

*South Mountains State Park
General Management Plan*




GENERAL MANAGEMENT PLAN
FOR
SOUTH MOUNTAINS STATE PARK

Department of Environment, Health, and Natural Resources

Division of Parks and Recreation

Planning and Development Section

October, 1993



Digitized by the Internet Archive
in 2012 with funding from
LYRASIS Members and Sloan Foundation

<http://archive.org/details/southmountainsst00unse>

INTRODUCTION

Planning is an essential element of effective and efficient park administration and management. The North Carolina General Assembly acknowledged its importance by passing state parks system legislation that includes planning requirements.

The 1987 State Parks Act (G.S.114-44.7 through 114-44.14) stipulates that a State Parks System Plan be prepared. The plan was completed in December 1988. It evaluated the statewide significance of each park, identified duplications and deficiencies in the system, described the resources of the system, proposed solutions to problems, described anticipated trends, and recommended means and methods to accommodate trends.

The State Parks Act also requires each park to have an individual general management plan. The general management plans are required to:

...include a statement of purpose for the park based upon its relationship to the System Plan and its classification. An analysis of the major resources and facilities on hand to achieve those purposes shall be completed along with a statement of management direction. The general management plan shall be revised as necessary to comply with the System Plan and to achieve the purpose of the [State Parks Act].

The general management plan (GMP) is to be a comprehensive five-year plan of management for a park unit. GMP's function to:

1. describe park resources and facilities;
2. state the purpose and importance of each park unit;
3. outline interpretive themes and propose locations for informational and interpretive facilities;
4. analyze park and recreation demands and trends in the park's service area;
5. summarize the primary laws guiding park operations;
6. identify internal and external threats to park natural and cultural resources, and propose appropriate responses;
7. identify and set priorities for capital improvement needs;
8. analyze visitor services and propose efficient, effective, and appropriate means of responding to visitor needs; and
9. review park operations and identify actions to support efficient and effective park administrative procedures.

The GMP for South Mountains State Park, developed with public involvement, is intended to serve these purposes.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
I. DESCRIPTION OF PARK RESOURCES AND FACILITIES.....	I-1
Location.....	I-1
Land Base.....	I-1
Visitor Facilities.....	I-1
History of the Park Area.....	I-2
II. PARK PURPOSES.....	II-1
Mission Statement for the State Parks System.....	II-1
South Mountains Park Purpose Statement.....	II-1
III. SUMMARY OF INTERPRETIVE THEMES.....	III-1
Primary Interpretive Theme.....	III-1
Secondary Interpretive Themes.....	III-2
IV. PARK AND RECREATION DEMAND AND TRENDS.....	IV-1
Annual Visitation Trends.....	IV-1
Monthly Visitation Trends.....	IV-1
Population Trends.....	IV-3
Outdoor Recreation Participation in North.....	IV-3
Carolina	
Priorities of Public Outdoor Recreation Funding....	IV-6
Recreation Opportunities in Close Proximity.....	IV-7
V. SUMMARY OF LAWS GUIDING PARK MANAGEMENT.....	V-1
State Legal Mandates.....	V-1
Federal Laws.....	V-3
State Policies.....	V-3
VI. NATURAL AND CULTURAL RESOURCE MANAGEMENT.....	VI-1
Natural Resource Management Policy.....	VI-1
Natural Communities.....	VI-2
Natural Heritage Program Element Occurrences.....	VI-4
Registered Natural Heritage Areas.....	VI-5
Cultural and Natural Resource Management Issues....	VI-7

VII. PHYSICAL PLANT INVENTORY.....VII-1

- Facility Inventory and Inspection Program.....VII-1
- Building Inventory.....VII-3
- Facilities Repair Needs.....VII-4
- Facilty Repair Needs Cost Summary.....VII-5
- Road and Utility Inventory.....VII-6
- Major Capital Improvement Project Priorities.....VII-11

VIII. PARK OPERATIONS.....VIII-1

- Staffing Levels.....VIII-1
- Operating and Equipment Budget.....VIII-3
- Training Needs.....VIII-4
- Back Country Patrol.....VIII-5
- Mountain Biking.....VIII-6
- Trail System.....VIII-6

IX. LAND ACQUISITION NEEDS.....IX-1

- Land Acquisition Status.....IX-1
- Future Land Acquisition Needs.....IX-1
- Land Acquisition Summary Table.....IX-2

APPENDIX A: PARK PROFILE.....A-1

APPENDIX B: CAPITAL IMPROVEMENT REQUESTS.....B-1

I. DESCRIPTION OF PARK RESOURCES AND FACILITIES

LOCATION

South Mountain State Park is located in the Piedmont province of North Carolina in southwestern Burke County on the boundary of Cleveland County. Morganton, the Burke County seat, is 18 miles north of the park. The park entrance is located south of Interstate 40 via N.C. 18 and several secondary roads (S.R. 1913, S.R. 1924, S.R. 1901, and S.R. 1904).

LAND BASE

South Mountain State Park, which contains 7,330 acres, was established in 1974. The park area is characterized by relatively steep terrain, with narrow ridge tops and valleys and some slopes exceeding 60 percent. Elevations within the park range from a low of 1,250 feet along Jacob's Fork River to 2,894 feet on Benn's Knob, the park's southern boundary. Jacob's Fork, Shinny Creek and their tributaries drain through the park into the Catawba River watershed. Waterfalls and rock outcrops occur along streams in the park. High Shoals Falls on Jacob's Fork, which is the most outstanding natural feature and attraction of the park, drops 80 feet over bare rock with a series of cascades below.

VISITOR FACILITIES

Visitor facilities at South Mountain State Park provide opportunities for hiking, mountain bicycling, horseback riding, nature study, backpack camping, picnicking, and fishing in mountain streams. There are over 14 miles of designated mountain trout streams in the park. Most of the water is classified as Wild Trout water, with approximately two miles classified as Delayed Harvest General Trout water. A North Carolina trout fishing license is required.

Two picnic areas with a total of 16 picnic tables and 12 grills are available. One is located adjacent to the main parking lot and has universally accessible restrooms. The other, which is a smaller, primitive facility with a pit toilet, is located 0.4 miles from the main parking area.

Four backpack camping areas without water are available in the park. There is also an 11-site primitive family campground adjacent to the horse trailer parking area. Each site has a picnic table and rock fire circle. Two pit toilets service the campground. An equestrian pack-in camping area is also available.

An extensive network of trails exists in the park on old road beds that have been converted into hiking, bridle, and mountain bike trails. Over 29 miles of bridle trails are available for horseback riding. A strenuous, 18-mile loop trail is available for mountain bike riding. All trails are open for hiking (Figure I-1).

HISTORY OF THE PARK AREA

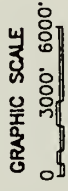
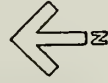
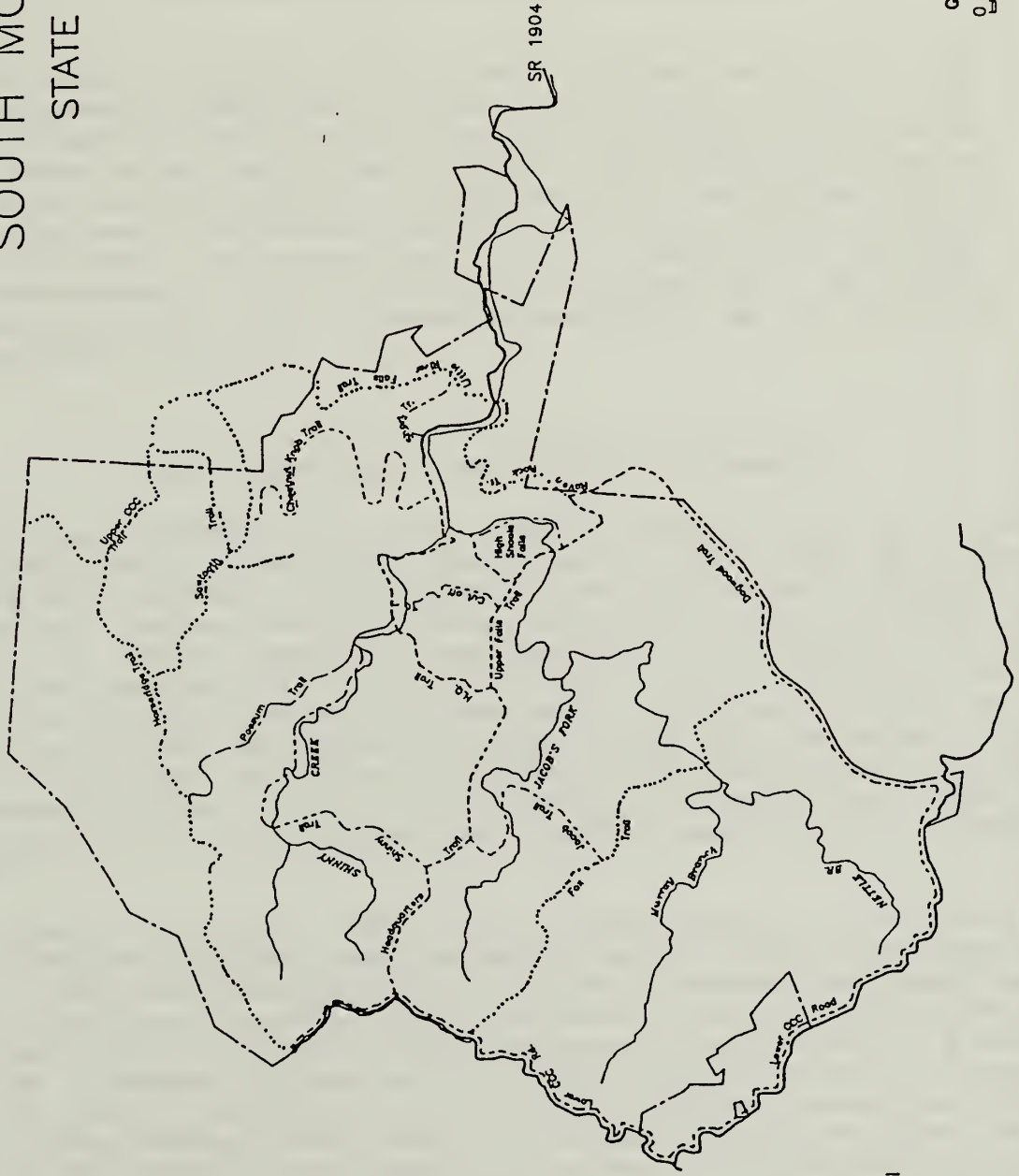
The South Mountains Range encompasses approximately 100,000 acres in Burke, Cleveland and Rutherford counties. Native Americans, explorers and settlers used the Catawba Valley and the gaps across the mountain ranges as major travel routes. The mountains also served as a buffer between the Cherokee and Catawba Indian tribes. Early Native Americans established villages and cultivated land along the rivers and set up temporary camps in the mountains to hunt and collect food.

The first permanent settlers farmed the fertile bottomland along the Catawba River. The David Bibby family constructed the first homesite in the park on Jacob's Fork and operated a corn mill above High Shoals Falls. The Johnny Smith family established a second homesite in the park near the park office, and the family graves remain at this site.

In 1828 gold was discovered at Brindle Creek. According to legend, gold flakes and grains were first discovered in the mud used to seal a log cabin. The ensuing gold rush caused a population influx into the area that included immigrants, wealthy slave owners, and mining companies. Although the mining declined, the South Mountain area was settled by a few pioneers and immigrants from the gold rush.

The Civilian Conservation Corps (CCC) made future development of the area possible by clearing streams and constructing Forest Service roads in the 1930s. The Upper and Lower CCC roads are still in use in the park.

SOUTH MOUNTAINS STATE PARK



- LEGEND**
- Park boundary
 - Bridle trail
 - - - - Mountain bike trail
 - _____ Hiking trail
 - _____ Road

Figure I-1.

II. PARK PURPOSES

MISSION STATEMENT FOR THE NORTH CAROLINA STATE PARKS

The North Carolina state parks system exists for the enjoyment, education, health, and inspiration of all our citizens and visitors. The mission of the state parks system is to conserve and protect representative examples of the natural beauty, ecological features and recreation resources of statewide significance; to provide outdoor recreation opportunities in a safe and healthy environment; and to provide environmental education opportunities that promote stewardship of the state's natural heritage.

SOUTH MOUNTAINS PARK PURPOSE STATEMENT

The Civilian Conservation Corps (CCC) provided the first public works programs in the South Mountains in the 1930s by cleaning streams and building the upper and lower CCC roads to improve fire protection. Subsequently, timber companies and other landowners formed the South Mountain Association to coordinate a fire-protection program with State Forestry. National Park Service (NPS) studies recommended the area as a state park, first in 1940 and again in 1961, but the recommendations were rejected. Local support increased in the early 1970s for a state park to protect High Shoals Falls, and in 1974 South Mountains State Park was established with land acquisition funding approved by the General Assembly.

Significant biological resources include examples of diverse and well developed mountain and piedmont forest communities, six rare plants, one rare bird, and two Registered Natural Heritage Areas. The Cove Hardwood Forests support a wide variety of hardwoods more characteristic of the Blue Ridge Mountains than the park's Piedmont location. Steeper slopes above the Cove Hardwood Forests support Pine-Oak Heath communities. The park's highest peaks and ridges support pine communities. Bear oak, a rare shrubby species, occurs in the pine forests' understory. The Bear Oak Registered Natural Heritage Area protects a small population of this plant, while the High Shoals Falls Registered Natural Heritage Area supports excellent examples of Spray Cliff and Montane Acidic Cliff communities. The High Shoals Falls Natural Area also provides habitat for a number of rare plants as well as nesting habitat for the park's ravens.

Significant geological features include waterfalls, caves, and overhangs. High Shoals Falls, which plunges 70 feet down a bare rock face, is on the Jacob's Fork River. Two other waterfalls are found in the park, one on Shiny Creek and the other on Little River. Small eaves and overhangs are located in areas where rock slabs have been exposed through erosion or have broken off and rest against the hillside. A nearly complete, protected watershed lies within the park, formed by the ridge line of the South Mountains range. Jacob's Fork has high quality water and has been designated as an Outstanding Resource Water. Protection of this watershed was one of the main reasons for the park's establishment.

South Mountains State Park is an attractive mountain park in close proximity to the state's Piedmont population centers. Significant recreational resources include extensive opportunities for backcountry experiences, trout fishing, and natural heritage interpretation. The park offers a trails system and back-country conditions that should be maintained to provide opportunities to experience settings predominated by the forces of nature. Interpretation and education of the park's natural heritage should be the highest priority visitor service.

Significant scenic resources include waterfalls, views of the Blue Ridge escarpment and the undeveloped expanses of the Jacob's Fork watershed. High Shoals Waterfall is the most popular visitor attraction. The trails system provides access to striking scenery, including exposed rock faces, mountain streams, and abundant wildlife.

South Mountains exists as a state park so that its valuable geological, biological, scenic, and recreational values can be protected. The Division of Parks and Recreation is charged with preserving these values and providing park experiences that promote pride in and understanding of North Carolina's natural heritage.

III. SUMMARY OF INTERPRETIVE THEMES

The 1987 State Parks Act defines the purposes of the state parks system. It establishes that:

The State of North Carolina offers unique archaeological, geologic, biologic, scenic and recreational resources. These resources are part of the heritage of the people of this State. The heritage of a people should be preserved and managed by those people for their use and for the use of their visitors and descendants.

It further provides that:

Park lands are to be used by the people of this State and their visitors in order to promote understanding of and pride in the natural heritage of this State.

One of the best methods of meeting these purposes is through environmental education. The Department of Environment, Health, and Natural Resources has adopted the following definition of environmental education:

Environmental education is a process that increases awareness, knowledge, and understanding of natural systems - the interdependence of living things, the impact of human activities - and results in informed decisions, responsible behavior, and constructive action.

South Mountains State Park is well suited to environmental education with its excellent representation of the ecology and habitat types found throughout the mountain provinces.

South Mountains has one primary interpretive theme and 11 secondary themes. The primary theme is the interpretation of the ecology of the Jacob's Fork watershed.

PRIMARY INTERPRETIVE THEME

Jacob's Fork Watershed Ecology

The study of the Jacob's Fork watershed ecology should focus on two areas: the transition from Piedmont to Mountain in terrain and biotas, and the high quality of the watershed and the sensitive plants and animals that live in and around the river.

SECONDARY INTERPRETIVE THEMES

Eleven secondary interpretive themes have been identified. They are:

1. Plant Communities
2. Stream Recreation (fishing, etc.)
3. Local Cultural History
4. Rare and Endangered Species
5. Aquatic Ecology
6. Conservation Ethic
7. Park System History
8. Reptiles
9. Camping and Back Country Safety
10. Horseback Riding
11. Changing Land-Use Patterns
12. Geology

IV. PARK AND RECREATION

DEMAND AND TRENDS

ANNUAL VISITATION TRENDS

South Mountains State Park's attendance increased steadily during the 1980s. In 1982, the park's visitation decreased substantially, however, because of the condition of the gravel access road to the park, which badly needed repairs. Once improvements were made to the road, visitation began to increase again.

A traffic counter located on the gravel access road records visitation to the park. Although visitation had steadily increased since 1982, the year 1987 showed a decrease. This may not be an accurate representation of the park's annual visitation because the traffic counter's accuracy is questionable. Visitation has increased, however, an average of 20 percent since 1987 (Figure IV-1).

In 1991 visitation decreased approximately 11 percent from the previous year, which can be attributed to the extremely wet weekends during 1991. Because of South Mountains State Park's remote location, it attracts more overnight visitors, whereas parks near urban areas tend to attract more day users. Although these parks may have higher attendance, South Mountains State Park visitors probably spend more time in the park. The park staff notes that since visitor stays are longer, the typical visitor tends to demand more services, which requires more staff time.

MONTHLY VISITATION TRENDS

South Mountain State Park has an eight-month peak season, from March through October. The monthly visitation fluctuated between 12,983 and 5,136 during this season for the years 1990-1991 (Figure IV-2). The lowest monthly attendance at the park occurs in December, which recorded a low of 1,753 visits for December 1990. The heaviest visitor use is in June and July, with an average of 11,372 visits during this two-month period.

Visitation fluctuates with the weather. When heavy rains wash out the park access road, it is frequently impassable to all but the most well-equipped park visitor.

ANNUAL VISITATION TRENDS 1980 - 1991

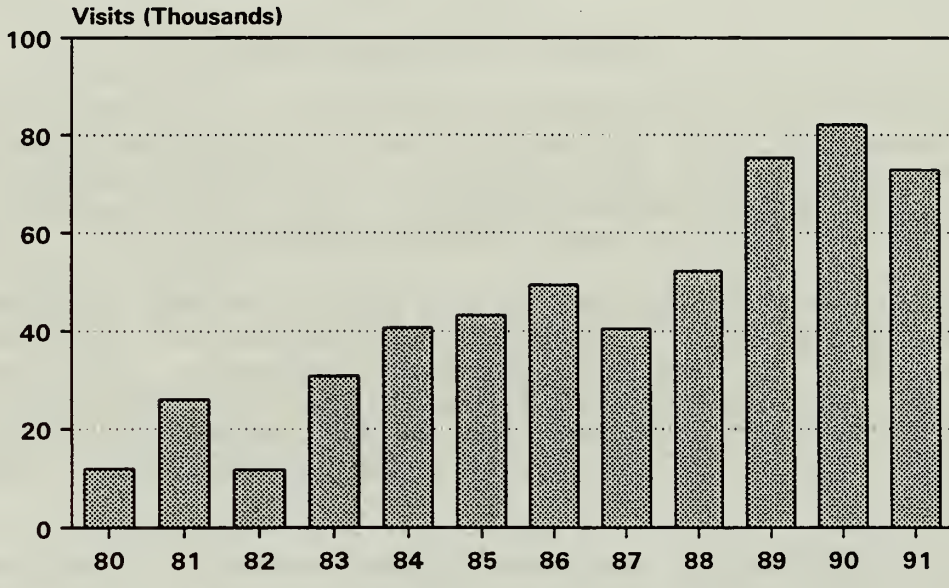


Figure IV-1. South Mountain State Park Annual Visitation 1980 - 1991

MONTHLY VISITATION

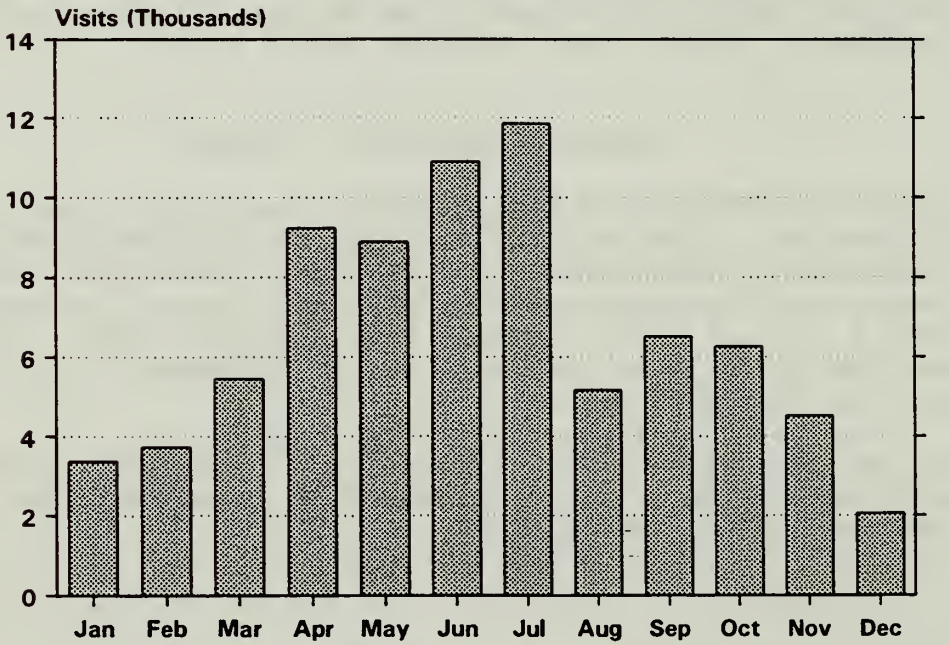


Figure IV-2. South Mountain State Park Average Monthly Visitation 1990-1991

POPULATION TRENDS

The six counties comprising the area served by South Mountain State Park are Burke, Catawba, Cleveland, Lincoln, McDowell and Rutherford. The total population in the area was 421,788 in 1990.

It is estimated that the population in the six-county area will grow by 7 percent or 30,236 people by the year 2000. All counties will experience population increases ranging from 4 percent to 14 percent, with Catawba and Lincoln having the greatest increases, at an average of 12 percent.

Population Trends by Age Group

The 10-29 year-old age groups show a decline in population, while most other age groups show an increase by the year 2000. The increase is attributed to several factors (Figure IV-3). The 0-9 year-old age group will increase as the baby boomers who have delayed starting families begin having children. The largest percentage increase in population will occur in the 40-59 year-old age group, which is the post baby boomer generation. The 70+ year-old age group also shows a significant increase in population as life expectancies increase with better health care.

OUTDOOR RECREATION PARTICIPATION IN NORTH CAROLINA

The five most popular outdoor recreational activities in North Carolina are walking for pleasure, driving for pleasure, viewing scenery, beach activities, and visiting historical sites. Three out of every four households participated in walking for pleasure at least once in the past 12 months (Table IV-1). In addition to the five most popular activities, over fifty percent of the households responding to a 1989 survey participated at least once in the following activities: swimming (in lakes, rivers, or oceans), visiting natural areas, picnicking, attending sports events, visiting zoos, and freshwater fishing.

The North Carolina Outdoor Recreation Participation Survey was mailed to 3,100 randomly selected residents in the spring of 1989. Forty-five percent, or 1,399 people, returned completed surveys. Each person receiving the survey was asked to estimate the number of times the respondent's household members had participated in each of 43 activities.

REGIONAL AGE GROUP TRENDS 1980 - 2000

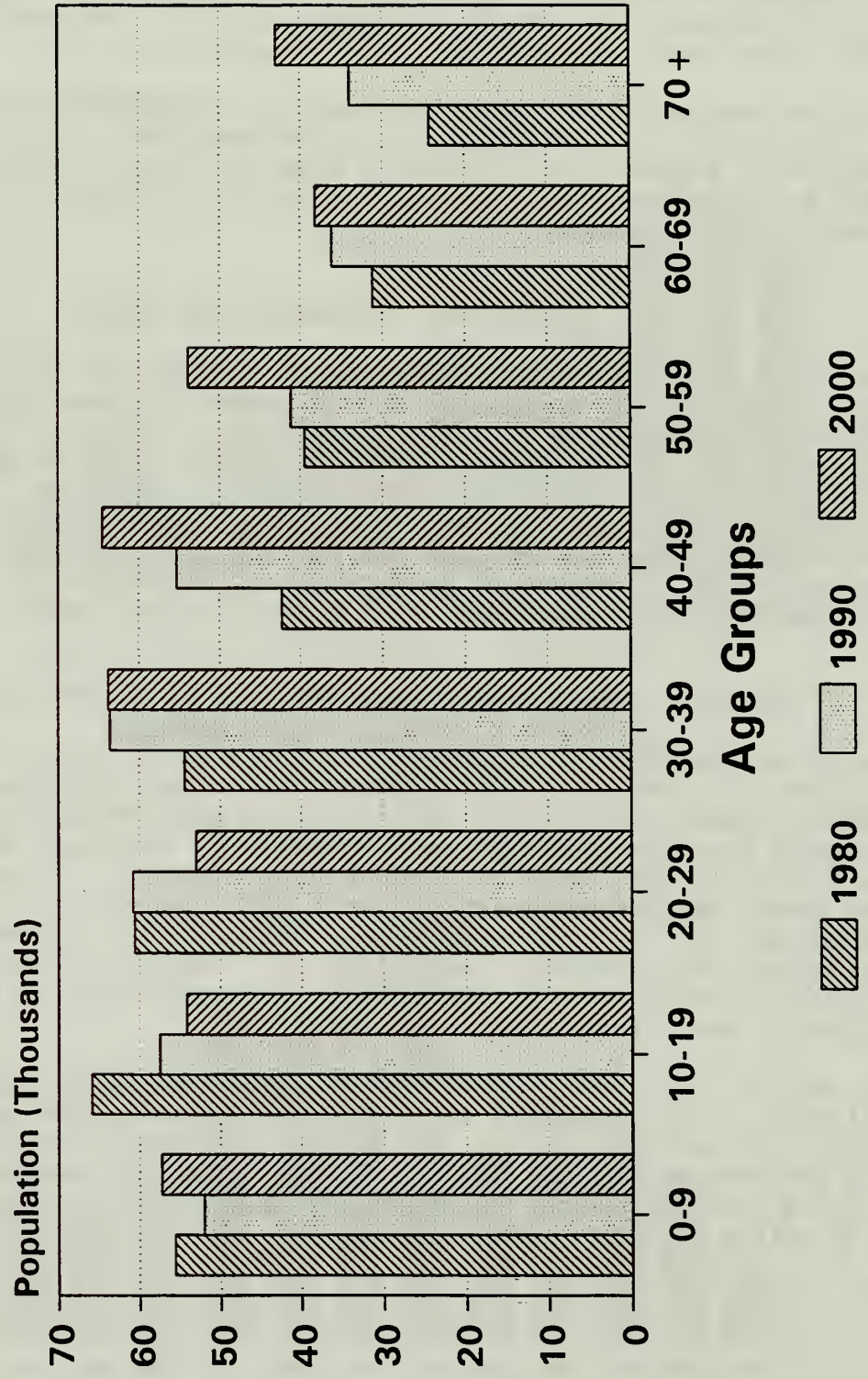


Figure IV-3. South Mountain State Park Market Region Age Group Trends

Table IV-1. Outdoor recreation activities ranked by popularity.

Rank	Activity	Percentage of Households Participating
1.	Walking for Pleasure	75%
2.	Driving for Pleasure	72
3.	Viewing Scenery	71
4.	Beach Activities	69
5.	Visiting Historical Sites	62
6.	Swimming (in Lakes, Rivers, and Oceans)	54
7.	Visiting Natural Areas	53
8.	Picnicking	52
9.	Attending Sports Events	52
10.	Visiting Zoos	51
11.	Fishing - Freshwater	50
12.	Use of Open Areas	41
13.	Swimming (in Pools)	40
14.	Fishing - Saltwater	38
15.	Attending Outdoor Cultural Events	35
16.	Bicycling for Pleasure	32
17.	Other Winter Sports	31
18.	Camping, Tent or Vehicle	29
19.	Softball and Baseball	28
20.	Hunting	28
21.	Use of Play Equipment	28
22.	Power Boating	26
23.	Trail Hiking	26
24.	Jogging or Running	24
25.	Basketball	24
26.	Nature Study	22
27.	Golf	22
28.	Target Shooting	20
29.	Water Skiing	19
30.	Camping, Primitive	14
31.	Tennis	14
32.	Use Motorcycles, Dirt Bikes, ATV's	13
33.	Use Four Wheel Drive Vehicles	13
34.	Canoeing and Kayaking	13
35.	Horseback Riding	12
36.	Volleyball	12
37.	Downhill Skiing	12
38.	Football	11
39.	Soccer	7
40.	Sailboating	7
41.	Skateboarding	6
42.	Cross Country Skiing	2
43.	Windsurfing	1

PRIORITIES OF PUBLIC OUTDOOR RECREATION FUNDING

The North Carolina Outdoor Recreation Survey also asked residents to identify and rank their unmet public outdoor recreational needs. Future demand was determined by asking them which activities they would have tried more often had adequate facilities been available. Respondents were then asked to rank these activities in order of importance. A scoring system was used assigning each activity a rating of high, moderate or low future demand based on the survey results.

In the second part of the analysis, the respondents' level of support for publicly funded outdoor recreation activities was determined by asking them to identify and rank those activities to which government should give highest priority when spending public money. The same scoring system used to analyze unmet demand was then applied to the survey results, with each activity receiving a high, moderate or low rating in public support for public funding.

In the final part of the needs analysis, the two ratings were combined for each activity, producing a score of one to nine that reflected both future demand and public funding priorities. The activities that ranked high in both future demand and support for public funding received the highest priority in the needs assessment (Table IV-2).

Based on this analysis, many of the activities with high priority ratings are activities that are currently or could potentially be provided at South Mountains State Park. The activities include picnicking, visiting natural areas, viewing scenery, trail hiking, and fresh-water fishing.

Table IV-2. Priorities for Future Outdoor Recreation Activities

Activity	Code	Future Demand	Support for Public Funding
Walking for Pleasure	1	High	High
Camping, Tent or Vehicle	1	High	High
Picnicking	1	High	High
Beach Activities	1	High	High
Fishing - Freshwater	1	High	High
Attend Outdoor Cultural Events	1	High	High
Visiting Natural Areas	2	Moderate	High
Use of Play Equipment	2	Moderate	High
Visiting Zoos	2	Moderate	High
Visiting Historical Sites	2	Moderate	High
Bicycling for Pleasure	3	High	Moderate
Swimming (in Pools)	3	High	Moderate
Viewing Scenery	4	Moderate	Moderate
Hunting	4	Moderate	Moderate
Trail Hiking	4	Moderate	Moderate
Use of Open Areas	4	Moderate	Moderate
Target Shooting	4	Moderate	Moderate
Swimming (Lakes, Rivers, Ocean)	4	Moderate	Moderate
Fishing - Saltwater	4	Moderate	Moderate

RECREATION OPPORTUNITIES IN CLOSE PROXIMITY

There are two state parks near South Mountains State Park. Lake James is approximately 45 minutes away and provides an extensive array of recreational activities, such as fishing, boating, picnicking, camping, hiking, and lake swimming. Duke Power State Park, which is approximately an hour and 15 minutes away, has recreation facilities for fishing, picnicking, camping, and hiking. Boating access is provided to Lake Norman, and canoeing, rowboating and swimming are available on a 33-acre lake. The visitor experience at these more developed state parks contrasts with the back-country visitor experience available at South Mountains State Park.

V. SUMMARY OF LAWS GUIDING PARK MANAGEMENT

There are many federal and state statutes, state and federal executive orders, and administrative rules and policies that govern the operation of the state parks system. This chapter includes a brief discussion of the primary legal basis for the existence and operation of the state parks system.

STATE LEGAL MANDATES

North Carolina Constitution

Article XIV, Section 5 of the North Carolina Constitution sets overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The amendment reads in part as follows:

It shall be the policy of this State to conserve and protect its lands and waters for the benefit of all its citizenry, and to this end it shall be a proper function of the State of North Carolina and its political subdivisions to acquire and preserve park, recreation, and scenic areas, to control and limit the pollution of our air and water, to control excessive noise, and in every other appropriate way to preserve as a part of the common heritage of this state its forests, wetlands, estuaries, beaches, historical sites, open land, and places of beauty.

State Parks Act

The State Parks Act (G.S. 113-44.7 through 113-44.14) sets forth a mission statement for the state parks system. It states that the system functions to preserve and manage representative examples of significant biologic, geologic, scenic, archaeological, and recreational resources, and that park lands are to be used by the people of the state and their visitors and descendants in order to promote understanding of and pride in the state's natural heritage.

The State Parks Act also calls for development and periodic revisions of a System Plan to achieve the mission and purpose of the state parks system in a reasonable, timely, and cost-efficient manner. The Act describes System Plan components and requires that public participation be a component of plan development and revision.

The State Parks Act also calls for the classification of park resources and the development of general management plans (GMPs) for each park. GMPs are to include a statement of park purpose, an analysis of major resources and facilities, and a statement of management direction.

**Powers and Duties of the Department of Environment,
Health, and Natural Resources**

This act authorizes the Department to investigate the resources of the state and to take measures it deems best suited to promote the conservation and development of such resources. The Act also authorizes the Department to care for state forests and parks and other recreational areas now owned, or to be acquired by, the state. (G.S. 113-8)

State Nature and Historic Preserve Dedication Act

The General Assembly passed the State Nature and Historic Preserve Dedication Act in 1973 to "prescribe the conditions and procedures under which properties may be specifically dedicated for the purposes enumerated by Article 14, Section 5 of the North Carolina Constitution (Conservation of Natural Resources)" (G.S. 143-260.6 to 143-260.10). A three-fifths majority of the General Assembly is required to add or remove land from a state nature and historic preserve. The 1,330-acre South Mountains State Park is dedicated into the State Nature and Historic Preserve.

North Carolina Environmental Policy Act of 1971

Recognizing the profound influence that man's activity has on the natural environment, the General Assembly passed the Environmental Policy Act "to assure that an environment of high quality will be maintained for the health and well-being of all..."

The Act declares that:

It shall be the continuing policy of the State of North Carolina to conserve and protect its natural resources and to create and maintain conditions under which man and nature can exist in productive harmony. Further, it shall be the policy of the State to seek, for all its citizens, safe, healthful, productive, and aesthetically pleasing surroundings; to attain the widest possible range of beneficial uses of the environment without degradation, risk to health or safety; and to preserve the important historic and cultural elements of our common inheritance. (G.S. 113A-3)

While there are other General Statutes that concern the state parks system and the environment, the above-described statutes, along with Article XIV, Section 5 of the North Carolina Constitution, largely define the purposes of the state parks system and serve to guide the operation of state park system units.

FEDERAL LAWS

Land and Water Conservation Fund Act of 1965

The federal Land and Water Conservation Fund Act (PL 88-578) offers protection and places restrictions on fund-assisted outdoor recreation areas.

By virtue of receiving Land and Water Conservation Fund (LWCF) grant assistance, most of the state parks system, including South Mountains State Park, is subject to LWCF rules and regulations. Property acquired or developed in whole or in part with LWCF assistance cannot be converted to other than public outdoor recreation use without federal approval. A conversion may only take place if approved by the secretary of the Interior, and only then if replacement property of equal fair market value and reasonably equivalent usefulness and location is made.

LWCF requirements include: programming, operating and maintaining areas in a manner that encourages public participation; maintaining the property so it appears attractive and inviting to the public; maintaining property, facilities and equipment to provide for public safety; keeping facilities, roads, trails and other improvements in reasonable repair throughout their lifetime to prevent undue deterioration and encourage public use; keeping the park and facilities open for use at reasonable hours and times; and making future development meet LWCF rules and regulations. LWCF-assisted sites are periodically inspected by state and federal inspectors to ensure compliance with LWCF requirements.

STATE POLICIES

State Parks System Mission Statement

The North Carolina state parks system exists for the enjoyment, education, health and inspiration of all our citizens and visitors. The mission of the state parks system is to conserve and protect representative examples of the natural beauty, ecological features and recreation resources of statewide significance; to provide outdoor recreation opportunities in a safe and healthy environment; and to provide environmental educational opportunities that promote stewardship of the state's natural heritage.

While the mission statement itself has no legal authority, it was written to concisely express the purposes for which the system exists. These purposes are legally mandated by many sources, including the North Carolina Constitution and state statutes, some of which have been highlighted above.

South Mountains State Park Master Plan

The master plan is to serve as a guide for development and management of park resources. It includes an analysis of cultural and natural resources as well as site analysis and development recommendations.

During the general management plan process, the master plan was reviewed to determine if development proposals are still valid. The GMP evaluation produced significant changes to the master plan in that the lake, dam, boathouse and beach bathhouse project was deleted and the proposed park acreage was significantly expanded. These issues are addressed in chapters VII and IX of this document.

VI. NATURAL AND CULTURAL RESOURCE MANAGEMENT

NATURAL RESOURCE MANAGEMENT POLICY

The Division of Parks and Recreation's approach to natural resource management is dictated by the North Carolina Constitution and the State Parks Act, both of which require the management of natural resources. The Constitution sets overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The State Parks Act states that unique archaeological, geological, biological, scenic, and recreational resources are a part of the heritage of the people, which "...should be preserved and managed by those people for their use and for the use of their visitors and descendants."

The North Carolina State Parks System plays an important role in maintaining, rehabilitating, and perpetuating the state's natural heritage. The natural resources of the state parks system are: high quality, rare, or representative examples of natural communities; native plants and animals; geological features and landforms; water resources; and the natural processes that affect these elements. The primary objective in natural resource management will be the protection of natural resources for their inherent integrity and for appropriate types of enjoyment while ensuring their availability to future generations.

It is the policy of the Division that natural resources will be managed by allowing natural environments to evolve through natural processes with minimal influence from human activities. Resource management will not attempt solely to preserve individual species or individual processes; rather it will try to maintain all of the components of naturally evolving ecosystems. When intervention is necessary, direct or secondary effects on park resources will be minimized to the greatest extent possible. Intervention with natural processes may occur:

- 1) to correct or compensate for the disruption of natural processes caused by human activities;
- 2) to protect, restore, or enhance rare species;
- 3) to protect, restore, or enhance significant archaeological resources;
- 4) to prevent danger to human health and safety.

NATURAL COMMUNITIES

These descriptions follow the *Classification of the Natural Communities of North Carolina: Third Approximation* (Schafale and Weakley, 1990).

Spray Cliff

This community occurs on gently sloping to vertical rock faces that have waterfalls. The local humidity is very high and the moisture supply is essentially constant as a consequence of the spraying action of the waterfall. The terrain is generally too rocky to support a closed tree canopy, and the vegetation is usually a variety of mosses, ferns, liverworts, and shrubby vascular species, many of which require constantly moist substrates and high humidities. These communities are unusually stable and equitable; successional processes are usually slower than normal and extremes in temperature are rare. A small example of this community type occurs in the spray zone along the cliffs at High Shoals Falls. Small acidic cliffs occur nearby, and a cove forest community fills the rest of the steep rocky cove below the falls. Most of the spray zone is bare of vegetation, but several herbaceous species occur, including riverweed (*Podostemum ceratophyllum*), saxifrage (*Saxifraga micranthidifolia*), and trautvetteria (*Trautvetteria carolinensis*).

Rich Cove Forest

This forest type generally occurs on sheltered, low to moderate elevation sites and is one of the most well known and recognized community types in the North Carolina mountains. Undisturbed examples of this community type are rare and tend to be relatively stable and unevenly aged, with trees up to several centuries old. This community type occurs in the park along the Jacob Fork in the rocky cove below High Shoals Falls. Although not particularly rich in comparison to most mountain region cove forests, this community is significant in being located in the Piedmont region at a fairly low elevation and is the only well developed cove forest in the park. The canopy is dominated by a diverse collection of mesophytic tree species, and the herb layer is lush and highly diverse. Canopy species in this community include American basswood (*Tilia americana*), silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), cherry birch (*Betula lenta*), Canadian hemlock (*Tsuga canadensis*), and American beech (*Fagus grandifolia*). Herbaceous species are especially lush on the banks of the falls and include spleenworts (*Asplenium montanum*, *A. platyneuron*, and *A. trichomes*), hairy cap fern (*Polypodium virginianum*), resurrection fern (*P. polypodioides*), wood fern (*Dryopteris marginalis*), hepatica (*Hepatica acutiloba*), sweet pinesap (*Monotropsis odorata*), ginseng (*Panax quinquefolium*), and trautvetteria.

Montane Acidic Cliff

This community, like the Rich Cove Forest community, is rare in the Piedmont. The best developed examples are dominated by bare rock, and scattered woody species produce an open habitat lacking a substantial canopy. A small example of this community type occurs along the Jacob Fork near High Shoals Falls. It is located in scattered areas of exposed rock near the falls but is situated out of the spray zone. The tree canopy is largely broken or absent, and this community is surrounded by a cove forest community. A second example of this community type is found at Raven Rock. Although these are only small examples of this community type, they are significant as a consequence of their low elevation, Piedmont location, and associations with other community types.

Chestnut Oak Forest

Most of the areas' high slopes and ridges support forests dominated by chestnut oak (*Quercus montana*), white oak (*Q. alba*), red oak (*Q. rubra*), black oak (*Q. velutina*), white pine (*Pinus strobus*), Virginia pine (*P. virginiana*), table mountain pine (*P. pungens*), and various hickories (*Carya* spp.). The abundance of white pines, which seems to be characteristic of the South Mountains and other foothill areas, is unusual in the typical chestnut oak forests of the Blue Ridge and may result from a combination of past logging, storms, fire, and dry climate.

Pine--Oak/Heath

Pine-Oak/Heath communities occur on the sharpest ridges and are dominated by table mountain pine, chestnut oak, and scarlet oak (*Q. coccinea*). The shrub layer is generally dense and is dominated by heath species, including mountain laurel (*Kalmia latifolia*), blueberry (*Vaccinium* spp.), and huckleberry (*Gaylussacia* spp.).

Acidic Cove Forest

The area's deep stream valleys appear to support Acidic Cove communities which are dominated by acid-tolerant, mesophytic tree species. Canopy dominant species include yellow poplar (*Liriodendron tulipifera*), yellow birch (*Betula alleghaniensis*), beech (*Fagus grandifolia*), cherry birch, and red maple. The shrub layer is generally dense and includes great rhododendron (*Rhododendron maximum*), dog hobble (*Leucothoe editorum*), and mountain laurel. Limited areas supporting Canada Hemlock Forest may also occur in these coves. These communities are strongly dominated by Canada hemlock (*Tsuga canadensis*) and are generally less diverse than the acidic cove forests.

NATURAL HERITAGE PROGRAM ELEMENT OCCURRENCES**Common Raven (*Corvus corax*)**

This species has been assigned Significantly Rare status by the Natural Heritage Program, meaning that while it is neither threatened nor endangered, it occurs in North Carolina in limited numbers and requires monitoring. Suitable habitat occurs on the steep rock faces at High Shoals Falls and at nearby Raven Rock; however, park staff report that heavy visitor use at the falls area has caused the birds to abandon those cliffs. Two active nests were located at Raven Rock in January 1993.

Sweet Pinesap (*Monotropsis odorata*)

This species has been assigned Candidate status for state listing as a protected species, meaning that it may become threatened or endangered as a consequence of low numbers, habitat loss, or limited distribution. Its typical habitat is dry forests and bluffs. The most recent park record dates from 1977, when it was found growing on wooded slopes under hardwoods and pines along the Jacob Fork.

Thin-Pod White Wild Indigo (*Baptisia albescens*)

This species has been assigned Significantly Rare status. It prefers open woodlands and was reported from the park in 1975, when it was found along a forest service road near the top of Horse Ridge.

Bear Oak (*Quercus ilicifolia*)

This small shrubby species has been assigned Significantly Rare status. It generally favors dry, southwest facing slopes dominated by chestnut oak-pine forests; it occurs in the park in the Bear Oak Registered Natural Heritage Area between Chestnut Knob and Simm's Hill. A field survey in 1985 reported that approximately 100 plants were growing in an open oak-pine forest on Simm's Hill near the park's northern border. Most of these plants were less than one meter tall and were shaded by the canopy.

Large Witch Alder (*Fothergilla major*)

This plant has been assigned Candidate status. The most recent park record dates from 1976 and notes only that it was found at an elevation of 2,400 feet "on dry, rocky ridges in pine forests."

Bleeding Heart (*Dicentra eximia*)

This plant has been assigned Significantly rare status. The most recent record is from 1988, when it was found growing on a rock outcrop at the top of High Shoals Falls.

Bradley's Spleenwort (*Asplenium bradleyi*)

This plant has been assigned Candidate status. The most recent park record for this species dates from 1935, when it was collected from Benn Knob.

REGISTERED NATURAL HERITAGE AREAS

South Mountains State Park is located in the foothills of the Blue Ridge Escarpment, and the Registered Natural Heritage Areas support well developed examples of mesic cove hardwood forests and xeric pine ridges (Figure VI-1). Topography in these areas is rugged, with steep slopes and very little flat terrain.

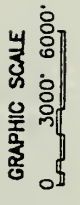
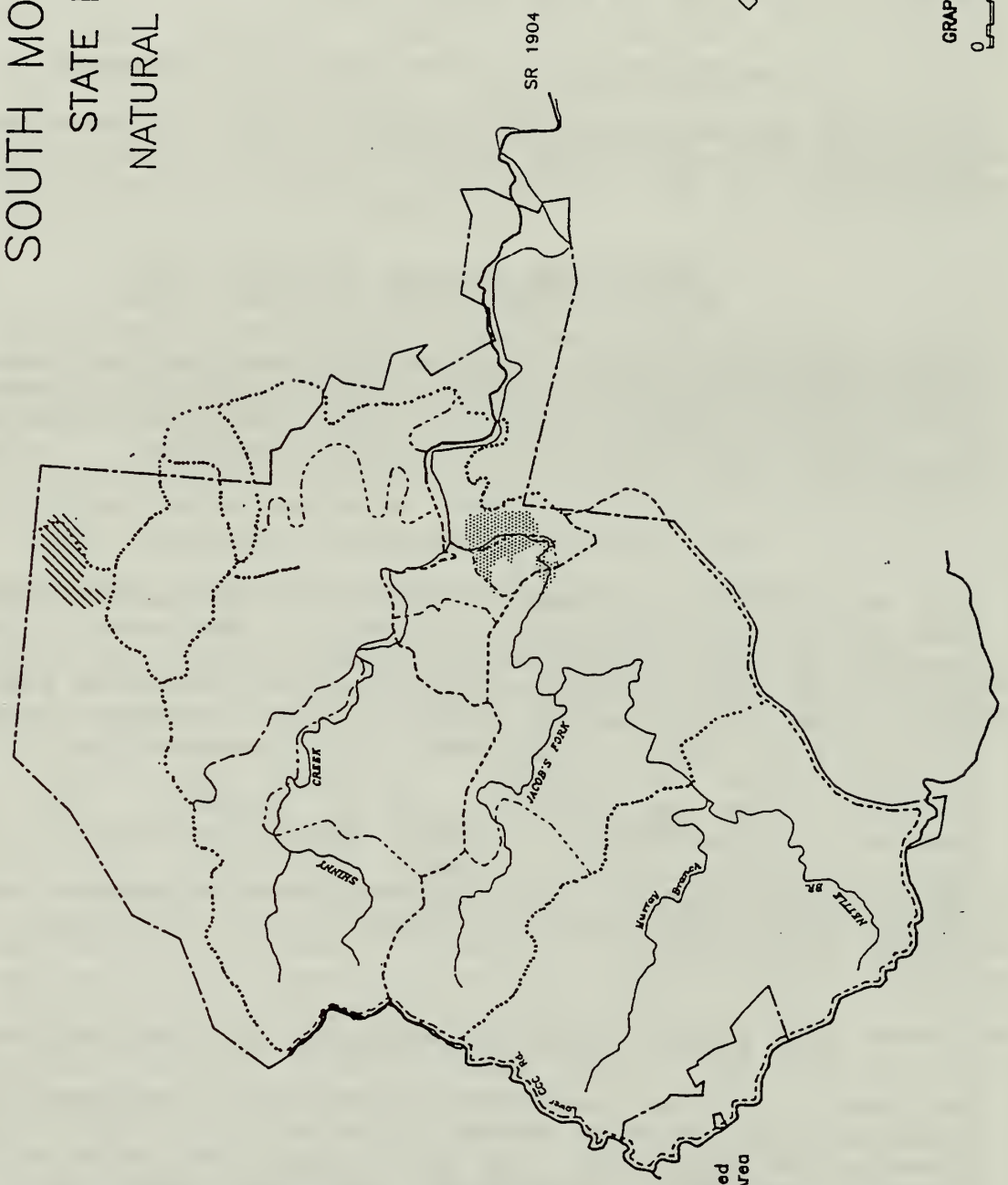
Bear Oak Registered Natural Heritage Area


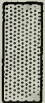





This 42-acre area is located in the far northeastern corner of the park and is characterized by oak and pine dominated ridges. These communities occur on shallow, poor soils on the park's highest peaks and are maintained by topographic conditions as well as by fire, which often sweeps across these ridges. Dominant pines include Virginia pine (*Pinus virginiana*), table mountain pine (*P. pungens*), and pitch pine (*P. rigida*). Dominant oaks include white oak (*Quercus alba*) and chestnut oak (*Q. montana*). The understory species are dominated by heaths, including blueberry (*Vaccinium* spp.), mountain laurel (*Kalmia latifolia*), and rhododendron (*Rhododendron minus*). The understory also supports a substantial population of bear oak near Simm's Hill; large witch alder also occurs in this area.

High Shoals Falls Registered Natural Heritage Area

The central attraction of this 54-acre area is High Shoals Falls, which is highlighted by steep cliffs and an 80-foot waterfall with a series of cascades. The banks below the falls support lush, diverse herbaceous communities, and the steep rocky coves are characterized by a well developed Rich Cove Forest community. Examples of Montane Acidic Cliff communities occur on the cliffs around the falls. Sensitive plant species include sweet pinesap and ginseng. Ravens are known to have nested on the cliffs beside the falls, but heavy visitor use caused them to abandon these nest sites. Ravens are now nesting at nearby Raven Rock, which is more isolated than the falls area. The falls are a popular destination

SOUTH MOUNTAINS STATE PARK NATURAL AREAS



- LEGEND**
-  Bear Oak Registered Natural Heritage Area
 -  High Shoals Falls Registered Natural Heritage Area
 -  Park boundary
 -  Bridle trail
 -  Mountain bike trail
 -  Hiking trail
 -  Road

point for park visitors, and overuse could result in soil compaction, erosion, and vegetation loss, particularly in mesic areas near the falls. A recently constructed stairway and bridge system along the west side of the Jacob Fork now channels visitors to designated viewing areas and has significantly decreased environmental damage from foot traffic.

Potential Additions to Registered Natural Heritage Areas

The current registered areas comprise only a small fraction of the park's total acreage. The park's rugged topography limits the amount of development and has left most of the park isolated and largely undisturbed. Consequently, much of the park is suitable for inclusion into the existing registered areas. Extensive inventory work is needed to establish baseline monitoring data and specific sites; however, based on the current data, additional areas suitable for registry are present.

CULTURAL AND NATURAL RESOURCE MANAGEMENT ISSUES

Natural Resource Inventories

A comprehensive, updated natural heritage survey is needed for the entire park. These inventories would provide the baseline data for a natural resources monitoring program and would also provide for expanded interpretation and education programs. Particular emphasis should be placed on locating and determining the status of the species listed in the Element Occurrence files.

Fire Ecology

Fire ecology in the Piedmont and Mountain regions of North Carolina is poorly understood, and although large fires are known to have occurred in the area, the park's natural fire regime is largely unknown. Lightning strikes in the area frequently result in forest fires and indicate that fire is part of the natural communities found within the park. Further research is needed to determine the need for and scope of a prescribed burning program in the park.

Non-Native Animal Species

The Wildlife Resources Commission has traditionally stocked area streams with brown trout (*Salmo trutta*), rainbow trout (*S. fairdneri*), and brook trout (*Salvelinus fontinalis*). Only the brook trout is a native species, and its populations are declining in much of their native range as a consequence of degraded water quality and increased competition from non-native species. Stocking of non-native species provides substantial recreational opportunities, but

it conflicts with the Division's natural resource management goals, which emphasize native species and processes. Because the effects of stocking non-native trout species are unknown, the National Park Service (NPS) is studying the issue at the Great Smoky Mountains National Park. The Division will prepare a trout management plan after the NPS study is completed.

The presence of feral pigs on adjoining lands has the potential to produce serious natural resource damage in the park. These animals are being released by private landowners to provide hunting opportunities and include Russian boars as well as domestic swine. These animals are extremely adaptive and typically have high reproductive potentials. The absence of natural predators, combined with the isolation provided by the park and the adjacent Morganton watershed, will make these secretive animals extremely difficult to control if they become established in the park. Their feeding habits are extremely damaging to native flora, and park staff should make every effort to monitor for the presence of these animals. Resource management staff will consult National Park Service personnel at Great Smoky Mountains National Park about developing an effective control program before they become established in the park.

Native Species Reintroduction

Wild turkeys were formerly a native component of the natural communities of the South Mountains. However, hunting and trapping pressures extirpated the species from the park in the 1940's. There has recently been renewed interest from the Wildlife Resources Commission in reintroducing this species to the park. The Division supports the wild turkey's reintroduction in the park for the purpose of natural community restoration. However, it is opposed to plans following reintroduction to trap and transport birds from the park to other locations, as this would violate Division resource management policies.

Rock Climbing

Area rock climbers have contacted park staff and expressed a desire to have rock climbing classified as an approved activity for the cliffs at Raven Rock. However, Raven Rock's location in the High Shoals Falls Registered Natural Heritage Area, its small size, and its status as the park's only location with nesting ravens raise serious concerns about adverse impacts. There are numerous well developed, high quality climbing areas within a two hour radius of the park offering climbers far more opportunities and far easier access than Raven Rock. Therefore, given the potential for long term damage to one of the park's important natural areas, the site will not be opened to climbing.

Mountain Biking

This park is one of two units in the system where mountain biking on designated trails is an approved activity. The park's bike trails are challenging and they have proven to be quite popular. The Division has recently evaluated a two year pilot program in which field staff monitored mountain bike use and impacts to natural resources. At South Mountains, biking has been restricted to the park's extensive system of old logging roads. These roads have proven to provide an excellent trail surface that is far more capable of withstanding repeated mountain bike use than standard hiking trails. Consequently, damage to natural resources from mountain bikes at the park has been minimal. Therefore, the park mountain bike trail system will continue to be restricted to old logging roads.

Bear Oak Protection

Resource management staff will be developing a system wide management plan for this species, which is at its southern distributional limit in North Carolina. Bear oak generally favors gaps opened by disturbance, and with the South Mountains' incidence of lightning-caused fires, it is likely that fire has played a role in its distribution and abundance. Future management strategies for this species should consider the role of fire. Until the development of a system wide bear oak management plan, park staff should continue to monitor the bear oak communities in the Simm's Hill area.

Water Quality

The Jacob Fork has been classified as an Outstanding Resource Water by the Environmental Management Commission, and the entire Jacob Fork watershed is contained within the park's master planned boundaries. The only inholding in the watershed is in the Cool Springs area on the park's southwestern boundary. Threats to the watershed's water quality from this inholding include septic systems and outhouses. The watershed's integrity can be completely protected if this inholding is purchased.

Resource Management Plan

A comprehensive, park specific resource management plan addressing these and future resource management issues should be developed. This plan should include detailed actions whose implementation will prevent or correct threats or damage to significant natural resources. The addition of a district resource management specialist would facilitate the implementation of this plan.

VII. PHYSICAL PLANT INVENTORY

FACILITY INVENTORY AND INSPECTION PROGRAM

The buildings in state parks are needed for park operations and visitor services and are essential components of providing for the public's health and safety. They include facilities providing safe drinking water, restrooms, and electricity, as well as recreation facilities such as bathhouses, group camps, and cabins. Without proper maintenance, these facilities are, at best, a disservice to the citizens who use them, and at worst, potentially harmful.

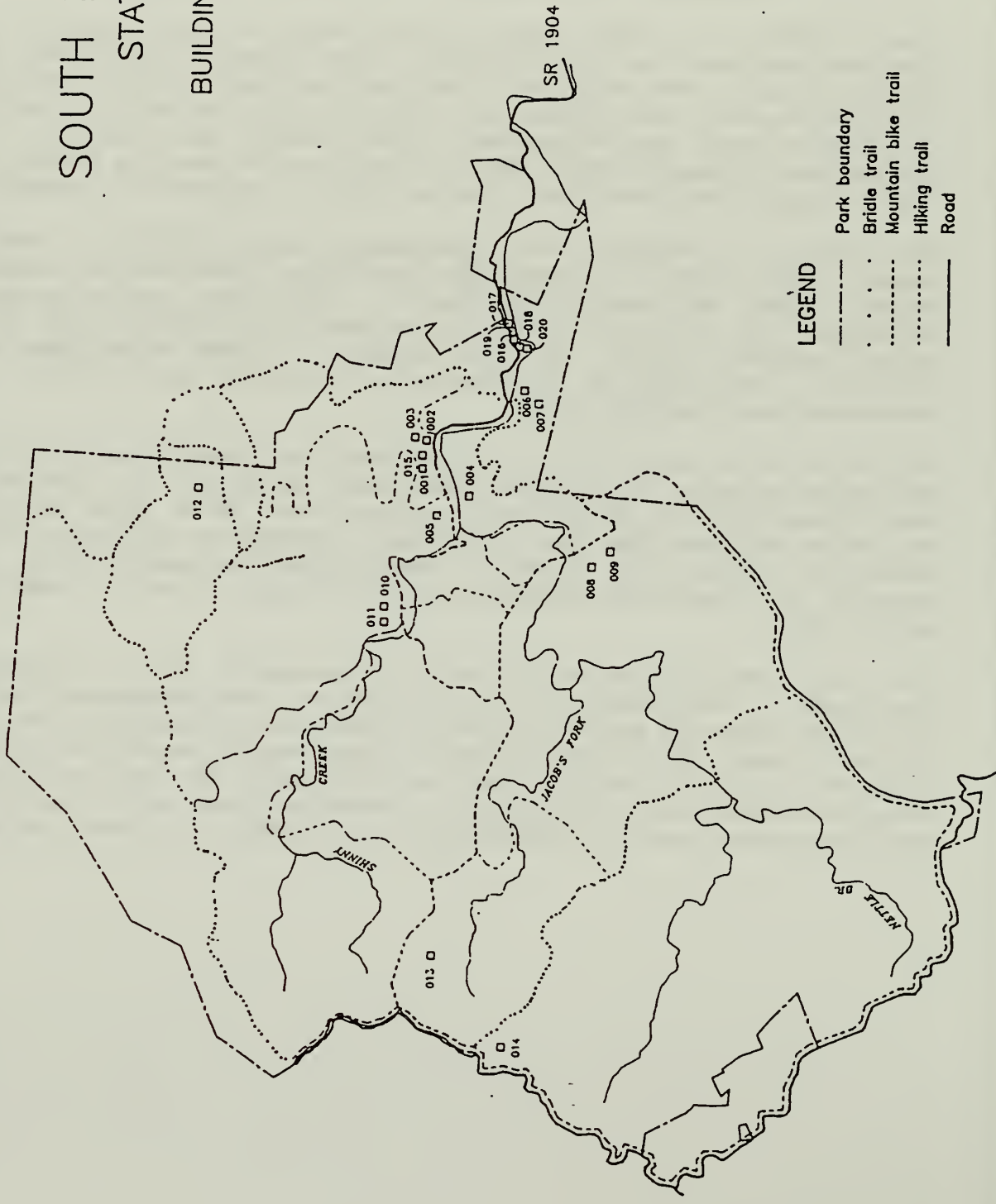
The Facility Inventory and Inspection Program (FIIP) is a computer-based system used to track the condition, maintenance needs, and repair costs of every building in the state parks system. A principal objective of FIIP is to identify deficiencies that may affect health, fire, or life safety. Other objectives are to identify accessibility deficiencies and other significant maintenance-related deficiencies.

During a field evaluation of each facility, deficiencies are given priority ratings of critical, serious, or minor. The deficiencies are classified in nine basic categories: site (the grounds and walkways surrounding the building); exterior envelope; interior envelope; fire/life safety; handicapped accessibility; public health; heating/ventilation/air conditioning (HVAC); plumbing; and electrical.

The field evaluation begins with an inventory of all structures in the park. The results of the inventory are presented using the building name and state property numbers as identification (Figure VII-1). Next, the types of repairs and repair costs are listed for each building. Finally, the cost summary for the park is given using the nine basic categories of repairs (e.g. exterior envelope) and the three levels of deficiencies (critical, serious, and minor).

SOUTH MOUNTAINS STATE PARK

BUILDING LOCATIONS



LEGEND

- Park boundary
- . - . - . Bridge trail
- Mountain bike trail
- Hiking trail
- Road

GRAPHIC SCALE

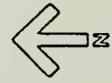


Figure VII-1. Building Locations

BUILDING INVENTORY

<u>CODE</u>	<u>BUILDING NAME</u>	<u>IN USE</u>
031001	Ranger Residence	Y
031002	Office and Shop	Y
031003	Pumphouse	Y
031004	Toilet Building	Y
031005	Pit Toilet	Y
031006	Pit Toilet	Y
031007	Pit Toilet	Y
031008	Pit Toilet	Y
031009	Pit Toilet	Y
031010	Pit Toilet	Y
031011	Pit Toilet	Y
031012	Pit Toilet	Y
031013	Pit Toilet	Y
031014	Pit Toilet	Y
031015	Carport @ 001	Y
031016	Double Carport @ 018	Y
031017	Four-bay storage	Y
031018	Superintendent's Residence	Y
031019	Wellhouse @ 018	Y
031020	Shed @ 018	Y

FACILITY REPAIR NEEDS

Buildings at South Mountain are in good condition. Two buildings need work totalling more than \$10,000; other totals are much less than that, and most require no work at all. There are no buildings to be demolished at South Mountain. The park office (building #002) does not meet accessibility codes. Both parking and entry must be provided. Only buildings needing repairs are included.

<u>Bldg. #</u>	<u>Building Name/Need</u>	<u>Repair Cost</u>
031001	<u>Ranger Residence</u>	\$15,460.00
	Add receptacles, interior & exterior	949.00
	Replace kitchen flooring	1,140.00
	Replace water heater	771.00
	Add 2nd floor bath with storage room below	12,600.00
031002	<u>Office and Shop</u>	\$12,793.00
	Provide underground electrical service	278.00
	Add accessible parking and entrance	2,515.00
	All toilet room & septic system	10,000.00
031003	<u>Pumphouse</u>	\$ 225.00
	Rebuild two doors	
031004	<u>Toilet Building</u>	\$ 1,470.00
	Repair flashing	975.00
	Replace broken WC	495.00
031018	<u>Superintendent's Residence</u>	\$ 3,711.00
	Replace roofing	
		=====
	Total:	\$33,659.00

FACILITY REPAIR NEEDS COST SUMMARY

<u>DEFICIENCY CATEGORY</u>	<u>PRIORITY 1 (CRITICAL)</u>	<u>PRIORITY 2 (SERIOUS)</u>	<u>PRIORITY 3 (MINOR)</u>	<u>CATEGORY SUBTOTAL</u>
SITE	\$ 0	\$ 0	\$ 0	\$ 0
EXTERIOR ENVELOPE	975	3936	0	4911
INTERIOR ENVELOPE	0	1140	0	1140
FIRE/LIFE SAFETY	0	0	0	0
HANDICAPPED ACCESS	0	2515	0	2515
PUBLIC HEALTH	0	0	0	0
HVAC	0	0	0	0
PLUMBING/UTILITY	10001	13095	770	23866
ELECTRICAL	0	1227	0	1227
=====	\$ 10976	\$ 21911	\$ 770	\$ 33659

Deficiencies that are a threat to fire and life safety or the health of an individual are considered to be "critical." A "serious" deficiency is one that is not considered a threat to fire and life safety, but which could cause further damage to the structure if left uncorrected. This category usually includes building code violations. "Minor" deficiencies are those requiring general maintenance and repair.

ROAD AND UTILITY INVENTORY

Introduction

The inventory is divided into five major sections: parking areas and roads; water system; sewer system; electrical system; and telephone system. Each section has two parts: existing conditions and system recommendations.

Information for this inventory is based on an inspection of the park facilities in October 1992, as well as on original construction drawings, and information from Division staff and the Institute for Transportation Research and Education's (ITRE) study on roads.

Most of the park's infrastructure was already in existence when the Division acquired the land in 1975. There has been little capital improvement funding since it was created in 1975. The only significant capital improvement project was a \$120,000 appropriation in 1985 for the construction of a toilet building, picnic area, water system, underground power line, and the upgrading of the bridges into the park.

The road was constructed under a reimbursable agreement with the N.C. DOT in the late 1970's. In 1989, a \$75,000 appropriation was approved for trail improvements to High Shoal Falls and other miscellaneous trail projects.

Roads and Parking Areas

Existing Conditions

According to the ITRE study completed in March 1990, there are 1.88 miles of paved roads and 30.25 miles of unpaved roads in the park. There are 2,658 square yards of unpaved parking area and no paved parking areas.

The main entrance road is an unpaved gravel road approximately 18 feet wide, with varying shoulder widths. Two sections of the road, however, are only 21 feet wide, including the shoulders with a vertical drop-off of approximately 75 feet on the road fill side. Therefore, a guard rail was installed at these two sections. The depth of the stone stabilization on the entrance road is estimated to be approximately six inches.

Of the 30 miles of unpaved roads, 28.7 miles are single lane (8 to 11 feet wide) fire access roads and bridle trails. The roads have numerous water bars and water trail ditches. The park staff maintains these roads using park equipment.

The NC DOT currently maintains SR 1904 to the old park gate. The Division, in an agreement with DOT, pays for the remaining one-half mile of roadway maintenance to the visitor parking lot.

There are currently two low water bridges along SR 1904 crossing Jacob's Ford Creek. These bridges flood during heavy rains and sustain heavy flood damage. Because of this flooding, the road is maintained by DOT on a frequent cycle, with stone stabilization required after each flood.

The pipe culverts along the park roads are both concrete and corrugated metal, but the majority of the piping is metal. Most are in fair shape. Minor tail ditching is required on several culverts.

The gravel parking lot at the day-use area is in fair shape. It has 43 designated parking spaces. On busy weekends, the parking lot is full, and the park staff manages the parking of 80 to 90 additional cars in an overflow field. Some minor rutting has taken place in the parking lots.

Recommendations

The park road system is the largest in the state parks system because of the extensive logging roads that predate the park. These old logging roads now serve as the park's trail system and are closed to public vehicles. Division policy is to not use DOT funds on roads without public vehicle access.

Until more facilities are constructed, the present unpaved road system should remain. The parking lot and main entrance road need additional stone stabilization and reshaping.

Park road improvements should be limited to routine maintenance until DOT realigns SR 1904 to eliminate some of the roadway flooding problems.

Some major roadway embankment work may be needed on areas where guard rails were recently installed. Currently, the road shoulder is stabilized. These specific areas should be re-evaluated before major funding is committed.

Sewer Systems

Existing Conditions

All facilities at South Mountain are served by individual septic tanks and separate drain fields. All systems are functioning properly.

The Picnic Area Toilet Building (Building #031-004) - This system has a 2,000-gallon, pre-cast septic tank with a five-line distribution box. There are five 140-linear-foot nitrification lines. The nitrification field is located approximately 25 feet behind the toilet building in a wooded area. Picnic tables are in the drainfield. A gravel interceptor drainage ditch above the drainfield catches surface water that runs

across it. The septic tanks do not have risers and have never been pumped out.

Ranger Residence (Building #031-002) - The size and age of this system is unknown, but it is probably a 1,000-gallon tank with approximately three 100-foot drainfield lines. The tank does not have a riser and has never been pumped out.

Superintendent's Residence (Building #031-018) - The size and age of this system is unknown, but it is probably a 1,000-gallon tank. The tank does not have a riser and has never been pumped out.

Pit Privies - There are 10 pit privies at South Mountain. Four of the privies are located at the 11-site primitive family campground and the horse trailer parking area. The remaining five are located at the hike-in primitive group and family sites. These privies are well maintained and are in fairly good shape.

There are no rest rooms or sewer system at the office and maintenance area.

Recommendations

1. Install inspection risers on all three septic tanks, and pump out septic tanks.
2. Remove trees from drainfield at picnic area toilet building, and re-landscape.
3. Install a composting toilet at the 11-site primitive family campground.
4. Install bathroom at park office.
5. Consult with Resource Management staff and park field staff prior to any major sewer system renovation.

Water System

Existing Conditions

Three water systems serve the park, and each system has a well.

Picnic Toilet Building Water System (Building #031-004) - This system is served by a 302-foot deep, 6-inch diameter well with a flow rate of 24 gallons per minute. The well is located about 200 feet north of the picnic toilet building. The pump control, storage tank, and chlorinator is located inside the toilet building. The pump is a submersible pump of unknown

horse power. The water quality is fair with a high sulphur content.

Ranger Residence Water System (Building #031-002) - This system is served by a well of unknown age and an estimated depth of 120 feet. The piping and jet pump were replaced approximately eight years ago. The water quality is the best of the three wells. The well supplies only the ranger residence and one outside hose bibb located at the park office. The pump house is in the front yard.

Superintendent's Residence (Building #031-018) Water System - This system is served by a water well of unknown age and depth. It is a six-inch diameter drilled well with an estimated depth of 150 feet. The water has a high sulphur content. A submersible pump of unknown horse power pumps the water.

Recommendations

1. Drill a well for the 11-site primitive family campground, and install a hand pump for drinking water.
2. Run a water line to picnic area and parking lot. Install drinking fountain and hose bibb.
3. Install water meter inside toilet building to keep track of sewer system water use.
4. Install water treatment to remove sulphur at superintendent's house (Building #031-018).

Electrical System

Existing Conditions

Rutherford Electric Membership Corporation in Morganton provides electrical power to the park. Overhead power lines run along the side entrance road to a transformer located about 100 feet west of the office building.

A power line runs overhead to a service riser at the office and ranger residence. At this pole, the line runs underground 550 feet to the picnic area toilet building to a pad-mounted transformer. The wire size is #4, with three wire conductors and 240 volt, single-phase power. This services the well and toilet building.

The superintendent's residence has overhead power with service mast.

Recommendations

1. The present overhead power line is in fair condition and is maintained by the power company.
2. It is Division policy to put park electric lines underground. To place existing overhead power lines underground would cost approximately \$50,000. Until more development is planned, it is recommended that the power lines remain overhead.

Telephone System

Existing Conditions

Southern Bell Telephone in Morganton, North Carolina provides phone service to the park. The park office has two separate phone lines, with one line dedicated to the park radio (MARTI) system. There are three phone extensions in the office and shop area, and each residence has its own phone line. There is no public phone in the park. Telephone service is frequently interrupted, particularly during rain storms.

Recommendations

1. Install a public telephone at the office area.
2. The telephone company will continue to maintain phone service at the park.
3. State Telecommunications should evaluate the poor telephone service and make recommendations.

MAJOR CAPITAL IMPROVEMENT PROJECT PRIORITIES

The South Mountains State Park Master Plan describes the long-range vision of what the park should be. A significant portion of the master plan is devoted to identifying short- and long-term development plans for the park. The development plans are to be implemented by identifying and detailing specific capital improvement projects that can be constructed through the state construction process. By identifying, evaluating and ranking each development project, the Division has created a priority list of capital improvement projects for each park and for the state parks system. The South Mountains State Park project ranking is based upon objectives such as promoting public health, protecting natural resources, enhancing environmental education, increasing public accessibility, and improving the park's appearance.

As a part of the general management plan process, the master plan (Figure VII-2) with its proposed development was reviewed to determine if changes were needed in the proposed development. The master plan had not been reviewed since publication in 1976; therefore, changes in the development plans were deemed necessary. The GMP evaluation team considered factors such as changes in environmental regulations, condition of facilities, natural heritage inventory, changes in recreation demand, park visitor safety considerations, State Parks Act stipulations, and current recreation demand. The GMP review of the proposed capital improvements resulted in changes, additions, and deletions to the pre-GMP capital improvement priority list. The revised project priority list reflects the changes to the master plan (Figure VII-3).

Pre-GMP Project Priority List

Rank	Description	Mean Score	Total Costs
1.	Renovate park water supply, backpack wells	548	\$ 153,700
2.	Tent & trailer campground	533	375,000
3.	Picnic shelter	530	75,000
4.	Pave main road	491	410,200
5.	Trails	483	294,045
6.	Trails - load and unload area for horses	461	100,000
7.	Visitor center/maintenance area	412	550,000
8.	Ranger residence (1)	389	128,300
9.	Lake, dam, beach, boathouse, bathhouse	271	3,803,017
			=====
			\$5,889,262

Recommended Changes to Project Priority List

Projects with Revised Cost Estimates and Unchanged Scopes

1. The tent and trailer campground project (\$396,900) is revised to reflect current costs and inflation.
2. The ranger residence (\$123,500) project will reflect current costs for standard residence construction and required surcharges by the Office of State Construction.

Projects to be Deleted

1. Renovation of the park water supply and back pack wells project (\$153,700) was deleted. Improvements were made to the water system using other funds, and the back-country wells have been deleted because treating the water at the site or packing it in is in keeping with the primitive experience.
2. The lake, dam, boathouse, and beach bathhouse project (\$3,803,017) was deleted because level ground needed for development is limited at the park. Available flat land should be used to expand picnicking, camping, and horse trailer areas because the activities are more appropriate to the park's back-country emphasis. The lake impoundment would flood developable land, while generating greater demands for picnicking and tent and trailer camping that require flat land.

Projects with Changed Scopes

1. Construct two picnic shelters (\$171,100) instead of one.
2. The paving of the main road, realignment of the entrance, and the three bridges project (\$1,193,800) will add road realignment to the original scope to prevent the continual road repair necessary with the current alignment. Part of this project is land dependent.
3. The trail improvements project (\$44,200) - Most of the proposed trails have been improved with other funds. Minor repairs at diverse locations are required.
4. The project to develop a parking area for day-use horseback riding has been expanded to include an overnight horse-use facility (\$316,000). This enlarged project will include individual campsites and parking, a horse barn with individual stalls, one toilet building, entrance road, and water and electrical supply. This facility will be relocated from the existing trailhead site to the general area of the deleted lake project. The project is scheduled for completion in mid to late 1996. Prior to opening this facility to the public, operational and management issues concerning horse waste

removal, campsite reservations, equine disease control, and biting insect control will need to be addressed.

5. Visitor center project (\$1,376,600) - The combination visitor center/maintenance area has been separated into two projects. The visitor center will be relocated to another area, which will provide better visitor programming. This project is land dependent.

Projects Proposed to be Added to List

1. Building repairs project (\$36,100) - The building inventory recommended the items in this project to bring the buildings up to current building codes.
2. General utility repairs project (\$73,600) - The utility review recommended the items in this project extend the life of the utility systems and bring them up to current codes.
3. Maintenance area project (\$541,300) - This project will consist of constructing a maintenance area, which was originally a combination visitor center/maintenance area project.

Revised Project Priority List

Rank	Description	*Mean Score	Total Costs
1.	Maintenance area	588	\$ 541,300
2.	2 picnic shelters	530	171,100
3.	Repave road, realign entrance, 3 bridges	526	1,193,800
4.	Building repairs	525	36,100
5.	Tent and trailer campground	519	396,900
6.	Trail improvements	483	44,200
7.	Horse camp/trailer parking	477	316,400
8.	Visitor center	429	1,376,600
9.	General utility repairs	426	73,600
10.	Ranger residence (1)	397	123,500
			=====
			\$4,273,500

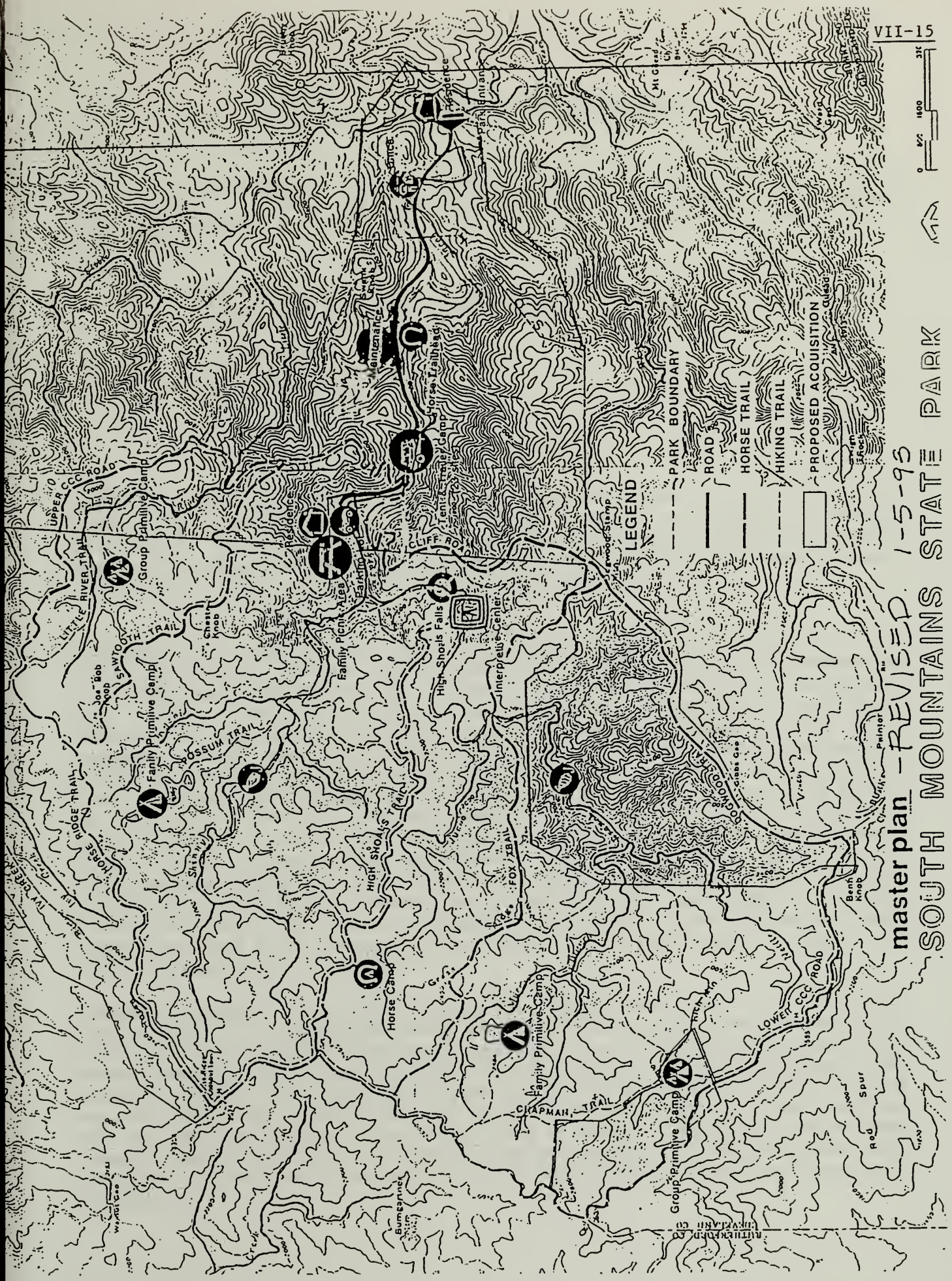
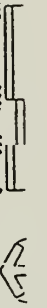
* The mean score comes from the Division's Project Evaluation Program (PEP). The PEP uses an evaluation formula to rank projects that considers three factors: the objective of the project; the justification or urgency for funding; and the estimated annual number of persons (visitors and/or employees) who are affected by the project. Projects are evaluated by the park superintendent, district superintendent, and Division management.

For a further explanation of the project priority list and changes, see Appendix B.



Figure VII-2

Figure VII-2 master plan



master plan - REVISED 1-5-95
 SOUTH MOUNTAINS STATE PARK

Figure VII-3

VIII. PARK OPERATIONS

The GMP identified six park operations issues at South Mountains State Park. This chapter identifies these issues and makes recommendations for addressing them during the next five years. They are:

1. staffing levels;
2. operating and equipment budget;
3. training needs;
4. back country patrol;
5. mountain biking; and
6. trail system.

STAFFING LEVELS

ISSUE: Staffing shortages exist because there are only four permanent staff and two seasonal employees to protect natural resources, conduct interpretation and education programs, provide law enforcement as well as search and rescue services, repair park facilities, and perform routine maintenance.

Background: Patrolling the park, monitoring use of back country facilities and areas, providing interpretation and education programming, monitoring for natural resource protection, managing the office, and performing clerical tasks require significant amounts of the existing staff time. The superintendent and two park rangers patrol the 7,330-acre park's 42 miles of trails (29 miles of bridle trails and an 18-mile loop trail for mountain bike riders) and 14 miles of designated fishing trout waters; maintain 22 miles of boundary; present interpretative and educational programs, special events and outreach programs; perform resource management activities; respond to emergency situations; and handle law enforcement incidents. One general utility worker handles trail and sign maintenance, mowing or grounds duty, and trash cleanup; either directly or in the delegation of duties to part-time workers (seasonal and volunteers). There is no one available to serve as radio dispatcher on weekends.

Recommendation: Two additional park ranger positions are needed to assist with the interpretation and education programs, patrolling of the park, and resource management duties. South Mountains is a back-country facility with primitive areas, fishing streams and boundary lines that need daily patrolling during hunting and fishing season, and trails that need daily patrolling. Lack of staff allows for patrolling these areas only once a week. The addition of two rangers would meet the minimum Division standard of one commissioned law enforcement employee on duty or available for each hour the park is open.

A position for a full-time maintenance worker with knowledge of carpentry and masonry is needed. This position will construct and maintain bridges and water bars on existing trails. This person will also need to maintain the 150 wooden park signs, remove hazardous trees from the 42-mile trail system, and assist in the construction and maintenance of an extensive trail network.

The part-time clerk-typist position should be converted to a peak-load clerk-typist position for weekends. A peak-load general utility worker position is needed for more routine maintenance tasks (Table VIII-1).

Finally, more of the current seasonal staff time should be dedicated to routine maintenance to allow park rangers to concentrate on visitor services. Convert the three-month general utility worker position to a six-month general utility worker position and the six-month park attendant position to a three-month park attendant position.

Table VIII-1. Staffing Needs.

Current Staff	Proposed Additions
PERMANENT	
1 Superintendent	1 Maintenance Mechanic
2 Rangers	2 Rangers
1 General Utility Worker	
1 Clerk-Typist	
SEASONAL	
1 Park Attendant	1 Park Attendant
1 General Utility Worker	1 General Utility Worker
PEAK LOAD	
	1 Park Attendant
	1 Clerk-Typist
	1 General Utility Worker

OPERATING AND EQUIPMENT BUDGET

Issue: The budget for operations, equipment, and supplies is inadequate to manage and maintain the park.

Background: Shortages in staffing, supplies, and equipment are detailed below.

Peak Load Wages (line item 1411): The budget for peak load wages has increased by \$3,552. There is a need for a peak-load clerk-typist (\$5.02/hour @ 11 weeks @ 16 hours/week) and a peak load park attendant (\$4.25/hour x 39 week @ 16 hours/week).

Seasonal Wages (line item 1491): Convert the three-month general utility worker position to a six-month general utility worker and the six-month park attendant position to a three-month position.

Motor Fuels and Lubricants (line item 2510): South Mountains State Park is a back country facility, which requires more heavily built equipment to maneuver the terrain; therefore, the park staff are using heavier equipment, which requires more gas.

Educational Equipment (line item 5300): Additional equipment is needed for the interpretive and education programs.

Table VIII-2. Proposed Operating and Equipment Budget *

Line Item	Description	Need
1411	Peak Load Wages	3552
1491	Seasonal Wages	9040
2190	Household Cleaning Supplies	300
2360	Medical and agric. supplies	400
2510	Motor Fuels and Lubricants	4000
2520	Tires and tubes	1000
2590	Other motor vehicle repairs	4000
3112	Travel	700
3250	Postage	400
3510	Repairs to buildings	300
3590	Other repairs	1200
5300	Educational equipment (VCR/TV monitor, stereo microscope, compound microscope)	1700
5400	Motor vehicles (3/4 ton truck, ATV w/trailers)	24,000
5500	Other equipment (4x4 tractor w/backhoe & loader small dozer, riding mower, side arm brush mower, jointer/planer, band saw, hydraulic blade, shotguns, auger, mowers)	57,000
Total:		\$107,592

* Permanent staff salaries are not included.

TRAINING NEEDS

Issue: The park staff does not have sufficient training opportunities and consequently their ability to perform environmental education, natural resource protection, and emergency services is diminished.

Background: Park management requires well-trained and skilled individuals to keep the parks operating efficiently and effectively. The implementation of many of the expanded programs and services the state park system has adopted requires a more highly skilled and trained professional staff. When training programs are available, the park staff takes advantage of these opportunities. Training needs have been neglected because of budget shortages.

Recommendations: A comprehensive training plan needs to be developed for the park for each position. Funding and training opportunities, however, must also be made available if the park is going to have a well-trained and professional staff. Increased funding is necessary to expand the training opportunities.

To accomplish the park purposes and protect park visitors, training needs have been evaluated and the following additional training is needed:

Emergency Medical Service (EMS) - One staff person needs the first responder training; one staff needs 80 hours of Wilderness EMT.

Search and Rescue (SAR) - Three staff are certified. One staff member needs training at Fundamentals of Search and Rescue (FUNSAR) level, three at management level.

Interpretation & Education (I&E) - To meet the Division minimum standards, two staff should complete Skills II and one staff Skills I; one staff should attend Project WILD, Learning Tree and Aquatic WILD.

Maintenance and Operation - If a maintenance mechanic position is not added, then the general utility worker should be upgraded to a maintenance mechanic II and trained in small engine repair, vehicle and motorized equipment maintenance and repair, water/sewer systems maintenance and repair, HVAC systems, pesticide/herbicide application, welding, electrical systems, masonry and carpentry.

Resource Management - To meet the Division minimum standards, the permanent staff should complete Natural Resource Management Skills I and II; staff responsible for natural resource management should have specialized training; and the permanent staff should complete the Basic Fire Fighter Training course.

BACK COUNTRY PATROL

Issue: The park staff is inadequate to effectively and safely patrol the back country of South Mountain State Park.

Background: South Mountains has over 20 miles of boundary line, 42 miles of designated trails, 14 miles of designated fishing mountain trout waters/streams, five overnight pack-in camping areas, and over 7,200 acres of back country open woodlands and fields. The majority of these areas are patrolled by park staff at least once a week. During peak hunting and fishing seasons, the areas receiving intense internal and external pressure (60 percent of the park boundary is affected during hunting season) are patrolled daily by one or two staff. With the continuing increase in back country use of the park, there is a need for a minimum of one commissioned ranger patrolling at all times, with another ranger on duty who is available to assist in emergencies. The following is a breakdown of the time needed for one staff member to patrol the roads, trails, boundary, and streams once:

Vehicle: 8-10 hours (25 miles of trails and boundary that can be driven)

Foot: 26-30 hours (14 miles streams, 15 miles of boundary lines, and 22 miles of trail/road)

Recommendation: To meet the minimum standards for patrolling the 7,200-acre park with its diversity of recreational opportunities, the encroachment pressures (contiguous to game lands), and the extensive boundary, the following staff and equipment are needed:

- two commissioned rangers for patrol, interpretive and education programs, emergency medical services, resource management;
- a peak-load clerk-typist to respond to radio calls from rangers and coordinate emergency procedures with telephone and radio;
- two 4x4 ATVs with radio converta com capability to reach the repeater because the hand-held units will not activate the repeater in many locations. Distance covered would be increased and time required for coverage would greatly be decreased by the use of ATVs. In addition, the ranger would have radio contact in an emergency and additional supplies could be carried, such as first aid items, tools, clothing, signs, etc.
- replace existing 4x4 vehicles with 3/4 ton 4x4 vehicles or heavy duty vehicles, which should be replaced every 4 to 5 years.

The staffing and equipment needs are summarized in the staffing issue recommendations (Table VIII-1) and the operating budget issue recommendations (Table VIII-2).

MOUNTAIN BIKING

Issue: What are the effects of mountain bikes on trail tread?

Background: South Mountains was chosen for a study of mountain bicycling impact on trails because it has trails that appear to be suitable for mountain bike use. Four trail sites were selected within the park because each site had a different use. The sites were categorized as follows: foot traffic only, combined horse traffic and foot traffic; combined mountain bike traffic and foot traffic; and combined foot traffic, horse traffic and mountain bike traffic. The methodology used to test the potential loss of soils at each site was stretching a line between two set points above the tread and measuring the distance to the tread at set intervals along the line (trail transect method). This test was performed monthly for the first six months and quarterly thereafter. Each measurement was recorded by park staff.

Approximately 400 bicyclists use the mountain bicycle trail each year. No measurable tread degradation was noted over the two-year period, due to the relatively resistant nature of the soils at the park. If the bicycling increases significantly, resource degradation as well as crowding on popular trails may occur.

Recommendations: The mountain bike use should continue to be monitored to ensure that significant natural resource degradation does not occur.

TRAIL SYSTEM

Issue: The condition of park trails should be evaluated and repair needs identified.

Background: The major trail users of the park are hikers, equestrians, and mountain bikers. All trails are rated as moderate to strenuous. There are 42 miles of trails open to foot traffic; 29 miles of trail open for equestrian use, and an 18-mile loop for mountain bike use.

Recommendations: The most significant need of the trail system at South Mountains State Park is the completion of the loop trail connecting the lower and upper areas of High Shoals Falls. South Mountains staff have created an excellent trail to both areas, and materials are on site for the completion of this project.

A pressing need is to lessen the impact of park truck traffic on the 25 miles of trails that are aligned with old roads. The truck traffic causes premature breakdown of the 300 grade dips (200 more are proposed) that have been built into the trail system. Trucks should be replaced by two four-wheel-drive all-terrain-vehicles (ATVs). This will allow staff to continue to patrol the park and maintain trails while lessening the impacts (and subsequent increase

in erosion that finds its way into the riparian system) of these drainage structures.

The ATVs need to carry normal patrol equipment, be able to pull a small trailer for emergency transportation of accident victims and carry maintenance equipment. If the staff continues using full-size vehicles, the proposed total of 500 grade dips will require annual maintenance (estimated cost: \$2,500 per year).

Mountain bike trails should remain open but not be expanded until a comprehensive site-specific analysis of soils, topography, and biology is completed and possible user conflicts are known. This analysis should be accomplished through a Quality Action Team composed of team leader Darrell McBane, state trails coordinator; Walter Gravley, South Mountains State Park superintendent; Marshall Ellis, natural resources management specialist; Bob Davies, William B. Umstead State Park ranger; and Dwayne Stutzman, Mountain Region trails specialist.

With the construction of a permanent equestrian campground facility pending at South Mountains, a policy should be developed on the need for equestrian trail users to supply a negative Coggins test (to certify that the horse is free from Equine Infectious Anemia) for each horse before they are allowed to ride and/or camp at South Mountains. The Coggins test is presently required by the N.C. Department of Agriculture whenever a horse is imported from out of state, as the disease normally results in the euthanasia of the affected animal. The development of this policy should require the advice of the horse specialist from the N.C. Department of Agriculture and should also have input from the N.C. Horse Council as the representative of the equestrian public. The policy should apply to all state parks that provide equestrian facilities.

Although the evaluation of the trails system at South Mountains has focused primarily on the maintenance of existing trails, the superintendent has expressed concern about the crowding of existing multiple-use trails, especially by equestrian users. Therefore, it is recommended that a revised trail plan be developed during the next five years and subsequent development of new trails be considered in the next general management plan.

South Mountains staff are to be commended for the condition of the trail system within the park. With the exception of the Cut-Off Trail, the system is in good to excellent condition. Three trails will need relocating within five to 10 years to alleviate resource degradation. These trails are Jacob and Fox trails where they are located besides streams and Shiny Trail between the stream and the ridge-top. Of exceptional note is the recent reconstruction of the High Shoals Falls Trail. The following descriptions detail the needs of each trail.

Shinny Trail

Shinny Trail is a 2.1-mile trail from backpack campsites 5-8 to the junction with Headquarters Road. From Shinny Creek, it tends to be extremely steep, with grades between 20 percent and 40 percent. Where the grade exceeds 25 percent, damage is occurring to adjacent tree roots that will cause die-off of adjacent tree cover in the future as well as trail erosion. While water bars and other diversion structures will alleviate the majority of the erosion, those structures must be installed and will require yearly maintenance. Therefore, the trail in those areas where the grade exceeds 25 percent should be relocated if possible.

Repair needs include relocating the approximately 1550 feet of trail from the ridge line to the sidehill, improving stream crossing with better stepping stones and replacing hand rails on log bridges, and placing a sign at the junction with the Possum Trail.

Cut-off Trail

Cut-off Trail is a 0.65-mile trail from the junction with Upper Falls Trail to backpack campsites 5-8. It either needs major reconstruction/relocation of the tread or closure. The trail repair needs include a 230-foot section needing steps, relocating a 170-foot segment, diverting a stream from the trail, and installing a 125-foot section of cribbing. Bridges or stepping stones are needed at Shinny Creek. Signs identifying the trail and prohibiting bicycling are needed at both ends of the trail.

Lower High Shoals Falls Trail

Lower High Shoals Falls Trail is a .5-mile trail from Shinny Creek Picnic Area to the viewing platform at the bottom of falls. It is an example of excellent trail reconstruction using in-ground structures that aesthetically complement the natural features surrounding the trail and alleviate grade and erosion problems. Major emphasis should be on continuing the connection of the Lower and Upper portions of the High Shoals Falls Trail for both hikers and equestrians.

Upper High Shoals Falls Trail

Upper High Shoals Falls Trail is a .4-mile-long trail from Shinny Picnic Area to the junction with Upper Falls Trail. It has recently been reconstructed and is in excellent condition.

Upper Falls Bridle Trail

Upper Falls Trail is a 1.5-mile trail from the junction of Headquarters Trail to the junction with Raven Rock Trail. It follows an old road bed and is in good-to-fair condition. Approximately 3,250 feet of trail needs new grade dips. Existing grade dips will need reconstruction. The crossing at Jacobs Fork River 3/8 mile upstream from High Shoals Falls needs to be reworked to harden the

bridle trail entry into the river on the south side for approximately 40 feet. A sign is needed sign at the junction of Raven Rock Trail indicating the route to the parking area.

Headquarters Trail

Headquarters Trail is a 4.4-mile trail from the park office to the junction with Lower CCC Road. It follows an old road bed and is in good condition. Existing grade dips will need reconstruction next year with additional grade dips installed.

Fox Trail

Fox Trail is a 4.2-mile trail from the junction with Lower CCC Trail to the junction with Dogwood Trail. It is in good condition except near the Nettle Branch where it needs to be relocated to alleviate steep grade (approximately .25 mile).

Lower CCC Road

The Lower CCC Road Trail is a 5.6-mile trail from the junction of Horseridge Trail to the junction with Dogwood Trail. It is on an actively used road that serves as the park boundary and crosses some private land. Some muddy areas need work.

Dogwood Trail

Dogwood Trail is a 2.5-mile trail from the junction with Raven Rock Trail to the junction with Lower CCC Trail. It is the boundary line between the park and Pine Mountain Resort, a private operation. A major portion of the trail is on paved road.

Raven Rock Trail

Raven Rock Trail is a 2.4-mile trail from the parking/horse unloading area on the park entrance road to the junction with Dogwood Trail. It is in very good shape, with newly reconstructed grade dips and newly reworked stream crossing for horse traffic. A portion of the trail is on private road.

Jacob Trail

Jacob Trail is a one-mile trail from the junction with Headquarters Trail to the junction with Fox Trail. It is in good shape with the exception the intersection of the old road bed that follows Jacobs Fork. This section contains grades in excess of 35 percent. Approximately 500 feet of trail needs to be relocated.

Horseridge Trail

Horseridge Trail is a 3.5-mile trail from the junction with Lower CCC Trail to the junction with Upper CCC Trail. It follows an old road and is in good condition. Additional grade dips are needed.

Possum Trail

Possum Trail is a 2.2-mile trail from junction with Shinny Trail to the junction with Horseridge Trail. It is in good condition on the portion that follows the old road bed; however, the portion not on the old road bed needs to be completed or the trail needs to be closed until it is completed. A sign is needed at the junction with Shinny Trail.

Sawtooth Trail

Sawtooth Trail is a 1.7-mile trail from the junction with Horseridge Trail to the park boundary. It is in good condition, but needs additional grade dips.

Chestnut Knob Trail

Chestnut Knob Trail is a 2.2-mile trail from the junction with Headquarters Trail to the junction with Sawtooth Trail. It includes side trails to High Shoals Falls Overlook and Chestnut Knob Overlook. It is newly constructed and is in excellent condition.

Short Trail

Short Trail is a 0.5-mile trail from the park office to the junction with Little River Falls Trail. It is in good condition and only needs additional grade dips.

Little River Falls Trail

Little River Falls Trail is a 3.1-mile trail from the junction with the park entrance road to the junction with Upper CCC Trail. It is in good condition except for some erosion at a switchback and needing grade dips where the trail is located on old roads.

Upper CCC Trail

Upper CCC Trail is a 2.6-mile trail from the junction with the Little River Falls Trail to the park boundary. Portions of the trail are on a private road. Some additional grade dips are needed.

IX. LAND ACQUISITION NEEDS

LAND ACQUISITION STATUS

South Mountains State Park contains 7,330 acres. This park was included in the 1985 appropriation for state park land acquisition and 1,551 acres were acquired. Land acquisition objectives are to completely protect the upper reaches of the Jacob's Fork watershed, and to provide land for park facilities and buffers. Land acquisition since 1985 has been to protect the upper reaches of the Jacob's Fork watershed and to provide the land for park facilities.

FUTURE LAND ACQUISITION NEEDS

Completing the master plan for the park calls for the acquisition of 1,064 acres. Remaining land acquisition objectives are to completely protect the water quality of the Jacob's Fork watershed and to provide land for park facilities and buffers. Approximately 30 additional acres are needed to allow for the realignment of the park access road.

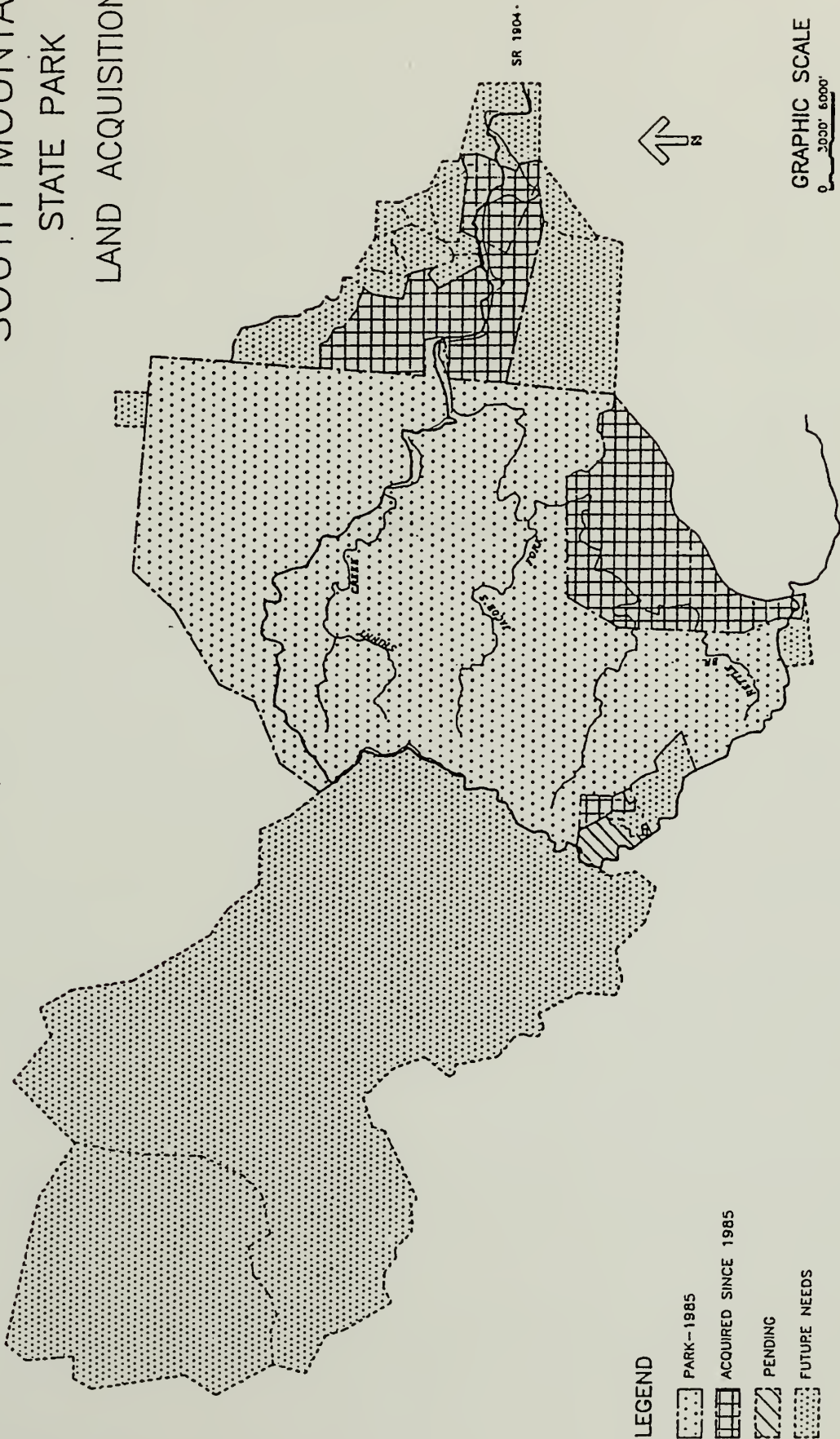
Major expansion of the size of the park is supported by the Division of Parks and Recreation with the proposed acquisition of the Morganton and Broughton Hospital watersheds, ±4,700 acres and 3,121 acres respectively. These areas of high ecological and recreational value have become available because of changing needs for municipal water supply treatment. The acquisition of these two large parcels of land will provide additional backcountry recreational experiences and will protect high quality natural communities and rare species. The Division does not want to pursue the acquisition of the Broughton watershed without the Morganton watershed because it is not contiguous with the existing park boundaries. If not added to the park, these areas might be vulnerable to future subdivision and development.

Funds to acquire these areas are not available at this time and with traditional funding patterns the acquisition will take a long time. The addition of the watersheds would roughly double the size of the park and will need the commitment of additional staff for park operation and protection and management of the natural resources.

SUMMARY TABLE

1985 size of the park	5,779 acres
1985 land program additions	<u>1,551 acres</u>
Current size of the park	7,330 acres
Pending acquisition	<u>71 acres</u>
1993 anticipated size of park	7,401 acres
Master planned needs	<u>993 acres</u>
Master planned size of the park	8,394 acres
Additions to master-planned needs	
Road realignment	30 acres
Morganton watershed	+4,700 acres
Broughton Hospital watershed	3,121 acres
Total of additions to master plan	<u>7,851 acres</u>
New total planned size of park	16,245 acres

SOUTH MOUNTAINS STATE PARK LAND ACQUISITION







- LEGEND**
-  PARK - 1985
 -  ACQUIRED SINCE 1985
 -  PENDING
 -  FUTURE NEEDS

Figure IX-1.

APPENDIX A

PARK PROFILE

SOUTH MOUNTAINS STATE PARK PARK PROFILE

PARK PURPOSE STATEMENT

The Civilian Conservation Corps (CCC) provided the first public works programs in the South Mountains in the 1930s by cleaning streams and building the upper and lower CCC roads to improve fire protection. Subsequently, timber companies and other landowners formed the South Mountain Association to coordinate a fire-protection program with State Forestry. National Park Service (NPS) studies recommended the area as a state park, first in 1940 and again in 1961, but the recommendations were rejected. Local support increased in the early 1970s for a state park to protect High Shoals Falls, and in 1974 South Mountains State Park was established with land acquisition funding approved by the General Assembly.

Significant biological resources include examples of diverse and well developed mountain and piedmont forest communities, six rare plants, one rare bird, and two Registered Natural Heritage Areas. The Cove Hardwood Forests support a wide variety of hardwoods more characteristic of the Blue Ridge Mountains than the park's Piedmont location. Steeper slopes above the Cove Hardwood Forests support Pine-Oak Heath communities. The park's highest peaks and ridges support pine communities. Bear oak, a rare shrubby species, occurs in the pine forests' understory. The Bear Oak Registered Natural Heritage Area protects a small population of this plant, while the High Shoals Falls Registered Natural Heritage Area supports excellent examples of Spray Cliff and Montane Acidic Cliff communities. The High Shoals Falls Natural Area also provides habitat for a number of rare plants as well as nesting habitat for the park's ravens.

Significant geological features include waterfalls, caves, and overhangs. High Shoals Falls, which plunges 70 feet down a bare rock face, is on the Jacob Fork River. Two other waterfalls are found in the park, one on Shining Creek and the other on Little River. Small eaves and overhangs are located in areas where rock slabs have been exposed through erosion or have broken off and rest against the hillside. A nearly complete, protected watershed lies within the park, formed by the ridge line of the South Mountains range. Jacob's Fork has high quality water and has been designated as an Outstanding Resource Water. Protection of this watershed was one of the main reasons for the park's establishment.

South Mountains State Park is an attractive mountain park in close proximity to the state's Piedmont population centers. Significant recreational resources include extensive opportunities for backcountry experiences, trout fishing, and natural heritage interpretation. The park offers a trails system and backcountry conditions that should be maintained to provide opportunities to experience settings predominated by the forces of nature. Interpretation and education of the park's natural heritage should be the highest priority visitor service.

Significant scenic resources include waterfalls, views of the Blue Ridge escarpment and the undeveloped expanses of the Jacob Fork watershed. High Shoals Waterfall is the most popular visitor attraction. The trails system provides access to striking scenery, including exposed rock faces, mountain streams, and abundant wildlife.

South Mountains exists as a state park so that its valuable geological, biological, scenic, and recreational values can be protected. The Division of Parks and Recreation is charged with preserving these values and providing park experiences that promote pride in and understanding of North Carolina's natural heritage.

PRIMARY INTERPRETIVE THEME

Jacob's Fork Watershed Ecology: The study of the Jacob Fork watershed ecology should focus on two areas: the transition from Piedmont to Mountain in terrain and biotas, and the high quality of the watershed and the sensitive plants and animals that live in and around the river.

STATISTICS

Visitation (1991)	72,837
Operating Budget (FY 90-91)	\$128,165
Revenue (FY 90-91)	\$ 5,736

EXISTING VISITOR FACILITIES

Picnicking (2 areas, totaling 16 tables)	Primitive Camping
Trails (hiking: 42 miles; bridle: 29 miles; 18 mile loop mountain bike trail)	Restroom
Park office/maintenance building	

CONSTRUCTION AND RENOVATION NEEDS

1.	The maintenance area project will provide the basic maintenance facilities for this park. It includes shop, warehouse, vehicle, and flammable storage buildings.	\$ 541,300
2.	The two picnic shelters project provides two picnic shelters in the picnic area.	171,100
3.	The project to repave road, realign entrance, three bridges will realign the main entrance road up out of the low floodable location where it now is located. It includes all bridges and pavement. This project is land dependent.	1,193,800
4.	The tent and trailer campground project will include a washhouse, access road, 23 sites, gate, and all utilities.	396,900
5.	The building repairs project will repair all buildings in the park and bring them up to minimum safety standards.	36,100
6.	The trail improvements project will make minor improvements to most park trails.	44,200
7.	The horse camp/trailer parking project will organize parking, provide an access road, low water bridge, a toilet and water source, and 40 parking/campsites.	316,400
8.	The general utility repairs project will make all currently needed repairs to utility systems.	73,600
9.	The visitor center project will provide a standard visitor center with office space, exhibits, toilets , auditorium, access road, parking and all utilities. This project is land dependent.	1,376,600
10.	The one ranger residence project will provide a standard ranger residence to provide security to park users and facilities. This project is land dependent.	123,500

TOTAL:

\$4,273,500

REGISTERED NATURAL HERITAGE AREAS

Bear Oak Registered Natural Heritage Area: This 42 acre area is located in the far northeastern corner of the park and is characterized by oak and pine dominated ridges. These communities occur on shallow, poor soils on the park's highest peaks and are maintained by topographic conditions as well as by fire, which often sweeps across these ridges. Dominant pines include Virginia pine (*Pinus virginiana*), table mountain pine (*P. pungens*), and pitch pine (*P. rigida*). Dominant oaks include white oak (*Quercus alba*) and chestnut oak (*Q. montana*). The understory species are dominated by heaths, including blueberry (*Vaccinium* spp.), mountain laurel (*Kalmia latifolia*), and rhododendron (*Rhododendron minus*). The understory also supports a substantial population of bear oak near Simm's Hill; large witch alder also occurs in this area.

High Shoals Falls Registered Natural Heritage Area: The central attraction of this 54 acre area is High Shoals Falls, which is highlighted by steep cliffs and an 80 foot waterfall with a series of cascades. The banks below the falls support lush, diverse herbaceous communities, and the steep rocky cove is characterized by a well developed Rich Cove Forest community. Examples of Montane Acidic Cliff communities occur on the cliffs around the falls. Sensitive plant species include sweet pinesap and ginseng. Ravens are known to have nested on the cliffs beside the falls, but heavy visitor use caused them to abandon these nest sites. Ravens are now nesting at nearby Raven Rock, which is more isolated than the falls area. The falls are a popular destination point for park visitors, and overuse could result in soil compaction, erosion, and vegetation loss, particularly in mesic areas near the falls. A recently constructed stairway and bridge system along the west side of the Jacob Fork now channels visitors to designated viewing areas and has significantly decreased environmental damage from foot traffic.

Potential Additions to Registered Natural Heritage Areas: The current registered areas comprise only a small fraction of the park's total acreage. The park's rugged topography limits the amount of development and has left most of the park isolated and largely undisturbed. Because of high biological significance, much of the park is suitable for inclusion into the existing registered areas. Extensive inventory work is needed to establish baseline monitoring data and specific sites; however, based on the current data, substantial additional areas suitable for registry are present.

FUTURE LAND ACQUISITION NEEDS

Completion of the South Mountains State Park Master Plan calls for the acquisition of 8,915 acres. Remaining land acquisition objectives are to completely protect the water quality of the Jacob Fork watershed, to provide land for park facilities and buffers, to realign the park access road, and to protect the water quality and natural communities of the Morganton watershed.

Master Plan Total Acreage	16,245 acres
Current Park Acreage	<u>7,330 acres</u>
Acquisition Needs	8,915 acres

STAFFING

<u>Permanent</u>		<u>Seasonal</u>		<u>Peak Load</u>	
Current Positions					
Park Superintendent I	1	Park Attendant	1		
Park Ranger II	2	General Utility Worker	1		
General Utility Worker	1				
Clerk-Typist	1				
Proposed Additions					
Maintenance Mechanic	1	Park Attendant	1	Park Attendant	1
Park Ranger I	2	General Utility Worker	1	Clerk-Typist	1
				General Utility Worker	1

APPENDIX B

CAPITAL IMPROVEMENT REQUESTS

Projects By Park In Priority Order

Description	Job Codes	Dst Cde	Locations	Mean Score	Total Costs
Maintenance area	148N31	1 WES	South Mtn	588	\$ 541,300
Picnic shelters	180N31	5 WES	South Mtn	530	\$ 171,100
- repave road, realign entrance, 3 bridges	420R31	1 WES	South Mtn	526	\$ 1,193,800
Building repairs	530R31	1 WES	South Mtn	525	\$ 36,100
Rest & trailer campground	230N31	3 WES	South Mtn	519	\$ 396,900
Trail improvements	260R31	1 WES	South Mtn	483	\$ 44,200
Reverse camp/trailer parking	260N31	1 WES	South Mtn	477	\$ 316,400
- visitor center	124N31	1 WES	South Mtn	429	\$ 1,376,600
General utility repairs	600R31	1 WES	South Mtn	426	\$ 73,600
Ranger residence (1)	300N31	1 WES	South Mtn	397	\$ 123,500
					----- \$ 4,273,500
					----- \$ 4,273,500

Total number of jobs reported = 10



75 Copies of this document were printed at a total cost of \$174.00 or \$2.32 each.

NCDPR – GMP Section - 0010