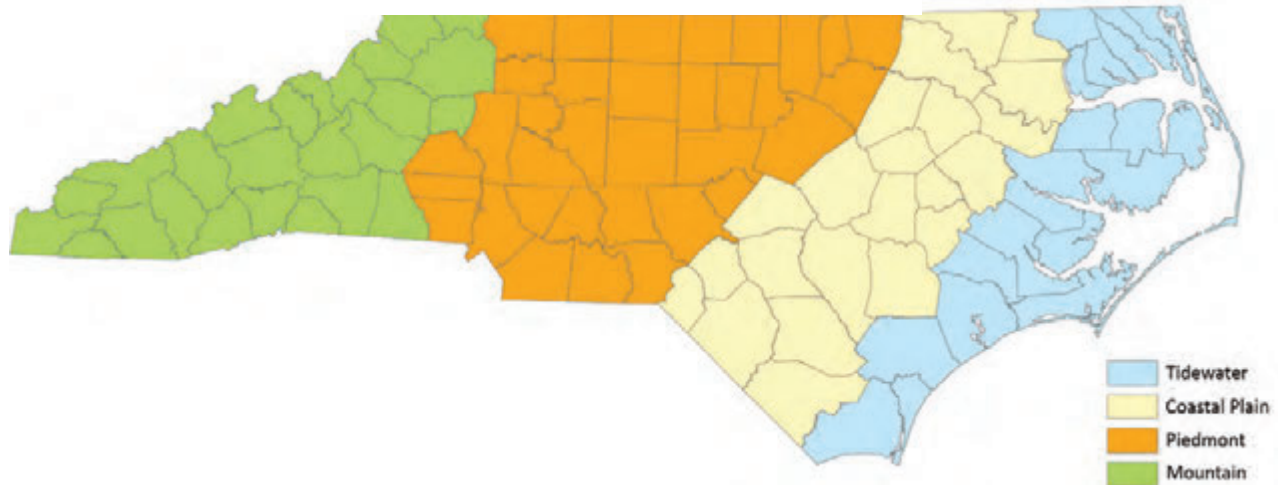
1. Define resource themes within each of the five resource categories;
2. Determine the significance of themes within geographic regions;
3. Identify representation of themes within state parks system units;
4. Evaluate the representation of themes within geographic regions; and
5. Rank the amount of protection that park units provide for significant biological, geological, scenic and archeological resources.

Biological, geological, scenic and recreational resources were reevaluated by DPR of Parks and Recreation (DPR) for this plan update. The archaeological resources have not been reevaluated since the original plan because there are no "very high" protection needs. The evaluation of biological and geological resources has been revised in consultation with the Natural Heritage Program and the NC Geological Survey.

**Definition of Resource Themes** - Within each resource category cited in the State Parks Act (archeological, geological, scenic, recreational and biological) are subcategories called resource "themes". The committees identified 108 themes that should be protected in order to preserve representative examples of unique biological, geological, scenic, and archeological resources in a comprehensive state parks system (Table 3.1). Definitions of themes are included in Appendix D.

**Significance of Themes Within Regions** - After identifying resource themes, the committees rated their significance within four natural regions: Tidewater, Coastal Plain, Piedmont, and Mountain. The committees determined the level of significance of each theme in each region and rated the level of significance as “high”, “moderate”, “low”, or “none” based on the quality, quantity and diversity of the theme in the region. For themes that did not exist in a region, no rating is assigned. The significance of themes within regions is found in the columns labeled "Significance" in Tables 3.2 through 3.5.

Figure 3.1 - Natural regions of North Carolina.



**Representation of Themes in Parks Within Geographic Regions** - The next step in the process is to determine whether resource themes are adequately represented in the state parks system within each region. The adequacy of the protection within the regions is rated as either “adequate”, “moderate”, “little”, or “none”. Themes that do not exist in a region were not labeled. Judgments were based upon the quality, quantity and diversity of the theme being protected. Committee results and staff updates from the additional acreage added in the state park system are listed in columns labeled "Representation" in Tables 3.2 through 3.5.

**Duplications and Deficiencies in the State Parks System** - Deficiencies in the North Carolina state parks system exist where there is inadequate representation of unique archeological, geological, scenic, recreational, and biological themes (Tables 3.2 through 3.5). An indication of deficiencies and duplications can be derived by examining the representation and significance of themes defined by the resource committees.

**Role of the One NC Naturally Conservation Planning Tool**- DPR has committed to participating in the Department’s Conservation Planning Tool (CPT). The CPT provides a framework for land conservation and sustainable growth across the state by identifying the resources required for a healthy environment. The primary assessment used by DPR is the Biodiversity and Wildlife Habitat Assessment. This assessment contains summaries of much of the information already used by DPR as well as additional information. Although the CPT does not contain enough detail in its assessments to fully evaluate a potential new park unit, it is very useful for estimating the scope of a unit and potential connections to other conservation priorities.

Figure 3.2 - Chimney Rock State Park area – overlay of the Conservation Planning Tool: Biodiversity and Wildlife Habitat Assessment

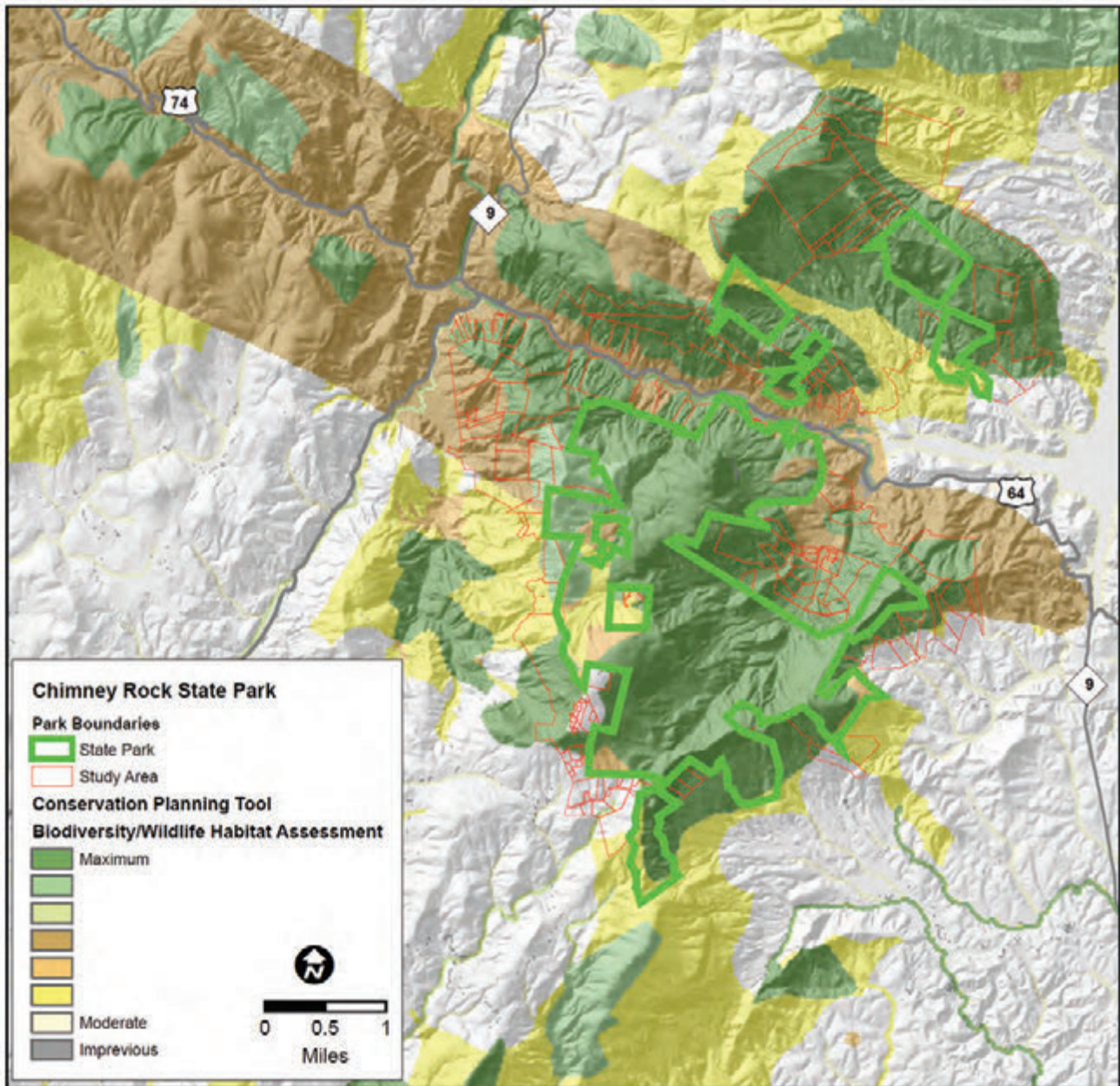


Table 3.1. - Themes Identified by Resource Evaluation Committees

BIOLOGICAL	GEOLOGICAL	ARCHEOLOGICAL	SCENIC
Spruce-Fir Forests	Barrier Islands and Shoreline	<u>PREHISTORIC</u>	Scenic Vistas
Grass and Heath Balds	Estuaries	Village	Reservoirs/Lakes
Northern Hardwood Forests	Continental Shelf	Campsite/ Activity Area	Waterfalls
Mountain Cove Forests	Relict Coastal Features	Shell Midden	Rivers
Piedmont and Coastal Plain	Carolina Bays	Burial/Cemetery	Whitewater Streams
Mesic Forests	Fluvial Depositional Features	Quarry/Soapstone	Forests
Piedmont and Mountain Dry	Peatlands and Interstream	Quarry/Other	Meadows and
Coniferous Woodlands	Wetlands	Shelter/Cave	Grasslands
Montane Oak Forests	Natural Lakes and Ponds	Rock Art	Swamps
Piedmont and Coastal Plain	Caves, Sinks, and Springs	Trail/Path	Pocosins
Oak Forests	Dissected Uplands	Underwater	Marshes
High Elevation Rock Outcrops	Inselbergs (Monadnocks)	Other	Gorges
Low Elevation Cliffs and Rock Outcrops	Cliffs		Rock Outcrops
Coastal Plain Marl Outcrops	Exfoliation Outcrops	<u>HISTORIC</u>	Islands
Granitic Flatrocks	Gorges, Rapids, Waterfalls	Recreation	Caves and Cliffs
Mafic Glades and Barrens	Mass Wasting Features	Public Works	Bays and Estuaries
Maritime Grasslands	Faults, Joints, and Related	Public/Civic/Religious	Seashores
Maritime Upland Forests	Features	Commercial	Scenic Highways
Dry Longleaf	Folds and Related Features	Urban/Domestic	
Pine Communities	Intrusions	Rural/Domestic	
Blackwater Coastal Plain	Volcanic Features	Cemetery	
Floodplains	Metamorphic Features	Industrial	
Brownwater Coastal Plain	Sedimentary Features	Mills	
Floodplains	Fossils	Transportation	
Piedmont and Mountain	Unusual Rock Types	Military	
Floodplains		Underwater	
Riverine Aquatic Communities		Other	
Mountain Bogs and Fens			
Upland Seepages and		<u>STANDING STRUCTURE</u>	
Spray Cliffs		Recreation	
Piedmont Upland Pools		Public Works	
and Depressions		Public/Civic/Religious	
Coastal Plain Nonalluvial		Commercial	
Mineral Wetlands		Urban/Domestic	
Peatland Pocosins		Rural/Domestic	
Streamhead Pocosins		Cemetery	
Wet Pine Savannas		Industrial	
Coastal Plain Depression		Mills	
Communities		Transportation	
Natural Lake Communities		Military	
Maritime Wetland Forests		Other	
Freshwater Tidal Wetlands			
Estuarine Communities			

## ARCHEOLOGICAL THEME REPRESENTATION

Five archeological themes have high protection needs: prehistoric village (Coastal Plain, Piedmont), prehistoric burial/cemetery (all regions), standing structure mills (Mountain), historic industrial (Piedmont, Mountain) and historic commercial (Piedmont, Mountain). The most duplicated themes include prehistoric campsite/activity areas, historic rural-domestic, and standing structure rural-domestic.

Archeological themes as defined by the archeological committee are relatively well covered by the state parks system. This is not to say they are well preserved or interpreted, but simply that most archeological themes exist, or are likely to exist, within the state parks system. Expansion needs to protect significant archeological themes are identified by bold capital letters in Table 3.2. The committee recommended that the state should take action to preserve inadequately protected themes before establishing new units to represent themes that are already well represented and protected within the state parks system.

Archeological surveys have been conducted in portions of 19 units of the state parks system as part of the capital development construction process. Prior to ground-disturbing activities (e.g., road construction, capital improvements), archeological surveys are often required to identify and evaluate any cultural resources that may be adversely affected. Such a piecemeal approach to identifying archeological values within state parks has resulted in an uncoordinated and inadequate inventory. The archeological committee also made the following recommendations:

1. The state parks system should consider conducting cultural resource surveys and evaluations in-house. Doing so would considerably speed up the planning process, facilitate compliance with regulatory requirements, and aid in the development of interpretive programming. It is recommended that DPR employ two professional archaeologists (master's degree or better) and one laboratory technician to manage the cultural resource program. In addition, an architectural historian should be hired under contract to conduct a comprehensive inventory and evaluation of all standing structures in the parks.
2. It is recommended that DPR continue training staff in the overall principles and procedures of cultural resource management. Proposed program topics include:
  - a. current state cultural resource protection laws (e.g., the Archeological Resources Protection Act, the Unmarked Human Burial and Human Skeletal Remains Act);
  - b. the general prehistory and history of North Carolina;
  - c. identification and treatment of cultural materials;
  - d. proper approaches to recording and interpreting cultural resources in general; and
  - e. cultural resource preservation and management procedures.
3. DPR should employ one or more trained individuals to compile and synthesize the extant cultural resource information available within DPR and the Division of Archives and History.

Table 3.2. - Statewide Significance of Archeological Themes and Their Representation in the State Parks System

THEMES	REGIONS							
	TIDEWATER		COASTAL PLAIN		PIEDMONT		MOUNTAIN	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
<b>PREHISTORIC ARCHEOLOGICAL: Village</b>	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	High	Adequate
<b>Campsite/Activity Area</b>	High	Adequate	High	Adequate	High	Adequate	High	Adequate
<b>Shell Midden</b>	High	Adequate						
<b>Burial/Cemetery</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>
<b>Quarry—Soapstone</b>			None	Little	None	Little	High	Moderate
<b>Quarry—Other</b>			None	Little	High	Adequate	High	Moderate
<b>Shelter/Cave</b>			High	Adequate	High	Adequate	High	Adequate
<b>Rock Art</b>			None	Little	High	Moderate	High	Moderate
<b>Trail/Path</b>	None	Little	None	Little	High	Adequate	High	Moderate
<b>Underwater</b>	High	Adequate	High	Adequate	High	Adequate	High	Moderate
<b>Other</b>	None	Little	None	Little	None	Little	None	Little
<b>HISTORIC ARCHEOLOGICAL: Recreation</b>	High	Adequate	High	Adequate	High	Adequate	High	Adequate
<b>Public Works</b>	High	Adequate	High	Adequate	High	Adequate	High	Moderate
<b>Public/Civic/Religious</b>	High	Adequate	High	Adequate	High	Adequate	High	Adequate
<b>Commercial</b>	High	Adequate	High	Adequate	High	Moderate	High	Moderate
<b>Urban—Domestic</b>	None	Little	High	Adequate	None	Little	None	Little
<b>Rural—Domestic</b>	High	Adequate	High	Adequate	High	Adequate	High	Adequate
<b>Cemetery</b>	High	Adequate	High	Adequate	High	Adequate	High	Adequate
<b>Industrial</b>	High	Adequate	High	Adequate	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>LITTLE</b>
<b>Mills</b>	High	Adequate	High	Adequate	High	Adequate	None	Little

Table 3.2. - Statewide Significance of Archeological Themes and Their Representation in the State Parks System (continued)

THEMES	REGIONS							
	TIDEWATER		COASTAL		PIEDMONT		MOUNTAIN	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
Transportation	High	Adequate	High	Adequate	High	Moderate	High	Moderate
Military	High	Adequate	High	Adequate				
Underwater	High	Adequate	High	Adequate	High	Moderate		
Other			None	Little				
STANDING STRUCTURES: Recreation			High	Adequate	High	Adequate	High	Adequate
Public Works			High	Adequate	High	Adequate	High	Moderate
Public/Civic/Religious			High	Adequate			High	Adequate
Commercial			High	Adequate			High	Moderate
Urban—Domestic			High	Adequate				
Rural—Domestic			High	Adequate	High	Adequate	High	Adequate
Cemetery			High	Adequate	High	Moderate	High	Moderate
Industrial			High	Adequate			High	Moderate
Mills	High	Adequate	High	Adequate	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>
Transportation			High	Adequate	High	Moderate	High	Moderate
Military	High	Adequate	High	Adequate				

Notes: Very high expansion needs are shaded. High Expansion needs are shown in BOLD CAPITAL letters. No entry means theme is not applicable.

## **GEOLOGICAL THEME REPRESENTATION**

Twelve geological themes were rated as having very high expansion needs in at least one region. Four of these twelve themes had very high expansion needs in more than one region, making a total of 17 theme-region combinations rated as having very high expansion needs. These 17 very high expansion needs are highlighted in Table 3.3 by bold type and shading. Very high expansion needs are those that have high significance in a region and have little or no representation in the state parks system.

Five geological themes and theme-region combinations have high expansion needs. High expansion needs are those that have high significance in a region and have moderate but not adequate representation in the state parks system. They are indicated in Table 3.3 by bold type but have no shading.

Fossils, caves/sinks/springs, and unusual rock types have little coverage across all regions. On the other hand, barrier islands, Carolina bays, exfoliation outcrops, intrusions, and metamorphic features have adequate representation. The Piedmont offers the most protection to geological themes within the state parks system, whereas the Tidewater offers the least. Additional surveys of geological resources in the System should be conducted in partnership with the North Carolina Geological Survey.



Table 3.3. - Statewide Significance of Geological Themes and Their Representation in the State Parks System

THEMES	REGIONS							
	TIDEWATER		COASTAL PLAIN		PIEDMONT		MOUNTAIN	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
Barrier Islands and Shorelines	High	Adequate	None		None		None	
Estuaries	High	Adequate	Little	None	None		None	
Continental Shelf	<b>HIGH</b>	<b>NONE</b>	None		None		None	
Relict Coastal Features	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>NONE</b>	None		None	
Carolina Bays	High	Adequate	High	Adequate	None		None	
Fluvial Depositional Features	High	Adequate	High	Adequate	High	Adequate	<b>HIGH</b>	<b>LITTLE</b>
Peatlands and Interstream Wetlands	High	Adequate	High	Adequate	None		None	
Natural Lakes and Ponds	High	Adequate	High	Adequate	None		None	
Caves, Sinks, and Springs	High	Adequate	<b>HIGH</b>	<b>NONE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>MODERATE</b>
Dissected Uplands	Little	None	High	Adequate	High	Adequate	High	Adequate
Inselbergs (Monadnocks)	None		Little	None	High	Adequate	High	Adequate
Cliffs	<b>HIGH</b>	<b>NONE</b>	High	Adequate	High	Adequate	High	Adequate
Exfoliation Outcrops	None		None		High	Adequate	High	Adequate
Gorges, Rapids, and Waterfalls	None		<b>HIGH</b>	<b>LITTLE</b>	High	Adequate	High	Adequate
Mass Wasting Features	None		<b>HIGH</b>	<b>NONE</b>	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>
Faults, Joints, and Related Features	None		Little	None	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>
Folds and Related Features	None		Little	None	High	Adequate	<b>HIGH</b>	<b>LITTLE</b>
Intrusions	None		Little	Adequate	High	Adequate	High	Adequate
Volcanic Features	None		Little	None	High	Adequate	<b>HIGH</b>	<b>NONE</b>
Metamorphic Features	None		High	Adequate	High	Adequate	High	Adequate
Sedimentary Features	High	Adequate	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>NONE</b>
Fossils	<b>HIGH</b>	<b>NONE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>NONE</b>	Little	None
Unusual Rock Types	<b>HIGH</b>	<b>NONE</b>	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>LITTLE</b>

Notes: Very high expansion needs are shaded. High expansion needs are shown in BOLD CAPITAL letters. No entry means theme is not applicable.

## **SCENIC THEME REPRESENTATION**

Eight scenic themes are rated as having very high expansion needs (Table 3.4: very high expansion needs are shaded; high expansion needs are shown in bold capital letters). These include: meadows/grasslands (Tidewater, Coastal Plain, Piedmont), waterfalls (Piedmont), rivers (Tidewater), islands (Tidewater, Piedmont), rock outcrops (Coastal Plain), caves/cliffs (Coastal Plain, Piedmont, Mountain) and bays/estuaries (Tidewater).

All scenic themes had some representation in the state parks system, although significant scenic highways had no representation within the Tidewater and Coastal Plain regions. Across all regions, approximately half the scenic themes are represented in state parks. Additional units in the Piedmont region are proposed to serve a rapidly expanding population and in the Mountain region to preserve significant resources.

Table 3.4. - Statewide Significance of Scenic Themes and Their Representation in the State Parks System

THEMES	REGIONS							
	TIDEWATER		COASTAL PLAIN		PIEDMONT		MOUNTAIN	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
Scenic Vistas	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>
Reservoirs/Lakes	<b>HIGH</b>	<b>MODERATE</b>	High	Adequate	High	Adequate	<b>HIGH</b>	<b>MODERATE</b>
Waterfalls					<b>HIGH</b>	<b>LITTLE</b>	High	Adequate
Rivers	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>
White Water Streams					<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>
Forests	<b>HIGH</b>	<b>MODERATE</b>	High	Adequate	High	Adequate	High	Adequate
Meadows/Grasslands	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>MODERATE</b>
Swamps	High	Adequate	High	Adequate				
Pocosins	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>				
Marshes	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>				
Gorges							<b>HIGH</b>	<b>MODERATE</b>
Rock Outcrops			<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>
Islands	<b>HIGH</b>	<b>MODERATE</b>			<b>HIGH</b>	<b>LITTLE</b>		
Caves/Cliffs	<b>HIGH</b>	<b>NONE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>LITTLE</b>	High	Adequate
Scenic Highways	<b>HIGH</b>	<b>NONE</b>	<b>HIGH</b>	<b>NONE</b>	<b>HIGH</b>	<b>LITTLE</b>	<b>HIGH</b>	<b>LITTLE</b>
Bays/Estuaries	<b>HIGH</b>	<b>LITTLE</b>						
Seashores	<b>HIGH</b>	<b>MODERATE</b>						

Notes: Very high expansion needs are shaded. High Expansion needs are shown in BOLD CAPITAL letters. No entry means theme is not applicable.

## **BIOLOGICAL THEME REPRESENTATION**

Over 116 natural community types have been identified and described in North Carolina (Schafale and Weakley, 1990). These have been grouped into 32 biological themes based on similarities in environment and vegetation. Each of the themes is fully described in the Natural Heritage Program Biennial Protection Plan (Division of Parks and Recreation, 1993).

As land within North Carolina is altered for agriculture, forestry, industry, and residential development, one of the consequences is a reduction of natural diversity in the landscape. Undisturbed natural communities in North Carolina are very diverse, varying in geology, soil type, topography, moisture, flora, and fauna. It is the purpose of the state parks system to protect representative examples of the state's natural diversity for the benefit and enjoyment of all the citizens. At present, the state parks system includes representative examples of many of the state's biological themes. However, many themes are not adequately represented. Expansion of the state parks system for protection of biological diversity should focus on the themes which are not yet adequately represented.

Eight biological themes are rated as having very high expansion needs (Table 3.5; very high expansion needs are shaded; high expansion needs are shown in bold capital letters). These include:

1. grass and heath balds (Mountain)
2. low elevation cliffs and outcrops (Tidewater)
3. coastal plain marl outcrops (Tidewater)
4. mafic glades and barrens (Piedmont and Mountain)
5. riverine aquatic communities (Tidewater and Piedmont)
6. piedmont upland pools and depressions (Piedmont)
7. streamhead pocosins (Coastal Plain)
8. coastal plain depression communities (Tidewater and Coastal Plain).

Table 3.5. - Statewide Significance of Biological Themes and Their Representation in the State Parks System

Themes	Regions							
	Tidewater		Coastal		Piedmont		Mountain	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
Spruce-Fir Forests							HIGH	MODERATE
Grass and Heath Balds							HIGH	LITTLE
Northern Hardwood Forests							HIGH	Adequate
Mountain Cove Forests							HIGH	Adequate
Piedmont and Coastal Plain Mesic Forests	HIGH	MODERATE	High	Adequate	High	Adequate	Little	None
Piedmont and Mtn Dry Coniferous Woodlands					Moderate	Moderate	HIGH	Adequate
Montane Oak Forests					Moderate	Adequate	HIGH	Adequate
Piedmont and Coastal Plain Oak Forests	MODERATE	LITTLE	High	Adequate	HIGH	Adequate	Little	Little
High Elevation Rock Outcrops							HIGH	MODERATE
Low Elevation Cliffs and Rock Outcrops	HIGH	NONE	Moderate	Adequate	HIGH	MODERATE	HIGH	MODERATE
Coastal Plain Marl Outcrops	HIGH	NONE	MODERATE	NONE				
Granitic Flatrocks					HIGH	MODERATE		
Mafic Glades and Barrens					HIGH	NONE	HIGH	NONE
Maritime Grasslands	High	Adequate						
Maritime Upland Forests	HIGH	MODERATE						
Dry Longleaf Pine Communities	HIGH	MODERATE	HIGH	MODERATE	MODERATE	NONE		
Blackwater Coastal Plain Floodplains	HIGH	MODERATE	HIGH	MODERATE	Little	None		
Brownwater Coastal Plain Floodplains	Little	None	HIGH	MODERATE				
Piedmont and Mountain Floodplains			Moderate	Adequate	HIGH	MODERATE	HIGH	MODERATE
Riverine Aquatic Communities	HIGH	LITTLE	HIGH	MODERATE	HIGH	MODERATE	HIGH	MODERATE
Mountain Bogs and Fens							HIGH	MODERATE
Upland Seepages and Spray Cliffs					MODERATE	MODERATE	HIGH	MODERATE

Themes	Regions							
	Tidewater		Coastal		Piedmont		Mountain	
	Significance	Representation	Significance	Representation	Significance	Representation	Significance	Representation
Piedmont Upland Pools and Depressions					<b>HIGH</b>	<b>MODERATE</b>	Little	None
Coastal Plain Nonalluvial Mineral Wetlands	<b>HIGH</b>	<b>MODERATE</b>	<b>MODERATE</b>	<b>LITTLE</b>				
Peatland Pocosins	<b>HIGH</b>	<b>MODERATE</b>	High	Adequate				
Streamhead Pocosins	Little	Little	<b>HIGH</b>	<b>LITTLE</b>				
Wet Pine Savannas	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>MODERATE</b>	MODERATE	NONE		
Coastal Plain Depression Communities	<b>HIGH</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>LITTLE</b>				
Natural Lake Communities	<b>HIGH</b>	<b>MODERATE</b>	High	Adequate				
Maritime Wetland Forests	<b>HIGH</b>	<b>MODERATE</b>						
Freshwater Tidal Wetlands	<b>HIGH</b>	<b>MODERATE</b>						
Estuarine Communities	High	Adequate						

Notes: Very high expansion needs are shaded. High Expansion needs are shown in BOLD CAPITAL letters. No entry means theme is not applicable.

# CHAPTER 4

## TRENDS AFFECTING OUTDOOR RECREATION IN THE STATE PARKS SYSTEM

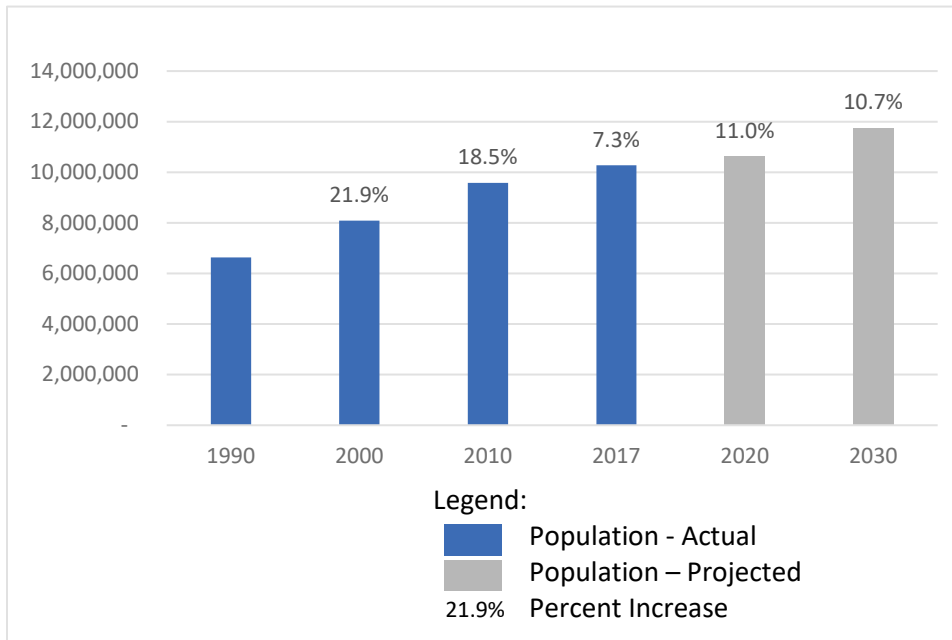
North Carolina’s population and landscape are always changing. The state parks system is part of the natural landscape and offers places where people love to recreate outdoors. As the state’s population grows and people’s preferences for enjoying the state parks change, it’s important to consider the impacts these changes will have on the state parks system. The mission of the state parks system remains a constant. How to best accomplish the mission is an ongoing challenge. This chapter highlights important trends affecting state parks and provides recommendations for how to address the impacts.

### POPULATION GROWTH

From 1990-2000, the state’s population grew 21.3 percent and totaled over 8 million people. The growth rate reflects the significant in-migration of people who are relocating to North Carolina. In fact, two-thirds of the growth rate is because of people moving to the state.

This trend has continued with growth rates of 18 percent and 11 percent for the first two decades, respectively. By 2020, the state’s population will have grown to nearly 10.6 million, up from 6.6 million in 1990 (Figure 4-1). This increase of nearly 4.5 million people represents a total increase of 60 percent over 30 years. By contrast, it took 80 years, 1910 to 1990, to add 4.5 million people to the state’s population.

*Figure 4.1 - North Carolina’s Population Increase 1990-2030*



Higher population growth is occurring throughout the state. One third of the growth in North Carolina’s population this decade is the two largest counties; Mecklenburg and Wake counties. It is worth noting that the fastest growing counties are not the largest counties in the state. Growth is starting to flow into

less populated counties with less development. The growth in the top 10 counties, nearly 750,000 people, has accounted for about two-thirds of the population increase in the state from 2010-2020. In contrast, significant portions of the state have declining population. Thirty-three of the state's 100 counties are projected to have fewer residents or have had no population growth.

*Table 4.1 - Top Ten Counties by Population Increase 2010-2020*

<b>County</b>	<b>2010 Population</b>	<b>2020 Population Projection</b>	<b>Population Increase</b>	<b>Percent Increase</b>
Brunswick	107,431	141,520	34,089	32%
Chatham	63,504	79,480	15,976	25%
Johnston	168,904	210,948	42,044	25%
Pender	52,195	64,933	12,738	24%
Mecklenburg	919,637	1,143,547	223,910	24%
Wake	901,037	1,116,912	215,875	24%
Hoke	46,880	57,978	11,098	24%
Cabarrus	178,112	217,409	39,297	22%
Harnett	114,707	137,501	22,794	20%
Union	201,350	240,933	39,583	20%
Currituck	23,547	28,118	4,571	19%
Durham	270,055	320,173	50,118	19%
New Hanover	202,688	238,232	35,544	18%
Watauga	51,079	59,703	8,624	17%

North Carolina's population has been and will continue to be among the fastest growing in the United States. In the year 2017, North Carolina ranked 9<sup>th</sup> in total population in the nation. By 2020, North Carolina is projected by the US Census Bureau to stay the ninth most populous state in the nation. Much of the population growth in the state is because of in-migration, people who relocate to North Carolina from another state.

*Table 4.2 - Most Populous States in the US: 2010, 2020 and 2030*

	<b>2017</b>	<b>2020</b>	<b>2030</b>
<b>Rank</b>	<b>State</b>	<b>State</b>	<b>State</b>
1	California	California	California
2	Texas	Texas	Texas
3	Florida	Florida	Florida
4	New York	New York	New York
5	Pennsylvania	Pennsylvania	Pennsylvania
6	Illinois	Illinois	Illinois
7	Ohio	Ohio	Georgia
8	Georgia	Georgia	Ohio
9	North Carolina	North Carolina	North Carolina
10	Michigan	Michigan	Michigan



Another measure of the changing landscape is population density, people per square mile, which is increasing across the state. In 2010, North Carolina will have about 195 residents per square mile. In 2016 that density had increased to 209 residents per square mile. During the next 20 years, the population density for the state will increase to 255 per square mile (Figure 4-2).

Much of the growth will be concentrated in the Piedmont Crescent; from the Charlotte metropolitan area through the Triad area of Forsyth and Guilford counties and through the Triangle area containing Orange, Durham, Wake and Johnston counties. The maps on the following page show that the increased growth radiates from these counties as people move to adjacent areas. As population densities increase, land that was previously natural, rural or agricultural is converted to commercial or residential uses.

Figure 4.2 - Population Densities by County 2010 - 2030

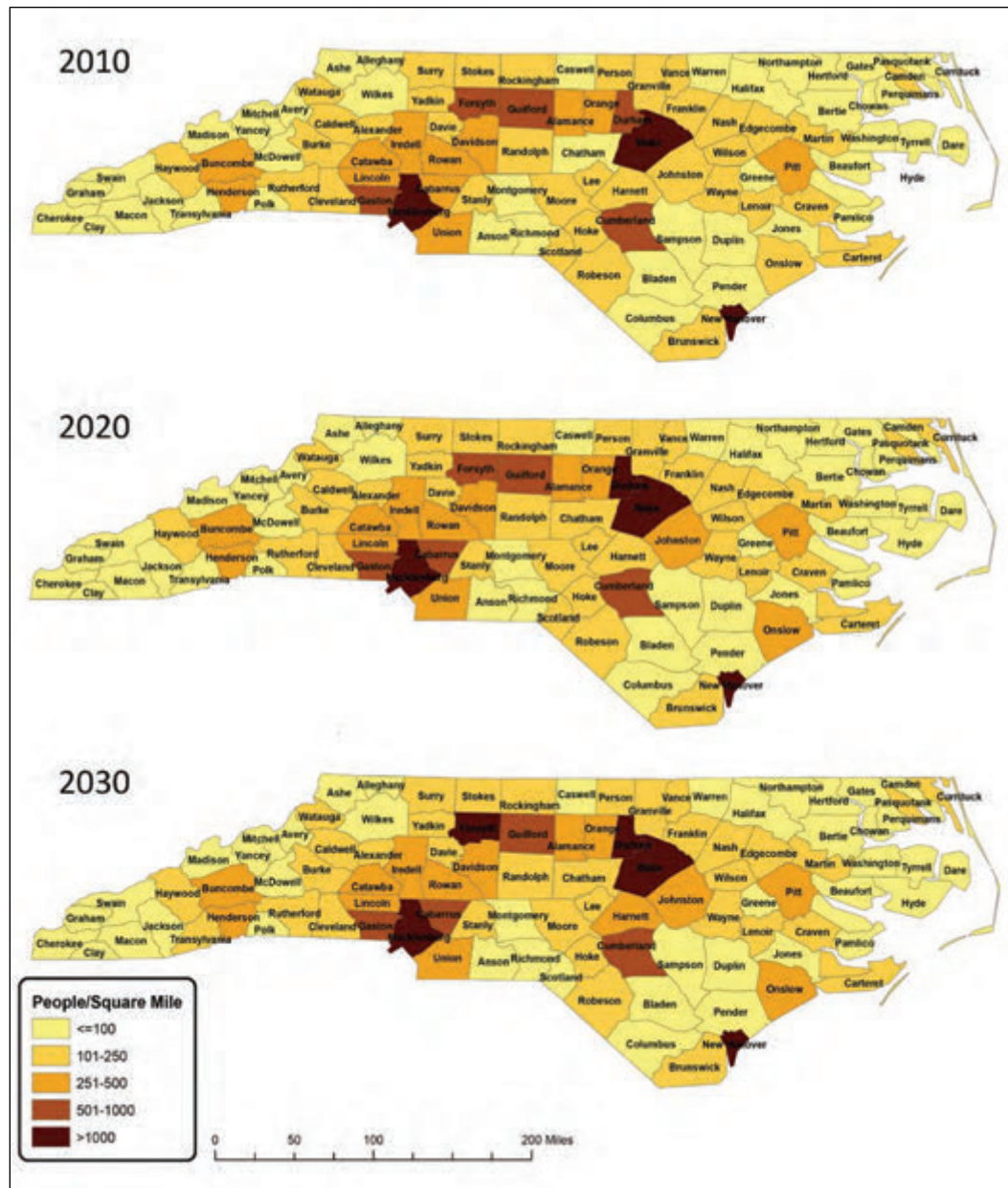
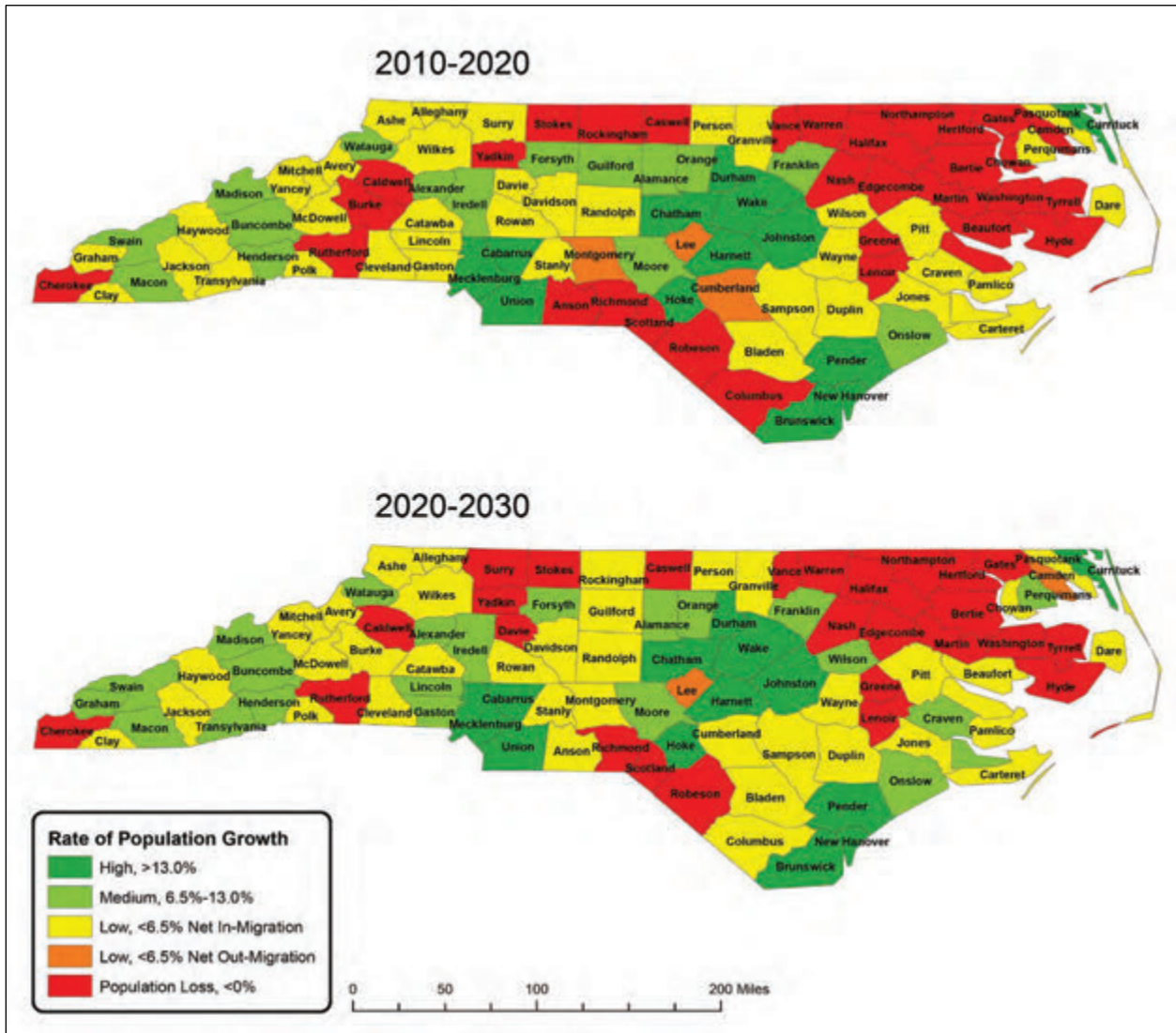


Figure 4.3 - Rate of Population Growth by County 2010 – 2030



As can be seen from Figure 4.3 the rate of population growth varies around the state. With several areas showing continued and higher growth and other showing low or a loss of population. This can guide DPR to look at additional units or facilities at existing units to help meet this growth, as well as provide economic opportunities in locations where counties are experiencing a population loss.

### LONGER, HEALTHIER LIVES

The North Carolina population is aging as Baby Boomers born between 1946 and 1964 continue to retire, birth rates have slowed and average life expectancy increase. The median age in the state rose from 26.5 in 1970 to 38.7 in 2016. By the year 2030, the median age is projected to rise to 40.4 years.

People are living longer (Table 4-4). Improved living conditions, medical discoveries, advances in healthcare and knowledge about the effects of lifestyle have all contributed to the longer lives. Questions about how long-life spans can be extended through discoveries of biological research are being debated,

but the trend of increased life expectancy is projected to continue. Lifestyle choices, including participating in recreation and exercise, can affect an individual's life span.

*Table 4.3 - Life Expectancy at Birth, 1900-2016*

	1900	1920	1940	1960	1980	2000	2016
<b>Average</b>	49.2	56.4	63.6	69.9	73.9	75.4	78.6
<b>Men</b>	47.9	49.9	57.7	65.5	70.1	71.8	76.7
<b>Women</b>	50.7	57.4	65.9	73.2	77.6	78.8	81.1

Source: Centers for Disease Control and Prevention

While the elderly participate in outdoor recreation less frequently than younger persons, they participate more frequently than in past years. An increasing interest in physical fitness and improved health has led to more participation. When higher participation rates are coupled with large increases in the over-65 age group, the elderly will demand services to a much greater degree than they do now.

Increased demand can therefore be expected for activities that have high participation by older Americans. These include walking, sightseeing, attending family gatherings, visiting a beach or waterside, picnicking, visiting a historic site or nature center and bird watching. Older Americans also participate in a wide variety of other outdoor recreation activities including wildlife viewing, attending concerts, nature study, fishing, swimming, motor boating, biking and golf.

In contrast, the N.C. State Center for Health Statistics found that more than two thirds of adults are overweight or obese as well as an estimated 30% of children ages 10 – 17. The chronic conditions related to obesity, such as high blood pressure, diabetes and heart disease could have much greater public health impacts in the future as overweight children get older and increase the number of overweight adults. All of these illnesses shorten lifespans and limit a person's ability to participate in outdoor recreation.





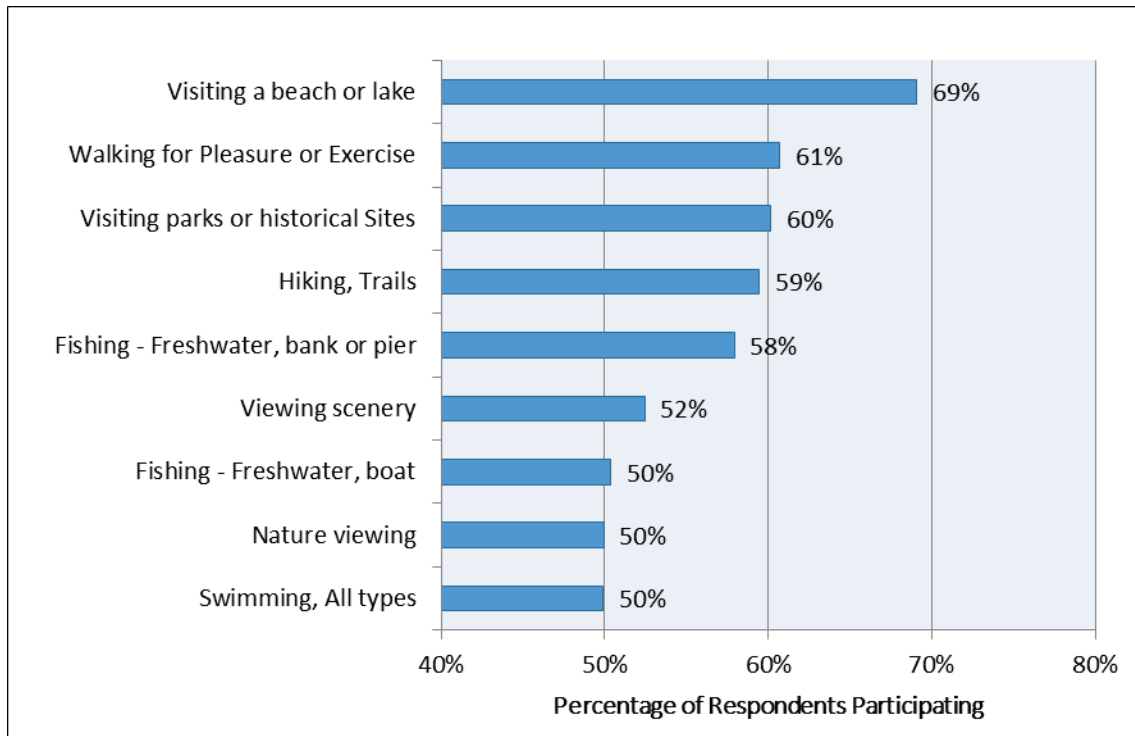
## PREFERENCES FOR OUTDOOR RECREATION ACTIVITIES

In 2014, the North Carolina Division of Parks and Recreation conducted a public survey to evaluate demand for, participation in, and perceptions of outdoor recreation. The survey was conducted online using Survey Monkey and was distributed via multiple statewide channels. In total, the study yielded over 17,000 responses.

Questions from the survey broadly address areas such as outdoor recreation participation, satisfaction with statewide outdoor recreation opportunities, motivation for participation, and barriers to participation.

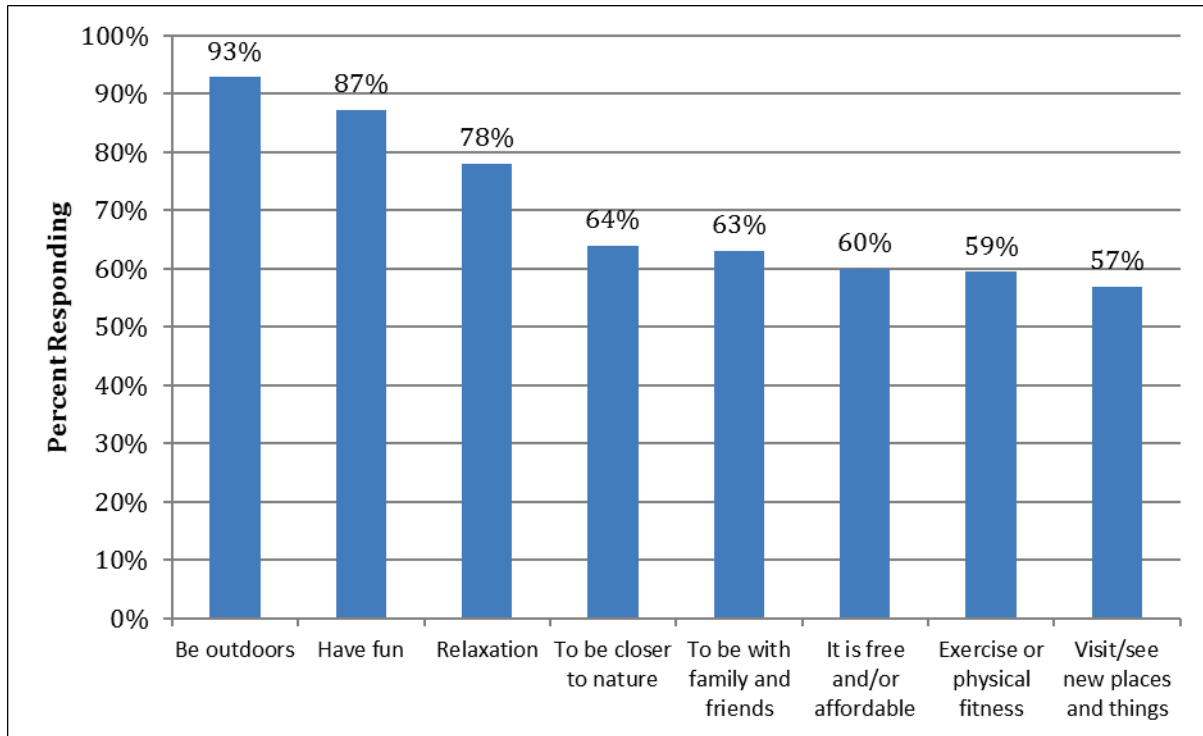
In order to understand trends and popularity among outdoor recreation activities, respondents were asked to identify the activities they or household members participate in or have participated in over the past five years. The most popular activity was visiting a beach or lake, with 69 percent participating. Walking for pleasure or exercise and visiting parks or historic sites are activities for 61 and 60 percent of respondents respectively. Over half of all respondents participate in hiking on trails and freshwater fishing (Figure 4.3). Other activities that have at least half of respondents participating are viewing scenery, fishing from a boat, nature viewing and swimming.

Figure 4.4 - Most popular outdoor recreation activities



Respondents were asked to describe their motivations for participating in outdoor recreation activities. The most popular answers were, being outdoors, followed by having fun and relaxing. Respondents also wanted to be closer to nature and spend time with family and friends. (Figure 4.4)

Figure 4.5 - Why North Carolinians Recreate Outdoors



Respondents were also asked how many times they visited local, state, and federal parks. For state parks, most people indicated that they visited between three and five times in the past year (28 percent). The next most popular answers were one to two visits and more than eight visits. (Figure 4.5). The reasons that state parks enjoy wide popularity are reflected in the things survey respondents seek in participating in outdoor recreation. State parks provide many if not all of these experiences – opportunities to be outdoors, be closer to nature, enjoy time with family and friends. Many state parks also provide opportunities for exercise and adventure in a setting that is free or affordable.

In many cases, another factor in the number of times a person visits a state park is proximity. Earlier surveys of state park visitors have shown that many people who choose to visit are within 30 miles. Parks that are closer to home are more affordable to visit in terms for time and effort as well as money.

North Carolina residents are generally satisfied with the parks available to them. That’s important because over 90 percent of those surveyed responded that local and state parks are extremely important to them. The highest levels of satisfaction are with efforts to provide outdoor recreation and environmental education. About 80 percent of respondents were either satisfied or somewhat satisfied with these efforts. In contrast, about 70 percent of respondents are satisfied or somewhat satisfied with efforts to acquire and manage public land. (Figure 4.6)

Figure 4.6 - Average Visits to State Parks Per Year

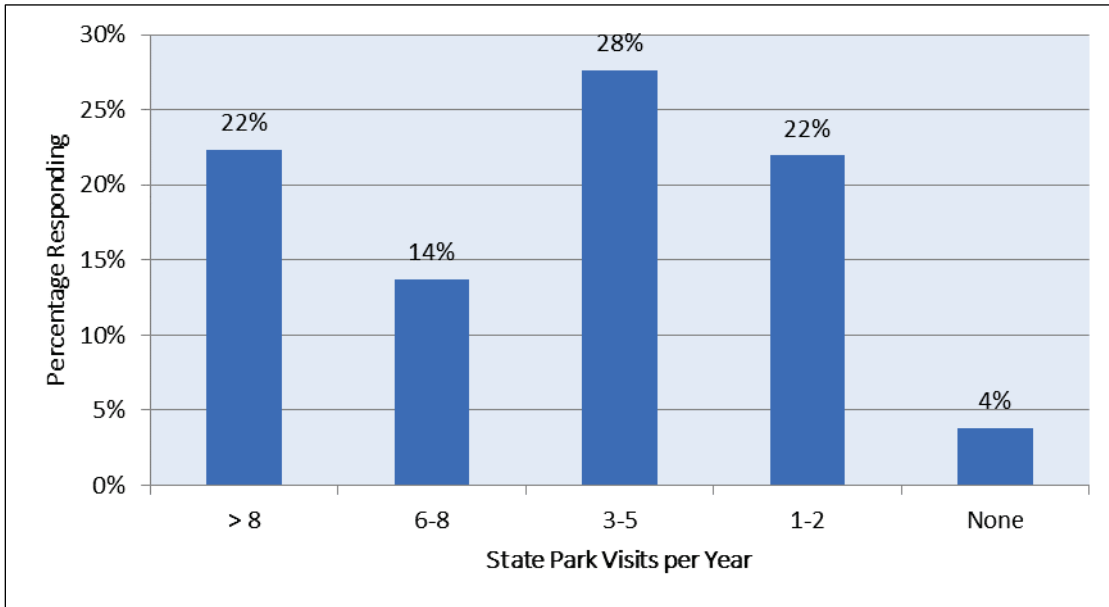
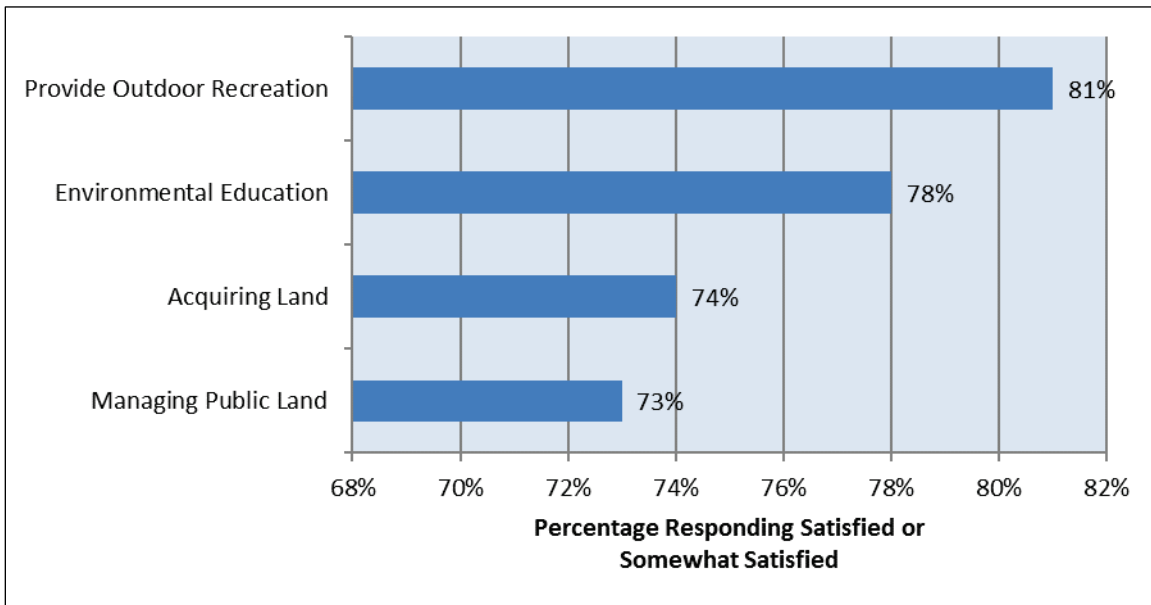


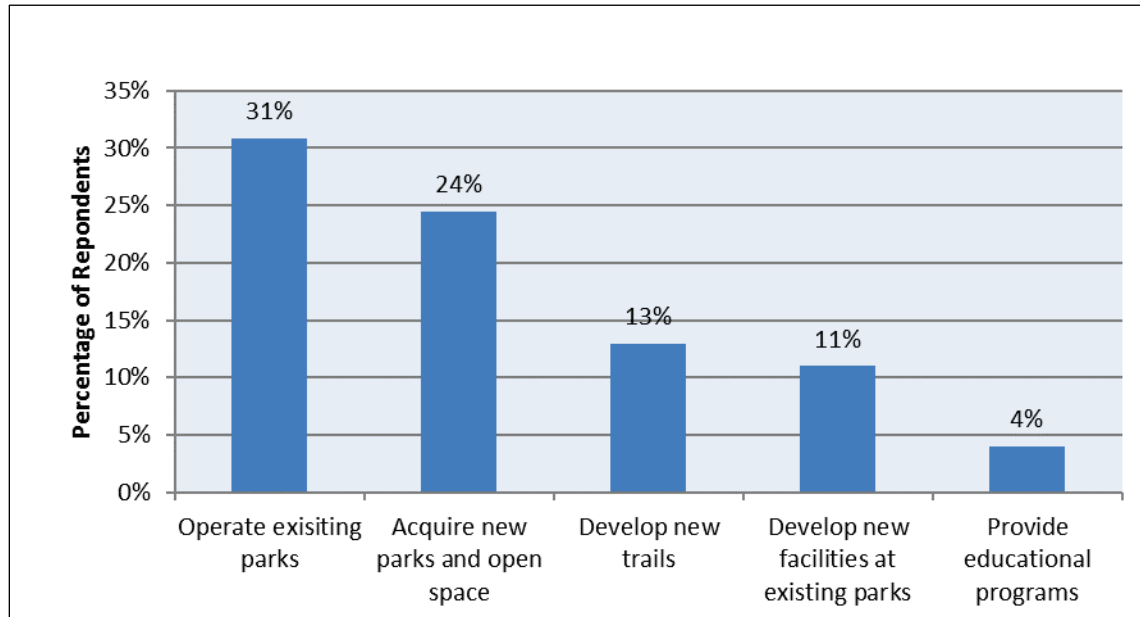
Figure 4.7 - Satisfaction with Park Management



### Priorities for Park Management

What are public priorities for parks in North Carolina? Survey respondents were asked to identify their priorities for several management objectives. The most popular top priority was “operate existing parks” (31 percent of respondents), followed closely by “acquire new parks and open space”. Other priorities are to develop new trails, the top priority of 13 percent of respondents and to develop new facilities at existing parks. (Figure 4.7)

Figure 4.8 - Public Priorities for park management



### Recreational Resource Needs in State Parks

During 2008, the Division of Parks and Recreation (DPR) conducted a survey to gain feedback on what types of recreational facilities are desirable in state parks as well as a review and ranking of statements regarding the state park system. In addition to press releases, Friends of State Parks groups, outdoor recreation groups, land conservation partners, and various park supporters were encouraged to take the survey online. Some local and statewide park user groups circulated the web link of the online survey to their members. By the time the survey was closed to responses, 3,927 individuals interested in North Carolina state parks completed a survey.

The survey found the five **most popular** facilities in the park system to be: 1. Hiking Trails, 2. Nature Trails, 3. Picnic Table with Grill, 4. Multi-Use Trail, and 5. Observation Decks.

The five **least popular** facilities were: 1. Equestrian Trails, 2. Recreation Vehicles (RV)/Trailer campsite with hook-ups, 3. Marina, 4. Playground, and 5. Boat Ramp/Dock. (Table 4-4)

Table 4.4 - What types of facilities would you use in a state park?

Potential Park Facilities	I would use	I might use	I would not use
Hiking trail	<b>79.50%</b>	16.20%	4.30%
Nature trail	<b>74.10%</b>	21.30%	4.60%
Picnic table with grill	<b>68.40%</b>	26.10%	5.50%
Multi-use trail	<b>61.20%</b>	30.90%	7.90%
Observation decks	<b>61.00%</b>	31.00%	8.00%
Paddle trails and river access areas	55.50%	33.10%	11.50%
Picnic shelter	53.90%	37.00%	9.10%
Beach	53.40%	34.00%	12.70%
Museum / educational exhibit	50.70%	37.50%	11.80%
Swimming area	48.40%	38.00%	13.60%
Tent / trailer campsite without hookups	47.90%	31.70%	20.40%
Cabin with kitchen, heat, and restroom	45.00%	36.90%	18.00%
Mountain bike trail	39.30%	25.40%	35.20%
Back-country primitive campsite	38.90%	32.30%	28.80%
Simple cabin (enclosed living space)	37.20%	43.30%	19.50%
Tent / trailer campsite with hookups	35.20%	30.70%	34.20%
Open play area	32.40%	35.80%	31.80%
Fishing pier	30.80%	35.80%	33.40%
Rock climbing area	30.70%	33.00%	36.30%
Group campsites	30.30%	44.70%	25.00%
Boat ramp / dock	30.20%	33.30%	<b>36.50%</b>
Playground	29.80%	28.40%	<b>41.80%</b>
RV / trailer campsite with hookups	22.70%	17.80%	<b>59.50%</b>
Equestrian trail	20.90%	13.90%	<b>65.10%</b>
Marina	17.60%	30.20%	<b>52.20%</b>



Table 4.5 - To what degree do you agree or disagree with the statements below?

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree
It is important to protect North Carolina's unique natural resources, even if it means limiting public access to certain areas.	<b>48.3%</b>	41.5%	8.7%	1.5%
It is important to protect natural and scenic resources by acquiring land even if these areas may not be accessible to the public until planning, design and funding are in place to be developed as park units.	<b>59.5%</b>	34.2%	5.2%	1.1%
NC Parks should add new parks to provide additional recreational opportunities.	<b>60.7%</b>	34.5%	4.4%	0.4%
NC Parks should provide more recreational facilities and activities at its existing parks.	40.4%	<b>43.2%</b>	15.0%	1.4%
Completing land acquisition and construction plans at existing parks should take priority over adding new parks, recreation areas, or natural areas.	19.3%	<b>38.2%</b>	36.6%	5.9%
It is important to locate new parks equitably across the state based on geography and population.	18.9%	<b>45.2%</b>	31.4%	4.4%
It is important to locate new parks based on the need to protect natural and recreational resources regardless of their proximity to centers of population.	<b>49.5%</b>	40.4%	9.2%	1.0%
I would be willing to pay higher fees for improved and expanded state park services and programs.	28.8%	<b>49.7%</b>	18.1%	3.3%
Fees should be kept at a minimum to serve greatest number of people possible.	27.6%	<b>50.9%</b>	18.5%	3.0%
Information on the NC Parks website is sufficient for my needs.	11.4%	<b>65.7%</b>	20.4%	2.5%
The brochures and maps for the state parks I visit are sufficient for my needs.	14.3%	<b>68.4%</b>	16.0%	1.4%
NC Parks should focus on providing more environmental education opportunities for visitors at parks.	27.6%	<b>55.0%</b>	24.9%	1.7%
NC Parks should increase its environmental education programs for public schools curriculum.	27.6%	<b>52.9%</b>	17.4%	2.1%
NC Parks should focus on providing educational opportunities in parks for children and families with children.	22.4%	<b>56.2%</b>	19.3%	2.1%
NC Parks should focus on improving maintenance and cleanliness of its parks.	20.4%	<b>57.4%</b>	21.4%	0.9%
NC Parks should focus on improving natural resource protection.	38.5%	<b>51.2%</b>	9.8%	0.5%
Access at state parks for persons with disabilities needs improvement.	10.4%	<b>45.3%</b>	41.1%	3.2%

The greatest percentage of survey respondents **strongly agreed** or **agreed** with the following statements (Table 4-5):

Strongly Agreed:

- NC Parks should add new parks to provide additional recreational opportunities.
- It is important to protect natural and scenic resources by acquiring land even if these areas may not be accessible to the public until planning, design and funding are in place to be developed as park units.
- It is important to locate new parks based on the need to protect natural and recreational resources regardless of their proximity to centers of population.
- It is important to protect North Carolina's unique natural resources, even if it means limiting public access to certain areas.

Agreed:

- The brochures and maps for the state parks I visit are sufficient for my needs.
- Information on the NC Parks website is sufficient for my needs.
- NC Parks should focus on improving maintenance and cleanliness of its parks.
- NC Parks should increase its environmental education programs for public school's curriculum.
- NC Parks should focus on providing more environmental education opportunities for visitors at parks.

The following statements had **a higher level of disagreement**:

- Completing land acquisition and construction plans at existing parks should take priority over adding new parks, recreation areas, or natural areas.
- It is important to locate new parks equitably across the state based on geography and population.
- Access at state parks for persons with disabilities needs improvement.

The survey respondents ranked the **top five priority statements** as follows:

- First Priority: It is important to protect North Carolina's unique natural resources, even if it means limiting public access to certain areas. (25.5% selected this as their first priority)
- Second Priority: It is important to protect natural and scenic resources by acquiring land even if these areas may not be accessible to the public until planning, design and funding are in place to be developed as park units. (19.4% selected this as their second priority)
- Third and Fourth Priority: It is important to locate new parks based on the need to protect natural and recreational resources regardless of their proximity to centers of population. (16.7% selected this as their third priority and 10.8% selected this as their fourth priority)
- Fifth Priority: NC Parks should focus on improving natural resource protection. (11.3% selected this as their fifth priority)

## IMPLICATIONS OF DEMOGRAPHIC AND SOCIOECONOMIC TRENDS

- Increasing population and associated development pressures underscore the importance of conserving naturally significant land and water resources.
- The most popular state parks are also the parks that are most impacted by increasing visitation and population growth. Providing additional recreational opportunities in appropriate places and environmental education will help accommodate more people and enhance an appreciation for the state's natural heritage.
- An increasing multicultural and educated proportion of the North Carolina population participates in outdoor recreation more frequently, usually on weekends and close to home. This pattern creates a greater demand for higher quality outdoor recreation near population centers.
- As two-wage-earner families and urban lifestyles predominate, these families will have less time to plan outings. Better information systems about state parks, such as the centralized reservation system and the state park webpages, will help increase public awareness of recreational opportunities as well as planning a visit more convenient.
- Most types of trail use, such as hiking, bicycling, and nature study are among the most popular activities in state parks. Trail construction and maintenance should continue to be a priority.
- Use of mountain bikes have increased dramatically in the state. Mountain bike trails in state parks are quite popular. It will continue to be important to working with bicycle groups to find appropriate locations and cooperate to minimize impacts.
- The growing elderly population has more leisure time but participates in active leisure activities less frequently than do younger age groups. The elderly are more concerned with the safety, quality and accessibility of park facilities. The Americans with Disabilities Act stipulates that both facilities and programs should be accessible to all visitors. Newly constructed park facilities will be accessible and older facilities renovated to meet ADA standards. Making parks accessible to all citizens will continue to be important.
- State parks attract tourist spending. Additional efforts to market state parks would be beneficial across the state and particularly in counties experiencing a decline in population and a related downturn in the local economy.
- Increasing the availability of Spanish for park signs and other information within state parks would assist visitors from the growing Hispanic population in North Carolina. Warning signs, directions, and fee collection would seem to be a logical starting point.
- Nationwide, local, county, state, and federal governments are working to reduce childhood obesity and encourage children and families to be more physically active through recreation planning and infrastructure programs. The provision of outdoor open spaces and recreational space is a key to addressing these issues.
- The 2013 Outdoor Recreation Participation Report found 90 percent of adults who regularly recreate outdoors were introduced to outdoor activities between the ages of five and 18. This makes youth participation critical to encouraging similar patterns for future generations.
- Visiting beaches, lakes, parks, as well as walking for pleasure are the most popular outdoor recreational activities in the state. It is important that residents have easy access to information about state park sites that offer these opportunities.

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# CHAPTER FIVE

## STRATEGIC DIRECTIONS

Although expressed in different words over the years, the mission and long-term goals of the North Carolina State Parks System have been adhered to since the first state park was established at Mount Mitchell in 1916. The strategies used to achieve these goals have adapted to changing circumstances, trends, and opportunities.

### OUR MISSION:

**The North Carolina Division of Parks and Recreation** exists to inspire all its citizens and visitors through conservation, recreation and education.

**Conservation:** To conserve and protect representative examples of North Carolina's natural beauty, ecological features, recreational and cultural resources within the state parks system;

**Recreation:** To provide and promote safe, healthy and enjoyable outdoor recreational opportunities throughout the state; and

**Education:** To provide educational opportunities that promote stewardship of the state's natural and cultural heritage.

### LONG TERM VISION

- Preserve and protect high-quality, representative examples of the biological, geological, archaeological, scenic, and recreational resources of North Carolina by including such resources in the state parks system for public enjoyment, education, and inspiration.
- Offer a wide range of safe and enjoyable outdoor recreation opportunities in the state parks system by developing and staffing appropriate public facilities.
- Support recreation opportunities provided by other agencies and local governments by offering training and technical assistance, and by administering grant programs for park, trail, and greenway acquisition and development.
- Maintain and enhance the ecological quality of park resources by conducting appropriate stewardship activities, ensuring adequate staffing levels and by careful planning and management of visitor use patterns and park development projects.
- Promote understanding of and pride in the natural heritage of the state by providing environmental education and interpretive materials and programming for teachers, students, and park visitors.
- Institute a statewide program "Park's Educational Program for Elementary Students" that exposes every elementary school student with a meaningful experience in a state Park, to support North Carolina curriculum objectives and to foster lifelong appreciation for nature and history.

## **TWENTY-FIVE YEARS AGO**

At the end of 1993, the North Carolina State Parks System consisted of 58 units, totaling 135,738 acres, with annual attendance of 11,076,082 visitors. In 1993, voters approved a \$35 million state parks improvement bond referendum, and in 1994, the North Carolina General Assembly established the North Carolina Parks and Recreation Trust Fund (PARTF). The General Assembly made an initial appropriation of \$1 million to the PARTF to fund improvements in state parks, to fund grants for local governments and to increase public access to the state's beaches. In 1995, the General Assembly dedicated funds from the excise stamp tax to the trust fund starting in FY 1996-97

Prior to the 1993 bond referendum and the establishment of the PARTF, land acquisition funding was sporadic, and opportunities to acquire new units were delayed or missed. Capital improvements were typically projects constructed by the Civilian Conservation Corps during the 1930's. The 1993 bond referendum and the establishment of the PARTF essentially put an end to the sleepy park system and through the availability of a steady funding source, ushered in a park system that every North Carolinian can be proud of.

In addition to establishing a dedicated funding source, the General Assembly also added significantly to the state park operating budget. Sixty new maintenance positions were added, as well as 34 new office assistants. Falls Lake and Jordan Lake state recreation areas together added 26 new positions, and an additional 35 new ranger positions were added across the state. The General Assembly supported the staffing of new land and facilities that were added to the system.

## **FIFTEEN YEARS AGO**

By the end of 2003, the status of the state parks system was quite different. The number of units had increased to 70, total acreage had increased to 172,815, and annual visitation was 11,210,836. Revenue to the trust fund for FY2002-2003 was \$28,484,354, of which \$12,571,570 was available for state park capital needs and \$5,387,816 was available for land acquisition. With bond and PARTF funding, many of the most urgent land inholdings and critical safety and health project needs were being addressed. The prospect of annual, recurring funds made it possible to conduct facility planning in a systematic, predictable way.

Meanwhile, funding had become available from other sources as well. The Natural Heritage Trust Fund, also funded by the excise stamp tax, provided grants for acquisition of lands with important natural and cultural resource value. The Clean Water Management Trust Fund, established in 1996, provides grants for acquisition of riparian buffer lands. Both of these trust funds have provided generous grants to the state parks system.

In addition, public support for protection of open space was growing. In 1999, Governor James B. Hunt proposed to permanently protect an additional one million acres of farmland, open space, and conservation lands in the State. In 2000, the state's General Assembly codified this goal in statute.

The time was right for a major expansion of the state parks system. The strategic directions in the 2000 Systemwide Plan were to complete the land acquisition and development envisioned in master plans for existing parks, and to add carefully selected new park units to the system. Criteria were identified, proposed sites were evaluated, and new units were added to enhance the system as a whole and to help the system fulfill its statutory purpose for future generations. Because PARTF was indexed to the real estate excise tax, the booming real estate market of the 2000's generated revenue exceeding projections. The legislature also authorized special indebtedness (bonds) for land acquisition. Prior planning made it possible for the North Carolina Division of Parks and Recreation (DPR) to take advantage of significant opportunities to add important new state parks, state natural areas, and state trails to the system.

## **FIVE YEARS AGO**

At the end of 2013, the situation changed again. The state parks system had grown to 74 units with a total of almost 224,000 acres. Visitation in 2013 was 14,172,661. After nearly two decades of unprecedented growth, expansion of the North Carolina State Parks System slowed considerably from 2009 through 2013 due to the depressed economy. Growth and capital development in the parks was also curtailed by the General Assembly's decision to fund the Parks and Recreation Trust Fund through appropriations and eliminate its dedicated funding source. From 1999 through 2008, North Carolina established 15 new state park units and acquired 46,340 acres. From 2009 through 2013, one new unit was established and 14,152 acres were added to the state parks system.

Like many states, North Carolina suffered the effects of the nationwide economic downturn. Long term goals for the state park system remained the same, yet the system's strategic directions responded to the challenging times. From 2008 to 2013, the state parks system implemented many improvements to efficiency and contributed in significant ways to supporting job growth and economic development in North Carolina.

## **TODAY**

By 2017, the park system had seen many changes including increased visitation and increased funding. The visitation has continued to increase from 14 million in 2013 to over 19 million in 2017, fueled by new parks, new facilities and DPR's first ever marketing program funded as part of the 2016 centennial. More people from both within and outside of North Carolina are visiting our parks, supporting our state and local economies.

The North Carolina General Assembly increased the trust fund and allocated \$75 million in Connect NC Bond funds, later approved by voters, for 45 projects at state parks. These projects include expanded visitor centers, campgrounds, day use facilities and land acquisitions for parks, natural areas and trails. Every state park has a project identified in the bond package. The General Assembly also increased the Parks and Recreation Trust Fund by \$10.6 million, almost doubling the amount of funding allocated for state parks in 2017.

With this additional funding facilities were added to the state parks, and over 7,800 acres of land was acquired for existing parks units. In 2017, the General Assembly also crafted a bill authorizing three new natural areas to be added to the state park system. Governor Roy Cooper signed the legislation in July 2017 which added Bobs Creek in McDowell County, Warwick Mill Bay in Robeson County and Salmon Creek in Bertie County which represent diverse and rare ecosystems across the state.

As the popularity of our parks continues to increase, we are faced with challenges which affect our ability to provide the best user experience to visitors. With increased visitation, our parks are becoming overcrowded with parking capacity issues and the general user experience being compromised. DPR is continually struggling with how much is too much development in a park. While DPR strives to accommodate all users, there is a point that this accommodation can begin to threaten the resources DPR is protecting.

Another challenge that DPR faces is the Infrastructure at many of our parks is nearing the end of its useful life. Preventative maintenance is ongoing, but eventually full replacement is needed for bathhouses, showerhouses, restrooms etc. as well maintenance equipment.

## **GOAL #1**

### **CONTINUE EXPANSION OF THE STATE PARKS SYSTEM**

Despite past economic challenges, the state parks system continues to grow and improve. With the authorization of the NC Connect Bond funds, land acquisition and facility development has increased again. Public support for open space protection and new park units remains high (Chapter 4). North Carolina continues to be an attractive place for development, and strong population growth is anticipated in the coming decades. There is a continuing need to protect important natural resources and to provide outdoor recreation opportunities. There will be continued emphasis on careful planning and evaluation of statewide priorities to ensure the best use of funding. As the state parks system moves into the future, strategic planning efforts will be implemented to meet the demands of outdoor recreation and natural resource protection.

#### **FIVE-YEAR OBJECTIVES**

- Complete construction, fully staff and operate all North Carolina bond projects.
- Develop a new state park system expansion plan to meet the demands of a growing population and increase demand for outdoor recreation and natural resource protection.
- Complete a comprehensive statewide trail plan and 5-year vision plan for the state trails system.

#### **Ongoing Objectives**

- Develop a future acquisition plan for each new park unit which identifies priority acquisitions.
- Implement priority land protection projects, with emphasis on completing existing parks, providing locations for facilities and protecting high priority resource themes.
- Identify recreational needs, prepare master plans and general management plans, establish statewide priorities, and administer a capital development program for planning, design and construction of park facilities, both at newly established and existing parks.
- Update the Project Evaluation Program (PEP) to reflect current needs for funding capital improvement projects. This new evaluation will go hand in hand with the updated GMP's.
- Initiate master plan efforts at Mayo River and newly authorized state natural areas.
- Ensure new staffing is identified and hired as new land, facilities, as well as, increase visitation are added to existing parks and as new park units are authorized.
- Develop a plan for equipment retirement and replacement.
- Develop enhanced visitor experiences and services to increase revenue.



## **GOAL #2**

### **PROVIDE THE BEST POSSIBLE VISITOR EXPERIENCE**

DPR can improve the quality of the park visitor's experience by better coordinating all aspects of the operation to focus on connecting visitors to the state's unique natural resources in a purposeful, planned manner.

The visitor experience has two components. The internal experience is the visitor's perspective, which is created by a combination of feelings, sensations and prior experiences. This is unique to every visitor. The external component consists of the many separate pieces outside the visitor – the road conditions in the park, the cleanliness of the campgrounds, the clarity and readability of park signs, and the friendliness of park staff are just a few examples. Integrating all these pieces is the key to providing great visitor experiences.

DPR is made up of many individual programs, each responsible for a part of the visitor's experience: operational policies, park design, constructed facilities, natural resource management, recreational activities, visitor services, interpretation, trails, signage, brochures, public information, and others. By focusing on collaboration and coordination among these programs, DPR seeks to provide purposeful, consistent, authentic experiences for visitors.

#### **FIVE-YEAR OBJECTIVES**

- Ensure adequate staffing is available to guarantee the best possible visitor experience.
- Collect and analyze survey results from the online survey of park users.

#### **Ongoing Objectives**

- Use a wide range of data from the centralized reservation system to identify trends and visitor demand in order to better target capital development to visitor needs.
- Expand retail space and product lines, increase public-private partnerships to offer a greater variety of recreational experiences and use marketing and other promotional effects to steer visitation to under utilized parks and facilities.
- Promote and integrate "Park's Educational Program for Elementary Students" program into all programs and promote the effort.
- Track international, national, and statewide recreation trends.
- Give priority to providing basic public services at every park and to expanding accessibility for all people to state park facilities. All new projects will provide accessibility in accordance with the standards of the American Disabilities Act.
- Create a plan for retrofitting, upgrading or replacing the aging infrastructure in the state park system.
- Provide for effective wayfinding designs as part of park master plans.
- Integrate trail routing and design with interpretation and education themes for each park.
- Provide a variety of opportunities for public input in the facility planning process.

## **GOAL #3**

### **INCREASE OPERATIONAL EFFICIENCY**

The recent growth of the state parks system, increased visitation, and high public interest in DPR services has placed great demands on DPR's resources and capabilities. DPR operates and maintains state park units open to the public 364 days per year (all park units are closed on Christmas Day), including law enforcement, public safety, education, natural resource protection, and visitor services. In addition, much work remains to be done to acquire, plan, staff, and develop newly established park units. Past economic downturns have not provided opportunities for DPR to increase staffing and the system's growth threatens to outpace the agency's capabilities.

DPR's challenge will be to manage the rapid growth of the parks system while maintaining excellence in state park operations and stewardship. It will be essential to increase DPR's organizational effectiveness, and to foster efficient use of funds and resources available to the DPR.

#### **FIVE-YEAR OBJECTIVES**

- Transition from a crisis driven maintenance program to a coordinated and efficient preventative maintenance program.
- Improve personnel retention at all staffing levels.
- Continue to migrate DPR data to electronic formats and integrate data into a centralized system.

#### **Ongoing Objectives**

- Ensure adequate staffing both in the land management program and at the state property office to be able to manage the increased land acquisitions envisioned in the future.
- Pursue multiple funding opportunities for accessibility modifications to existing facilities.
- Design sites and facilities to minimize staff travel distances and patrol time, to streamline maintenance costs, and to reduce energy costs.
- Pursue new technologies appropriate for state parks construction, maintenance, and operation. Explore using recycled materials, low waste systems, renewable energy and energy savings. Use environmentally friendly materials. All facilities will use "green" building standards as a guide for project design and construction.
- Improve interdisciplinary collaboration in project planning in order to target projects to identified needs, to identify constraints early, and to identify potential efficiencies and cost savings.
- Communication and data sharing among DPR's multiple field offices and remote sites will be improved with web-based data sharing.
- All programs will work to improve integration of multiple data sources and formats, including land acquisition, budget data, visitor use statistics, GIS data, and natural resource inventory.
- Take advantage of technological advances to improve park operations, both in the central office and in the field.
- Work with administration to identify activities which maximize revenue and incorporate the activities into future planning efforts.

- Continue to develop and implement DPR-wide fiscal data management system.
- Develop ways to identify, track and demonstrate cost efficiencies.
- Strengthen leadership training throughout DPR by encouraging completion of the Certified Public Managers Program or other leadership programs such as the Natural Resources Leadership Program offered by North Carolina State University.
- Use the website to host public information electronically. Maps, brochures, reports, and newsletters will be increasingly formatted for web distribution, although DPR will continue to provide printed materials.
- Continue the use of new communication opportunities, such as Facebook, Twitter, Instagram and other technological innovations. As new communications methods become available and are embraced by the public, state parks will explore and initiate utilization
- Explore ways to use available youth corps workers, to enhance volunteer recruitment and retention, to train volunteers to work independently in long-term positions, and in other ways to reduce labor costs and to allow state park units to operate more efficiently.
- Increase the number of volunteers systemwide by 50 percent.
- Increase total number of volunteer hours by 25 percent.
- Work with departmental Human Resources to improve/streamline the hiring process.
- Work with departmental Budget and Human Resources Department to remedy pay inequities.
- Continue to improve and enhance the centralized reservation system to improve both efficiency and customer service.
- Use the central warehouse to increase efficiencies in purchase and distribution of supplies and materials.
- Over time, as funding allows, convert vehicle fleet to more fuel-efficient vehicles. Evaluate use of vehicles and develop ways of reducing vehicle and fuel costs.
- Evaluate energy use patterns in buildings to identify cost-saving measures; including replacing the existing lighting in exhibit halls with more efficient LED lighting.
- Identify energy efficiency improvements in museums and incorporate these into museum maintenance projects.
- Improve personnel retention, thus reducing staff turnover, hiring and training expenses, by pursuing salary improvements for critical classes of employees commensurate with increasingly complex responsibilities.
- Better educate Local Governments regarding the PARTF (Parks and Recreation Trust Fund), RTP (Recreational Trails Program) and LWCF (Land and Water Conservation Fund) programs and the administration of the programs, through training seminars, the DPR web site, and Recreation Resources Services.

## **GOAL #4**

### **SUPPORT LOCAL ECONOMIC DEVELOPMENT**

The state's rural areas have been increasingly turning to ecotourism for economic growth and stability. The state parks are important regional attractions that can form the cornerstone of these local efforts. In addition, DPR can support local economic development by participating in local and regional tourism initiatives, by coordinating multi-jurisdictional recreation planning, by offering grants for local park and trail projects, and by providing environmental education opportunities for schools and universities.

DPR will look for innovative ways to support local economic development, while adhering to the mission and long-term goals of the state parks system, keeping public costs reasonable, and avoiding competition with the private sector.

#### **FIVE YEAR OBJECTIVE**

- Complete regional trail planning for the southern coastal plain and institute planning in the northern coastal plain.
- Prioritize acquisition and development of park units in Hometown Strong communities.

#### **Ongoing Objectives**

- Ensure that proper staffing is available to support local communities in increasing the economic development opportunities.
- Explore ways to increase support for and participation in community festivals, regional tourism initiatives, local planning projects, and youth job projects.
- Seek community input on park planning efforts and actively participate in community planning efforts.
- Continue support for recreation and ecotourism development at the local level.
- Work with local partners to provide grant funding and technical assistance for the implementation of trail and greenway projects.
- Update the DPR website to disseminate information on trail and greenway opportunities available across the state from various recreation providers.
- Increase partnerships with local school districts by offering educational programming targeted toward K-12 teachers and students.
- Partner with universities by making appropriate sites available for college-level field visits and research, and by exploring ways to fund research needed for park management.
- Revise and expand the basic EELEs, and place field-tested EELE activities on DPR's website so that educators can search a database and download activities to meet the learning needs of their students.
- Improve the availability of park resources for education by developing a systematic, coordinated approach for disseminating information about interpretation and education programs, interpretive exhibits and brochures and EELEs to teachers, scout leaders and other appropriate individuals.

## **GOAL #5**

### **SUPPORT STATE AND LOCAL HEALTH AND WELLNESS**

Studies show the average American boy or girl spends just four to seven minutes in unstructured outdoor play each day, and more than seven hours each day in front of an electronic screen. This lack of outdoor activity has profoundly impacted the wellness of our children. Childhood obesity rates have more than doubled in the last 20 years; the United States has become the largest consumer of ADHD medications in the world; and pediatric prescriptions for antidepressants have risen precipitously. DPR will develop partnerships with public and private health organizations to explore ways to use the state parks to encourage physical activity and healthy lifestyles.

#### **FIVE YEAR OBJECTIVES**

- Initiate the “Park’s Educational Program for Elementary Students”.
- Expand outreach efforts to local governments that have never applied for or received a PARTF (Parks and Recreation Trust Fund) grant.

#### **Ongoing Objectives**

- Continue to sponsor and promote first day hikes and steer visitation to under-utilized parks and facilities.
- Explore partnerships with healthcare providers to promote and encourage physical activity especially related to hiking biking and jogging.
- Continue to partner with outside organizations in supporting fitness related activities such as triathlons, trail running, hiking, mountain bike and other community events we can host in our parks.
- Continue to support, promote and manage the 100-mile challenge and passport program.
- Provide marketing strategies and support for the continued development, professionalism and financial stability and viability of Friends of State Parks.
- Develop and maintain partnerships with insurance and healthcare providers and other corporate sponsors.
- Increase outreach efforts to local governments to better inform them of available grant opportunities through state and federal grant programs.

## **GOAL #6**

### **INCREASE NATURAL AND CULTURAL RESOURCE STEWARDSHIP**

The ecosystems and cultural features protected by the state parks system often represent the highest quality examples of the state's natural landscape and cultural heritage. In many cases, these ecosystems and cultural features are also among the most threatened. DPR is responsible for the protection of the natural and cultural resources within the state parks system. The primary objective of DPR's natural resource management initiatives is to correct or compensate for the disruption of natural processes caused by human activities. These initiatives include the reintroduction of natural fire regimes, restoration of natural communities, and removal of exotic invasive species. The primary goal of cultural resource management is to protect and preserve historically significant features.

#### **FIVE YEAR OBJECTIVES**

- Double the annual acreage of prescribed burns within the park system.
- Continue ongoing restoration efforts and initiate two new restorations.
- Create efficiencies by improving effectiveness of invasive species control prescriptions.

#### **Ongoing Objectives**

- Ensure appropriate staffing is available to carry out the programs in a safe and efficient manner.
- Work with biologists to complete a geographic information system based natural community dataset. This dataset will form the basis for documenting natural community types and planning restoration efforts.
- Develop park fire prescriptions for all areas known to support communities with fire adaptive species. Apply prescribed fire on all areas with an appropriate natural fire return interval.
- Develop timber management plans for restoring damaged forests. Plans will include a description of existing conditions, restoration goals, monitoring objectives and public involvement
- Develop a strategic plan for controlling exotic invasive species throughout the park system.
- Partner with universities by making appropriate sites available for college-level field visits and research, and by exploring ways to fund research needed for park management.
- Develop management plans for each State Natural Area. Management plans will include objectives for the natural areas, land protection goals and protection plan for significant cultural and natural features.
- Ensure appropriate fire and exotic invasive species management training is available for field staff.
- All new seasonal fire staff will receive training on chainsaw, off-road vehicle usage, heat exhaustion, and other fire safety.
- Pre-fire briefings will discuss how to prepare for any emergencies on the fire line.

- Ensure all park facilities will be designed, constructed, and maintained to avoid direct and indirect adverse impacts to high quality natural communities, rare plant and animal species, major archaeological sites, and other significant natural and cultural resources.
- Ensure all appropriate park staff have training in fire and exotic species management. Where appropriate, a division certified burn boss should be trained for each unit.
- Each park will schedule an annual meeting with Natural Resources and NC Forest Service staff to review the park fire management plan and goals for prescribed fire.
- Each park should designate a staff liaison to coordinate with Natural Resources staff and take a lead on natural resource management initiatives.

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APPENDIX A

PARK PROFILES

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**Carolina Beach State Park**

**Summary**

With a marina providing access to some of North Carolina's best fishing spots, a secluded camping area beneath towering trees, and miles of hiking trails that traverse a variety of distinct habitats--not to mention the presence of the Venus flytrap, one of the world's most unique carnivorous plants--it's no wonder Carolina Beach State Park is a popular coastal attraction. Located in an area steeped in both history and natural diversity, the park includes a visitor's center with exhibits depicting the wonders of its environment. Visit Carolina Beach State Park to relax, enjoy nature or embark on an eye-opening adventure.

**Interpretive Themes**

CARNIVOROUS PLANTS  
DIVERSE PLANT COMMUNITIES

**Acreage:** 420 land acres    **Visitation (2017):** 797,375    **County:** New Hanover

**Visitor Facilities**

- 1 Auditorium
- 3 Boat Dock
- 1 Boat Ramp
- 4 Cabin - Improved
- 69 Campsite - No Hookups
- 1 Classroom
- 2 Dump Station
- 1 Fishing Pier
- 1 Group Camp - Walk In
- 2 Group Campsite - Walk In
- 1 Marina
- 1 Museum/Exhibit Hall
- 1 Office
- 11 Parking Area - Public
- 1 Picnic Area
- 2 Showerhouse
- 2 Tent and Trailer Camp
- 1 Toilet Building
- 2 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 2
- Office Assistant - 1
- Processing Assistant - 1

**Seasonal Staff**

- Refreshment Stand/bathhouse Fee Collector - 5
- General Utility worker - 5
- Park Attendant/fee Collector - 2
- Office Assistant - 1
- Park Technician/fee Collector - 1

## **Carvers Creek State Park**

### **Summary**

The summary information for this park has not yet been entered.

### **Interpretive Themes**

ENVIRONMENTAL  
RESTORATION  
CULTURAL HISTORY OF  
THE REGION  
THE LONGLEAF PINE  
ECOSYSTEM

**Acreeage:** 4,332 land acres

**Visitation (2017):** 67,642

**Counties:** Cumberland, Harnett

### **Visitor Facilities**

1 Boathouse  
1 Historic - House  
40 Historic Building  
1 Park Office  
2 Parking Area -Public  
3 1 Pier

### **Permanent Staff**

Park Superintendent - 1  
Maintenance Mechanic - 2  
Park Ranger - 2  
Office Assistant - 1

### **Seasonal Staff**

General Utility Worker - 2  
Office Assistant - 1  
Park Attendant/fee Collector - 1  
Park Technician/fee Collector - 1  
Natural Resource Technician - 1

## **Chimney Rock State Park**

### **Summary**

In 2005, the N.C. General Assembly authorized a new state park in the scenic Hickory Nut Gorge area of western Rutherford and surrounding counties. The unit was designated as Chimney Rock State Park shortly after the state had acquired Chimney Rock Park, a private nature park surrounding the striking 315-foot spire on the gorge's southern side. In 1902, Lucius B. Morse bought the site. The Morse family developed park facilities including a tunnel and elevator to the rock summit, a visitor center, nature center and a network of hiking trails to geologic points of interest and the 404-foot-tall Hickory Nut Falls.

The greater Chimney Rock State Park currently encompasses roughly 5,900 acres on both north and south sides of the gorge and expansion efforts continue to bring more of the gorge's rich natural resources into conservation.

The primary sections of the park are Chimney Rock, World's Edge, and Rumbling Bald. The addition of these lands to the State Parks System brings a large cluster of state and nationally significant sites, centered on the spectacular cliffs, rugged mountains, and unusually rich soils that line the gorge. With 36 rare plant species and 14 rare animal species, it is one of the major centers of biodiversity in the state.

### **Interpretive Themes**

LIVING ON THE EDGE

GEOLOGIC FORCES BEHIND THE STUNNING SCENERY OF HICKORY NUT GORGE

**Acreeage:** 6,270 land acres **Visitation (2017):** 253,715 **Counties:** Rutherford, Henderson, Buncombe, Polk

### **Visitor Facilities**

- 1 Concession
- 1 Elevator
- 2 Environmental Education Center
- 1 Interpretive Building
- 1 Lodge
- 1 Museum/Exhibit Hall
- 1 Office
- 1 Park Office
- 8 Parking Area - Public
- 5 Parking Area - Public Unpaved
- 1 Picnic Shelter
- 2 Restaurant
- 3 Toilet Building
- 1 Visitor Center

### **Permanent Staff**

- Park Superintendent - 1
- Maintenance Mechanic - 1
- Park Ranger - 4
- Maintenance Mechanic II - 1
- Office Assistant - 1

### **Seasonal Staff**

- Park Technician/fee Collector - 2
- Park Attendant/fee Collector - 2
- General Utility Worker - 1

**Cliffs of the Neuse State Park**

**Summary**

Cliffs of the Neuse State Park presently features a 35-site family campground (dump station for R.V. users/no electricity) and a four-site group campground (restrooms/no showers/shared water) for groups. The park's primary attraction during the summer season is its 11-acre swim lake and concession that are open daily Memorial Day-Labor Day for swimming and water activities (lifeguards on duty during season). The park is presently about 1,100 acres in size and borders the Neuse River for about two miles. Fishing is permitted in the river and anglers have good access at the base of the 350-yard Trail to target rockfish, shad, largemouth bass, bream or catfish depending upon the season. The Visitor Center features natural and cultural displays and offers a 1,000 sq. ft. auditorium that is available for public and private organization use by fee. Also featured is the park's 1800 sq. ft. picnic shelter (adjacent to restrooms) which may be reserved by fee also. Those with disabilities are permitted to drive to the picnic shelter upon request. Weddings are permitted by reservation on the Swim Lake beach from Sept. 10-May. 10.

**Interpretive Themes**

BOTTOMLAND BALD CYPRESS  
FOREST TYPES SWAMP ADJACENT  
TO THE NUESE RIVER UPLAND  
LONGLEAD PINE FOREST

**Acreeage:** 892 land acres      **Visitation (2017):** 260,820      **County:** Wayne

**Visitor**

**Facilities**

- 1 Amphitheater
- 1 Bathhouse
- 1 Beach
- 1 Boathouse
- 3 Cabin - Improved
- 31 Campsite - No Hookups
- 1 Campsite - Water & Electric
- 1 Dump Station
- 1 Group Camp - Drive To
- 4 Group Campsite - Drive To
- 1 Museum/Exhibit Hall
- 1 Park Office
- 7 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 1 Picnic Area
- 1 Picnic Shelter
- 1 Showerhouse
- Swimming Area - Freshwater
- 1 Tent and Trailer Camp
- 2 Toilet Building
- 1 Toilet Building - Non-Flush
- 1 Visitor Center

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 3
- Office Assistant - 1

**Seasonal Staff**

- Park Attendant/fee Collector - 6
- Lifeguard - 5
- Refreshment Stand/bathhouse Fee Collector - 5
- General Utility Worker - 5
- Office Assistant - 2
- Chief Lifeguard - 1
- Natural Resource Technician - 1

**Crowders Mountain State Park**

**Summary**

Raptors soar gracefully in the wind; vegetation reaches to the sky; sheer vertical cliffs drop 150 feet. Enjoy the spectacle from a front-row seat. High atop Crowders Mountain, the second highest point in Gaston County, views stretch for more than 25 miles. For a closer view of nature's marvels, walk the park's many miles of trails. The gently rolling landscape of the North Carolina Piedmont offers a variety of terrain. Dip into the valleys; cross the foothills; climb to the peaks. Quiet woods, trickling streams and melodious birds await. These spectacular surroundings, like the unique habitats in many other state parks, would not exist were it not for the efforts of concerned citizens dedicated to protecting our environment.

**Interpretive Themes**

THE MONADNOCKS OF CROWDERS MOUNTAIN AND THE PINNACLE  
STREAM AND LAKE ECOLOGY  
DIVERSE PLANT COMMUNITIES

**Acreeage:** 5,126 land acres      **Visitation (2017):** 888,039      **Counties:** Gaston, Cleveland

**Visitor Facilities**

- 1 Amphitheater
- 1 Auditorium
- 1 Backcountry Campground
- 1 Campsite - No Hookups
- 1 Fishing Pier
- 1 Group Camp - Hike In
- 9 Group Campsite - Hike In
- 1 Museum/Exhibit Hall
- 1 Park Office
- 11 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 2 Picnic Shelter
- 10 Primitive Campsite - Hike In
- 2 Toilet Building
- 6 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 6
- Office Assistant - 1
- Maintenance Mechanic - 3

**Seasonal Staff**

- General Utility Worker - 3
- Office Assistant - 3
- Park Attendant/fee Collector - 2

**Dismal Swamp State Park**

**Summary**

Feel your daily stresses melt away as you cross the historic Dismal Swamp Canal and walk along the 2000-foot boardwalk into this geological wonder. Experience firsthand the lush swamp forest and get up-close and personal with the wide variety of wildlife.

For the adventurer, there are 18 miles of hiking and mountain biking trails. Or, enjoy a leisurely paddle down the Dismal Swamp Canal in your canoe or kayak.

Learn why George Washington called the Dismal Swamp "a glorious paradise", how the swamp was important in the Underground Railroad and the ecological importance of wetlands in the visitor center and exhibit hall. All of this and more can be found just 3 miles south of the NC/VA border on US Hwy 17.

**Interpretive Themes**

- FORMATION OF THE GREAT DISMAL SWAMP
- THE HISTORY OF HUMAN ACTIVITY IN THE SWAMP
- RESTORATION OF NATURAL PROCESSES IN THE SWAMP

**Acreage:** 14,432 land acres    **Visitation (2017):** 137,820    **County:** Camden

**Visitor Facilities**

- 1 Auditorium
- 1 Canoe Launch Point
- 1 Classroom
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 2 Parking Area - Public
- 1 Parking Area - Public Unpaved
- 1 Parking Area - Trailer
- 1 Visitor Center

**Permanent Staff**

- Park Superintendent - 1
- Maintenance Mechanic - 2
- Park Ranger - 2
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 4



**Elk Knob State Park**

**Summary**

The park is centered on a series of high ridges and peaks, featuring spectacular scenery and high-quality examples of Northern Hardwood Forest and High Elevation Red Oak Forest natural communities. As in the rest of the Amphibolite Mountains area, much of the area is composed of amphibolite, a rock type that produces unusually rich, non-acidic soils with associated rich hardwood forest communities.

Elk Knob State Park is one of the newest additions to the North Carolina state parks system. Currently, it is in an interim development stage with a park office/contact station, a maintenance facility, picnic area, parking areas, a 1.9-mile trail to the summit of Elk Knob, and backcountry camping areas.

**Interpretive Themes**

The interpretive themes for this park have not yet been entered.

**Acreage:** 3,672 land acres    **Visitation (2017):** 44,825    **Counties:** Watauga, Ashe

**Visitor Facilities**

- 1 Classroom
- 2 Group Camp - Hike In
- 1 Park Office
- 1 Parking Area - Public
- 1 Parking Area - Public Unpaved
- 1 Picnic Area
- 1 Primitive Camp - Walk In
- 3 Primitive Campsite - Hike In
- 1 Toilet Building
- 1 Toilet Building - Non-Flush

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 2
- Office Assistant IV - 1
- Maintenance Mechanic - 1

**Seasonal Staff**

- General Utility Worker - 4
- Office Assistant - 2

**Eno River State Park**

**Summary**

Minutes from Durham, Hillsborough, and Chapel Hill the Eno River State Park offers secluded wilderness trails with the serenity of a clear river drifting and cascading over a rocky stream bed. The Eno River is a swift, shallow stream flowing from northwest Orange County into Durham County for 33 miles where it joins the Flat River to become the Neuse and flows into Falls Lake. Its waters roll through wilderness, passing historic mill sites, river bluffs covered with flowering shrubs, and fords used by early settlers.

Rains can turn the river into a raging torrent, yet it quickly settles into a gentle current. It is a chain of rapids, pools, and riffles meandering through forest on a bed of rock.

The valley of the river is narrow and steep walled. The rugged landscape is carved and sculpted by swift flowing water. Eno River State Park lies here, in the beauty of almost 4,200 acres of natural resources. Five accesses - Cabe Lands, Cole Mill, Few's Ford, Pleasant Green, and Pump Station -- offer entry into this largely unspoiled river environment.

**Interpretive Themes**

- RIVER BASIN ECOLOGY
- CULTURAL HISTORY
- WILDLIFE HABITAT CONSERVATION
- GEOLOGIC FEATURES

**Acreage:** 4,197 land acres    **Visitation (2017):** 640,172    **Counties:** Durham, Orange

**Visitor Facilities**

- 3 Canoe Launch Point
- 2 Group Camp - Walk In
- 2 Group Campsite - Walk In
- 4 Historic - House
- 1 Historic Area
- 2 Historic Building
- 1 Park Office
- 9 Parking Area – Public
- 2 Parking Area - Public Unpaved
- 1 Parking Area - Trailer Unpaved
- 2 Picnic Area
- 2 Picnic Shelter
- 2 Primitive Camp - Walk In
- 11 Primitive Campsite - Walk In
- 1 Shelter
- 1 Toilet Building
- 6 Toilet Building - Non-Flush
- Park has > 5 mi of Hiking Trails

**Permanent Staff**

- Park Ranger - 5
- Park Superintendent – 1
- Office Assistant - 1
- Maintenance Mechanic - 3

**Seasonal Staff**

- General Utility Worker - 10
- Park Technician/fee Collector - 3
- Office Assistant - 2
- Park Attendant/fee Collector – 2
- Naturalist\_pt - 1
- Natural Resource Technician - 1

## **Fort Macon State Park**

### **Summary**

Fort Macon offers public access to the surf, sun and sand of the Crystal Coast - as well as a historic landmark. Located at the eastern end of Bogue Banks, one of a series of barrier islands along the North Carolina coast, the park is surrounded on three sides by water - the Atlantic Ocean, Beaufort Inlet and Bogue Sound. This area of undisturbed natural beauty is the perfect place to explore salt marshes and estuaries vital to the coastal ecosystem.

The park is also home to a Civil War fort with a history as intricate and unique as the waterways of the sound. Visit Fort Macon to enjoy the land's natural beauty and soak up some history.

### **Interpretive Themes**

THE FORT

BARRIER ISLAND DYNAMICS

**Acreeage:** 424 land acres    **Visitation (2017):** 1,543,772    **County:** Carteret

#### **Visitor Facilities**

- 1 Auditorium
- 1 Bathhouse
- 1 Classroom
- 1 Concession
- 1 Fort
- 2 Museum/Exhibit Hall
- 1 Park Office
- 8 Parking Area - Public
- 1 Picnic Area
- 11 Picnic Shelter
- 2 Shelter
- 1 Swimming Area - Ocean or Sound
- 1 Visitor Center

#### **Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 4
- Maintenance Mechanic - 4
- Office Assistant - 1

#### **Seasonal Staff**

- Park Attendant/fee Collector – 6
- Lifeguard - 6
- Refreshment Stand/bathhouse Fee Collector - 5
- General Utility Worker - 5
- Chief Lifeguard - 1
- Refreshment Stand/bathhouse Manager - 1

**Goose Creek State Park**

**Summary**

Giant, old oaks draped in Spanish moss welcome you to this special world where broad, lazy Goose Creek joins the Pamlico River. A primitive camping area, picnic sites, swim beach and hiking and paddling trails offer a variety of ways to savor the tranquil surroundings at Goose Creek State Park. Goose Creek is conveniently located between historic Bath and the original Washington.

Visit Goose Creek State Park. Unwind and soak up the peacefulness; a hectic pace is not permitted.

**Interpretive Themes**

WETLANDS  
DIVERSITY OF HABITATS

**Acreeage:** 1,672 land acres    **Visitation (2017):** 299,100    **County:** Beaufort

**Visitor Facilities**

- 1 Amphitheater
- 1 Auditorium
- 1 Beach
- 1 Boat Dock
- 1 Boat Ramp
- 1 Classroom
- 1 Fishing Pier
- 2 Group Camp - Drive To
- 2 Group Campsite - Drive To
- 1 Information Station
- 1 Interpretive Building
- 1 Laboratory
- 1 Meeting Room
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 12 Parking Area - Public
- 2 Parking Area - PublicUnpaved
- 1 Picnic Area
- 2 Picnic Shelter
- 14 Primitive Campsite - Drive To
- 1 Restroom
- 1 Swimming Area - Ocean orSound
- 1 Tent and Trailer Camp
- 2 Toilet Building
- 3 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Paddle Trails
- Park has Interpretive Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 2
- Office Assistant - 1
- Environmental Specialist - 1

**Seasonal Staff**

- General Utility Worker - 5
- Park Attendant/fee Collector - 4
- Park Technician/fee Collector - 1

## Gorges State Park

### Summary

Plunging waterfalls, rugged river gorges, sheer rock walls and one of the greatest concentrations of rare and unique species in the eastern United States are found within Gorges State Park. An elevation that rises 2,000 feet in only four miles, combined with rainfall in excess of 80 inches per year, creates a temperate rain forest and supports a collection of waterfalls.

On April 29, 1999, thanks to a unique partnership of industry, the environmental community and the state of North Carolina, 10,000 acres of the Jocassee Gorges in Transylvania County were placed in public ownership to be preserved for future generations of North Carolinians. The property was purchased by the state from Duke Energy Corporation, and the transaction created a 2,900-acre game land managed by the N.C. Wildlife Resources Commission. Currently, Gorges encompasses nearly 7,500 acres and is the only state park west of Asheville.

### Interpretive Themes

THE STEEP TERRAIN OF THE BLUE RIDGE  
ESCARPMENT WET CLIMATE AND ABUNDANT  
SURFACE WATERS NATURAL COMMUNITIES AND  
RARE SPECIES

**Acreeage:** 7,709 land acres      **Visitation (2017):** 196,556      **County:** Transylvania

#### Visitor Facilities

- 1 Amphitheater
- 1 Auditorium
- 1 Backcountry Campground
- 1 Classroom
- 3 Observation Structure
- 8 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 1 Picnic Area
- 2 Picnic Shelter
- 14 Primitive Campsite - Hike In
- 3 Toilet Building
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails
- Park has Equestrian Trails

#### Permanent Staff

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 2
- Office Assistant - 1

#### Seasonal Staff

- General Utility Worker - 2
- Park Attendant/fee Collector – 2
- Office Assistant - 2
- Naturalist\_pt - 1

**Grandfather Mountain State Park**

**Summary**

In 2008, agreement was reached for the state parks system to acquire 2,456 acres of Grandfather Mountain to become North Carolina’s newest state park. The property is commonly known as the “backcountry” of the famous travel destination. The acquisition was arranged with the help of the Conservation Fund and The Nature Conservancy, which holds conservation easements on the mountain covering nearly 4,000 acres. The acquisition was financed by the Parks and Recreation & Natural Heritage trust funds.

In early 2009, the General Assembly formally authorized Grandfather Mountain State Park. This gives the state parks system the option of seeking additional acreage for traditional park facilities. Any additional tracts or facilities would be identified and prescribed through a public master planning process.

Over 70 species of rare, threatened and endangered plants and animals reside on the mountain. From the lower streams up to the higher peaks, over a dozen distinct ecological zones stretch across the landscape. The park is known for some of the most challenging hiking trails in the Southeast. Nature lovers and hikers alike, find this a special place.

**Interpretive Themes**

BIOSPHERE RESERVE

ECOLOGICAL

TRANSITION ZONES

HEADWATERS OF WATAUGA AND LINVILLE RIVERS/WATER QUALITY

**Acreage:** 2,644 land acres

**Visitation (2017):** 87,648

**Counties:** Avery, Watauga, Caldwell

**Visitor Facilities**

- 3 Group Campsite - Hike In
- 1 Parking Area - Public
- 10 Primitive Campsite - Hike In
- 1 Shelter
- 1 Toilet Building

**Permanent Staff**

- Park Superintendent - 1
- Maintenance Mechanic - 1
- Park Ranger - 3
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 3
- Office Assistant - 1
- Park Technician/fee Collector - 1

**Hammocks Beach State Park**

**Summary**

Venture to Bear Island and reward yourself with vivid memories of one of the most unspoiled beaches on the Atlantic coast. Accessible only by passenger ferry or private boat, there's just one thing at Hammocks Beach that's crowded -- the list of things to do.

Stroll the beach with laughing gulls and sandpipers. Cast a baited hook into endless rows of foaming breakers. Discover tiny specimens of marine life in tidal pools and mudflats. Use a camera or paintbrush to capture the green and gold grasses that color the salt marshes. Spend the night among the sand dunes, or simply bask in the sun and do nothing at all.

Secluded and tranquil, free from intruding commercialism, Hammocks Beach may not be for everyone, but the island is a retreat for people who welcome the challenges of relentless sun, sand, sea and sky.

**Interpretive Themes**

- LOGGERHEAD SEA TURTLE
- BARRIER ISLAND ECOLOGY
- LOCAL CULTURAL HISTORY

**Acreeage:** 1,155 land acres      **Visitation (2017):** 175,195      **County:** Onslow

**Visitor Facilities**

- 1 Auditorium
- 1 Bathhouse
- 1 Boat Dock
- 1 Boat Ramp
- 2 Canoe Launch Point
- 1 Classroom
- 1 Concession
- 1 Environmental Education Center
- 3 Ferry Boat Dock
- 1 Group Camp - Walk In
- 1 Group Campsite - Walk In
- 1 Interpretive Building
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 5 Parking Area - Public
- 5 Picnic Shelter
- 1 Primitive Camp - Walk In
- 14 Primitive Campsite - Walk In
- 1 Restroom
- 4 Shelter
- 1 Swimming Area - Ocean or Sound
- 1 Visitor Center
- Park has Paddle Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 4
- Mechanic - 1
- Maintenance Mechanic - 2
- Office Assistant - 2

**Seasonal Staff**

- General Utility Worker - 7
- Ferryboat Operator - 7
- Lifeguard - 5
- Deckhand - 4
- Office Assistant - 3
- Refreshment Stand/bathhouse Fee Collector - 2
- Park Attendant/fee Collector - 1
- Chief Lifeguard - 1
- Park Technician/fee Collector - 1

## **Haw River State Park**

### **Summary**

Haw River State Park grew to nearly 1,000 acres in 2008 when the state parks system completed the purchase of 692 acres. The property was added to about 300 acres the state parks system acquired since 2004 to establish the park and which includes The Summit environmental education center. The Haw River headwaters area was one of only 12 sites in the state deemed suitable for a new state park in the system's 2001 New Parks for a New Century initiative.

The area supports several natural communities within the river floodplain and on the adjacent bluffs and uplands. The river corridor contains a large collection of wetlands, including what may be the largest complex of beaver ponds in the Piedmont. There are several areas with high quality upland forests and a couple of rare plant and animal species, as well as significant historic and archaeological resources.

Authorized by the General Assembly in 2003, the Haw River State Park is in the early stages of development for future public use. The first major acquisition for the state park was the Summit Center, a Retreat and Conference Center originally owned by the Episcopal Diocese. This facility is now operated as the division's first residential environmental education center and also provides conference facilities which can be rented for group activities.

Located near the headwaters of the Haw River, The Haw River State Park and Summit Environmental Education Center is situated on nearly 300 acres of piedmont forest, fields, wetlands, and uplands.

As land acquisition continues and Haw River State Park grows and develops the park will be able to provide additional resource protection of the Haw River Corridor and recreational opportunities for park visitors. We hope to include picnicking, camping, and hiking opportunities in the future. The Haw River Corridor is also a proposed route for the Mountains to Sea Trail.

Until additional properties are acquired for the state park, we do not have facilities for general public use. Visitors are welcome to come to visit and see what we are all about, but it is recommended that you call ahead: our operating hours are Monday -- Friday 8am to 5pm and we are closed most state holidays. If the Summit is reserved for a weekend group, we will open during those reservation hours. We also ask that visitors check in at the front desk before touring the grounds.

### **Interpretive Themes**

The interpretive themes for this park have not yet been entered.

**Acreage:** 1,379 land acres    **Visitation (2017):** 65,187    **Counties:** Rockingham, Guilford



## **Haw River State Park (con't)**

### **Visitor Facilities**

- 1 Amphitheater
- 1 Boathouse
- 2 Classroom
- 1 Conference Center
- 1 Dining Hall
- 9 Disc Golf Hole
- 2 Environmental Education Center
- 1 Fishing Pier
- 5 Lodge
- 6 Meeting Room
- 7 Parking Area - Public
- 1 Parking Area - Public Unpaved 1
- 1 Picnic Shelter
- 1 Pool
- 1 Restroom
- 2 Swimming Platform
- 1 Tennis Court

### **Permanent Staff**

- Park Superintendent - 1
- Environmental Education Director - 1
- Administrative Assistant - 1
- Food Service Supervisor - 2
- Assistant Environmental Education Director - 1
- Maintenance Mechanic - 2
- Park Ranger - 2 Maintenance Mechanic I - 1
- Office Assistant - 1
- Housekeeping Supervisor - 1
- Cook - 1

### **Seasonal Staff**

- General Utility Worker - 18
- Environmental Education Instructor - 14
- Park Technician/fee Collector - 5
- Environmental Facility Culinary Intern - 2
- Lifeguard - 2
- Office Assistant - 1
- Natural Resource Technician - 1

**Hanging Rock State Park**

**Summary**

Not far from the cities of the Triad area, off the four-lane highways there's another North Carolina to be discovered sheer cliffs and peaks of bare rock, quiet forests and cascading waterfalls, views of the piedmont plateau that stretch for miles.

Hike the trails of Hanging Rock State Park and let nature put life's hectic pace in perspective. Rent a vacation cabin and fall asleep to the lullabies of spring peepers and chorus frogs. Join an interpretive program and discover something new about nature's bounty. Nestled in the hills is a cool mountain lake that beckons to swimmers and fishermen. Picnic areas and campgrounds lend themselves to time spent with family and friends. Hanging Rock State Park awaits you.

**Interpretive Themes**

GEOLOGY OF HANGING ROCK

**Acreeage:** 7,869 land acres    **Visitation (2017):** 672,611    **County:** Stokes

**Visitor Facilities**

- 3 Amphitheater
- 1 Auditorium
- 1 Bathhouse
- 1 Beach
- 1 Boathouse
- 10 Cabin - Improved
- 73 Campsite - No Hookups
- 1 Classroom
- 1 Concession
- 1 Dump Station
- 1 Group Camp - Walk In
- 5 Group Campsite - Walk In
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 1 Park Office
- 5 Parking Area - Public
- 11 Parking Area - Public Unpaved
- 2 Picnic Area
- 4 Picnic Shelter
- 1 Pier
- 1 Pool
- 1 Restroom
- 2 Showerhouse
- 1 Swimming Area - Freshwater
- 1 Tent and Trailer Camp
- 5 Toilet Building
- 4 Toilet Building - Non-Flush 1
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails

Park has Equestrian Trails  
Park has Interpretive Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 5
- Maintenance Mechanic - 4
- Office Assistant - 1

**Seasonal Staff**

- Lifeguard - 7
- Refreshment Stand/bathhouse Fee Collector - 5
- Park Attendant/fee Collector - 5
- General Utility Worker - 5
- Refreshment Stand/bathhouse Manager - 2
- Office Assistant - 2
- Chief Lifeguard - 1
- Park Technician/fee Collector - 1
- Environmental Education Instructor - 1

## Jones Lake State Park

### Summary

Venture to Jones Lake State Park and view one of the greatest geological mysteries of the eastern United States, the phenomenon of the Carolina bays. Adjacent to the Bladen Lakes State Forest and home of two natural lakes, Jones and Salters lakes, the 2,208-acre park is a nature lover's delight. Peaceful surroundings and a variety of facilities, including a trail with several outlooks that circles Jones Lake, make this state park a favorite for hiking, picnicking, swimming, fishing and camping.

### Interpretive Themes

ORIGIN OF CAROLINA BAYS

CAROLINA BAY ECOLOGY

**Acreeage:** 1,669 land acres / 539 water acres    **Visitation (2017):** 154,721    **County:** Bladen

### Visitor Facilities

- 1 Auditorium
- 1 Bathhouse
- 19 Campsite - No Hookups
- 1 Campsite - Water & Electric
- 1 Classroom
- 1 Fishing Pier
- 1 Group Camp - Drive To
- 1 Group Campsite - Drive To
- 1 Museum/Exhibit Hall
- 2 Parking Area - Public
- 1 Picnic Area
- 7 Picnic Shelter
- 1 Play Area w/ Equipment
- 1 Restroom
- 1 Showerhouse
- 1 Swimming Area - Freshwater
- 1 Tent and Trailer Camp
- 1 Visitor Center

### Permanent Staff

- Park Superintendent - 1
- Park Ranger – 3
- Maintenance Mechanic - 3
- Office Assistant - 1

### Seasonal Staff

- Lifeguard - 5
- Refreshment Stand/bathhouse Fee Collector – 2
- Park Attendant/fee Collector - 2
- General Utility Worker - 2
- Office Assistant - 1

## **Jockey's Ridge State Park**

### **Summary**

There are many reasons why millions of people visit Jockey's Ridge State Park. Some come to see the tallest sand dune on the Atlantic coast; others come for the spectacular sunsets.

At Jockey's Ridge State Park, you can experience the world of the desert. Shifting sands, high winds, extreme temperatures and a lack of water make the park resemble barren environments such as the Sahara Desert. You also can explore the wonders of an estuarine environment. The tidal waters of the Roanoke Sound, the western boundary of the park, is a rich habitat for a variety of plant and animal life, making these waters the source of much of the sea's bounty.

Whatever the reason for a visit to Jockey's Ridge, a trip to this unique park will give you even more reasons to come back again and again.

### **Interpretive Themes**

SAND DUNES

DIVERSITY OF HABITATS

**Acreeage:** 426 land acres      **Visitation (2017):** 1,560,254      **County:** Dare

### **Visitor Facilities**

- 1 Auditorium
- 1 Boardwalk
- 1 Concession
- 1 Museum/Exhibit Hall
- 2 Observation Structure
- 5 Parking Area - Public
- 9 Picnic Shelter
- 1 Restroom
- 1 Swimming Area - Ocean or Sound
- 1 Toilet Building
- 1 Visitor Center

### **Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 4
- Maintenance Mechanic - 2
- Office Assistant - 1

### **Seasonal Staff**

- General Utility Worker - 5
- Park Technician/fee Collector - 3
- Park Attendant/fee Collector - 2
- Office Assistant - 1

## Lake James State Park

### Summary

Tucked into the rolling hill country at the base of mighty Linville Gorge is Lake James, a sprawling 6,812-acre reservoir with more than 150 miles of shoreline. This impressive waterway is the centerpiece of Lake James State Park, where nature offers scenic vistas of the Appalachian Mountain range and beckons those with an appetite for outdoor recreation.

Bring family and friends to one of North Carolina's most popular state parks for a variety of activities. Go swimming and sunbathing or enjoy a quiet picnic along the lakeshore. Boat, water ski or fish in the lake's cool mountain waters or take a walk on the wild side and enjoy the beautiful forest wildflowers and abundant wildlife along park trails. Of course, you just may find that your favorite thing to do at Lake James is simply relaxing.

### Interpretive Themes

RESPONSIBLE AQUATIC RECREATION

WILDLIFE HABITATS

**Acreeage:** 3,515 land acres    **Visitation (2017):** 586,215    **Counties:** Burke, McDowell

### Visitor Facilities

- 1 Amphitheater
- 1 Bathhouse
- 2 Beach
- 2 Boat Dock
- 1 Boat Ramp
- 34 Campsite - No Hookups
- 1 Concession
- 3 Fishing Pier
- 1 Horseshoe Pit
- 2 Observation Structure
- 1 Park Office
- 12 Parking Area - Public
- 1 Parking Area - Public Unpaved
- 1 Parking Area - Trailer
- 2 Picnic Area
- 3 Picnic Shelter
- 2 Pier
- 1 Primitive Camp - Walk In
- 20 Primitive Campsite - Walk In
- 1 Swimming Area - Freshwater
- 3 Toilet Building
- 2 Toilet Building - Flush
- 3 Toilet building - Non-Flush
- Park has > 5 mi of Hiking Trails

### Permanent Staff

- Park Superintendent - 1
- Park Ranger – 4
- Maintenance Mechanic - 3
- Maintenance Mechanic I - 1
- Office Assistant - 1

### Seasonal Staff

- Lifeguard - 7
- General Utility Worker - 5
- Refreshment Stand/bathhouse Fee Collector - 4
- Park Attendant/fee Collector - 2
- Refreshment Stand/bathhouse Manager - 2
- Park Technician/fee Collector - 1
- Office Assistant - 1
- Chief Lifeguard - 1

**Lake Norman State Park**

**Summary**

At Lake Norman State Park, fun is just a matter of scale. On one hand, there's the largest manmade lake in the state, Lake Norman. When filled to capacity, its surface area is 32,510 acres with a shoreline of 520 miles and a main channel 34 miles in length -- thus its nickname, the "Inland Sea." Thirteen miles of the shoreline are in the state park, which provides boating access.

On another hand, the park boasts its own 33-acre lake where fishing and boating are enjoyed. And with hiking and biking trails, picnic areas, interpretive programs and campgrounds, there's more to Lake Norman State Park than merely water.

**Interpretive Themes**

OUTDOOR AQUATIC RECREATION

**Acreeage:** 1,923 land acres    **Visitation (2017):** 962,576    **County:** Iredell

**Visitor Facilities**

- 1 Amphitheater
- 2 Bathhouse
- 1 Beach
- 3 Boat Dock
- 1 Boat Ramp
- 33 Campsite - No Hookups
- 1 Community Building
- 1 Concession
- 1 Dump Station
- 1 Fishing Pier
- 1 Group Camp - Walk In
- 5 Group Campsite - Walk In
- 1 Park Office
- 14 Parking Area - Public
- 1 Parking Area - Trailer Unpaved
- 2 Picnic Area
- 3 Picnic Shelter
- 1 Showerhouse
- 1 Swimming Area –Freshwater
- 1 Tent and Trailer Camp
- 2 Toilet Building
- 1 Toilet Building – Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails

**Permanent Staff**

- Park Superintendent - 1
- Maintenance Mechanic III - 1
- Park Ranger - 4
- Office Assistant IV - 1
- Maintenance Mechanic - 2
- Office Assistant - 1

**Seasonal Staff**

- Lifeguard - 5
- General Utility Worker - 4
- Refreshment Stand/bathhouse Fee Collector - 4
- Refreshment Stand/bathhouse Manager - 2
- Park Attendant/fee Collector - 2
- Park Technician/fee Collector - 2
- Office Assistant - 2
- Chief Lifeguard - 1
- Section Intern Exhibits - 1

**Lake Waccamaw State Park**

**Summary**

The cool, tea-colored waters at first appear similar to other lakes in the area, but Lake Waccamaw is one of the most unique bodies of water in the world. You will find here species of animals found nowhere else on the planet, rare plants and endangered animals.

At Lake Waccamaw, you can view one of the greatest geological mysteries of the eastern United States -- the phenomenon of Carolina bays. Limestone bluffs along the north shore neutralize Lake Waccamaw's water, making the lake different from any other Carolina Bay. Nearby, you can catch a glimpse of a botanical wonder -- the Green Swamp.

From its sandy shorelines to its tree-lined natural areas, Lake Waccamaw offers peaceful surroundings, an intriguing natural history and fun in the sun.

**Interpretive Themes**

- LAKE WACCAMAW AQUATIC LIFE
- FRESHWATER MOLLUSKS
- ENDEMIC FISH

**Acreage:** 2,201 land acres / 8,938 water acres **Visitation (2017):** 134,334 **County:** Columbus

**Visitor Facilities**

- 1 Auditorium
- 1 Classroom
- 1 Fishing Pier
- 1 Group Camp - Walk In
- 4 Group Campsite - Walk In
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 4 Parking Area - Public
- 1 Parking Area - Public Unpaved
- 1 Picnic Area
- 1 Pier
- 1 Restroom
- 1 Toilet Building
- Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 2
- Office Assistant - 1

**Seasonal Staff**

- Park Attendant/fee Collector – 3
- General Utility Worker - 2
- Park Technician/fee Collector - 1
- Office Assistant - 1

## Lumber River State Park

### Summary

The Lumber River flows through the south-central portion of our state. The river's headwaters are in Montgomery, Moore, Richmond and Scotland counties where the waterway is known as Drowning Creek. The creek becomes a river at SR 1412/1203 along the Scotland-Hoke county line, and its waters flow into South Carolina, eventually joining the Little Pee Dee River.

Lumber River State Park contains 11,064 acres of land and 102 miles of state natural and scenic waters, 86.5 miles of which are also designated national wild and scenic waters. The park's recreation activities are currently centered at two access areas, Princess Ann and Chalk Banks. Princess Ann overlooks a unique reverse flow area named Griffin's Whirl. At the access, a bend in the river opens to a long, straight vista that beckons paddlers to take a ride. Chalk Banks, near the town of Wagram on the upper end of the river, has an interesting mixture of plants, fish, and animals from the sandhills and coastal plains regions.

Note: Due to the fluctuating water level of the Lumber River, canoeists and boaters should exercise caution in planning trips on the river. Add extra time for crossing exposed hazards and sandbars. All float times should include additional time to reach take-out points.

### Interpretive Themes

WATER QUALITY OF THE LUMBER RIVER

NATURAL COMMUNITIES WITHIN THE LUMBER RIVER CORRIDOR

WATER-BASED RECREATION AND SAFETY

**Acreage:** 11,259 land acres    **Visitation (2017):** 72,731    **Counties:** Columbus, Hoke, Robeson, Scotland  
State River: NATURAL - 34.5 miles RECREATIONAL - 15.5 miles SCENIC - 52.0 miles

### Visitor Facilities

- 1 Boat Ramp
- 9 Campsite - No Hookups
- 1 Canoe Launch Point
- 2 Group Camp - Walk In
- 2 Group Campsite - Walk In
- 1 Horseshoe Pit
- 1 Observation Structure
- 1 Office
- 1 Park Office
- 6 Parking Area – Public
- 3 Picnic Area
- 1 Picnic Shelter
- 2 Primitive Camp - Walk In
- 14 Primitive Campsite - Drive To
- 7 Primitive Campsite - Paddle To
- 1 Tent and Trailer Camp
- 3 Toilet Building
- 1 Toilet Building - Non-Flush
- Park has Paddle Trails

### Permanent Staff

- Park Superintendent - 1
- Park Ranger - 4
- Office Assistant - 1
- Maintenance Mechanic - 2

### Seasonal Staff

- General Utility Worker - 3
- Park Attendant/fee Collector - 2



**Mayo River State Park**

**Summary**

Authorized by the General Assembly in May 2003, the Mayo River State Park Mayo Mountain Access is located along the Mayo River from Madison and Mayodan near the confluence with the Dan River north to the Virginia border.

The Mayo River is ranked as nationally significant due to its numerous aquatic species. Numerous bluffs are found along the river including one of only two Piedmont Calcareous Cliff communities in the state. These xeric, rocky bluffs of calcite-cemented siltstone and sandstone in the Dan River Triassic Basin are home to rare plants and unique natural communities. Canoeing the river is a popular activity and picnicking, camping and other facilities are planned.

**Interpretive Themes**

The interpretive themes for this park have not yet been entered.

**Acreage:** 2,187 land acres    **Visitation (2017):** 56,783    **County:** Rockingham

**Visitor Facilities**

- 1 Group Camp - Walk In
- 2 Group Campsite - Walk In
- 1 Historic Building
- 1 Park Office
- 4 Parking Area - Public
- 1 Parking Area - Public Unpaved
- 1 Picnic Area
- 1 Picnic Shelter
- 1 Toilet Building
- 1 Toilet Building - Non-Flush

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 1
- Maintenance Mechanic - 1
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 3
- Park Attendant/fee Collector - 2

## Merchants Millpond State Park

### Summary

An "enchanted forest," primitive species of fish relatively unchanged over millions of years, towering bald cypress trees with massive trunks, luxuriant growths of Spanish moss -- this is Merchants Millpond State Park. Here, coastal pond and southern swamp forest mingle, creating one of North Carolina's rarest ecological communities. Together with upland forests, these environments create a haven for wildlife and humanity alike.

Escape the hectic pace of life and find sanctuary in a canoe. Drift along the smooth, dark surface of the millpond and savor the many sights and sounds that come alive in the stillness of the forest. Journey into remote and undisturbed Lassiter Swamp, a place that embodies the spirit of adventure, and see what you can discover.

If canoeing is not for you, fish for game species. Choose from an assortment of camping opportunities or enjoy a picnic beside the millpond. The remarkable surroundings of Merchants Millpond State Park lend themselves to a variety of activities.

### Interpretive Themes

THE MILLPOND  
PLANT COMMUNITIES  
SCENIC VALUE

**Acreage:** 3,447 land acres      **Visitation (2017):** 240,196      **County:** Gates

### Visitor Facilities

- 1 Auditorium
- 2 Boat Dock
- 23 Campsite - No Hookups
- 1 Canoe Launch Point
- 2 Canoe Rental Building
- 1 Classroom
- 1 Group Camp - Paddle To
- 1 Group Camp - Walk In
- 3 Group Campsite - Paddle To
- 1 Interpretive Building
- 6 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 3 Picnic Area
- 1 Picnic Shelter
- 1 Primitive Camp - Walk In
- 5 Primitive Campsite - Hike In
- 12 Primitive Campsite - Paddle To
- 1 Restroom
- 1 Showerhouse
- 1 Tent and Trailer Camp
- 2 Tent Camp - Paddle To
- 1 Toilet Building

- 2 Toilet Building - Flush
- 7 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Paddle Trails

### Permanent Staff

- Park Superintendent - 1
- Park Ranger - 3
- Office Assistant - 1
- Maintenance Mechanic - 2

### Seasonal Staff

- General Utility Worker - 5
- Park Attendant/fee Collector - 2

**Medoc Mountain State Park**

**Summary**

Should the humdrum of nine-to-five leave you with the urge to travel and explore, head to Medoc Mountain State Park. A pleasurable excursion awaits just 60 miles from the Raleigh area and only 8 miles off Interstate 95.

At Medoc Mountain, the urban refugee finds a welcome tranquility, a chance to embrace the outdoors. Trails beckon as light filters through branches overhead and falls on paths that hold the promise of new frontiers. The peacefulness gives the opportunity to refresh. The silence of the forest is broken only by bird songs and the occasional drumming of the pileated woodpecker. Grab your hiking boots. Load your camera. Spend some time at Medoc Mountain State Park and let nature renew your spirit.

**Interpretive Themes**

- GEOLOGY
- ECOLOGY OF LITTLE FISHING CREEK
- PARK HISTORY AND ECOLOGY

**Acreage:** 3,893 land acres    **Visitation (2017):** 150,397    **County:** Halifax

**Visitor Facilities**

- 13 Campsite - Electric Hookups
- 5 Campsite - Equestrian
- 21 Campsite - No Hookups
- 2 Canoe Launch Point
- 1 Classroom
- 1 Dump Station
- 1 Group Camp - Drive To
- 4 Group Campsite - Drive To
- 1 Museum/Exhibit Hall
- 1 Office
- 5 Parking Area - Public
- 1 ParkingArea - Trailer Unpaved
- 1 Picnic Area
- 2 Picnic Shelter
- 1 Restroom
- 2 Showerhouse
- 2 Tent and Trailer Camp
- 1 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Equestrian Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 2
- Maintenance Mechanic - 2
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 3
- Office Assistant - 2
- Park Attendant/fee Collector - 2

**Mount Mitchell State Park**

**Summary**

Rising more than a mile high, surrounded by the gentle mist of low-hanging clouds, Mount Mitchell State Park is one of North Carolina's most extraordinary places.

In the crest of the Black Mountains lies the summit of Mount Mitchell, the highest point east of the Mississippi. For those who ascend this timeworn yet still lofty peak, get to enjoy a feast for the eyes with breathtaking views of the Blue Ridge Mountains, mesmerizing cloud play, rolling ridges and fertile valleys. Forested and forever misty, 1,996-acre Mount Mitchell State Park will enchant you as it has been doing visitors for over a hundred years.

**Interpretive Themes**

MOUNTAIN BUILDING

FOREST DECLINE

BIOLOGICAL ISLANDS IN THE SKY

**Acreeage:** 1,996 land acres    **Visitation (2017):** 375,471    **County:** Yancey

**Visitor Facilities**

- 9 Campsite - No Hookups
- 1 Classroom
- 1 Community Building
- 1 Meeting Room
- 1 Museum
- 1 Observation Structure
- 1 Park Office
- 8 Parking Area – Public
- 2 Picnic Shelter
- 1 Primitive Camp - Walk In
- 1 Restaurant
- 1 Restroom
- 1 Toilet Building - Flush
- Park has > 5 mi of Hiking Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 4
- Maintenance Mechanic - 2
- Office Assistant - 1

**Seasonal Staff**

- Refreshment Stand/bathhouse Fee Collector - 8
- Park Attendant/fee Collector - 6
- General Utility Worker – 4
- Office Assistant - 2
- Naturalist\_pt - 2
- Park Technician/fee Collector - 1
- Refreshment Stand/bathhouse Manager - 1

## Morrow Mountain State Park

### Summary

Enjoy the gifts of nature surrounded by the remnants of a once mighty range of peaks. Upon first encounter, the Uwharrie Mountains may seem like a mountainous mirage. These steep, rugged hills and unusual topography for the area form a stark contrast with the rolling countryside of the piedmont plateau.

Recreation is plentiful in and around the waters of Lake Tillery and the Yadkin / Pee Dee River. Fishing and boating are popular pastimes. Nature lovers can pick from miles of trails to travel on foot or horseback. And for those who want to stay and take it all in, cabins and camping are available. There's really only one word to describe Morrow Mountain State Park: variety. Use the family car or RV, horseback or canoe, put on a pair of hiking boots or dip bare feet in the river, or bait your favorite fishing pole. A visit to Morrow Mountain lets you choose your kind of adventure.

### Interpretive Themes

GEOLOGY OF THE UWHARRIES

**Acreeage:** 4,496 land acres      **Visitation (2017):** 500,869      **County:** Stanly

#### Visitor Facilities

- 1 Amphitheater
- 1 Bathhouse
- 1 Boathouse
- 6 Cabin - Improved
- 22 Campsite - Electric Hookups
- 83 Campsite - No Hookups
- 1 Community Building
- 1 Group Camp - Drive To
- 6 Group Campsite - Drive To
- 1 Historic - House
- 3 Historic Building
- 1 Information Station
- 1 Museum
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 1 Office
- 6 Parking Area - Public
- 2 Parking Area – Public Unpaved
- 2 Picnic Area
- 3 Picnic Shelter
- 1 Pier
- 1 Pool
- 1 Primitive Camp - Walk In
- 4 Primitive Campsite - Walk In
- 1 Restroom
- 3 Showerhouse

- 1 Tent and Trailer Camp
- 4 Toilet Building
- 2 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Equestrian Trails
- Park has Interpretive Trails

#### Permanent Staff

- Park Ranger - 4
- Park Superintendent - 1
- Maintenance Mechanic - 3
- Office Assistant - 2

#### Seasonal Staff

- Refreshment Stand/bathhouse Fee Collector – 7
- Lifeguard - 6
- General Utility Worker - 6
- Park Attendant/fee Collector - 5
- Park Technician/fee Collector - 2
- Refreshment Stand/bathhouse Manager - 2
- Chief Lifeguard - 1

## **New River State Park**

### **Summary**

Rugged hillsides, pastoral meadows and farmlands surround what is believed to be one of the oldest rivers in North America is the New River. Its waters are slow and placid. Its banks are fertile and covered with wildflowers. Dedicated as a National Scenic River in 1976, this gentle river is the centerpiece of New River State Park.

The New River area still maintains an old-fashioned charm. Mountain roads are narrow and winding, dotted with small farms, churches and country stores. The river itself is tranquil, offering good bass fishing, trout streams, excellent birding and inspiring mountain scenery. But perhaps the best way to absorb and appreciate the river's peacefulness is from the seat of a canoe as it glides across the slow-moving waters. Four areas with access to this waterway make up more than 2,700 acres of New River State Park and provide spots for camping, canoeing, picnicking and fishing.

### **Interpretive Themes**

THE RIVER'S GEOLOGIC HISTORY

THE RIVER ECOLOGY

CULTURAL HISTORY

WATER RECREATION, SAFETY AND ETHICS

**Acreage:** 2,878 land acres    **Visitation (2017):** 253,718    **Counties:** Ashe, Alleghany

State River: SCENIC - 26.5 miles

### **Visitor Facilities**

- 1 Auditorium
- 20 Campsite - Water & Electric
- 8 Canoe Launch Point
- 1 Classroom
- 1 Community Building
- 1 Dump Station
- 1 Group Camp - Walk In
- 1 Meeting Room
- 1 Museum/Exhibit Hall
- 1 Park Office
- 13 Parking Area - Public
- 1 Parking Area - PublicUnpaved
- 4 Picnic Area
- 2 Picnic Shelter
- 1 Primitive Camp - Walk In
- 12 Primitive Campsite - Paddle To
- 24 Primitive Campsite - Walk In
- 1 Restroom
- 3 Showerhouse
- 2 Tent Camp - Paddle To
- 1 Toilet Building
- 8 Toilet Building - Non-Flush

- 1 Visitor Center
- Park has Paddle Trails
- Park has Interpretive Trails

### **Permanent Staff**

- Park Ranger - 5
- Park Superintendent - 1
- Maintenance Mechanic - 2
- Office Assistant - 2

### **Seasonal Staff**

- Park Attendant/fee Collector - 9
- General Utility Worker - 4
- Park Technician/fee Collector - 2
- Office Assistant - 2
- Natural Resource Technician - 1

## **Pettigrew State Park**

### **Summary**

With more than 1,300 acres of land around Lake Phelps and more than 4,400 acres along the Scuppernong River, with an additional 16,600 acres of water, Pettigrew State Park is an ideal blend of nature, history and recreation.

Explore Lake Phelps and examine dugout canoes as ancient as the pyramids. Or cast your line into crystal-clear waters where largemouth bass reign. Take a trip back in time at the grave of a great Confederate general. Or hug a tree as wide as an elephant. Paddle down one of North Carolina's last undeveloped rivers.

Pettigrew exhibits its history among picturesque natural surroundings. Majestic cypress trees tower above as the branches of tulip poplar and swamp chestnut oak provide perches for songbirds. Wildflowers decorate the landscape with a splash of color.

### **Interpretive Themes**

NATIVE AMERICANS

PHELPS LAKE

OLD-GROWTH TREES

ASTRONOMY

**Acree:** 5,830 land acres/16,600 water acres **Visitation (2017):** 69,453 **Counties:** Washington, Tyrrell

### **Visitor Facilities**

- 1 Boat Dock
- 1 Boat Ramp
- 13 Campsite - No Hookups
- 2 Fishing Pier
- 1 Group Camp - Walk In
- 1 Group Campsite - Walk In
- 1 Information Station
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 1 Park Office
- 6 Parking Area - Public
- 1 Parking Area - PublicUnpaved
- 1 Picnic Area
- 2 Picnic Shelter
- 1 Pier
- 1 Restroom
- 1 Showerhouse
- 1 Tent and Trailer Camp
- 2 Toilet Building
- 2 Toilet Building - Non-Flush
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails

### **Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 2
- Maintenance Mechanic - 2
- Office Assistant - 1

### **Seasonal Staff**

- General Utility Worker - 5
- Park Attendant/fee Collector - 2
- Office Assistant - 1

**Pilot Mountain State Park**

**Summary**

Pilot Mountain has served, for centuries, as a landmark for Native Americans, early explorers, and migrating wildlife. This iconic peak is the most recognizable mountain in North Carolina and forms the centerpiece of Pilot Mountain State Park. Rising to an elevation of 2421 feet, this solitary quartzite mountain, part of the ancient Sauratown Mountain range, was dedicated as a National Natural Landmark, and now serves as a beacon to hikers, rock climbers, and nature lovers.

A 6.5-mile wooded corridor trail joins the Mountain Section of the park with the Yadkin River Section which includes the north and south side of the river and a dozen small islands. This scenic section of the Yadkin provides hiking trails, fishing, and includes a canal wall built in 1825 that was designed to deliver boat traffic above the rocky shoals that form islands in this portion of the river.

Since 1968, a portion of the wild piedmont and a geological wonder has been preserved for you to enjoy at Pilot Mountain State Park.

**Interpretive Themes**

THE GEOLOGIC FORMATION OF THE SAURATOWN MOUNTAIN RANGE  
YADKIN RIVER BASIN

**Acreeage:** 3,663 land acres      **Visitation (2017):** 801,954      **Counties:** Surry, Yadkin

**Visitor Facilities**

- 49 Campsite - No Hookups
- 1 Canoe Launch Point
- 1 Group Camp - Drive To
- 2 Group Campsite - Drive To
- 1 Historic - House
- 1 Park Office
- 5 Parking Area - Public
- 5 Parking Area - Public Unpaved
- 2 Picnic Area
- 1 Picnic Shelter
- 2 Showerhouse
- 1 Tent and Trailer Camp
- 5 Toilet Building
- 1 Toilet Building - Flush
- Park has > 5 mi of Hiking Trails
- Park has Equestrian Trails
- Park has Paddle Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 4
- Office Assistant – 1
- Maintenance Mechanic - 3

**Seasonal Staff**

- General Utility Worker - 5
- Office Assistant - 3
- Park Attendant/fee Collector - 3



**Raven Rock State Park**

**Summary**

Should the humdrum of the work week leave you with the urge to travel and explore, head to Raven Rock State Park. Adventure is just an hour's drive from the Research Triangle and only 45 minutes from the Fayetteville area.

The first feeling you are likely to experience at Raven Rock is one of renewal. Here, the forest reigns as each year the timeless cycle of growth further heals age-old wounds inflicted by man. Nature triumphs as plants compete in the stages of forest succession and the woodlands are restored. High above the Cape Fear River stands Raven Rock, its austere beauty a testament to the forces that have shaped the land. As the river below rushes to join the sea, nature's elements continue to shape the surface of this natural monument. Spend some time at Raven Rock State Park and let nature refresh your spirit.

**Interpretive Themes**

- GEOLOGY OF RAVEN ROCK
- THE ECOLOGY OF THE FALL ZONE
- NATURAL AND CULTURAL HISTORY OF THE CAPE FEAR RIVER

**Acreeage:** 4,694 land acres    **Visitation (2017):** 236,258    **County:** Harnett

**Visitor Facilities**

- 2 Canoe Launch Point
- 1 Concession
- 1 Group Camp - Paddle To
- 1 Group Camp - Walk In
- 6 Group Campsite - Paddle To
- 5 Group Campsite - Walk In
- 1 Observation Structure
- 1 Park Office
- 5 Parking Area - Public
- 3 Parking Area - Public Unpaved
- 1 Picnic Area
- 1 Picnic Shelter
- 1 Primitive Camp - Walk In
- 5 Primitive Campsite - Walk In
- 1 Toilet Building
- 5 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Equestrian Trails
- Park has Paddle Trails

**Permanent Staff**

- Park Superintendent - 1
- Maintenance Mechanic - 2
- Park Ranger - 2
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 4
- Park Attendant/fee Collector - 3
- Office Assistant – 2
- Park Technician/fee Collector - 2

## **Singletary Lake State Park**

### **Summary**

Bring your group to Singletary Lake State Park and enjoy group camping in a land of mysterious origins. A portion of the unique Carolina bay ecosystem found nowhere else in the world, Singletary Lake lies within the 35,975-acre Bladen Lakes State Forest.

Developed primarily for organized group camping, the park is comprised of 649 acres of land and a 572-acre natural lake. In addition to group camping, Singletary Lake State Park offers ample opportunities for nature study and recreation.

### **Interpretive Themes**

ORIGIN OF CAROLINA BAYS

CAROLINA BAY ECOLOGY

**Acreage:** 649 land acres / 572 water acres    **Visitation (2017):** 25,531    **County:** Bladen

### **Visitor Facilities**

- 16 Cabin – Group
- 2 Dining Hall
- 1 Environmental Education Center
- 2 Interpretive Building
- 1 Park Office
- 3 Parking Area – Public
- 1 Pier
- 3 Play Area w/ Equipment
- 1 Restroom
- 2 Showerhouse

### **Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 1
- Office Assistant - 1
- Maintenance Mechanic - 2

### **Seasonal Staff**

- General Utility Worker - 1

**South Mountains State Park**

**Summary**

Nestled deep in the woods, South Mountains State Park is the perfect place to enjoy nature. Here you can see a majestic mountain range peeking out from the gently rolling landscape of the Piedmont. The park includes elevations up to 3,000 feet, a waterfall dropping 80 feet and more than 40 miles of trails. From equestrian camping to trout fishing, mountain biking to picnicking, a number of activities are available at South Mountains State Park.

Visit one of the state's most rugged parks. Hike the trail to High Shoals Falls to witness the roar of the waterfall as it pours into a large pool. Backpack through the woodlands for primitive camping. Fish for trout in miles of mountain streams, or bicycle along the 17-mile mountain-bike loop.

**Interpretive Themes**

JACOB'S FORK WATERSHED ECOLOGY

**Acreeage:** 18,627 land acres    **Visitation (2017):** 296,773    **County:** Burke

**Visitor Facilities**

- 1 Amphitheater
- 1 Auditorium
- 6 Backcountry Campground
- 15 Campsite - Equestrian
- 11 Campsite - No Hookups
- 1 Classroom
- 1 Fishing Pier
- 1 Information Station
- 1 Interpretive Building
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 8 Parking Area - Public
- 14 Parking Area - Trailer Unpaved
- 1 Picnic Area
- 1 Picnic Shelter
- 20 Primitive Campsite - Hike In
- 1 Restroom
- 1 Showerhouse
- 2 Tent and Trailer Camp
- 2 Toilet Building - Flush
- 9 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails
- Park has Equestrian Trails
- Park has Interpretive Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 7
- Maintenance Mechanic - 3
- Office Assistant - 1

**Seasonal Staff**

- General Utility Worker - 9
- Office Assistant - 2
- Park Attendant/fee Collector - 2

## Stone Mountain State Park

### Summary

Stone Mountain is not immediately visible upon entering the park that bears its name, but this magnificent 600- foot granite dome is well worth the wait. Sunlight and shadows dance across a broad tapestry of stone. White- tailed deer emerge from the security of the forest to graze on meadow grasses at the mountain\'s base. The scenery is only one attraction of the park.

Test your fly-fishing techniques in more than 20 miles of designated trout waters. Or, with more than 16 miles of trails, take a hike in the park. Designated as a National Natural Landmark in 1975, Stone Mountain is bounded on the north by the Blue Ridge Parkway and on the west by the Thurmond Chatham Game Lands. More than 14,100 acres of mountain beauty offer opportunities for outdoor activities of all kinds.

### Interpretive Themes

GEOLOGY OF STONE MOUNTAIN

**Acreeage:** 14,351 land acres    **Visitation (2017):** 440,217    **Counties:** Wilkes, Alleghany

### Visitor Facilities

- 1 Amphitheater
- 47 Campsite - No Hookups
- 41 Campsite - Water & Electric
- 1 Dump Station
- 2 Fishing Pier
- 1 Group Camp - Drive To
- 4 Group Campsite - Drive To
- 1 Historic Area
- 13 Historic Building
- 1 Information Station
- 1 Meeting Room
- 1 Museum/Exhibit Hall
- 20 Parking Area - Public
- 2 Parking Area - PublicUnpaved
- 1 Parking Area – Trailer
- 2 Picnic Area
- 3 Picnic Shelter
- 6 Primitive Campsite - Hike In
- 1 Restroom
- 3 Showerhouse
- 1 Tent and Trailer Camp
- 2 Toilet Building
- 1 Toilet Building - Flush
- 1 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Equestrian Trails

Park Superintendent - 1

Park Ranger - 5

Maintenance Mechanic - 3

Office Assistant III - 1

### Seasonal Staff

General Utility Worker - 6

Park Attendant/fee Collector - 6

Office Assistant - 2

### Permanent Staff

**William B. Umstead State Park**

**Summary**

Tucked between the growing cities of Raleigh, Cary, Durham and the corporate world of Research Triangle Park is an oasis of tranquility, a peaceful haven -- William B. Umstead State Park.

Here, two worlds merge as the sounds of civilization give way to the unhurried rhythm of nature. Highways fade in the distance as trees, flowers, birds and streams form a more natural community. William B. Umstead is a place to escape the pressures of everyday life, a place to picnic in the pines, to wait for a fish to bite, to take a hike or horseback ride on trails through the woods.

Divided into two sections, Crabtree Creek and Reedy Creek, this 5,599-acre park is easily accessible from Interstate 40 and US 70. Visit William B. Umstead State Park and enjoy this region of wilderness at the city's doorstep.

**Interpretive Themes**

RECLAMATION, REGENERATION AND RECOVERY  
SUCCESSIONAL PROCESSES AND SECOND GROWTH FORESTS  
LAND STEWARDSHIP

**Acreeage:** 5,592 land acres      **Visitation (2017):** 1,538,830      **County:** Wake

**Visitor Facilities**

- 3 Amphitheater
- 1 Auditorium
- 1 Boathouse
- 100 Cabin - Group
- 28 Campsite - No Hookups
- 1 Classroom
- 4 Dining Hall
- 3 Group Camp - Drive To
- 1 1 Group Camp - Walk In
- 1 Group Campsite - Drive To
- 1 Group Campsite - Walk In
- 2 Lodge
- 1 Museum/Exhibit Hall
- 1 Observation Structure
- 1 Park Office
- 9 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 1 Parking Area - Trailer
- 1 Picnic Area
- 4 Picnic Shelter
- 1 Play Area
- 3 Restroom
- 3 Showerhouse
- 1 Tent and Trailer Camp
- 12 Toilet Building

- 3 Toilet Building - Flush
- 1 Toilet Building - Non-Flush
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails
- Park has Equestrian Trails

**Permanent Staff**

- Park Superintendent - 1
- Park Ranger - 6
- Maintenance Mechanic - 4
- Office Assistant - 2

**Seasonal Staff**

- Park Attendant/fee Collector - 10
- General Utility Worker - 3
- Park Intern - 2
- Park Technician/fee Collector - 1

**Falls Lake State Recreation Area**

**Summary**

Hours of relaxation await you at Falls Lake State Recreation Area. Just moments away from the hustle and bustle of the city, Falls Lake is a great way to escape urban life. With a 12,000-acre lake and 26,000 acres of woodlands, Falls Lake State Recreation Area offers a choice of recreation areas Beaverdam, B.W. Wells, Highway 50, Holly Point, Rolling View, Sandling Beach and Shinleaf.

Fishing, boating and swimming are only a few of the activities awaiting you on the water. On land, you can enjoy walking, mountain biking or camping along a portion of the state's Mountains-to-Sea Trail. From recreation to environmental education, no matter what you are looking for, you are sure to discover it at Falls Lake.

**Interpretive Themes**

WATER-BASED RECREATION AND SAFETY  
FISH AND WILDLIFE HABITATS

**Acreeage:** 5,035 land acres    **Visitation (2017):** 1,033,861    **Counties:** Wake, Durham

**Visitor Facilities**

- 4 Amphitheater
- 5 Bathhouse
- 10 Beach
- 15 Boat Dock
- 5 Boat Ramp
- 99 Campsite - No Hookups
- 175 Campsite - Water & Electric
- 1 Community Building
- 2 Dump Station
- 5 Fishing Pier
- 3 Group Camp - Drive To
- 27 Group Campsite - Drive To
- 2 Historic - House
- 2 Historic Building
- 1 Marina
- 1 Park Office
- 80 Parking Area - Public
- 2 Parking Area - Public Unpaved
- 4 Parking Area - Trailer
- 2 Parking Area - Trailer Unpaved
- 13 Picnic Area
- 22 Picnic Shelter
- 2 Play Area
- 8 Play Area w/ Equipment
- 1 Primitive Camp - Walk In

- 47 Primitive Campsite - Walk In
- 12 Showerhouse
- 5 Swimming Area – Freshwater
- 2 Tent and Trailer Camp
- 17 Toilet Building
- 8 Toilet Building - Non-Flush
- Park has > 5 mi of Hiking Trails
- Park has Bicycle Trails

**Permanent Staff**

- Park Superintendent - 2
- Facility Maintenance Supv - 1
- Park Ranger - 12
- Mechanic - 1
- Wastewater Treatment Area OP - 1
- Office Assistant - 2
- Trades Worker - 1
- Maintenance Mechanic - 10

**Seasonal Staff**

- Park Attendant/fee Collector - 27
- General Utility Worker - 23
- Park Technician/fee Collector - 13
- Refreshment Stand/bathhouse Fee Collector - 8
- Office Assistant - 2
- Natural Resource Technician – 1

## Fort Fisher State Recreation Area

### Summary

Enjoy a leisurely day at the ocean shore. Comb the beach for sea stars, keyhole urchins and whelk shells. Or, simply lie back on the sand and enjoy the aerial acrobatics of seagulls, terns and brown pelicans as they soar above the waves. You may want to venture into the mud flats and marshes to watch sandpipers and other shorebirds as they search for food. Learn about endangered species. Loggerhead sea turtles, piping plovers and other rare species nest along this sandy shore. Explore the North Carolina coast; visit Fort Fisher State Recreation Area. This stretch of pristine shoreline offers many enjoyable activities.

Approximately six miles of beach provide all the sun, sand, sea and sky you can soak up in a day. Experience the ocean away from all the crowds. From the recreation area parking lot, an elevated boardwalk leads over the sand dunes to the beach, from where visitors can walk along one of the few remaining undeveloped stretches of shoreline on our southern coast.

Located on the southern tip of Pleasure Island near Wilmington, Fort Fisher lies between the Atlantic Ocean on the east and the Cape Fear River on the west. Here are miles of white, sandy beach for sunning, swimming and fishing. The salt marsh, tidal creeks and mud flats form a natural outdoor laboratory exhibiting the wonders of a coastal environment.

### Interpretive Themes

COASTAL WATERBIRDS

SEA TURTLES

BARRIER SPIT ECOLOGY

RECREATION

**Acreage:** 287 land acres

**Visitation (2017):** 792,584

**County:** New Hanover

### Visitor Facilities

- 1 Bathhouse
- 1 Classroom
- 1 Concession
- 1 Museum/Exhibit Hall
- 2 Parking Area – Public
- 2 Picnic Area
- 1 Swimming Area - Ocean or Sound
- 1 Visitor Center

### Permanent Staff

- Park Superintendent - 1
- Park Ranger - 3
- Maintenance Mechanic - 2
- Office Assistant - 1

### Seasonal Staff

- Lifeguard - 5
- Refreshment Stand/bathhouse Fee Collector - 2
- Office Assistant - 2
- General Utility Worker - 2
- Park Attendant/fee Collector - 2
- Park Technician/fee Collector - 2
- Chief Lifeguard - 1
- Refreshment Stand/Bathhouse Manager - 1

## Jordan Lake State Recreation Area

### Summary

Imagine relaxing in a cove, listening to the sounds of water rippling. Then, you feel a firm tug on your fishing line. It's going to be a big one! Picture the surface of the lake glistening, water spraying your face, the boat motor ahead roaring. Suddenly, your skis give way -- a splash landing! Hear the laughter of children, smell burgers roasting over a charcoal fire, feel a breeze blowing through the campground. With almost 14,000 acres of water, all this and more is yours to discover at Jordan Lake.

The NC Division of Parks and Recreation operates nine recreation areas on the lake -- Crosswinds Campground, Ebenezer Church, Parker's Creek, Poplar Point, Seaforth, Vista Point, Robeson Creek, New Hope Overlook, and White Oak Recreation Area. Whether you're looking for fun in the sun or an evening under the stars, Jordan Lake offers it all.

### Interpretive Themes

AQUATIC RESOURCES: WE ALL LIVE DOWNSTREAM

AREA WILDLIFE: PREDATOR-PREY

CULTURAL HISTORY

**Acreeage:** 4,558 land acres      **Visitation (2017):** 1,485,956      **County:** Chatham

### Visitor Facilities

- 3 Amphitheater
- 1 Auditorium
- 3 Bathhouse
- 6 Beach
- 14 Boat Dock
- 11 Boat Ramp
- 365 Campsite - Electric Hookups
- 380 Campsite - No Hookups
- 277 Campsite - Water & Electric
- 2 Canoe Launch Point
- 1 Classroom
- 4 Dump Station
- 1 Fishing Pier
- 2 Group Camp - Drive To
- 11 Group Campsite - Drive To
- 1 Marina
- 1 Meeting Room
- 1 Museum/Exhibit Hall
- 1 Office
- 78 Parking Area - Public
- 4 Parking Area - Public Unpaved
- 14 Parking Area - Trailer
- 9 Picnic Area
- 11 Picnic Shelter
- 11 Play Area w/ Equipment
- 2 Primitive Camp - Walk In

- 24 Primitive Campsite - Walk In
- 18 Showerhouse
- 7 Swimming Area – Freshwater
- 5 Tent and Trailer Camp
- 18 Toilet Building
- 3 Toilet Building - Non-Flush
- 1 Trash Station
- 1 Visitor Center
- Park has > 5 mi of Hiking Trails

### Permanent Staff

- Park Superintendent - 2
- Facility Maintenance Supv - 1
- Wastewater Treatment Area OP - 1
- Park Ranger - 16
- Electrician - 1
- Maintenance Mechanic - 6
- Mechanic - 2
- Office Assistant - 1
- Trades Worker - 1
- Processing Assistant - 1

### Seasonal Staff

- Park Attendant/fee Collector - 36
- General Utility Worker - 36
- Park Technician/fee Collector - 19
- Office Assistant - 2



## Kerr Lake State Recreation Area

### Summary

Set a course for Kerr Lake State Recreation Area to enjoy sailing, fishing, water skiing and camping. This 50,000-acre, man-made lake is a haven for water sports enthusiasts and landlubbers alike. The lake is situated in the northeast corner of the Piedmont region and lies in both Virginia and North Carolina. The recreation area's headquarters are located north of Henderson at Satterwhite Point. More than 800 miles of wooded shoreline provide access to a variety of fun-filled activities on the lake. Relax and enjoy water sports at any of the seven recreation areas operated by the NC Division of Parks and Recreation along this expansive reservoir.

### Interpretive Themes

KERR RESERVOIR WATER MANAGEMENT

WATER-RELATED RECREATION

FISH OF KERR RESERVOIR

**Acreeage:** 3,376 land acres    **Visitation (2017):** 1,120,837    **Counties:** Vance, Warren

### Visitor Facilities

- 1 Amphitheater
- 1 Beach
- 28 Boat Dock
- 18 Boat Ramp
- 78 Campsite - Electric Hookups
- 251 Campsite - No Hookups
- 284 Campsite - Water & Electric
- 3 Community Building
- 3 Concession
- 5 Dump Station
- 2 Fishing Pier
- 2 Group Camp - Drive To
- 1 Group Campsite - Drive To
- 1 Information Station
- 2 Marina
- 1 Meeting Room
- 1 Museum/Exhibit Hall
- 3 Office
- 66 Parking Area - Public
- 6 Parking Area - PublicUnpaved
- 3 Parking Area - Trailer
- 7 ParkingArea - Trailer Unpaved
- 11 Picnic Shelter
- 3 Play Area w/ Equipment
- 1 Restroom
- 1 Shelter
- 16 Showerhouse
- 1 Swimming Area – Freshwater
- 7 Tent and Trailer Camp

- 19 Toilet Building
- 1 Toilet Building – Flush
- 1 Visitor Center
- Park has Interpretive Trails

### Permanent Staff

- Park Superintendent - 2
- Park Ranger - 11
- Facility Maintenance Supv - 1
- Mechanic - 2
- Office Assistant - 2
- Maintenance Mechanic - 11

### Seasonal Staff

- Park Attendant/fee Collector - 76
- General Utility Worker - 14
- Park Technician/fee Collector - 8
- Office Assistant - 2

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## APPENDIX B

RESULTS FROM THE NATIONAL SURVEY OF  
RECREATION AND THE ENVIRONMENT:  
NORTH CAROLINA AND  
THE NORTH CAROLINA MARKET REGION

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## NATIONAL SURVEY ON RECREATION AND THE ENVIRONMENT RESULTS BY REGION IN NORTH CAROLINA

The following information about recreation participation in four regions of North Carolina has been excerpted from the report “North Carolina and the North Carolina Market Region”; a report submitted to the State of North Carolina, Division of Parks and Recreation by the Pioneering Research Group, Southern Research Station, USDA Forest Service, Athens, GA.

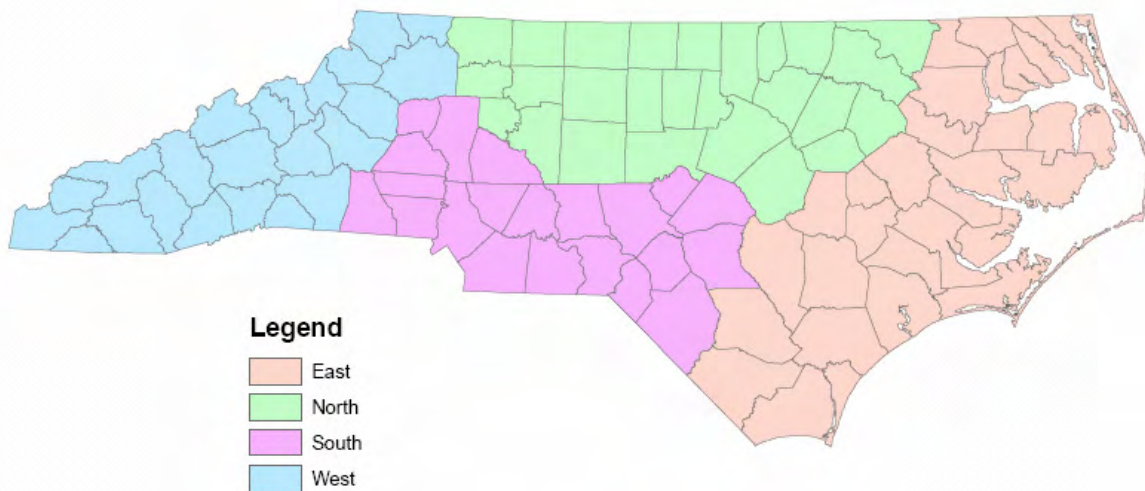
The 2002-2007 National Survey on Recreation and the Environment (NSRE) is the eighth in a series of national surveys started in 1960 by the Outdoor Recreation Resources Review Commission and now coordinated by the USDA Forest Service. The survey was accomplished by interviewing approximately 90,000 Americans aged 16 and over in random-digit-dialing telephone samplings. In 2007, the U.S. Forest Service prepared an analysis of responses to the NSRE for residents from North Carolina.

The NSRE has yielded just fewer than 3,000 total surveys for North Carolina during this period. The primary purpose of the NSRE and was to learn about approximately 85 specific outdoor recreation activities of people aged 16 and over in the United States. Questions from the NSRE broadly address areas such as outdoor recreation participation, demographics, household structure, lifestyles, environmental attitudes, natural resource values, constraints to participation, and attitudes toward management policies. For additional statewide results from the NSRE, please refer to Chapter 4 of this document.

### Activity Groups and Activities for Residents of North Carolina by Region

To provide information about regions within North Carolina, the state was divided into four regions; east, north, south, and west (Figure B-1). The regions are roughly defined by major interstate highways that traverse the state and are closely aligned with the four districts used to manage the North Carolina State Parks System. The East Region includes counties east of I-95. The West Region includes counties west of I-77. The North Region includes counties north of I-40 and between I-77 and I-40. The South Region includes counties south of I-40 and between I-77 and I-40.

Figure B-1. NSRE Regions in North Carolina



### Activity Groups and Activities for Residents in the East Region of North Carolina

The activities presented below are categorized by activity group for residents of the East Region of North Carolina by percent participating, number of participants, total sample size, and includes the upper and lower bounds of the 95% confidence interval.

*Table 3.19: East Region Resident Participation in Nature-Based Land Activities*

<b>Activity</b>	<b>Sample size</b>	<b>Percent participating</b>	<b>95% confidence interval lower bound (%)</b>	<b>95% confidence interval upper bound (%)</b>	<b>Number of participants (1,000s)</b>	<b>95% confidence interval lower bound (1,000s)</b>	<b>95% confidence interval upper bound (1,000s)</b>
Visit a farm or agricultural setting	251	25.9	20.5	31.3	297	235	359
Visit a wilderness or primitive area	457	24.3	20.4	28.2	278	234	323
Drive off-road (any type)	412	17.9	14.2	21.6	205	163	248
Developed camping	457	17.4	13.9	20.9	199	159	240
Day hiking	457	17.3	13.8	20.8	198	158	238
Mountain biking	447	16.5	13.1	19.9	189	150	228
Hunting (any type)	486	11.9	9.0	14.8	136	103	170
Primitive camping	430	10.6	7.7	13.5	121	88	155
Big game hunting	348	8.4	5.5	11.3	96	63	129
Small Game hunting	348	7.8	5.0	10.6	89	57	121
Horseback riding on trails	419	5.1	3.0	7.2	58	34	83
Mountain climbing	78	4.0	0.0	8.3	46	0	95
Backpacking	457	3.9	2.1	5.7	45	24	65
Migratory bird hunting	420	3.8	2.0	5.6	44	23	64
Orienteering	57	3.0	0.0	7.4	34	0	85
Rock climbing	78	1.4	0.0	4.0	16	0	46

Table 3.19 presents the most popular nature-based land activity in the East region to be visiting a farm or agricultural setting (25.9%). The second most popular activity is visiting a wilderness or primitive area (24.3%). Around 17% of the population of the East region participates in driving off-road, developed camping, or day hiking, and 16.5% mountain bikes. Primitive camping is enjoyed by over 10% of the population. Almost 12% of the population hunts. Of the various kinds of hunting, big game hunting ranks

highest in popularity (8.4%), followed by small game hunting (7.8%) and migratory bird hunting (3.8%). More than 5% of the population enjoys horseback riding on trails, while less than 5% goes mountain climbing, backpacking, orienteering, or rock climbing.

*Table 3.20: East Region Resident Participation in Developed-Setting Land Activities*

<b>Activity</b>	<b>Sample size</b>	<b>Percent participating</b>	<b>95% confidence interval lower bound (%)</b>	<b>95% confidence interval upper bound (%)</b>	<b>Number of participants (1,000s)</b>	<b>95% confidence interval lower bound (1,000s)</b>	<b>95% confidence interval upper bound (1,000s)</b>
Walk for pleasure	447	77.9	74.1	81.7	893	849	936
Family gathering	425	74.2	70.0	78.4	850	802	898
Gardening or landscaping for pleasure	47	62.8	49.0	76.6	720	562	878
Driving for pleasure	400	51.9	47.0	56.8	595	539	651
Picnicking	457	44.5	39.9	49.1	510	457	563
Bicycling	458	35.2	30.8	39.6	403	353	454
Yard games, e.g., horseshoes	60	33.8	21.8	45.8	387	250	525
Attend outdoor concerts, plays, etc.	47	28.0	15.2	40.8	321	174	468
Horseback riding (any type)	429	7.0	4.6	9.4	80	53	108

Table 3.20 shows more than 75% of East region residents participate in walking for pleasure, while just under 75% have family gatherings in developed areas. Gardening of landscaping for pleasure is done by 62.8% of the population, and more than 50% enjoys driving for pleasure. Picnicking is enjoyed by 44.5% of the East region population. More than 35% goes bicycling, and 33.8% enjoys yard games like horseshoes. Less than 30% attends outdoor concerts and plays, and just 7.0% rides horses.

Table 3.21: East Region Resident Participation in Water-Based Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Visit a beach	463	47.0	42.5	51.5	539	487	590
Swimming in lakes, streams, etc.	469	38.5	34.1	42.9	441	391	492
Swimming in an outdoor pool	211	36.4	29.9	42.9	417	343	492
Saltwater fishing	420	32.1	27.6	36.6	368	316	419
Boating (any type)	470	29.4	25.3	33.5	337	290	384
Freshwater fishing	459	29.1	24.9	33.3	333	285	382
Motorboating	470	23.9	20.0	27.8	274	229	319
Warmwater fishing	410	22.9	18.8	27.0	262	215	309
Visit other waterside (besides beach)	410	17.4	13.7	21.1	199	157	242
Anadromous fishing	405	6.0	3.7	8.3	69	42	95
Coldwater fishing	446	5.4	3.3	7.5	62	38	86
Use personal watercraft	470	4.7	2.8	6.6	54	32	76
Canoeing	470	3.9	2.1	5.7	45	24	65
Rafting	470	3.7	2.0	5.4	42	23	62
Waterskiing	420	3.2	1.5	4.9	37	17	56
Sailing	447	3.1	1.5	4.7	36	17	54
Kayaking	470	2.7	1.2	4.2	31	14	48
Surfing	420	2.4	0.9	3.9	28	10	45
Rowing	446	2.2	0.8	3.6	25	9	41
Snorkeling	419	1.5	0.3	2.7	17	3	31
Scuba diving	419	0.5	0.0	1.2	6	0	14
Windsurfing	420	0.4	0.0	1.0	5	0	11



Exactly 47.0% of East region residents visit beaches, making this the most popular water-based activity in the region. Swimming in lakes and streams is the second most popular with 38.5%, followed by swimming in an outdoor pool with 36.4%. Many forms of fishing are enjoyed by East region residents including saltwater fishing (32.1%), freshwater fishing (29.1%), warmwater fishing (22.9%), anadromous fishing (6.0%), and coldwater fishing (5.4%). Boating of any type is done by 29.4% of the East region, while less than 5% use personal water craft. More than 17% of area residents visit other watersides besides beaches. Between 3-4% of East region residents participate in canoeing, rafting, waterskiing, and sailing, while less than 3% kayak. Surfing is done by 2.4%, and rowing by 2.2%. Only 1.5% of area residents snorkel, while less than 0.5% scuba dive or windsurf.

*Table 3.22: East Region Resident Participation in Snow and Ice-Based Activities*

<b>Activity</b>	<b>Sample size</b>	<b>Percent participating</b>	<b>95% confidence interval lower bound (%)</b>	<b>95% confidence interval upper bound (%)</b>	<b>Number of participants (1,000s)</b>	<b>95% confidence interval lower bound (1,000s)</b>	<b>95% confidence interval upper bound (1,000s)</b>
Snow/ice activities (any type)	423	8.7	6.0	11.4	100	69	131
Downhill skiing	414	4.4	2.4	6.4	50	28	73
Sledding	105	2.5	0.0	5.5	29	0	63
Snowboarding	414	2.4	0.9	3.9	28	10	45
Cross country skiing	414	1.0	0.0	2.0	11	0	23
Snowmobiling	414	1.0	0.0	2.0	11	0	23
Ice skating outdoors	105	0.0	0.0	0.0	0	0	0
Snowshoeing	78	0.0	0.0	0.0	0	0	0
Ice fishing	107	0.0	0.0	0.0	0	0	0

Table 3.22 shows only 8.7% of the East region population participates in any type of snow/ice activity. Downhill skiing is the most popular with 4.4%, followed by sledding (2.5%), and snowboarding (2.4%). Cross country skiing and snowmobiling is enjoyed by 1.0% of area residents, and no one either snowshoes or ice fishes.

Table 3.23: East Region Resident Participation in Viewing/Learning Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
View/photograph natural scenery	485	52.3	47.9	56.7	599	549	650
Sightseeing	378	51.9	46.9	56.9	595	537	652
Visit nature centers, etc.	456	44.0	39.4	48.6	504	452	557
Visit historic Sites	406	43.1	38.3	47.9	494	439	549
View/photograph other wildlife	485	42.8	38.4	47.2	490	440	541
View/photograph wildflowers, trees, etc.	484	38.9	34.6	43.2	446	397	495
View/photograph birds	484	35.1	30.8	39.4	402	353	452
View/photograph fish	485	29.9	25.8	34.0	343	296	390
Gather mushrooms, berries, etc.	433	23.1	19.1	27.1	265	219	311
Boat tours or excursions	106	22.7	14.7	30.7	260	168	352
Visit prehistoric/archeological sites	438	19.3	15.6	23.0	221	179	264
Caving	78	1.8	0.0	4.8	21	0	55

Table 3.23 illustrates the most popular viewing/learning activity is viewing/photographing natural scenery with 52.3% of East Region residents participating. Coming in a close second is sightseeing with 51.9%, followed by visiting nature centers with 44.0%. Roughly 43% of area residents visit historic sites or view/photograph other wildlife compared to 38.9% view/photograph wildflowers, trees, etc., 35.1% view/photograph birds and 29.9% view/photograph fish. Mushrooms, berries, and other food items are gathered by 23.1% of residents. Almost 23% of area residents go on boat tours or excursions, while less than 20% visit prehistoric or archeological sites. Less than 2% participate in caving.

Table 3.24: East Region Resident Participation in Individual Outdoor Sports Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Running or jogging	60	22.1	11.6	32.6	253	133	374
Inline skating	40	12.1	2.0	22.2	139	23	254
Tennis outdoors	62	10.5	2.9	18.1	120	33	207
Golf	61	9.8	2.3	17.3	112	26	198
Handball or racquetball outdoors	59	6.6	0.3	12.9	76	3	148

According to Table 3.24, the most popular individual outdoor sport is running or jogging, which is done by 22.1% of area residents. More than 12% inline skate, while 10.5% play tennis outdoors. Less than 10% of residents play golf. Handball or racquetball outdoors is played by 6.6% of area residents.

Table 3.25: East Region Resident Participation in Team Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Attend outdoor sports events	48	36.4	22.8	50.0	417	261	573
Volleyball outdoors	62	9.5	2.2	16.8	109	25	193
Softball	64	4.6	0.0	9.7	53	0	111
Basketball outdoors	60	3.6	0.0	8.3	41	0	95
Soccer outdoors	61	2.3	0.0	6.1	26	0	70
Baseball	59	1.2	0.0	4.0	14	0	46
Football	57	1.2	0.0	4.0	14	0	46

According to Table 3.25, the most popular team outdoor sport is not an active sport, but rather attending an outdoor sporting event. Over 36% of area residents attend outdoor sports events. Just under 10% play outdoor volleyball, and less than 5% play softball. Basketball is played outdoors by 3.6% of area residents, and outdoor soccer is played by 2.3%. The least popular team outdoor sports are baseball and football, both having a participation rate of 1.2%.

Table 3.26: The 10 Most Popular Outdoor Recreation Activities for East Region Residents of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Walk for pleasure	447	77.9	74.1	81.7	893	849	936
Family gathering	425	74.2	70.0	78.4	850	802	898
Gardening or landscaping for pleasure	47	62.8	49.0	76.6	720	562	878
View/photograph natural scenery	485	52.3	47.9	56.7	599	549	650
Driving for pleasure	400	51.9	47.0	56.8	595	539	651
Sightseeing	378	51.9	46.9	56.9	595	537	652
Visit a beach	463	47.0	42.5	51.5	539	487	590
Picnicking	457	44.5	39.9	49.1	510	457	563
Visit nature centers, etc.	456	44.0	39.4	48.6	504	452	557
Visit historic sites	406	43.1	38.3	47.9	494	439	549

Table 3.26 presents the 10 most popular outdoor recreation activities, with walking for pleasure being the most popular (77.9%). Just less than 75% of area residents have outdoor family gatherings. The third most popular activity is gardening/landscaping for pleasure, which is done by 62.8% of area residents. Around 50% of area residents participate in viewing/photographing natural scenery, driving for pleasure, or sightseeing, and less than 50% visit a beach. About 44% enjoy picnicking or visiting nature centers. Visiting historic sites is done by 43.1% of East region residents.

Table 3.27: The 10 Least Popular Outdoor Recreation Activities for East Region Residents of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Rock climbing	78	1.4	0	4.0	16	0	46
Baseball	59	1.2	0	4.0	14	0	46
Football	57	1.2	0	4.0	14	0	46
Cross country skiing	414	1.0	0	2.0	11	0	23
Snowmobiling	414	1.0	0	2.0	11	0	23
Scuba diving	419	0.5	0	1.2	6	0	14
Windsurfing	420	0.4	0	1.0	5	0	11
Ice skating outdoors	105	0.0	0	0.0	0	0	0
Snowshoeing	78	0.0	0	0.0	0	0	0
Ice fishing	107	0.0	0	0.0	0	0	0

According to Table 3.27, the three least popular outdoor activities done by 0.0% of East region residents are ice skating outdoors, snowshoeing, and ice fishing. Both windsurfing and scuba diving are done by less than 0.5% of the population, while only 1.0% participates in snowmobiling or cross country skiing. More than 1.0% plays football or baseball, and 1.4% rock climbs.

**Activity Groups and Activities for Residents in the North Region of North Carolina**

The activities presented below are categorized by activity group for residents of the North Region of North Carolina by percent participating, number of participants, total sample size, and includes the upper and lower bounds of the 95% confidence interval.

Table 3.28: North Region Resident Participation in Nature-Based Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Visit a farm or agricultural setting	351	30.9	26.1	35.7	805	680	930
Visit a wilderness or primitive area	795	25.1	22.1	28.1	654	576	732
Day hiking	800	24.7	21.7	27.7	644	566	722
Developed camping	801	18.9	16.2	21.6	493	422	563
Drive off-road (any type)	742	16.1	13.5	18.7	420	352	487
Mountain biking	780	16.0	13.4	18.6	417	349	485
Primitive camping	750	11.1	8.9	13.3	289	232	347
Hunting (any type)	857	8.2	6.4	10.0	214	167	261
Backpacking	801	7.3	5.5	9.1	190	143	237
Horseback riding on trails	731	6.1	4.4	7.8	159	115	203
Small Game hunting	489	6.1	4.0	8.2	159	104	214
Big game hunting	610	5.2	3.4	7.0	136	89	182
Mountain climbing	113	5.1	1.0	9.2	133	26	240
Orienteering	67	5.0	0.0	10.2	130	0	266
Rock climbing	113	3.8	0.3	7.3	99	8	190
Migratory bird hunting	604	1.1	0.3	1.9	29	8	50

According to Table 3.28, the most popular nature-based land activity is visiting a farm or agricultural setting with 30.9% of area residents participating. The second most popular activity is visiting a wilderness or primitive area (25.1%). Just under 25% of area residents day hike, while roughly 16% drive off-road or mountain bike. Almost 19% camp in developed areas, while 11.1% camp in primitive areas. Hunting of any type is done by 8.2% of area residents, which is divided into small game hunting (6.1%), big game hunting (5.2%), and migratory bird hunting (1.1%). Backpacking is enjoyed by 7.3% of residents, and 6.1% ride horseback on trails. Around 5% mountain climb or orienteer, while less than 4% rock climb.

Table 3.29: North Region Resident Participation in Developed-Setting Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Walk for pleasure	656	83.7	80.9	86.5	2,181	2,108	2,254
Family gathering	614	74.4	70.9	77.9	1,939	1,848	2,030
Gardening or landscaping for pleasure	73	60.1	48.9	71.3	1,566	1,274	1,858
Driving for pleasure	709	55.1	51.4	58.8	1,436	1,339	1,532
Picnicking	801	45.5	42.1	48.9	1,186	1,097	1,274
Bicycling	678	32.2	28.7	35.7	839	748	930
Yard games, e.g., horseshoes	67	30.6	19.6	41.6	797	511	1,084
Attend outdoor concerts, plays, etc.	70	27.7	17.2	38.2	722	448	995
Horseback riding (any type)	629	6.9	4.9	8.9	180	128	232

Table 3.29 shows walking for pleasure as the most popular developed-setting land activity with 83.7% of area residents participating. Almost three-quarters of residents gather with family in developed settings. Roughly 60% enjoy gardening or landscaping for pleasure, while roughly 55% enjoy driving for pleasure. Picnicking is done by 45.5% of area residents, and 32.2% go bicycling. More than 30% play yard games like horseshoes. Activities like outdoor concerts and plays are attended by 27.7% of area residents, while less than 7% ride horseback.

Table 3.30: North Region Resident Participation in Water-Based Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Visit a beach	691	46.4	42.7	50.1	1,209	1,113	1,306
Swimming in lakes, streams, etc.	815	39.1	35.7	42.5	1,019	930	1,108
Swimming in an outdoor pool	283	38.3	32.6	44.0	998	850	1,147
Freshwater fishing	807	30.4	27.2	33.6	792	709	876
Boating (any type)	692	30.0	26.6	33.4	782	693	870
Warmwater fishing	584	29.2	25.5	32.9	761	665	857
Visit other waterside (besides beach)	600	26.4	22.9	29.9	688	597	779
Motorboating	692	19.5	16.5	22.5	508	430	586
Saltwater fishing	605	15.2	12.3	18.1	396	321	472
Coldwater fishing	665	9.0	6.8	11.2	235	177	292
Use personal watercraft	692	8.5	6.4	10.6	222	167	276
Canoeing	692	7.6	5.6	9.6	198	146	250
Rafting	814	6.9	5.2	8.6	180	136	224
Waterskiing	604	6.4	4.4	8.4	167	115	219
Snorkeling	604	5.4	3.6	7.2	141	94	188
Sailing	655	4.2	2.7	5.7	109	70	149
Kayaking	692	3.7	2.3	5.1	96	60	133
Anadromous fishing	594	2.7	1.4	4.0	70	36	104
Rowing	655	2.6	1.4	3.8	68	36	99
Surfing	604	1.7	0.7	2.7	44	18	70
Scuba diving	605	1.3	0.4	2.2	34	10	57
Windsurfing	604	0.3	0.0	0.7	8	0	18



Less than 50% of North region residents visit beaches, making this the most popular water-based activity. More than 39% swim in lakes and streams, while more than 38% swim in an outdoor pool. Fishing is a popular activity and can be divided into several categories which include freshwater fishing (30.4%), warmwater fishing (29.2%), saltwater fishing (15.2%), coldwater fishing (9.0%), and anadromous fishing (2.7%). Exactly 30.0% of North region residents participate in boating of any kind, with 19.5% motorboating, 8.5% using personal watercraft, 7.6% canoeing, 6.9% rafting, 4.2% sailing, 3.7% kayaking, and 2.6% rowing. More than a quarter of area residents visit other watersides besides beaches. Waterskiing is done by 6.4% of North region residents, and 5.4% snorkel. Less than 2% surf or scuba dive, and only 0.3% windsurf.

*Table 3.31: North Region Resident Participation in Snow and Ice-Based Activities*

<b>Activity</b>	<b>Sample size</b>	<b>Percent participating</b>	<b>95% confidence interval lower bound (%)</b>	<b>95% confidence interval upper bound (%)</b>	<b>Number of participants (1,000s)</b>	<b>95% confidence interval lower bound (1,000s)</b>	<b>95% confidence interval upper bound (1,000s)</b>
Snow/ice activities (any type)	641	17.0	14.1	19.9	443	367	519
Sledding	164	6.8	2.9	10.7	177	76	279
Ice skating outdoors	164	4.2	1.1	7.3	109	29	190
Downhill skiing	621	4.0	2.5	5.5	104	65	143
Snowboarding	621	3.0	1.7	4.3	78	44	112
Snowmobiling	621	1.1	0.3	1.9	29	8	50
Cross country skiing	621	0.3	0.0	0.7	8	0	18
Snowshoeing	113	0.0	0.0	0.0	0	0	0
Ice fishing	170	0.0	0.0	0.0	0	0	0

Exactly 17.0% of North region residents participate in any type of snow or ice activity, and the most popular is sledding with 6.8% participating. Around 4% of area residents ice skate outdoors, while snowmobiling is done by 1.1%. Downhill skiing is done by 4.0%, while 3.0% snowboard and 0.3% cross country ski. No one snowshoes or ice fishes in the North region.

Table 3.32: North Region Resident Participation in Viewing/Learning Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
View/photograph natural scenery	731	56.6	53.0	60.2	1,475	1,381	1,569
Visit nature centers, etc.	678	53.9	50.1	57.7	1,405	1,306	1,504
Sightseeing	550	52.0	47.8	56.2	1,355	1,246	1,465
Visit historic Sites	594	44.3	40.3	48.3	1,154	1,050	1,259
View/photograph other wildlife	735	42.2	38.6	45.8	1,100	1,006	1,194
View/photograph wildflowers, trees, etc.	734	41.7	38.1	45.3	1,087	993	1,181
View/photograph birds	736	33.5	30.1	36.9	873	784	962
View/photograph fish	736	25.5	22.4	28.6	665	584	745
Gather mushrooms, berries, etc.	763	24.1	21.1	27.1	628	550	706
Boat tours or excursions	170	23.4	17.0	29.8	610	443	777
Visit prehistoric/archeological sites	630	17.3	14.3	20.3	451	373	529
Caving	113	3.0	0.0	6.1	78	0	159

According to Table 3.32, the most popular viewing/learning activity is viewing/photographing natural scenery (56.6%). Visiting nature centers is done by almost 54% of area residents, while 52.0% go sightseeing and more than 44% visit historic sites. Around 42% of residents view/photograph other wildlife or wildflowers and trees, while 33.5% view/photograph birds and 25.5% view/photograph fish. Mushrooms and berries are gathered by 24.1% of area residents. Almost a quarter go on boat tours or excursions. More than 17% visit prehistoric/archeological sites, while only 3.0% go caving.

Table 3.33: North Region Resident Participation in Individual Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Running or jogging	67	27.4	16.7	38.1	714	435	993
Tennis outdoors	65	12.7	4.6	20.8	331	120	542
Golf	75	11.7	4.4	19.0	305	115	495
Inline skating	43	10.0	1.0	19.0	261	26	495
Handball or racquetball outdoors	71	1.6	0.0	4.5	42	0	117

Table 3.33 presents running or jogging (27.4%) as the most popular individual outdoor sport, followed by tennis (12.7%). Less than 12% of area residents golf, and exactly 10.0% inline skate. The least popular individual outdoor sport is handball or racquetball (1.6%).

Table 3.34: North Region Resident Participation in Team Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Attend outdoor sports events	60	51.5	38.9	64.1	1,342	1,014	1,670
Softball	67	14.9	6.4	23.4	388	167	610
Soccer outdoors	75	12.4	4.9	19.9	323	128	519
Volleyball outdoors	65	10.4	3.0	17.8	271	78	464
Basketball outdoors	67	8.0	1.5	14.5	208	39	378
Baseball	71	4.3	0.0	9.0	112	0	235
Football	68	3.5	0.0	7.9	91	0	206

Table 3.34 presents the most popular team outdoor sports activity to be attending outdoor sports events with more than 51% of North region residents participating. Almost 15% of area residents play softball, and 12.4% play outdoors soccer. Outdoor volleyball is played by 10.4% of residents, while 8.0% play basketball outdoors. Less than 5% of North region residents play baseball (4.3%) or football (3.5%).

Table 3.35: The 10 Most Popular Outdoor Recreation Activities for North Region Residents of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Walk for pleasure	656	83.7	80.9	86.5	2,181	2,108	2,254
Family gathering	614	74.4	70.9	77.9	1,939	1,848	2,030
Gardening or landscaping for pleasure	73	60.1	48.9	71.3	1,566	1,274	1,858
View/photograph natural scenery	731	56.6	53.0	60.2	1,475	1,381	1,569
Driving for pleasure	709	55.1	51.4	58.8	1,436	1,339	1,532
Visit nature centers, etc.	678	53.9	50.1	57.7	1,405	1,306	1,504
Sightseeing	550	52.0	47.8	56.2	1,355	1,246	1,465
Attend outdoor sports events	60	51.5	38.9	64.1	1,342	1,014	1,670
Visit a beach	691	46.4	42.7	50.1	1,209	1,113	1,306
Picnicking	801	45.5	42.1	48.9	1,186	1,097	1,274

According to Table 3.35, the most popular outdoor recreation activity for the North region of North Carolina is walking for pleasure with 83.7% of residents participating. The second most popular with almost 75% is gathering with family, followed by gardening or landscaping for pleasure (60.1%). More than 55% of area residents view/photograph natural scenery or drive for pleasure. Nature center are visited by 53.9%, and 52.0% of residents enjoy sightseeing. Just more than half of residents attend outdoor sports events, and less than half either visit beaches (46.4%) or picnic (45.5%).

Table 3.36: The 10 Least Popular Outdoor Recreation Activities for North Region Residents of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Rowing	655	2.6	1.4	3.8	68	36	99
Surfing	604	1.7	0.7	2.7	44	18	70
Handball or racquetball outdoors	71	1.6	0.0	4.5	42	0	117
Scuba diving	605	1.3	0.4	2.2	34	10	57
Migratory bird hunting	604	1.1	0.3	1.9	29	8	50
Snowmobiling	621	1.1	0.3	1.9	29	8	50
Cross country skiing	621	0.3	0.0	0.7	8	0	18
Windsurfing	604	0.3	0.0	0.7	8	0	18
Snowshoeing	113	0.0	0.0	0.0	0	0	0
Ice fishing	170	0.0	0.0	0.0	0	0	0

The least popular outdoor activities the North region are ice fishing and snowshoeing, possibly because of limited opportunities. Less than 0.5% of the population either windsurfs or skis cross country. Barely more than 1% snowmobile or hunt migratory birds or scuba dive. A small percentage of North area residents surf (1.7%) and still fewer play handball or racquetball outdoors (1.6%). There are roughly 68,000 area residents who row.

### Activity Groups and Activities for Residents in the South Region of North Carolina

The activities presented below are categorized by activity group for residents of the South region of North Carolina by percent participating, number of participants, total sample size, and includes the upper and lower bounds of the 95% confidence interval.

Table 3.37: South Region Resident Participation in Nature-Based Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Day hiking	726	30.6	27.2	34.0	669	595	743
Visit a wilderness or primitive area	727	28.3	25.0	31.6	619	547	691
Visit a farm or agricultural setting	306	26.6	21.6	31.6	581	472	691
Drive off-road (any type)	682	20.5	17.5	23.5	448	383	514
Developed camping	726	19.6	16.7	22.5	428	365	492
Mountain biking	705	16.8	14.0	19.6	367	306	428
Primitive camping	685	13.9	11.3	16.5	304	247	361
Hunting (any type)	771	9.3	7.2	11.4	203	157	249
Backpacking	727	8.8	6.7	10.9	192	146	238
Horseback riding on trails	654	7.4	5.4	9.4	162	118	205
Mountain climbing	114	7.4	2.6	12.2	162	57	267
Big game hunting	586	7.1	5.0	9.2	155	109	201
Small Game hunting	407	5.9	3.6	8.2	129	79	179
Rock climbing	114	2.0	0.0	4.6	44	0	101
Migratory bird hunting	497	1.6	0.5	2.7	35	11	59
Orienteering	69	1.5	0.0	4.4	33	0	96

The most popular nature-based land activity for the South region is day hiking with 30.6% of residents participating. Visiting wilderness or primitive areas (28.3%) and visiting a farm or agricultural setting (26.6%) are the next most popular, followed by driving off-road (20.5%). Mountain biking is enjoyed by almost 17% of area residents, and primitive camping, possibly part of a wilderness visit, is also popular

(13.9%) although not as popular as developed camping (19.6%). Less than 10% do hunting of any type, with the highest participation in big game hunting (7.1%), then small game hunting (5.9%), and finally migratory bird hunting (1.6%). Roughly 9% enjoy backpacking, and 7.4% of residents enjoy horseback riding on trails or mountain climbing. Exactly 2.0% went rock climbing, and 1.5% went orienteering, making this the least popular activity.

Table 3.38: South Region Resident Participation in Developed-Setting Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Walk for pleasure	541	81.7	78.4	85.0	1,786	1,714	1,858
Family gathering	504	75.0	71.2	78.8	1,640	1,556	1,723
Gardening or landscaping for pleasure	80	66.2	55.8	76.6	1,447	1,220	1,674
Driving for pleasure	658	54.5	50.7	58.3	1,191	1,108	1,274
Picnicking	727	49.4	45.8	53.0	1,080	1,001	1,159
Yard games, e.g., horseshoes	78	46.0	34.9	57.1	1,006	763	1,248
Attend outdoor concerts, plays, etc.	65	40.0	28.1	51.9	874	614	1,135
Bicycling	548	29.7	25.9	33.5	649	566	732
Horseback riding (any type)	496	8.6	6.1	11.1	188	133	243

Once again, the most popular develop-setting land activity is walking for pleasure (81.7%). Exactly 75.0% of South region enjoy family gatherings, and two-thirds garden or landscape for pleasure. More than half report driving for pleasure, while less than half go for picnics. Yard games like horseshoes are played by 46.0% of residents, and 40.0% attend outdoor concerts, plays, etc. Almost a third of the population bikes and less than 10% go horseback riding, making this the least participated in developed-setting activity.

Table 3.39: South Region Resident Participation in Water-Based Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Swimming in an outdoor pool	231	48.0	41.6	54.4	1,049	909	1,189
Visit a beach	567	43.6	39.5	47.7	953	863	1,043
Swimming in lakes, streams, etc.	747	39.3	35.8	42.8	859	783	936
Boating (any type)	568	31.8	28.0	35.6	695	612	778
Freshwater fishing	726	29.5	26.2	32.8	645	573	717
Warmwater fishing	474	25.4	21.5	29.3	555	470	640
Visit other waterside (besides beach)	496	24.7	20.9	28.5	540	457	623
Motorboating	567	24.3	20.8	27.8	531	455	608
Saltwater fishing	495	13.4	10.4	16.4	293	227	359
Coldwater fishing	526	12.2	9.4	15.0	267	205	328
Rafting	747	10.2	8.0	12.4	223	175	271
Use personal watercraft	567	9.7	7.3	12.1	212	160	265
Canoeing	568	7.3	5.2	9.4	160	114	205
Waterskiing	498	7.1	4.8	9.4	155	105	205
Snorkeling	498	4.9	3.0	6.8	107	66	149
Sailing	541	4.1	2.4	5.8	90	52	127
Kayaking	568	2.9	1.5	4.3	63	33	94
Anadromous fishing	492	2.8	1.3	4.3	61	28	94
Surfing	498	2.1	0.8	3.4	46	17	74
Rowing	541	1.9	0.7	3.1	42	15	68
Windsurfing	498	1.1	0.2	2.0	24	4	44
Scuba diving	498	1.1	0.2	2.0	24	4	44



The most popular water-based activity is swimming in an outdoor pool with nearly half of South region residents participating. Nearly 40% swam in lakes, streams, etc. and 43.6% visited a beach. Boating is a popular activity with nearly a third of residents participating in some form including motorboating (24.3%), rafting (10.2%), personal watercraft (9.7%), canoeing (7.3%), sailing (4.1%), kayaking (2.9%), and rowing (1.9%). Another popular activity reliant on water is fishing, which is divided into the two most popular, freshwater (29.5%) and warmwater (25.4%), followed by saltwater (13.4%), coldwater (12.2%), and the least popular form of fishing, anadromous fishing (2.8%). Almost of quarter visited a waterside other than a beach last year, and 7.1% water-skied. Less than 5% snorkeled, and only 1.1% went scuba diving. Few residents surf with only 2.1% participating, and only 1.1% windsurf.

Table 3.40: South Region Resident Participation in Snow and Ice-Based Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Snow/ice activities (any type)	524	23.0	19.4	26.6	503	424	581
Downhill skiing	503	9.6	7.0	12.2	210	153	267
Sledding	157	8.8	4.4	13.2	192	96	289
Snowboarding	503	3.6	2.0	5.2	79	44	114
Snowmobiling	503	2.3	1.0	3.6	50	22	79
Cross country skiing	503	1.6	0.5	2.7	35	11	59
Ice skating outdoors	157	1.2	0.0	2.9	26	0	63
Snowshoeing	113	0.0	0.0	0.0	0	0	0
Ice fishing	159	0.0	0.0	0.0	0	0	0

Roughly a quarter of South region residents participate in snow/ice activities, of which downhill skiing is the most popular (9.6%) followed by sledding (8.8%). Less than 4% snowboard and still fewer, 2.3%, snowmobile. Cross country skiing is done by 1.6% or area residents, and ice skating outdoors by 1.2%. No one snowshoes or ice fishes.

Table 3.41: South Region Resident Participation in Viewing/Learning Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
View/photograph natural scenery	592	56.2	52.2	60.2	1,229	1,141	1,316
Visit nature centers, etc.	542	53.7	49.5	57.9	1,174	1,082	1,266
Sightseeing	451	50.2	45.6	54.8	1,097	997	1,198
View/photograph other wildlife	593	41.1	37.1	45.1	898	811	986
Visit historic Sites	496	40.6	36.3	44.9	888	794	982
View/photograph wildflowers, trees, etc.	593	38.6	34.7	42.5	844	759	929
View/photograph birds	593	31.5	27.8	35.2	689	608	769
View/photograph fish	591	26.5	22.9	30.1	579	501	658
Gather mushrooms, berries, etc.	701	25.5	22.3	28.7	557	487	627
Boat tours or excursions	158	20.1	13.9	26.3	439	304	575
Visit prehistoric/archeological sites	517	17.7	14.4	21.0	387	315	459
Caving	114	6.8	2.2	11.4	149	48	249

Again, the most popular activity in the viewing/learning category is view/photograph natural scenery with 56.2% participating. More than 50% of South region residents went to visit a nature center last year or went sightseeing. Of the other view/photograph activities, viewing /photographing other wildlife was the most popular (41.1%), then wildflowers, trees, etc. (38.6%), then birds (31.5), and lastly fish (26.5%). More than 40% visited a historic site, and less than 20% visited a prehistoric/archeological site. More than a quarter of residents gathered mushrooms, berries, etc., and a fifth went on a boat tour or excursion. Only 149,000 (6.8%) entered a cave last year, the highest of all four regions.

Table 3.42: South Region Resident Participation in Individual Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Running or jogging	78	36.3	25.6	47.0	794	560	1,027
Tennis outdoors	78	17.8	9.3	26.3	389	203	575
Golf	77	14.0	6.2	21.8	306	136	477
Inline skating	47	9.5	1.1	17.9	208	24	391
Handball or racquetball outdoors	75	3.9	0.0	8.3	85	0	181

By far the most popular individual sport is running or jogging with 36.3% of the population participating. The next most popular individual sport activity is tennis outdoors (17.8%) followed by golf (14.0%). Inline skating is done by a tenth of the South region population, while less than 4% play handball or racquetball outdoors.

Table 3.43: South Region Resident Participation in Team Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Attend outdoor sports events	66	43.0	31.1	54.9	940	680	1,200
Basketball outdoors	78	11.9	4.7	19.1	260	103	418
Soccer outdoors	77	11.7	4.5	18.9	256	98	413
Volleyball outdoors	78	10.5	3.7	17.3	230	81	378
Football	70	8.3	1.8	14.8	181	39	324
Softball	76	5.1	0.2	10.0	111	4	219
Baseball	75	3.1	0.0	7.0	68	0	153

Table 3.43 presents the most popular team outdoor sport activity to be attending outdoor sports events (43.0%). Less than 12% of area residents play soccer or basketball outdoors, while more than 10% play volleyball outdoors. Residents who play football constitute 8.3% of the population, followed by softball (5.1%) and baseball (3.1%).

Table 3.44: The 10 Most Popular Outdoor Recreation Activities for the South Region of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Walk for pleasure	541	81.7	78.4	85.0	1,786	1,714	1,858
Family gathering	504	75.0	71.2	78.8	1,640	1,556	1,723
Gardening or landscaping for pleasure	80	66.2	55.8	76.6	1,447	1,220	1,674
View/photograph natural scenery	592	56.2	52.2	60.2	1,229	1,141	1,316
Driving for pleasure	658	54.5	50.7	58.3	1,191	1,108	1,274
Visit nature centers, etc.	542	53.7	49.5	57.9	1,174	1,082	1,266
Sightseeing	451	50.2	45.6	54.8	1,097	997	1,198
Picnicking	727	49.4	45.8	53.0	1,080	1,001	1,159
Swimming in an outdoor pool	231	48.0	41.6	54.4	1,049	909	1,189
Yard games, e.g., horseshoes	78	46.0	34.9	57.1	1,006	763	1,248

Once again, the most popular outdoor recreation activity is walking for pleasure with more than four-fifths of residents walking. The next most popular is family gatherings (75.0%) followed by gardening or landscaping for pleasure (66.2%). More than half of area residents view/photograph natural scenery or drive for pleasure, or visit nature centers. Almost half enjoy sightseeing, while just under half go on picnics or swim in outdoor pools. Finally, 46.0% of South region residents play yard games like horseshoes.

Table 3.45: The 10 Least Popular Outdoor Recreation Activities for the South Region of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Rock climbing	114	2.0	0.0	4.6	44	0	101
Rowing	541	1.9	0.7	3.1	42	15	68
Migratory bird hunting	497	1.6	0.5	2.7	35	11	59
Cross country skiing	503	1.6	0.5	2.7	35	11	59
Orienteering	69	1.5	0.0	4.4	33	0	96
Ice skating outdoors	157	1.2	0.0	2.9	26	0	63
Windsurfing	498	1.1	0.2	2.0	24	4	44
Scuba diving	498	1.1	0.2	2.0	24	4	44
Snowshoeing	113	0.0	0.0	0.0	0	0	0
Ice fishing	159	0.0	0.0	0.0	0	0	0

All of the least popular outdoor activities have a participation rate of 2.0% or lower. Those with 2% participating include rock climbing and rowing, while those around 1.5% include migratory bird hunting, cross country skiing, and orienteering. Around 1% of South region residents windsurf, ice skate outdoors, or scuba dive. No one in the South region reported snowshoeing or ice fishing.

**Activity Groups and Activities for Residents in the West Region of North Carolina**

The activities presented below are categorized by activity group for residents of the West region of North Carolina by percent participating, number of participants, total sample size, and includes the upper and lower bounds of the 95% confidence interval.

Table 3.46: West Region Participation in Nature-Based Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Day hiking	674	46.8	43.0	50.6	395	363	427
Visit a wilderness or primitive area	673	44.9	41.1	48.7	379	347	411
Drive off-road (any type)	638	31.4	27.8	35.0	265	235	295
Visit a farm or agricultural setting	216	27.7	21.7	33.7	234	183	284
Developed camping	675	27.2	23.8	30.6	230	201	258
Primitive camping	649	24.9	21.6	28.2	210	182	238
Backpacking	674	13.4	10.8	16.0	113	91	135
Mountain biking	660	12.7	10.2	15.2	107	86	128
Hunting (any type)	700	12.3	9.9	14.7	104	84	124
Horseback riding on trails	628	10.9	8.5	13.3	92	72	112
Big game hunting	573	9.8	7.4	12.2	83	62	103
Small Game hunting	295	6.5	3.7	9.3	55	31	78
Mountain climbing	66	2.6	0.0	6.4	22	0	54
Migratory bird hunting	356	0.7	0.0	1.6	6	0	14
Orienteering	41	0.0	0.0	0.0	0	0	0
Rock climbing	66	0.0	0.0	0.0	0	0	0

Table 3.46 presents the most popular form of nature-based land activity to be day hiking (46.8%). Almost 45% of West region residents visit wilderness or primitive areas. Nearly a third drive off-road, while roughly a quarter of residents visit farms or agricultural settings, camp in a developed area, or camp in a primitive area. Backpacking and mountain biking are done by 13% of area residents, and horseback riding by 11%. Hunting of any type is done by 12.3%, which is divided into big game hunting (9.8%), small game hunting (6.5%), and migratory bird hunting (0.7%). Less than 3% mountain climb. The two least popular nature-based land activities, with no one reporting to do either last year, are orienteering and rock climbing.

Table 3.47: West Region Resident Participation in Developed-Setting Land Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Gardening or landscaping for pleasure	33	88.0	76.9	99.1	743	649	836
Walk for pleasure	382	84.1	80.4	87.8	710	679	741
Family gathering	358	75.1	70.6	79.6	634	596	672
Driving for pleasure	624	73.8	70.3	77.3	623	593	652
Picnicking	674	63.3	59.7	66.9	534	504	565
Yard games, e.g., horseshoes	38	55.6	39.8	71.4	469	336	603
Bicycling	396	24.3	20.1	28.5	205	170	241
Attend outdoor concerts, plays, etc.	31	21.9	7.3	36.5	185	62	308
Horseback riding (any type)	364	9.6	6.6	12.6	81	56	106

The most popular activity in developed settings in the West region is gardening or landscaping for pleasure with 88.0% participation. This is the only region where walking for pleasure was not the most popular. It was second with 84.1% of residents participating. Three-quarters report having family gatherings, and almost that number drive for pleasure. Almost two-thirds enjoy picnics and more than half play yard games. Roughly 25% go bicycling and less than 10% go horseback riding, the least popular activity in this group. Almost 22% of West region residents attend outdoor concerts, plays, etc.

Table 3.48: West Region Participation in Water-Based Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Swimming in lakes, streams, etc.	680	42.6	38.9	46.3	360	328	391
Freshwater fishing	674	35.4	31.8	39.0	299	268	329
Visit a beach	397	35.4	30.7	40.1	299	259	338
Boating (any type)	402	34.7	30.0	39.4	293	253	333
Swimming in an outdoor pool	162	34.1	26.8	41.4	288	226	349
Visit other waterside (besides beach)	349	28.0	23.3	32.7	236	197	276
Motorboating	402	25.3	21.1	29.5	214	178	249
Coldwater fishing	381	25.2	20.8	29.6	213	176	250
Warmwater fishing	341	22.3	17.9	26.7	188	151	225
Rafting	679	16.6	13.8	19.4	140	116	164
Waterskiing	355	8.8	5.9	11.7	74	50	99
Saltwater fishing	356	8.4	5.5	11.3	71	46	95
Use personal watercraft	402	8.0	5.3	10.7	68	45	90
Canoeing	402	7.2	4.7	9.7	61	40	82
Rowing	381	3.9	2.0	5.8	33	17	49
Sailing	381	2.6	1.0	4.2	22	8	35
Snorkeling	356	2.4	0.8	4.0	20	7	34
Kayaking	402	2.3	0.8	3.8	19	7	32
Surfing	355	1.0	0.0	2.0	8	0	17
Anadromous fishing	353	0.8	0.0	1.7	7	0	14
Scuba diving	355	0.8	0.0	1.7	7	0	14
Windsurfing	355	0.0	0.0	0.0	0	0	0



According to Table 3.48, the most popular water-based activity in the West region is swimming in lakes, streams, etc with 42.6% of residents participating. This is the only region in which this was the most popular activity. The second most popular activity is shared by freshwater fishing and visiting a beach, both with 35.4%. Other forms of fishing residents participate in are coldwater fishing (25.2%), warmwater fishing (22.3%), saltwater fishing (8.4%), and anadromous fishing (0.8%). Boating (34.7%) is a popular water-based activity, which can be divided into motorboating (25.3%), rafting (16.6%), canoeing (7.2%), rowing (3.9%), sailing (2.6%), and kayaking (2.3%). More than a third of West region residents swam in an outdoor pool, while more than a quarter of residents visited a water side other than a beach. Less than 10% went waterskiing and only 8.0% used a personal watercraft. Snorkeling was done by 2.4% of residents, while less than 1% went scuba diving. Exactly 1.0% went surfing, while no one reported windsurfing.

*Table 3.49: West Region Participation in Snow and Ice-Based Activities*

<b>Activity</b>	<b>Sample size</b>	<b>Percent participating</b>	<b>95% confidence interval lower bound (%)</b>	<b>95% confidence interval upper bound (%)</b>	<b>Number of participants (1,000s)</b>	<b>95% confidence interval lower bound (1,000s)</b>	<b>95% confidence interval upper bound (1,000s)</b>
Snow/ice activities (any type)	375	22.4	18.2	26.6	189	154	225
Sledding	92	19.0	11.0	27.0	160	93	228
Downhill skiing	361	6.6	4.0	9.2	56	34	78
Snowboarding	361	3.5	1.6	5.4	30	14	46
Snowmobiling	361	2.0	0.6	3.4	17	5	29
Cross country skiing	361	1.4	0.2	2.6	12	2	22
Snowshoeing	66	1.3	0.0	4.0	11	0	34
Ice skating outdoors	92	0.4	0.0	1.7	3	0	14
Ice fishing	91	0.0	0.0	0.0	0	0	0

Nearly 25% of West Region residents participate in snow/ice activities of any kind, the most popular being sledding (19.0%). The next most popular activity is downhill skiing (6.6%) followed by snowboarding (3.5%). Exactly 2.0% snowmobile and more than 1% cross country ski or snowshoe. The two least popular snow and ice-based activities are ice skating outdoors (0.4%) and ice fishing (0.0%).

Table 3.50: West Region Resident Participation in Viewing/Learning Activities

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
View/photograph natural scenery	420	66.5	62.0	71.0	561	523	599
Sightseeing	325	63.0	57.8	68.2	532	488	576
Visit nature centers, etc.	396	60.9	56.1	65.7	514	473	555
View/photograph other wildlife	420	49.5	44.7	54.3	418	377	458
View/photograph wildflowers, trees, etc.	421	46.8	42.0	51.6	395	354	436
Visit historic Sites	355	45.3	40.1	50.5	382	338	426
View/photograph birds	422	38.6	34.0	43.2	326	287	365
Gather mushrooms, berries, etc.	653	34.1	30.5	37.7	288	257	318
View/photograph fish	422	24.8	20.7	28.9	209	175	244
Visit prehistoric/archeological sites	375	18.9	14.9	22.9	160	126	193
Boat tours or excursions	91	18.3	10.4	26.2	154	88	221
Caving	66	5.3	0.0	10.7	45	0	90

Table 3.50 presents the most popular viewing/learning activity to be view/photograph natural scenery with nearly two-thirds of West region residents participating. The second most popular activity is sightseeing (63.0%), followed by visiting nature centers, etc. (60.9%). Just under 50% of residents view/photograph other wildlife, 46.8% view/photograph wildflowers, trees, etc., 38.6% view/photograph birds, and 24.8% view/photograph fish. More than 45% of the population visits historic sites, while less than 20% visit prehistoric/archeological sites or go on boat tours or excursions. More than a third of residents gather mushroom, berries, etc. The least popular viewing/learning activity is caving (5.3%).

Table 3.51: West Region Resident Participation in Individual Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Golf	42	29.6	15.8	43.4	250	133	366
Tennis outdoors	42	21.6	9.2	34.0	182	78	287
Running or jogging	38	20.8	7.9	33.7	176	67	284
Inline skating	26	3.5	0.0	10.6	30	0	89
Handball or racquetball outdoors	43	0.0	0.0	0.0	0	0	0

The most popular individual outdoor sport is golf (29.6%). Tennis outdoors (21.6%) is the next most popular, followed by running or jogging (20.8%). Less than 4% inline skates, and no one reports playing handball or racquetball outdoors.

Table 3.52: West Region Resident Participation in Team Outdoor Sports

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Attend outdoor sports events	31	74.8	59.5	90.1	631	502	760
Basketball outdoors	38	9.7	0.3	19.1	82	3	161
Softball	45	8.0	0.1	15.9	68	1	134
Baseball	43	5.6	0.0	12.5	47	0	106
Football	41	2.0	0.0	6.3	17	0	53
Soccer outdoors	42	1.8	0.0	5.8	15	0	49
Volleyball outdoors	42	0.0	0.0	0.0	0	0	0

Nearly 75% of West region residents attend outdoor sports events, making it the most popular team outdoor activity. Less than 10% plays basketball outdoors, and exactly 8.0% plays softball. Baseball is enjoyed by 5.6% and football by 2.0%. Less than 2% plays soccer outdoors, while no one reported playing volleyball outdoors.

Table 3.53: The 10 Most Popular Outdoor Recreation Activities for the West Region of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Gardening or landscaping for pleasure	33	88.0	76.9	99.1	743	649	836
Walk for pleasure	382	84.1	80.4	87.8	710	679	741
Family gathering	358	75.1	70.6	79.6	634	596	672
Attend outdoor sports events	31	74.8	59.5	90.1	631	502	760
Driving for pleasure	624	73.8	70.3	77.3	623	593	652
View/photograph natural scenery	420	66.5	62.0	71.0	561	523	599
Picnicking	674	63.3	59.7	66.9	534	504	565
Sightseeing	325	63.0	57.8	68.2	532	488	576
Visit nature centers, etc.	396	60.9	56.1	65.7	514	473	555
Yard games, e.g., horseshoes	38	55.6	39.8	71.4	469	336	603

Table 3.53 presents the 10 most popular outdoor recreation activities for the West region with the most popular being gardening or landscaping for pleasure with nearly 90% of the population participating. The second most popular is walking for pleasure (84.1%), followed by family gathering (75.1%). Less than 75% attends outdoor sports events or drives for pleasure. Almost two-thirds views/photographs scenery, and 63% picnics or goes sightseeing. More than 60% of the population visits nature centers, etc., and yard games are enjoyed by 55.6%.

Table 3.54: The 10 Least Popular Outdoor Recreation Activities for the West Region of North Carolina

Activity	Sample size	Percent participating	95% confidence interval lower bound (%)	95% confidence interval upper bound (%)	Number of participants (1,000s)	95% confidence interval lower bound (1,000s)	95% confidence interval upper bound (1,000s)
Anadromous fishing	353	0.8	0	1.7	7	0	14
Scuba diving	355	0.8	0	1.7	7	0	14
Migratory bird hunting	356	0.7	0	1.6	6	0	14
Ice skating outdoors	92	0.4	0	1.7	3	0	14
Orienteering	41	0.0	0	0.0	0	0	0
Rock climbing	66	0.0	0	0.0	0	0	0
Ice fishing	91	0.0	0	0.0	0	0	0
Windsurfing	355	0.0	0	0.0	0	0	0
Handball or racquetball outdoors	43	0.0	0	0.0	0	0	0
Volleyball outdoors	42	0.0	0	0.0	0	0	0

Table 3.54 shows the least popular outdoor activities, all with less than 1% of the population participating. Just less than 1% goes anadromous fishing (0.8%), scuba dives (0.8%), or hunts migratory birds (0.7%). Only 0.4% ice skates outdoors. Exactly 0.0% of West region residents orienteer, rock climb, ice fish, windsurf, play handball or racquetball outdoors, or play volleyball outdoors.

### Summary

North Carolina and regional residential outdoor recreation participation is examined in-depth this chapter. North Carolina is broken into four interstate regions (East, West, North, South), and is grouped into the market region, which includes North Carolina, South Carolina, Tennessee and Virginia. Market region information can be used to support state data, as an increase (or decrease) in participation for an activity in the region may suggest movement into (or away from) North Carolina.

Overall, North Carolina and market region recreation activities are similar, as are the interstate regions. The most popular nature-based activity for both the state and market region is visiting a wilderness or primitive area (29.8%, 31.3% respectively), followed closely by day hiking (29.7%). The interstate regions vary as to the most popular activities. Other popular activities, including the aforementioned, are driving off-road, and visit a farm or agricultural setting. Hunting of any type is more popular in the region (12.1%) than in the state (9.9%).

Developed-setting land activities are very similar for all regions. The three most popular activities for the interstate regions, market region, and state are walking for pleasure, family gatherings, and

gardening/landscaping for pleasure. More than 80% of residents in every region walk for pleasure, except the East region (77.9%). Between 65.4% and 84.1% garden or landscape for pleasure, and between 74.1% and 75.1% have family gatherings. The least popular developed-setting land activity is horseback riding of any type.

Water-based activities are popular for each region, although there are some major differences. For instance, the West region is the only region that the most popular water-based activity is swimming in lakes, streams, etc., followed by freshwater fishing. For the other regions, state as a whole, and the market region, the most popular activities are visiting beaches (41.1%-47.0%), swimming in an outdoor pool (36.4%-40.7%), and swimming in lakes, streams, etc. (38.5%-48.0%). The least popular activities are windsurfing (0.0%-1.1%) and scuba diving (0.5%-1.3%).

Snow and ice activities are the least popular overall outdoor recreation activities.

Participation ranges from 8.7% in the East region to 23.0% in the South region. The three most popular activities are sledding (2.5%-19.0%), downhill skiing (4.0%-9.6%), and snowboarding (2.4%-3.6%). There were no reports of ice fishing in the state of North Carolina, although in the market region has 0.1% of residents participating.

The three most popular viewing/learning activities are view/photograph natural scenery (52.3%-66.5%), visit nature centers, etc. (44.0%-60.9%), and sightseeing (50.2%-63.0%). For all regions, the whole state, and the market region, the least popular activity is caving (1.8%-6.8%).

The most popular outdoor individual sports activity is running or jogging (22.1%-36.3%), except in the West region, where the most popular activity is golf (29.6%). The most popular team sports activity for all regions, the state, and market region is overwhelmingly attending outdoor sports events (36.4%-74.8%). The least popular team sports activities are baseball (1.2%-5.3%) and football (1.2%-8.3%). Once again, the West region is different from the other regions as the least popular activities are soccer (1.8%) and volleyball outdoors (0.0%).

The overall most popular activities are walking for pleasure, family gatherings, and gardening or landscaping for pleasure. The overall least popular activities are ice fishing and snowshoeing.

### **Implications**

- Walking for pleasure is the most popular outdoor recreational activity in the state and region. Over half of state and regional residents participate in viewing or photographing natural scenery, visiting a nature center, driving for pleasure or sightseeing. Therefore, it is important that residents receive information about pedestrian friendly areas as well as information regarding access to these areas.
- Many of the state's most popular activities involve few specialized skills or equipment. These include walking for pleasure (82%), attending family gatherings (74.6%), gardening or landscaping (65.4%), driving for pleasure (58.2%), and viewing and photographing natural scenery (57.0%).
- As gas prices continue to rise, more residents may choose to recreate at areas that are closer to home. This could decrease out-of-state visitors, but could increase park use by North Carolina residents. Information on the location and access of local recreation opportunities could increase user rates.
- Emphasis on a variety of opportunities such as interpretation, biking, dining, walking, swimming, and lodging at a specific location may encourage visitation.

APPENDIX C

*2008 SURVEY OF RECREATIONAL RESOURCE  
NEEDS  
ADDITIONAL ANALYSIS—*

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# ADDITIONAL ANALYSIS OF THE 2008 SURVEY OF RECREATIONAL RESOURCE NEEDS

## INTRODUCTION

This appendix contains additional analysis of the DPR Survey of Recreational Resource Needs conducted in 2008. The study and the primary results are contained in Chapter 4 of this document. The survey analysis cross-references, where appropriate, the 2007 National Survey on Recreation and Environment (NSRE) performed periodically by the U.S. Forest Service. The primary results of the NSRE are also presented in Chapter 4 and Appendix B.

## FACILITY THEMES

### Camping Preferences

Camping in state parks is a very popular pastime for many North Carolinians. According to the survey, tent/trailer camping *without* electrical hook-ups was the most popular camping option. Almost half (47.9%) of the survey respondents indicated they would use such a campsite. The next most popular camping option was back-country primitive campsites, with 38.9% indicating they would use such a facility and 32.3% of survey respondents noting that they *might* use a back-country primitive campsite. Some of the comments received in the survey for this facility type desired more natural campsites, more space between campsites, and separation from those who RV camp or use generators – citing the noise and modern conveniences as the very things they wanted to escape from by camping in a state park.

However, not all state park campers want to rough-it. Tent and trailer sites *with* electrical hook-ups was also a popular option, with 35.2% of those surveyed indicating they would use this facility type. Although many survey comments were received from RV enthusiasts requesting a greater number of improved facilities, RV camping was the least popular camping activity with only 22.7% of those surveyed stating they would use a RV/trailer facility with hook ups. Survey comments from the RV enthusiasts noted that campsites in state parks did not compare well with neighboring states that often had larger and hardened camp sites, more electrical hook-ups with either a waste tank dumping station or direct sewer hook-ups.

Group camping was the camping option where the highest percentage (44.7%) of respondents stated they *might* use a group camp facility, although nearly one-third (30.3%) stated they would group camp.

Cabins, either rustic (merely an enclosed living space) or improved (with a kitchen, heat, and restroom), were camping options that survey participants showed interest in having in state parks. More respondents indicated that they would use an improved cabin (45%) versus a rustic cabin (37.2%). With relatively few cabins currently in the state park system, the division should consider the pros and cons of adding new cabins to its parks.

The 2007 NSRE found that one fifth of North Carolinians (20.5%) participated in developed camping while 14.5% enjoyed primitive camping in the previous year.

Many survey respondents gave written comments regarding camping. The most prevalent camping complaint was that the state lacked a campground reservation system. Many explained their frustration with our current reservation system, particularly the uncertainty one faces in trying to plan a trip without knowing if a campsite will be available for use by the time they arrive at the park. The division's unveiling of its new on-line reservation system in 2009 appears to be a service that is timely and much appreciated.

The second most common complaint with camping regarded the park system's gate locking procedure at campgrounds. Several people commented that locking the gates restricts their freedom to enter and leave when they wish – be it for shopping, eating at restaurants, purchasing supplies, or their desire to arrive at the campsite later at night. Park staff lock campground gates as a means of deterring property theft, excluding non-campers from the campground at night, and retaining the ability to properly manage the campground during the night when fewer park rangers are available. In the past, the division experimented with various campground access policies in the past and has found that maintaining the ability to manage the campground's use and safety supersedes off-hour convenient access.

### **Picnicking**

The survey found that enjoying a meal in the great outdoors is the third most popular activity in state parks. 68.4% of those surveyed stated a desire to use a picnic table with a grill, while 53.9% would use a picnic shelter. The division's survey findings match well with the 2007 NSRE which states that 74.6% of North Carolinians attend outdoor family gatherings and 50.0% enjoy picnicking.

### **Play Areas**

Although playgrounds are not typically a component of state parks, 29.8% of respondents indicated a demand for this facility type. However, a greater majority of survey participants (41.8%) did not feel that playgrounds are an appropriate amenity in a state park.

Open play areas, which can be utilized for a variety of uses, received mixed reviews in the survey. The greatest percentage of those surveyed said they might use an open play area (35.8%), while a significant percentage of people noted they would use (32.4%) and would not use (31.8%) and open play area.

### **Hiking and Nature Trails**

By far, the most preferable activity to do in a North Carolina state park is to walk for pleasure, be it on a hiking trail or a nature trail. Four out five people surveyed (79.5%) would use a hiking trail and nearly three out of four people (74.1%) surveyed would use a nature trail. This data matches well with the 2007 NRSE, which finds walking for pleasure to be an outdoor recreation activity performed by 82% of North Carolina residents and 83% of all US residents.

Survey respondents truly desired more hiking opportunities, as hiking trails were selected as the second, third, and fourth highest priority for new park facilities. Hiking would have been the highest priority facility (14.4% of those surveyed chose hiking trails as their highest priority), had it not been for the unusually high survey response rate from the mountain biking community (19.9% chose mountain biking as highest facility priority)

Most of the hiking related comments in the survey related to the need for more hiking trails. Others noted that more wilderness hiking (longer trails in pristine areas) opportunities were desired. The popularity of back-country camping (38.9% would back-country camp) ties in well with the desire for long, wilderness hiking opportunities. Connectivity to the larger network of trails and greenways in coordination with other local, state, and federal agencies was a common request in the survey. Several people expressed their support for the Mountains-To-Sea Trail.

### **Equestrian Trails and Facilities**

Although many people from the equestrian community participated in the survey, equestrian trails were rated in the survey as the very least popular facility type in North Carolina state parks, with 65.1% of survey participants stating that they would not use equestrian-only trails. However, 20.9% of survey respondents stated they would use equestrian trails. According to the 2007 NSRE, only 7.8% of North Carolinians engaged in horseback riding during the previous 12 months.

Equestrians expressed concern for the limited number of opportunities to recreate in state parks and the lack of appropriate facilities. They noted that often the facilities they desire such as: appropriately-sized horse trailer parking; campsites with or without electrical hook-ups; and stables/barns/hitching posts are needed or need improvement. Equestrians noted the large revenue and economic impact that the state is missing out on by not having adequate horse riding facilities; many equestrians detailed how neighboring states are much more accommodating and that North Carolina residents are forced to spend their money out-of-state to have enjoyable horseback riding experiences in state parks. Some equestrians noted that existing horse trails are in need of maintenance; while others noted that some equestrian clubs (such as the Blue Ridge Horsemen's Association) are willing to help improve and maintain trails.

The majority of park-specific comments regarding equestrian facilities were directed to South Mountain State Park where several respondents noted that the equestrian facilities at this park need improvement.

### **Mountain Biking Trails**

The largest number of responses on the survey from a recreation-specific user group was from mountain bikers. The survey found that while although only 39.3% people surveyed would ride mountain bikes in state parks, mountain bike trails were by far the most requested facility-type – with 19.9% of people surveyed choosing this facility as their highest priority to develop in state parks. The 2007 NSRE found that within the previous year, 15.7% of North Carolinians participated in mountain biking.

The comments on the survey from the mountain biking community were numerous. The major themes emerging from the comments were: more mountain biking trails are needed – particularly in areas near centers of population; the mountain biking community is sizeable and organized; mountain biking can be low impact use on properly designed trails; single-track trails on natural surfaces with a wide variety of trail types, difficulties, and length are preferred; and there are many groups such as: the Tarheel Trailblazers, Brushy Mountain Cyclists, Greensboro Fat Tire Society, Triangle Off-Road Cyclists, International Mountain Biking Association, and the Southern Off-Road Bicycle Association are available and willing to contribute financially and also through volunteer work to help design, build, and maintain mountain bike trails.

The vast majority of park-specific comments received from this user group were directed to William B. Umstead State Park where mountain bikers were unhappy with the wide gravel road experience and noted that new single-track trails (or conversion of existing trails) at the park were desired. Several mountain bikers applauded the division's collaboration with the mountain biking community on the design and construction of the single-track trail network at Lake Norman State Park.

### **Multi-use Trails**

According to the survey, multi-use trails were a popular facility-type, with 61.2% of those surveyed indicating that they would use a multi-use trail. 30.9% said they might use a multi-use trail, while only 7.9% noted they would not. Multi-use trails are popular with most park users because this facility type allows the greatest number and widest range of user groups to recreate.

Although the survey comments noted that there is a demand for multi-use trails in North Carolina state parks, many people expressed concern. Some hikers did not appreciate mountain bikes whizzing by them on trail, as well as other users did not enjoy encountering horse manure in their hiking or biking experience. Several equestrians noted they did not enjoy sharing the trail with mountain bikers. Many multi-use trail users noted that better education and signage informing multi-use trail etiquette were necessary.

## **Rock Climbing**

Although many members of the rock climbing community participated in the survey, more people noted they would not use a rock climbing facility (36.3%) than those who would (30.7%). According to the 2007 NSRE, only 2.3% of NC residents participated in rock climbing in the previous 12-month period.

Many rock climbers provided comments on the survey. The majority of rock climbers who offered comments expressed a need for more rock climbing opportunities to utilize the outstanding climbing features in the state. Many described the low impact use of the sport and conservation ethics of many climbers, as well as the local climbing groups such as: the Carolina Climbers Coalition and Access Fund who are willing to partner with the state and volunteer to increase climbing opportunities in state parks.

Of particular note, many of the climbers expressed a desire to allow climbing at both Grandfather Mountain and Chimney Rock State Park. Some climbers hoped that state parks would not require the use of commercial guides to be able to climb in state parks.

## **Paddle Trails**

Over half of the people surveyed (55.5%) indicated they would use a paddle trail and river access facility. Of the comments received from the survey, most people noted that they desired more paddling opportunities with long multi-day trails and camping close to or on the river (platform camping). The need for more river access areas with improved facilities and signage was also noted.

According to the 2007 NSRE, during the previous year, 6.7% of NC residents went canoeing, while 3.1% went kayaking.

## **Swimming and Beach Areas**

Approximately half of the survey respondents indicated that they would use a beach (53.4%) and swimming area (48.4%). According to the 2007 NSRE, 39.7% of NC residents swam in lakes, streams and other large water bodies during the previous year. The 2007 NSRE also found that visiting a beach was one of the top ten favorite activities of North Carolinians, with 44.2% visiting beach during the last 12-months.

Survey respondents expressed the need for more swimming opportunities, including larger swim areas. Nearly all users groups including primitive campers, RV campers, and equestrians desired more beach camping opportunities. Several respondents desired upgrades of campsites at the beach to include electrical hook-ups.

## **Boating and Marina Use**

The survey found that a marina was the third least desired facility in state parks with only 17.6% of respondents expressing an interest in marinas. 52.2% of survey respondents would not use a marina in a state park. A boat ramp/dock facility was more popular than a marina, with 30.2% of those surveyed indicated they would use such a facility.

Boating of any type and motor boating are both relatively popular in North Carolina, the 2007 NSRE found the percentage of North Carolina residents participating during the previous year to be 31% and 22.5%, respectively.

## **Fishing Pier/Shoreline Fishing**

30.8% of those surveyed said they would use a fishing pier, while 35.8% indicated they might use a fishing pier. A few survey respondents indicated their desire for fishing opportunities in state parks, including more shoreline fishing and improve fishing opportunities for the disabled.

The survey data matches well with the 2007 NSRE survey which found that 30.9% of NC residents went freshwater fishing in the last year. The NSRE also found that 26.5% of NC residents enjoyed viewing or photographing fish. Saltwater fishing is somewhat less popular with only 17% of NC residents participating, according to the 2007 NSRE.

### **Museum and Education Exhibits**

Interpretation and education at state parks is very popular. Half of those surveyed (50.7%) said they would use a museum and educational exhibit during their visit to a state park. A museum or educational exhibit was ranked by those surveyed to be their fifth highest priority in our state parks. The need for interpretation and education of the state's natural resources was an overarching theme in the comments received from the survey. Many people felt that all park visitors need more educational opportunities to appreciate and understand the parks they visit, particularly the need to educate children to instill a sense of wonder and awe for the natural environment was also seen as a high priority.

### **Observation decks**

The survey found that observation decks were the fifth most popular facility in state parks, with 61% of participants indicating they would use these platforms to observe nature. According to the 2007 NSRE, viewing and photographing natural scenery was found to be the fifth most popular outdoor activity in North Carolina. 57% of North Carolinians participated in this activity during the previous year.

## **OPERATIONS AND OVERALL PARK THEMES**

### **Land Acquisition for Both Recreational Use and Conservation**

Interest in land acquisition was a primary focus of most survey respondents. 95.2% of all respondents either strongly agreed or agreed with the statement that *"NC Parks should add new parks to provide additional recreational opportunities."* Hundreds of written survey comments were received to elaborate on this sentiment.

Many respondents of the survey commented that it is imperative that the division of Parks and Recreation acquire significant lands now while they are still available – before they are lost forever to development. Many people supported new land acquisition as a means of controlling the state's sprawling urban development. An overwhelming concern from those seeking a greater increase in the amount of land acquired by the division is that that state should buy the land now – and worry about developing the appropriate facilities later.

However, a significant group of respondents didn't agree. Some mentioned that it would be unwise to buy more park land and assume that financial responsibility while other existing parks are understaffed, in need of maintenance, and/or where current capital improvement projects remain unfunded. 57.5% of survey respondents either strongly agreed or agreed with the statement: *"Completing land acquisition and construction plans at existing parks should take priority over adding new parks, recreation areas, or natural areas."*

### **Where to Locate New Parks**

As expected, there was a high level of disagreement regarding where new parks should be located. Although 89.9% either strongly agreed or agreed with the following statement: *"It is important to locate new parks based on the need to protect natural and recreational resources regardless of their proximity to centers of population"*; however, many did not. 61.4% either strongly agreed or agreed with the

statement that: *“It is important to locate new parks equitably across the state based on geography and population.”*

### **Natural Resource Protection**

Ensuring that parks remain natural and protecting the state’s natural resources was also major theme to emerge from the survey. 93.7% of all respondents either strongly agreed or agreed with the statement that: *“It is important to protect natural and scenic resources by acquiring land even if these areas may not be accessible to the public until planning, design and funding are in place to be developed as park units.”* Although outdoor recreation is extremely important to all park users, the desire to use the Division of Parks and Recreation to act as a means of conserving land first and then planning for recreation later was evident. 89.8% of those surveyed either strongly agree or agree with the following statement: *“It is important to protect North Carolina’s unique natural resources, even if it means limiting public access to certain areas.”*

Comments received from the survey covered a wide spectrum of the balancing act the division performs in protecting natural resources while providing outdoor recreation opportunities. Some commented that the protection of natural resources is too important to risk in the name of recreation, while others argued that on public lands, responsible recreation can and should dovetail with the preservation of natural resources. Both perspectives have valid arguments regarding the management of parks and the division’s balancing of those needs remains a primary focus of its mission.

### **Interpretation and Education**

The majority of survey participants supported the enhancement of environmental education both for park visitors and environmental education programs for children. 82.6% of survey respondents either strongly agreed or agreed that that NC Parks should focus on providing more environmental education to visitors at parks. 80.5% supported improving environmental education for children in the public schools curriculum and 78.6% of those surveyed wished to have more programs in parks for children and families.

Comments from survey respondents repeatedly drove home the importance of educating visitors at parks to understand and respect the natural resources. Several participants wanted to see more hands-on program and demonstration projects in parks such as recycling and storm-water management best management practices. Others noted the importance of adding new education and interpretation staff to provide this increased level of park visitor education.

### **Quality of Information for the Public**

A majority of those surveyed were satisfied with NC Park’s website content. 77.1% either strongly agreed or agreed that the website was sufficient for their needs. An even greater percentage of respondents were pleased with the maps and brochures available to them at parks, with 82.7% either strongly agreeing or agreeing that these documents met their needs.

However, a significant percentage of people were not happy with the website and maps. One in five respondents (20.4%) were not pleased with the website format and content. 16.0% desired better maps and brochures. Several people gave written comments to express their concerns with the information NC Parks makes available to the public. A primary complaint was that park maps don’t provide enough information about the park and what it has to offer. Many people complained that maps of trails were not detailed enough. Others requested that maps be revised to include the scale and topography.

Some respondents desired better signage: on trails; for paddling access points; and to direct motorists to a park from the highway. Many respondents felt that NC Parks doesn't do enough to market its parks and make information available about outdoor recreation and education opportunities.

### **Improving Maintenance and Cleanliness**

Many survey participants felt that improving maintenance in parks was important. 77.8% of those surveyed either strongly agreed or agreed that improving park maintenance is necessary. One in five surveyed (21.4%) felt that improving park maintenance wasn't an important issue.

### **Improving Accessibility for the Disabled**

Survey respondents had mixed opinions regarding the level of accessibility for the disabled in state parks. 55.7% either strongly agreed or agreed that accessibility in park needs improvement, while 44.3% either strongly disagreed or disagreed. Some of the survey comments received regarding improved accessibility included more accessible trails and fishing opportunities for persons with disabilities.

### **Access to and within State Parks**

Many survey participants gave written comments to complain about limitation on use in state parks. The chief complain was the operating hours of the park – while many desired longer hours of operation (for early morning exercise, watching a sunset, or fishing at night), others disagreed with the concept of closing a park for the night.

### **Amount of Development in Parks**

Although the vast majority of participants expressed a desire for more parks and recreational opportunities within parks, many respondents wanted to ensure that parks were not over-developed and remained in a mostly natural condition. Finding the appropriate balance of recreational use and natural resource protection again emerged as an important theme in the survey.

### **Fees**

Survey respondents' reaction to park fees was mixed. Exactly the same percentage of respondents either strongly agreed or agreed (78.5%) that they would be willing to pay higher fees for improved and expanded park services and programs as the percentage of people who felt that fees need to be kept at a minimum to serve the greatest number of people possible. This can be interpreted as: while parks provide a very valuable recreational resource to its users, a tax-payer funded amenity should strive to keep any additional users fees as low as possible to not discriminate against those who cannot pay. Written comments from the survey mirrored this sentiment.

## COMPARISON OF RESPONSES: GENERAL PUBLIC VS. PAC MEMBERS

The survey was designed to record results of the members of the North Carolina State Park Advisory Committees (PACs) to compare their responses to those of the general public. Of the 251 PAC members in the state parks system at the time the survey was conducted, 67 PAC members (27%) completed the survey. Of the 3,927 completed surveys received, only 2% were from PAC members.

In terms of facility preferences, PAC members had very similar responses as the general public for such as facilities as: back-country primitive campsite; tent/trailer campsite without hook ups; group campsites; simple cabin (enclosed living space); playground; open play area; equestrian trail; multi-use trail; swimming area; and beaches.

However, PAC members were less likely to: use a tent/trailer site with hook ups (23.9% PAC members vs. 34.9% public); use a RV/trailer site with hook up (14.9% PAC members vs. 22.5% public); use a mountain bike trail (23.9% PAC members vs. 40.4% public); and use a rock climb area (26.9% PAC members vs. 31.1% public).

Although, PAC members were more likely to: use an improved cabin with kitchen, heat, and restroom (52.2% PAC members vs. 44.5% public); and use a fishing pier (37.3% PAC members vs. 29.8% public).

In some instances, PAC member preferences varied greatly from that of the general public. PAC members are much more likely to: use hiking trail (92.5% PAC members vs. 80.3% public); use a picnic shelter (73.1% PAC members vs. 53.4% public); use a paddle trail (70.1% PAC members vs. 56.0% public); use a boat ramp/dock (46.3% PAC members vs. 29.8% public); use a marina (31.3% PAC members vs. 16.9% public); use a museum/educational exhibit (79.1% PAC members vs. 50.6% public); and to use an observation deck (85.1% PAC members vs. 60.5% public).

Despite the variations in facility use between PAC members and the general public, there was a high level of agreement regarding the priority of new facilities in state parks. Both cohorts felt strongly about the need for new hiking trails and museum and educational exhibits. 31.3% of the PAC members surveyed chose hiking trails as their first priority. Hiking trails were the second, third, and fourth highest priorities for the general public. Both PAC members and the general public chose museum and educational exhibits as their fifth highest facility priority.

The outlier in the facility priorities for the two groups is the desire for mountain biking trails. Given the deviation of the survey from the 2007 NSRE, it is evident that the survey had a much higher representation of mountain bikers than that of the general population. This discrepancy is evident when comparing the priority choices for facilities among PAC members and the general public. The general public's priority for mountain biking facilities is far out of line with that of PAC members, despite nearly one in four PAC members (23.9%) expressing interest in mountain biking.

It is interesting to note that PAC members and the general public had high level of agreement to the 17 policy statements in question three of the survey. Positions on the need for new parks, land acquisitions, protection of natural resources, park development priorities, new park locations, fees, public information, and park maintenance were all in close agreement.

However, PAC members had a higher level of support for environmental education compared to the general public. 91.1% of PAC members surveyed strongly agreed or agreed for the increased need for environmental education for park visitors. Whereas the majority of the general public did support this idea, only 73.1% strongly agreed or agreed. A similar distribution between PAC members and the general public was observed on the topic of the importance of environmental education for children and families.



Compared to the general public, PAC members also saw the need for improvement in state parks for persons with disabilities to be a higher priority. 67.2% of surveyed PAC members either strongly agreed or agreed with the statement that access for the disabled in state parks needs improvement, whereas only 54.9% of the general public strongly agreed or agreed.

In terms of priorities for the 17 policy statements, the PAC members and general public were in nearly unanimous agreement. The first second and third priority statements for the two cohorts were the same. Protecting natural resources through land acquisition was of the utmost importance.

The only disagreement on the priority statements between PAC members and the general public was the importance of increasing environmental education for children, which was the PAC members' fourth priority. All five of the general public's priorities related to natural resource protection.

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## APPENDIX D

### RESOURCE THEME DEFINITIONS

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# RESOURCE THEME DEFINITIONS

## ARCHEOLOGICAL RESOURCES

The resource themes used in this study are general statements of the various kinds of past human activity that are represented by sites or features within the State Parks System. These sites and features can be organized into three thematic categories—prehistoric archeological resources, historic archeological resources, and standing structures and other aboveground features.

### Prehistoric Archeological Themes

For purposes of this planning document, the term prehistory refers to the period of time beginning with the initial entry of the Native Americans into what is now North Carolina (sometime prior to ca. 10,000 years ago) until ca. 1670 A.D., by which time European settlement of the North Carolina coast was well underway. A prehistoric archeological site is therefore defined as any location of prehistoric human activity. As such, a site may be identified by one or more artifacts or features made, modified, or used by prehistoric people. These sites can be divided into a series of generalized site types that reflect differing forms of human activity which can be identified by specific artifact patterns and features. These site types or themes (for consistency with the State Parks planning process) are defined as follows:

#### Village

Sites that possess the remains of domestic, ceremonial, subsistence and economic activities, and shelters indicative of year-round habitation.

#### Campsite/Activity Area

Sites that consist of the remains of domestic, subsistence and economic activities, and shelters indicative of short-term habitation, or of behavior associated with specific domestic, subsistence, or economic activities. Examples include, but are not limited to, temporary habitation sites, hunting sites, butchery sites, and wild plant gathering sites such as those associated with harvesting nut resources.

#### Shell Midden

Sites that consist of the remains of shellfish gathering mixed with the remains of other domestic, subsistence and economic activities, with the mussel shell being the primary component of the remains.

#### Burial/Cemetery

Sites that consist of one or more human burials, and the material remains placed with the individual interments. Usually, but not always, prehistoric burials/cemeteries exist as part of some other archeological site, especially villages and campsites.

#### Quarry/Soapstone

A specialized economic site that shows evidence of activity directed toward the extraction of soapstone from the ground for trade or for later fashioning into artifacts such as bowls and ornaments. This site could show evidence of the actual sources of the soapstone mined, and/or the artifacts used to extract the soapstone. The habitation area used by the soapstone miners would be classified as a Campsite/Activity Area, or possibly a Village.

### Quarry/Other

A specialized economic site that shows evidence of activity directed toward the extraction of some stone (excluding soapstone), such as quartz, rhyolite, or slate, from the ground for trade or for later fashioning into artifacts such as projectile points, scrapers, and blades. This site could consist of the actual source of the stone mined, the artifacts used to extract the stone, and examples of the stone actually mined. The habitation area used by the stone miners would be classified as a Campsite/Activity Area or possibly a Village.

### Shelter/Cave

A site that consists of a natural rock shelter, rock overhang or cave showing evidence of having been used as a temporary or permanent habitation area. The remains of domestic, economic and subsistence activities would be present.

### Rock Art

A site that consists of drawings, sketches, or engravings executed by prehistoric peoples on stone (such as rock outcrops and the walls of rock shelters and caves).

### Trail/Path

A site used by prehistoric peoples as a route of land travel. A good example is the Occaneechi Trail that can be tentatively identified with certain existing roads in the Eno River State Park. The Occaneechi Trail connected the prehistoric and historic Indian groups of the North Carolina Piedmont with the Indians of the Chesapeake, the North Carolina Coast, and the South Carolina Piedmont. It was also a trail used by European traders during early historic times, approximately A.D. 1670 to 1750, to conduct trade with the Indians of the interior of the Southeastern United States.

### Underwater

A preserved underwater site that shows evidence of any prehistoric human behavior associated with habitation, subsistence and/or economic activities. Examples include, but are not limited to, the submerged prehistoric canoes and other artifacts including pottery recovered from Lake Phelps.

### Other

Any site that shows evidence of human activity that cannot be associated with any of the other prehistoric themes.

## **Historic Archeological and Standing Structure Themes**

For purposes of this planning document the term “historic” refers to the period of time beginning with the European settlement of what is now North Carolina (about the mid-seventeenth century). A historic archeological site is defined as any location of past human activity associated with historic Indians, Afro-Americans, and Euro-Americans and are generally identified by the material remains (artifacts and features) associated with them. These sites can be divided into a series of generalized site types that reflect differing forms of human activity that can be identified by specific artifact patterns and features. The theme definitions used for Standing Structures (which are the result of a specific type of human activity) are the same as those used for historic archeological resources. The themes in this case reflect different building types. These site types and building types or themes (for consistency with the State Parks planning process) are defined below:

### Recreation

Structures and/or sites related to the early development of the state parks system or to earlier private or local parks that preceded the state system, including but not limited to camp structures, sleeping cabins, picnic shelters, lodge halls, bathhouses, and related facilities. Also included would be early Euro-American and Afro-American structures or sites used for leisure or amusement activities such as race tracks, baseball fields, mineral springs, fishing cabins, and any landscaping associated with these features.

### Public Works

Facilities or the archeological remains of facilities constructed by local, state, and federal governments as part of public works projects, particularly the CCC, including but not limited to dams and other engineering facilities and including support facilities such as barracks, mess halls, bath houses, etc. not subsequently used for public recreation, and any associated landscape features.

### Public/Civic/Religious

Standing structures and/or sites built for community purposes, including but not limited to churches, lodge/fraternal halls, schools, post offices, and other government facilities, and any associated landscape features.

### Commercial

Structures and/or sites related to the exchange of goods including but not limited to store buildings, wharfs, and any associated landscape features.

### Urban/Domestic

Dwelling houses and/or the archeological remains of dwelling houses in a town or village setting, including all support structures such as sheds, garages, garden or animal facilities and any associated landscape features such as fences, plantings, walls, arbors, etc.

### Rural/Domestic

Dwelling structures and sites associated primarily with the agricultural economy, including farm and plantation houses and all their support facilities, including but not limited to barns, granaries, privies, smokehouses, cribs, sheds, spring houses, and similar structures. Also included would be irrigation canals and ditches, trappers cabins and their support structures and any associated landscape features such as fences, plantings, walls, etc.

### Cemetery

Burial sites with associated above-ground features, including stones and markers, fences and walls, and associated landscaping.

### Industrial

Structures or sites associated with the extraction of resources or the manufacture of materials or goods, including but not limited to mines, furnaces, distilleries, and factories. (Excepting mill sites—see below.)

### Mills

Structures and/or sites associated with the grinding of corn and grains or the cutting of lumber including but not limited to mill buildings, dams, sluices, storage buildings, related support structures and any associated landscape features.

### Transportation

Roadbeds, bridges, landing docks, canals, lighthouses, and other features or sites related to transportation.

### Military

Forts and fortifications, earthworks, battlefields, barracks, magazines, commissaries, and other features and sites related to defense of territory.

### Underwater

Lost or abandoned vessels or structural part of these vessels and structures built in the water such as docks, wharfs, dams, bridges, mill sites, lighthouses, and fish traps. Also included are inundated land sites and cultural material that is intentionally or accidentally deposited in the water particularly in areas such as river crossings, landing sites and city or town water fronts.

### Other

Any structure or site that shows evidence of human activity that cannot be associated with any of the other historic themes.



## **BIOLOGICAL RESOURCES**

Over 116 natural community types have been identified and described in North Carolina (Schafale and Weakley, 1990). These have been grouped into 32 biological themes based on similarities in environment and vegetation. Each of the themes is described more fully in the Natural Heritage Program Biennial Protection Plan (Division of Parks and Recreation, 1993).

### Spruce-Fir Forests

Forests dominated by red spruce and Fraser fir occur on the high mountain tops in western North Carolina, generally over 5500 feet in elevation. They provide habitat for large numbers of both endemic Southern Appalachian and disjunct northern species of plants and animals. This theme is represented in the parks system at Mount Mitchell. The park contains good examples of the Fraser Fir Forest natural community but contains little of the Red Spruce-Fraser Fir Forest found at slightly lower elevations. Like spruce-fir forests elsewhere, the forests in the park have been drastically changed by the balsam woolly adelgid, an introduced insect pest.

### Grass and Heath Balds

Balds are treeless shrub or herb-dominated communities of the high mountains. Grassy balds are open meadows with a diverse mixture of species. Heath balds are dense thickets of tall shrubs, mostly rhododendron, mountain laurel, and other members of the heath family. The state parks system includes only small amounts of heath bald at Mount Mitchell, and no examples of grassy bald in any of the parks.

### Northern Hardwood Forests

Northern hardwood forests are found on high mountain slopes with a cool climate and high levels of rainfall. They are dominated by combinations of moist-site hardwoods, such as yellow birch, beech, buckeye, and sugar maple. A good example of northern hardwood forest is found at Mount Jefferson, but the parks system does not include representation of the range of diversity in this broad theme.

### Mountain Cove Forests

Cove forests are relatively stable, uneven-aged climax forests, with trees up to several centuries old, occurring on sheltered, moist, low to moderate elevation sites. They have a dense canopy of moisture loving trees and a high diversity in all vegetation layers. The state parks system includes small examples of cove forests at South Mountains and Stone Mountain but includes no examples of the more typical mountain version and no examples of Canada Hemlock Forest.

### Piedmont and Coastal Plain Mesic Forests

Mesic forests occur on sites that are moist but not wet. These sites are among the most favorable environments in these regions for plant growth. They tend to support dense forests of beech, tulip poplar, red oak, and other moisture-loving trees. In the Piedmont and Coastal Plain, mesic sites often contain species that are more common in the mountainous parts of the state or farther north. Good examples of acidic Mesic forests are found at Merchants Millpond, Eno River, William B. Umstead, Cliffs of the Neuse, and other parks. A good, though small, example of basic Mesic forest occurs at Raven Rock.

### Piedmont and Mountain Dry Coniferous Woodlands

The vast majority of relatively undisturbed land in the Piedmont and Mountain regions is dominated by hardwood forests. While successional pine forests are very common, naturally occurring pine and Carolina hemlock forests are uncommon. They occur at mid to low elevations in specialized sites that are drier than average. They are found primarily in the mountains and in a few mountain-like sites in the Piedmont. South Mountains and Stone Mountain contain good examples of dry coniferous woodlands, but higher elevation examples are not represented in the parks system.

### Montane Oak Forests

Montane oak forests, which once had chestnut as a codominant, occupy much of the landscape of the Mountain region, covering the dry to intermediate slopes and ridgetops over a broad elevational range. Some montane oak forests are found at Mount Jefferson, and good examples of the foothills version occur at South Mountains and Stone Mountain, but there is inadequate representation of several montane oak community types in the parks system. This theme is scarce in the Piedmont, but excellent examples occur at Hanging Rock and Pilot Mountain.

### Piedmont and Coastal Plain Oak Forests

Oak forests were once the most common natural community type in the Piedmont, occurring over most of the uplands. In the Coastal Plain they were much more limited, occurring primarily in dissected areas near streams. Although still widespread, Piedmont and Coastal Plain oak forests have been substantially reduced from pre-settlement times. The parks system contains excellent representation of acidic types of this theme at several parks but has little representation of basic types.

### High Elevation Rock Outcrops

These communities occur on ridgetops, peaks, and upper slopes where soils are thin and discontinuous, vegetation is very patchy, and rock dominates the surface. Even in the most rugged high mountains they represent only a small fraction of the landscape. Mount Mitchell and Mount Jefferson contain good examples of this theme; however, the parks system does not include any examples of the High Elevation Granitic Dome community type.

### Low Elevation Cliffs and Rock Outcrops

This broad theme contains a wide variety of community types that are too steep or rocky to support a closed tree canopy. Vegetation is generally very patchy, reflecting wide variability in soil depth, rock chemistry, and available moisture. The parks system contains excellent representation of several rock outcrop community types, although representation is not as good for the calcareous and mafic types.

### Coastal Plain Marl Outcrop

This theme is very rare in North Carolina. Coastal Plain marl outcrops generally occur along stream bluffs or in ravines. Some are true marl while others are coquina or other kinds of limestone. Trees include calcium-loving species such as black walnut, southern sugar maple, and pawpaw, as well as more widespread moisture-loving species such as beech and tulip poplar. This theme is not represented in the parks system. An example of this theme occurs along the north shore of Lake Waccamaw, but this area is not included within the park boundaries.

### Granitic Flatrocks

Granitic flatrock communities occur on flat to gently sloping exfoliated outcrops of granitic rocks in the Piedmont. The rock outcrop is generally flush with the surrounding soil and has only minor irregularities. Vegetation is sparse and patchy, and includes several species found in no other communities. Mitchells Mill contains an excellent example of this theme. Several small examples occur at Raven Rock.

### Mafic Glades and Barrens

The communities in this theme are non-forested communities that occur on relatively flat outcrops of unusual, high pH rock types. All have vegetation kept open by the physical structure and chemistry of the rock. These communities have high concentrations of rare plant species. Only a handful of examples of this theme are known in North Carolina, and none of these are currently included within the state parks system.

### Maritime Grasslands

This theme includes the dunes, sandy flats, and dune swales along the coast. These communities are unable to support trees because of heavy salt spray or overwash by salt water during storms. Excellent examples of this theme occur at Baldhead Island and Hammocks Beach.

### Maritime Upland Forests

This theme includes well-developed forests with canopies of live oak, sand laurel oak, and loblolly pine. It also includes the distinctive scrubby woody growth of stabilized sand dunes and sand flats. Most maritime forests are found on the barrier islands, but a few areas on the mainland share the characteristic species. The state parks system includes several small, but good examples of maritime forest. Extensive examples are lacking, as are several of the rarer community types.

### Dry Longleaf Pine Communities

Longleaf pine communities are scattered in most of the Coastal Plain and extend into the Piedmont in the south. They were once the most abundant vegetation type in the Coastal Plain, occupying vast acreages and exhibiting considerable diversity based on moisture, soil, and location. Good examples of this theme exist at Carolina Beach, Jones Lake, Singletary Lake, Baytree Lake, and Weymouth Woods. Several important variants are not represented, particularly in the Sandhills.

### Blackwater Coastal Plain Floodplains

This theme includes the vegetated communities that occur on the floodplains of blackwater rivers. Blackwater rivers originate in the Coastal Plain, rather than in the Piedmont or Mountains. They carry little mineral sediment, and the water is generally very acidic and low in nutrients. The forests contain flood-tolerant trees and shrubs, are typically low in diversity, and can cover large areas. The state parks system contains good examples of this theme at Merchants Millpond, Lake Waccamaw, and a few other small areas. Acquisitions at Lumber River will add examples of this theme to the system.

### Brownwater Coastal Plain Floodplains

Brownwater rivers originate in the Piedmont or Mountains and flow into the Coastal Plain. In contrast to blackwater rivers, they carry heavy loads of mineral sediment, particularly clay and silt. The water is generally near neutral in pH and high in nutrients. Sediment deposition in the floodplain often results in topographic relief such as levees, bars, and sloughs. Representation of this theme in the parks system is minimal, with a small example at Cliffs of the Neuse.

### Piedmont and Mountain Floodplains

Floodplains in the Piedmont and mountains tend to be narrow, infrequently inundated, and generally lacking in depositional landforms. The forests contain mixtures of bottomland and moisture-loving species. Small depressions in the floodplain sometimes form pools that provide important amphibian breeding habitat. The state parks system contains good examples of some of the community types in this theme, but the Montane Alluvial Forest community type has little representation and the Piedmont/Mountain Swamp Forest is essentially unrepresented.

### Riverine Aquatic Communities

This theme includes all perennial, flowing water ecosystems—all rivers, creeks and streams. These aquatic systems are of great ecological importance. Riverine communities are highly diverse, ranging from mountain torrents to placid and meandering Coastal Plain rivers. Animals, rather than plants, tend to be the most conspicuous members of the communities. Many state parks are located adjacent to rivers, and many contain streams and creeks. However, few of the aquatic communities themselves are well-protected. The parks system includes only four State Rivers, and entire watersheds are included in only a few parks.

### Mountain Bogs and Fens

Montane bogs are among the rarest natural communities in the Southern Appalachians and in North Carolina. Bogs form in poorly drained depressions or on gentle slopes. They vary from being permanently wet to intermittently dry and are generally fed by seepage. Vegetation is generally a mosaic of shrub thickets and herb dominated areas. The state parks system contains no examples of mountain bogs.

### Upland Seepages and Spray Cliffs

The communities in this theme are small wetlands that occur on sloping uplands in the Piedmont and Mountain regions. The soils are generally saturated permanently or for long periods. Spray cliffs are kept wet by waterfalls; the other community types in this theme are fed by seepage. Spray cliffs are represented in the parks system at Hanging Rock, South Mountains, and Stone Mountain. There are few examples of seeps in the state parks system.

### Piedmont Upland Pools and Depressions

These are shallow depressions which hold water in the wetter parts of the year. They generally dry up by the end of summer but are flooded long enough to contain wetland vegetation which contrasts with the surrounding uplands. Most occur in the Piedmont. Morrow Mountain contains one small example of this theme, but representation in the parks system is otherwise absent.

### Coastal Plain Nonalluvial Mineral Wetlands

Nonalluvial mineral wetlands occur on flat, poorly drained areas of the outer Coastal Plain and occasionally in shallow depressions such as Carolina bays. The soils in these sites are saturated in the wetter seasons and may have shallow standing water. Vegetation is dominated by cypress, black gum, or other wetland hardwoods. In the state parks system, this theme is represented only at Dismal Swamp.

### Peatland Pocosins

Peatlands occur on nearly flat, poorly drained areas of the outer Coastal Plain and in large shallow depressions such as Carolina bays. Peat deposits develop where the soil is saturated for long enough periods that organic matter cannot completely decompose. The peat acts as a sponge, raising water levels in the soil, which is extremely infertile and acidic. Vegetation includes stunted pond pines and low shrubs, often with areas of sphagnum and pitcher plants. Pocosins are represented in the parks system at Dismal Swamp, Pettigrew, and several of the Carolina bay parks.

### Streamhead Pocosins

These communities have vegetation similar to peatland pocosins, but the physical setting is very different. They occur in ravines in dissected, sandy Coastal Plain terrain. The soils are mucky, very acidic and infertile. The streamhead pocosin theme is represented at Weymouth Woods. Better representation is needed in the Sandhills, where most examples of this theme exist.

### Wet Pine Savannas

The communities in this theme are Coastal Plain mineral soils wetlands that in presettlement times were frequently burned. With frequent fire, they have an open canopy of longleaf or pond pine over a grassy herb layer. They often contain a high diversity of herbaceous plants, including showy wildflowers and insectivorous plants. Shrubs are short and sparse with frequent fire but become dense if fire is suppressed more than a couple of years. Examples of this theme occur at Carolina Beach and Jones Lake, but the diversity of wet pine savanna communities is not well represented.

### Coastal Plain Depression Communities

These occur in various kinds of small basins in Coastal Plain uplands. The basins, which may be limesink depressions, Carolina bays, or swales between recent or older sand dunes, hold standing water for substantial parts of the year. Vegetation is often strongly zoned and varies widely. Carolina Beach contains excellent examples of several limesink types. Theodore Roosevelt and Bushy Lake also contain small examples.

### Natural Lake Communities

Natural lakes occur only in the Tidewater and Coastal Plain part of North Carolina. Some lake basins are Carolina bays, while others are depressions in peatlands that may have been created by deep peat burns or other causes. Most of the lakes in North Carolina are very acidic. Lake Phelps, Lake Waccamaw, Jones Lake, Singletary Lake, and the other state lakes represent the diversity of this theme.

### Maritime Wetland Forests

Maritime wetland forests occur in wet sites on barrier islands and near the sounds on the mainland. They are generally sheltered from the most extreme salt spray and from seawater overwash. The soils are saturated for much of the year. This rare theme includes forests and shrub communities. Examples exist at Fort Macon and Theodore Roosevelt, but the acreages are small.

### Freshwater Tidal Wetlands

Freshwater tidal wetlands occur in sites where flooding occurs in response to lunar or wind tides, but the water has less than 0.5 parts per thousand salt content. They are found on rivers near the coast and along the large sounds. Good to excellent examples of this theme are found at Goose Creek and Chowan Swamp.

### Estuarine Communities

Estuarine communities are affected by tidal waters in and along the sounds and drowned river mouths. Salt marshes, brackish marshes, salt flats, and salt shrubs may occur. This theme is well represented in the parks system at Fort Macon, Hammocks Beach, Fort Fisher and Baldhead Island.

## **GEOLOGICAL RESOURCES**

### Barrier Islands and Shoreline

Geomorphic features created by wind and waves at the coast during Holocene times, both on barrier islands and on sections of the mainland coast where barriers are absent. They include beach, foredunes, active and stabilized rear dunes, overwash deposits, interdune ponds and swamps, inlets, sand spits, capes, relict inlets, active flood and ebb tidal deltas.

### Estuaries

Geomorphic features associated with tidally influenced areas in lagoons behind barrier islands and in drowned river mouths. They include regularly and irregularly flooded tidal marshes, estuarine swamps, tidal channels, open water with sand and mud bottom, shell beds, relict flood tidal deltas, and estuarine beaches.

### Continental Shelf

Geomorphic features of offshore areas. They include soft bottom areas and erosional marl outcrops characterized by low scarps.

### Relict Coastal Features

Geomorphic features created by coastal processes before the Holocene, at higher stands of sea level than at present. They include Coastal Plain scarps and terraces, relict beach ridges, and dune systems.

### Carolina Bays

Oriented elliptical depressions. They include water-filled, peat-filled, sandy, and clay-based bay interiors, sand rims, and associated aeolian sand deposits.

### Fluvial Depositional Features

Geomorphic features produced by alluvial processes of streams and rivers on floodplains and in river channels, primarily in areas of relatively non-resistant rock. They include mud, sand, and gravel bars, natural levees, point bars, sloughs, ridge and swale systems, oxbows, relict terraces with ridge and swale systems, sloughs, etc., terrace slopes, and coastal plain blackwater stream swamps.

### Peatlands and Interstream Wetlands

Areas saturated by non-flowing water for large parts of the year, because of blocked drainage or flat topography without drainage. They include peat domes, other peatlands, upland swamps, and peat deposits in Carolina bays.

### Natural Lakes and Ponds

Natural bodies of fresh water in depressions of various origin. They include lakes in peatlands and Carolina bays and ponds in naturally blocked drainage systems and sinkholes or dolines, with associated shallow nearshore areas, beaches, and erosional shorelines.

### Caves, Sinks, and Springs

Features produced by solution of rock and other effects of ground water. They include solution caves, speleothems, sinkholes, dolines, natural bridges, and other karst features, and flowing and seeping springs produced by ground water flow in solution cavities, fractured bedrock, saprolite, and sand.

### Dissected Uplands

Upland areas with well-developed drainage, showing the effects of the common surface geomorphic processes operating on most of the state's landscape. They include upland ridges, ravines, and slopes along streams, underlain by bedrock, saprolite, or colluvium.

### Inselbergs (Monadnocks)

Isolated erosional remnants. They include isolated hills and mountains of unusually resistant rocks and outliers of the Blue Ridge escarpment.

### Cliffs

Steep to vertical or overhanging slopes of exposed rock. They include cliffs of resistant rock on high peaks and ridges, and cliffs produced by streams and rivers.

### Exfoliation Features

Geomorphic features produced by exfoliation or spalling in hard, generally granite-like rocks. They include flatrocks, dome-shaped mountains and rock faces, and weathering pits which are most commonly formed on exfoliation surfaces.

### Gorges, Rapids, and Waterfalls

Features produced by stream erosion in high to moderate relief terrain or resistant rock. They include steep-walled gorges, waterfalls, waterfall pools, rapids over bedrock, rapids over boulder deposits, and potholes.

### Mass Wasting Features

Landforms illustrating features produced by mass wasting phenomena. They include debris avalanches, tracks, and deposits, earth flows, slumps, talus slopes, and relict periglacial features such as boulder fields and nivation cirques.

### Faults, Joints, and Related Features

Areas illustrating results of faulting and jointing, either directly or indirectly. They include visible high angle and thrust faults, sheared and cataclastic rocks, large fault-produced features such as windows, fault zones, horsts, and grabens, fissure caves, joint or fault-controlled drainage, and other landforms showing effects of faults or joints.

### Folds and Related Features

Areas illustrating results of folding, either directly or indirectly. They include folds visible in outcrops and series of outcrops, and landforms produced by differential erosion in folded rocks.

### Intrusions

Areas illustrating intrusive igneous bodies. They include batholiths, dikes, sills, ring dikes, and other kinds of plutons, of granitic rocks, syenite, diorite, diabase, gabbro, and ultramafic rocks.



### Volcanic Features

Areas illustrating features produced by extrusive igneous activity. They include lava flows, breccias, tuffs, lahars, pillow lavas, and other features visible in outcrops or expressed in landforms.

### Metamorphic Features

Areas illustrating characteristic minerals, textures, and structures produced by metamorphic processes. They include rocks of different initial composition, metamorphosed to different degrees.

### Sedimentary Features

Areas illustrating sedimentary stratigraphy, rock types, sedimentary structures, and depositional environments. They include sandstone, dolomite, mudstone, graywacke, conglomerate, arkose, lake shale, coastal plain sand and shale, marl, coquina, representative strata of different ages or formations of the Coastal Plain, Triassic Basins, Carolina Slate Belt, and windows in the Blue Ridge.

### Fossils

They include representatives of the range of fossil types, animal and plant, marine and terrestrial, different types of preservation, and different ages.

### Unusual Rock Types

Outcrops of rock types rare in North Carolina or in the region. They include ultramafic rocks, dolomite, marble, limestone, and orbicular diorite and notable occurrences of unusual minerals.

## **GLOSSARY OF GEOLOGIC TERMS**

### Aeolian

Deposited or reworked by wind.

### Batholith

A large body of intrusive rock frequently covering many square miles of area and extending to great depth.

### Breccia (volcanic)

A rock consisting of broken rock fragments produced by volcanic eruptions, with rock fragments greater than 32 millimeters in size.

### Dike

A narrow vertical body of intrusive rock, appearing in outcrop as a narrow line.

### Doline

A depression on the land surface caused by collapse of surficial sediments into a void created by solution of limestone underground.

### Drowned river mouth

Lower reach of a river valley, now occupied by tidal estuarine waters. These valleys were formed when sea level was lower and were inundated when sea level rose.

### Graben

A block of rock lowered relative to adjacent areas by vertical fault movement.

### Holocene

The most recent period of geologic time, extending from the end of the last ice age (10,000 years ago) to the present.

### Horst

A block of rock uplifted relative to adjacent areas by vertical fault movement.

### Lahar

A deposit produced by landslides of volcanic ash on the flank of a volcano.

### Marl

A sedimentary rock consisting of clay with abundant calcium carbonate material in the form of shells or shell fragments. The term is also frequently used in North Carolina to refer to rocks made up largely of shells.

### Mass wasting

A series of geomorphic processes involving movement of large masses of earth material by gravity, either slowly or quickly.

Nivation cirque

A rounded basin-like landform produced by periglacial processes around permanent snowfields.

Periglacial

A series of geomorphic processes resulting from repeated freezing and thawing under cold climate, as occurred during the ice age.

Pluton

General term for bodies of intrusive igneous rock.

Ring dike

A narrow, ring-shaped body of intrusive rock, as in the syenite ring dike in Cabarrus County.

Sand spit

A small point of land or narrow shoal projecting from the shore.

Saprolite

A soft, earthy, clay-rich, thoroughly decomposed rock formed in place by weathering.

Scarp (Coastal Plain)

A relatively steeply sloping area on the Coastal Plain or Continental Shelf, believed to have been formed by coastal processes in the past.

Sill

A thin, horizontal body of intrusive rock. Unlike a dike, it may cover a large area in outcrop.

Slough

An elongate depression in a floodplain that occurs at a former location of a river channel.

Spalling

Breaking in layers parallel to the surface, as sometimes occurs in granite and related rocks.

Speleothem

A cave formation, such as a stalactite or stalagmite.

Tuff

A volcanic rock consisting of broken rock fragments produced by volcanic eruptions, with fragments generally less than four millimeters in size.

## **GLOSSARY OF SCENIC RESOURCE TERMS**

### Scenic Vistas

The view from a natural or man-made resource.

### Reservoirs/Lakes

The view of a body of flat water.

### Waterfalls

The view of a steep descent of water from a height.

### Rivers

The view of a large natural stream of water emptying into an ocean, lake, or other body of water, and usually fed along its course by converging tributaries.

### Whitewater Streams

The view of a cascading body of running water.

### Bays And Estuaries

The view of either a coastal flat body of water enclosed by land but having an outlet to the ocean or the lower portion of a river where its current is met and influenced by the tides.

### Seashores

The view of a tract of land adjacent to the ocean.

### Forests

The view of a dense growth of trees, together with other plants, covering a large area.

### Meadows And Grasslands

The view of a tract of grass covered land.

### Swamps

The view of a lowland region saturated with water and primarily vegetated with trees.

### Pocosins

The view of a shallow swampy depression vegetated chiefly with shrubs.

### Marshes

The view of a low lying wetland vegetated primarily with grasses.

### Gorges

The view of a deep, narrow passage with precipitous rocky sides often enclosed between mountains.

### Rock Outcroppings

The view of an expansive natural stone formation occurring either vertically or horizontally.

Islands

The view of a body of land surrounded on all sides by salt or fresh water.

Caves and Cliffs

The view of geologic formations of either a hollow beneath the earth's surface or of a vertical rock wall.

Scenic Highways

The view from a highway or road of visually diverse and natural or man-made phenomena.