
MERCHANTS MILLPOND
STATE PARK
gates co., n.c.

MERCHANTS MILLPOND MASTER PLAN

Prepared By:

The State of North Carolina
Department of Natural Resources and
Community Development
Division of Parks and Recreation
Raleigh, North Carolina

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FOREWORD

The primary objective in preparing a master plan document is to set forth a long-range plan and program for a park's development. The planning process utilized for Merchants Millpond State Park strives to achieve a balance of recreational and natural elements, taking into consideration resource-carrying capacity and the need for park protection. The plan is designed for implementation in phases, allowing for uninterrupted park use and periodic reevaluation of the plan. Thus, the plan is flexible inasmuch as development need not reach its final phase if follow-up analysis indicates further expansion is undesirable. The timing of development is contingent upon the availability of funds and the establishment of biennial statewide priorities.

This master plan study has been developed in depth, and reflects the officially adopted principles governing the establishment, extension, and development of the State Park System. Any decisions which affect the welfare of Merchants Millpond State Park must reflect the spirit of these principles.

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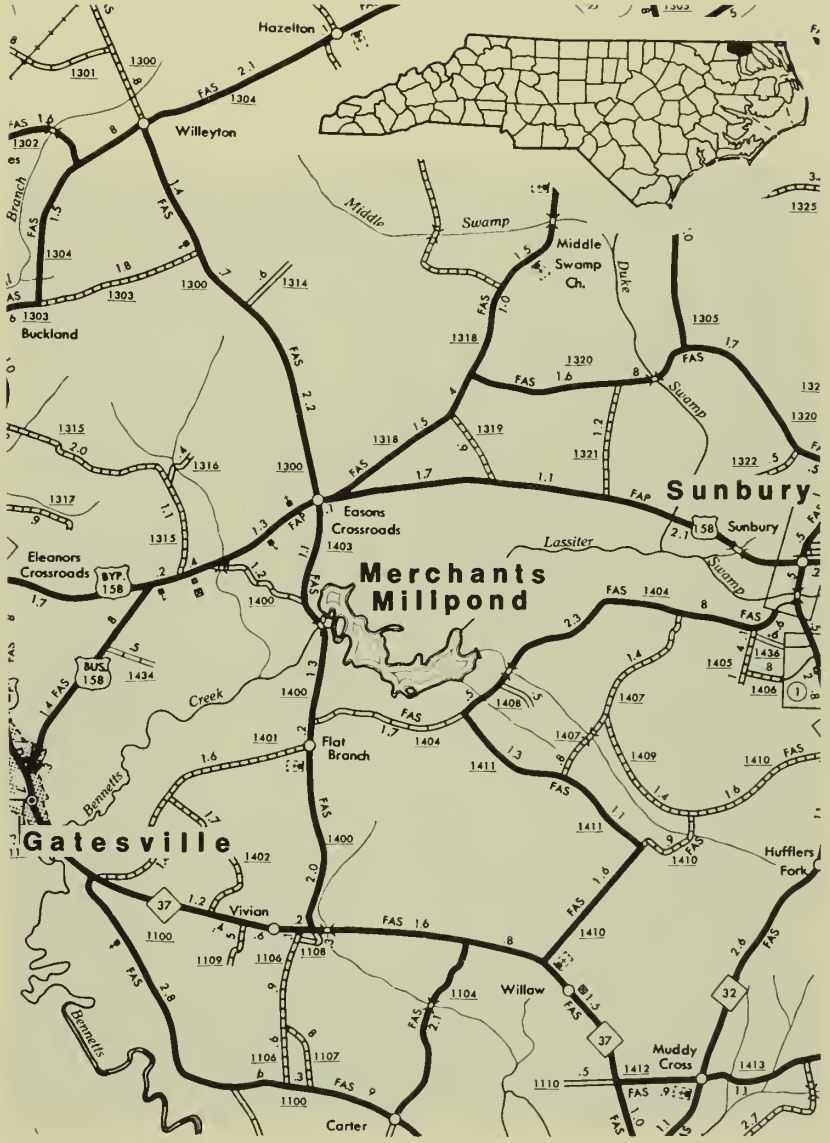
INTRODUCTION

MERCHANTS MILLPOND

Merchants Millpond is located in the Coastal Plain region of the State. The overall relief of the area is undulating to gently rolling with relatively flat ridges and stream beds, and gentle to rough sloping valley walls. Many of the stream beds are broad and poorly drained, often forming swamps. The Millpond area is characteristic of this situation. Bennetts Creek is a slow-moving, dark-water coastal plain stream which flows through a narrow baldcypress swamp (Lassiters Swamp) into an old second-growth cypress-gum swamp, and terminates in a large, placid millpond dotted with numerous gum and cypress trees. The Swamp and Millpond are defined by land which rises abruptly from the water's edge to heights varying from 20 to 30 feet. Mature hardwood and mixed pine forest the ridge line for most of the perimeter of the swamp-pond complex.

The Millpond is located near the geographic center of Gates County in northeastern North Carolina between Sunbury and Eason's Crossroad (intersection of N.C. 158 and S.R. 1400) along N.C. 158. It lies approximately 30 miles east of Murfreesboro, north of Edenton, west of Elizabeth City, and northeast of Ahoskie.



MERCHANTS MILLPOND HISTORY

The Gates County territory was first settled about 1660. According to tradition, the first settlement was established near Corapeake (then Oropeake, an Indian name). The Reverend George Fox, a Quaker clergyman, made the first recorded visit to the area in 1672, camping at Bennetts Creek on September 20. Richard Bennett, governor of Virginia from 1652-1655, also explored the area. At that time there was only one house at Bonner's Creek (now Bennetts) on the present site of Gatesville.

Prior to 1758, a road ran through Corapeake and what is now Sunbury, but the postal and stage routes went farther west through Summerton, Virginia. At that time, a Mr. Granby, one of the wealthiest men in the county, lived on the present site of Sunbury.

Just south of Granby's was Hunters Millpond, built prior to 1720, at the junction of Raynor Swamp and Harrell Swamp. This site was at the head of Bennetts Creek upstream from Merchants Millpond, which was to be constructed later. In 1922, the dam for Hunters Millpond was destroyed as the result of the construction of Highway 32.

Kincken Norfleet constructed Merchants Millpond in 1811; consequently, it was first called Norfleets Millpond. In 1812, the first corn was ground at the new grist mill. A wheat mill and sawmill were also built in that year.

Norfleet sold the mill to Daniel and H. C. Williams in 1856. Rufus Williams became a partner and the name became Williams Millpond. Later, the mill was sold to LeRoy Smith, and operated by N. J. Riddick.

By the turn of the century, the mill was Gates County's largest and became the county's chief trade center. A newly established mercantile business enabled local farmers to shop while their whole grain corn and wheat were transformed into meal and flour. Thus, the Millpond derived the name "Merchants." Other activities included picnicking on the Millpond's banks, courting, fishing, gossiping, exchanging tall tales, and watching the bustling activity of the Millpond.

About 1908, the mill house was in full operation with two gristmills busy most of the time. Ab Hayes was reportedly the operator at the time. Under a shelter, branching from the mill house, was a sawmill. The wheat mill building was still standing nearby, but was no longer in operation. Supposedly, apple brandy was made in a nearby still and served in the rear of the store.

The mill house was built over the water on cement pilings. Its dimensions were about 25 feet by 30 feet. The mill house was a frame building of wide weathered boards, either pine or cypress — "an A-roof of wooden shingles topped the bare boards, which were punctuated by a door and one window in front, one window in back, a window on one side wall, and two windows on the other side wall. Inside, the mill house was unfinished and rustic, with exposed rafters, beams, and uprights."

Gates underneath the building were raised, letting in water to run the mill. In front of the gates, logs were chained together and to cypress stumps, preventing floating logs from going through and into the gates.

Planks adjoining the mill house formed a covered bridge, accommodating traffic in front of the mill house. Along the bridge was a long bench for customers waiting to have their corn ground. A railing bordered the bridge to keep traffic out of the mill-run. Most traffic consisted of horse-and-mule carts bearing corn for the gristmill. There were not many cars in the county at the time.

Water powered the saws in the sawmill and the millstones in the gristmill. On the east side of what is now S.R. 1400, a dam retained water from the Millpond. Flow of the water, going into Bennetts Creek on a lower level, was regulated by the opening and closing of seven wooden 4 x 6-foot gates. The water spilled onto the mill wheel which was connected to the axles of the huge millstones, causing them to turn. Little grooves tooled into the stones mashed and pulverized the whole grain corn into meal.

Usually, payment for the grinding was a "toll," possibly three quarts of corn to the miller out of a bushel of the grain which the

farmer transported to the mill to be ground. The miller would then grind his "toll" into meal and sell this meal or the whole corn to an out-of-county market.

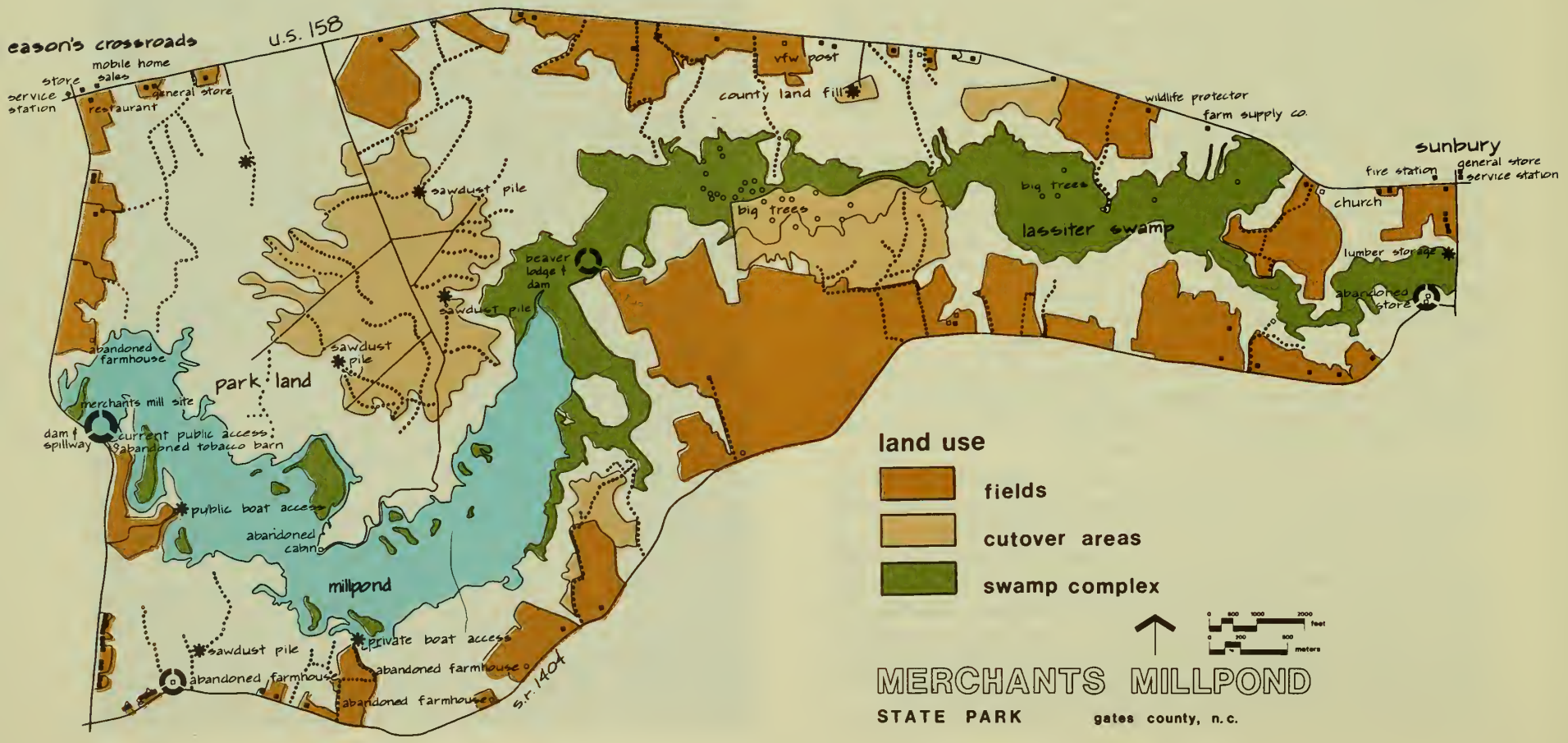
Maintenance of the mill was a community effort. Everyone pitched in to help rebuild or repair the dam when an occasional flash flood damaged it. In the spring people gathered, using special tools to help chip new grooves in the worn millstones. These annual gatherings always included a big fish fry.

About 1910, Charles Marmaduke Lawrence reportedly acquired the mill and Millpond. Some say that he was responsible for establishing the store at the mill. About the same time, a post office called "Merchants Mill" was established at the site, but closed in 1915. Lawrence, who lived in Gatesville, owned the mill house, sawmill, store, and pond, he also owned a nearby tenant house occupied by a family named Baker. Lawrence sold the Millpond to H. P. Foxhall, a Virginian, in 1944.

The mill was in operation until shortly before World War II. During Mr. Lawrence's ownership, several operators were employed in the gristmill. Among these were Preston Hobbs and Gene Lassiter, probably the last operator.

In 1951, the Millpond was sold to B. Howell of West Virginia. Apparently, both Foxhall and Howell had a development scheme in mind for the site. Fortunately, neither materialized.

Over a decade later, Mr. A. B. Coleman of Moyock, North Carolina, acquired the property. In June of 1973, he and members of his family donated the Millpond and some adjacent land to the Division of Parks and Recreation, making the establishment of the Park possible. In December of that year the Nature Conservancy conveyed the title to 925 acres of woodlands on the north side of the Millpond to the State of North Carolina.


eason's crossroads
U.S. 158
store
service station
mobile home sales
general store
restaurant
vfw post
county land fill
wildlife protector
farm supply co.
sunbury
fire station
general store
service station
church
lumber storage
abandoned store
big trees
big trees
lassiter swamp
sawdust pile
beaver lodge & dam
sawdust pile
sawdust pile
abandoned farmhouse
park land
merchants mill site
dam & spillway
current public access
abandoned tobacco barn
public boat access
abandoned cabin
millpond
private boat access
sawdust pile
abandoned farmhouse
abandoned farmhouse
abandoned farmhouse
S.R. 1404
land use
fields
cutover areas
swamp complex
0 500 1000 2000 feet
0 200 400 meters
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

EXISTING USES

The Millpond is used predominantly by fishermen interested in freshwater game fish such as bass and bream. Fishing occurs from boats and along the shore. The area adjacent to the dam on S.R. 1400 has, until recently, been the prime boat access for fishermen. Bank fishing also occurs immediately below the dam. Parking for both types of fishing occupies much of the right-of-way along S.R. 1400 on both sides of the bridge. However, a new boat launch and parking have been developed on the south side of the Park.

Fishery management for the Millpond is handled by the Wildlife Resources Commission. They are responsible for stocking the Millpond for game species and for manipulating the water level to reduce the eutrophication problems encountered in the summer. The Millpond is rich in nutrient minerals, producing an abundance of aquatic vegetation. The death and decomposition of this vegetation result in a low oxygen supply and a reduced potential for game fish production.

Most of the nutrients in the Millpond come from fertilizer applied to adjacent fields. The Millpond/Swamp community serves as the drainage basin for farms that border Bennetts Creek. Farms dominate N.C. 158 from Eason's Crossroads to Sunbury, and S.R. 1404 from S.R. 1400 to Sunbury. Most of the field crops consist of corn, soybeans, or peanuts, and livestock production consists mainly of hog farming.

Other land uses along the surrounding roads are single-family homesites, small grocery or convenience stores, the Gates County landfill, and scattered timberland. Single-family homes, both mobile and permanent structures, are scattered along S.R. 1400 and S.R. 1404; convenience stores are located at Eason's Crossroads and in Sunbury. The Gates County landfill is located on N.C. 158 and is within the Lassiter Swamp drainage area. The effect of this land use on the water quality is undetermined. Timber harvesting represents another revenue-producing land use. Pine, gum, and cypress are the traditional species harvested. Pine from upland ridges, and gum and cypress from the swamp have been cut since the early 18th Century. Much of the 950 acres conveyed to the Division of Parks and Recreation from the Nature Conservancy was recently clearcut. This land currently has little recreation potential. Clearing, burning, and reseeding will be required to restore the forest. In its present state, this area provides a fair habitat for deer. Before its donation to the State, the land was a favorite hunting ground for local residents.

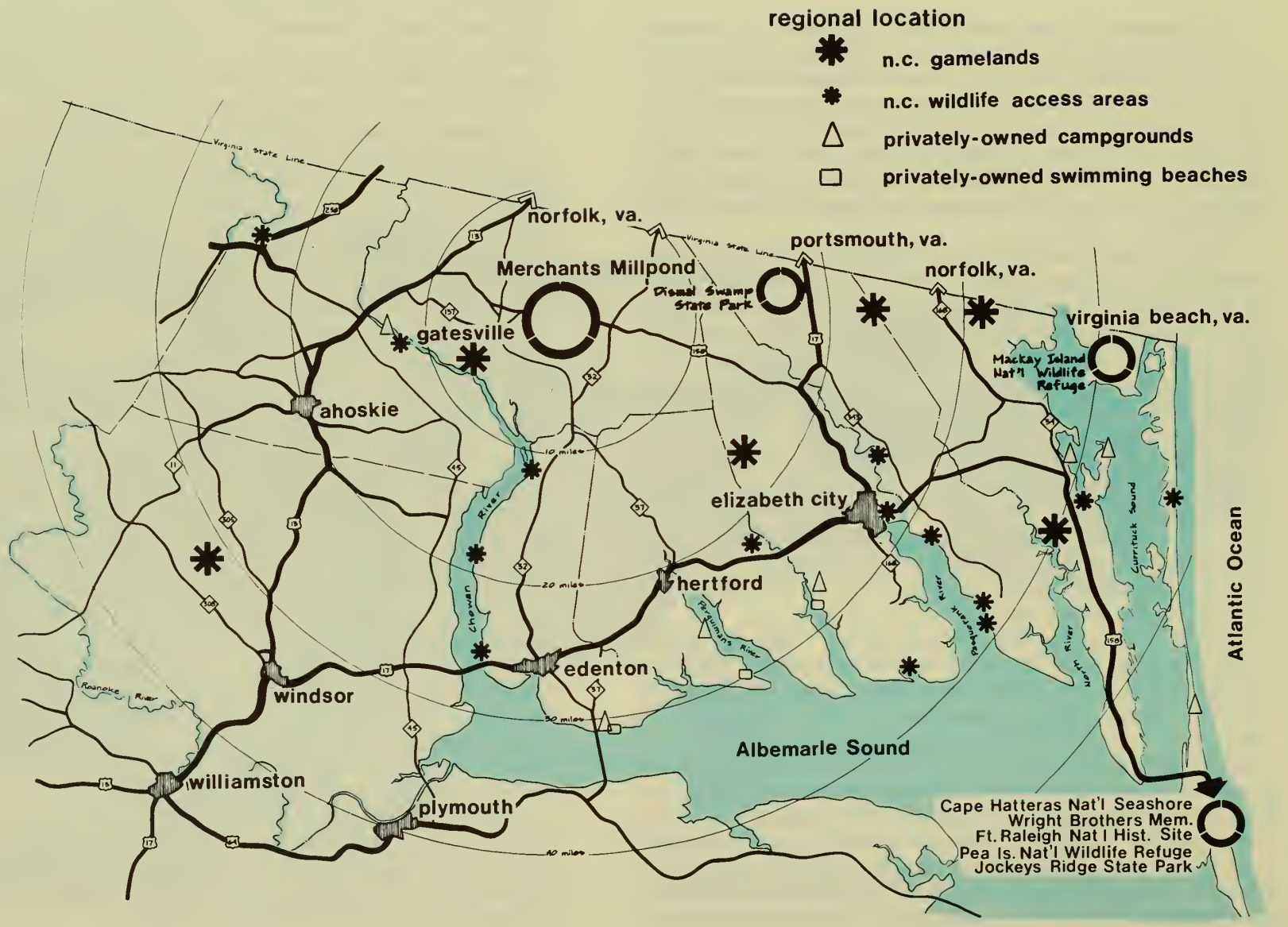
Recently, a portion of the Swamp approximating 100 acres was selectively cut for hardwood species. Fortunately, the large cypress were not cut; however, most of the residual trees are relatively small or non-merchantable. This tract represented some of the finest timber available in the Swamp, although an excellent stand of bald cypress and gum remains in adjacent swamp property. Approximately 30 to 40 bald cypress with an average diameter of five feet and a height of over 100 feet are scattered through Lassiter Swamp.

Downstream from the timber cut, several beaver dams and a lodge complement the uniqueness of this area. Best estimates suggest that the first dam is probably several years old (taken from field investigations by park staff).

The transition zone between the Swamp and Millpond represents another area of interest — a second-growth cypress and water gum forest. The area is affectionately called the "enchanted forest" because the gum trees have accumulated large burls and have assumed distorted positions. The quality of this area would offer the park visitor a unique visual experience.

The rolling terrain of the upland ridges which have not been cleared recently for timber or fields remains hardwood forest. This type of forest community is usually located at the edge of ridges facing the Millpond on both the north and south sides. Numerous trails have been cut through these areas; they have no recognizable beginning, but usually terminate at the Millpond. Many of these trails were probably old farm or timber roads; the narrower ones are probably animal paths.

On the south side of the Millpond, bordering S.R. 1404, a 100-acre tract of land has been leased by a private owner to the North Carolina Division of Mental Health for a camp. Much of the land remains in mature hardwood forest and would be ideal for the proposed wilderness camps.


regional location
n.c. gamelands
n.c. wildlife access areas
privately-owned campgrounds
privately-owned swimming beaches
Virginia State Line
norfolk, va.
Virginia State Line
portsmouth, va.
norfolk, va.
virginia beach, va.
Merchants Millpond
Dismal Swamp State Park
gatesville
Mackay Island Nat'l Wildlife Refuge
ahoskie
elizabeth city
hertford
edenton
windsor
williamston
plymouth
Albemarle Sound
Atlantic Ocean
Currituck Sound
Roanoke River
Chowan River
Perquimans River
Pasquotank River
North River
10 miles
20 miles
30 miles
40 miles
Cape Hatteras Nat'l Seashore
Wright Brothers Mem.
Ft. Raleigh Nat'l Hist. Site
Pea Is. Nat'l Wildlife Refuge
Jockeys Ridge State Park

RECREATION IN REGION 'R'

Merchants Millpond lies in the recreationally abundant Multi-County Planning Region R, a coastal plain environment in the northeastern corner of the State. Within the region, the North Carolina Division of Parks and Recreation operates Pettigrew State Park at Lake Phelps, and proposes development of two other sites — Jockey's Ridge and Dismal Swamp. The National Park Service also operates three sites of national significance in the region: Cape Hatteras National Seashore, Wright Brothers Memorial, and Ft. Raleigh National Historic Site. With these existing and proposed sites, the North Carolina State Comprehensive Outdoor Recreation Plan projects an abundance of recreational land for the region. However, all of the sites previously mentioned were proposed for either preservation of a unique environment or protection of a historical site.

The Millpond is designated as a North Carolina State Park (Bureau of Outdoor Recreation Class III: Natural Environmental Areas) because of its significance as a southern swamp. Such an outstanding example is not presently available in any other State Park in North Carolina. The mature bald cypress swamp, the old second-growth cypress-gum swamp, and the placid Millpond studded with heavily buttressed gum and cypress trees offer unlimited potential for nature study, wildlife protection, and recreational activities such as canoeing, hiking, fishing, and camping.

Recreational opportunities within a 40-mile radius of the Millpond are primarly limited to fishing, boating, and hunting. Fourteen Access Areas sponsored by the Wildlife Resources Commission are located along the Chowan, Pasquotank, and Perquimans Rivers, and on Albemarle Sound. Approximately 63,687 acres of Game Lands are also sponsored by the Wildlife Resources Commission within the same area. Planning Regions R and Q include over 270,000 acres of Game Lands available to the public.

Over 90 percent of the other recreational opportunities in the region lie outside of this 40-mile radius, and are associated with the waterfront along Currituck Sound and Cape Hatteras. Aside from one Wildlife Access Area on the Chowan River, there are no commercial or public recreational facilities within ten miles of the Millpond. If the radius expands to 30 miles, only two commercial sites with a total of 20 family campsites are available. All large commercial family camps are located in Currituck County or further south along the seashore, a minimum of 50 miles from the Millpond.

The Millpond area is easily reached via U.S. 158 from the east and west, and State Highways 32 and 37 from the north and south. A 50-mile radius from the site includes Bertie, Camden, Chowan, Currituck, Gates, Hertford, Northampton, Pasquotank, Perquimans, and Washington Counties. Also included within this radius are portions of Tyrrell, Martin, and Halifax Counties. This area encompasses approximately 184,000 North Carolinians and includes the population centers of Edenton, Ahoskie, Plymouth, Elizabeth City, Williamston, and Murfreesboro. Within a 75-mile radius (approximately 1.5 hour's driving time) the cities of Washington, Greenville, Rocky Mount, Roanoke Rapids, Weldon, and Tarboro are included. This adds another 227,000 citizens, or a total of 411,000, or about eight percent of the State's population within easy reach of the Millpond.

Gates County shares its northern boundary with the State of Virginia, placing the site within easy driving range of the Virginia cities of Suffolk, Newport News, Hampton, Portsmouth, and Norfolk. This area of Virginia has received the largest population increase in the State — approximately 30 percent over the national average. However, the greatest attraction for Virginians in North Carolina will still be the seashore, with the Dismal Swamp and Merchants Millpond receiving limited use from out-of-state visitors.

PURPOSE OF THE STATE PARK SYSTEM

The purpose of the North Carolina State Park System shall be to serve the people of North Carolina and their visitors by:

1. Preserving and protecting natural areas of unique or exceptional scenic value not only for the inspiration and benefit of the present generation, but, also for generations to come.
2. Establishing and operating state parks that provide recreational use of natural resources and outdoor recreation in natural surroundings.
3. Portraying and interpreting plant and animal life, geology, and all other natural features and processes included in the various state parks.
4. Preserving, protecting and portraying scientific sites of statewide importance.

General Principles

To assure the accomplishment of this basic purpose in accordance with the best standards, state park sites of the North Carolina State Park System shall be limited to:

1. State parks which evaluated on a state-wide basis, possess unique or exceptional scenic value. By exceptional scenic value is meant rare natural scenery, which is unlikely to be preserved for the benefit and enjoyment of the public in this and future generations if the property remains in private ownership, and which is sufficiently distinctive to attract and interest people from distinct parts of the State as well as local people.
2. State parks which possess distinctive scenic values and excellent opportunities for the development of facilities for active recreational use of natural resources and excellent opportunities for the study of natural history. A state park site (other than scientific sites) should possess both scenic and recreational values. In some sites exceptional scenic values may be sufficient to overcome the lack of recreational possibilities, and in other sites unusual recreational possibilities may make up for a lack of scenic values. By unusual recreational values is meant features such as topography, trees, vegetation, streams, lakes or ocean shore offering recreational possibilities which would attract and interest people of a wide surrounding area and would not be available to the public if the property remained in private ownership. The state parks should be sufficient in number, size, development, operation and maintenance to adequately serve the needs of all the people of the State over and above the facilities which are or should be provided by local city, town and county parks.

Size Requirement

Every state park site shall be of sufficient size to:

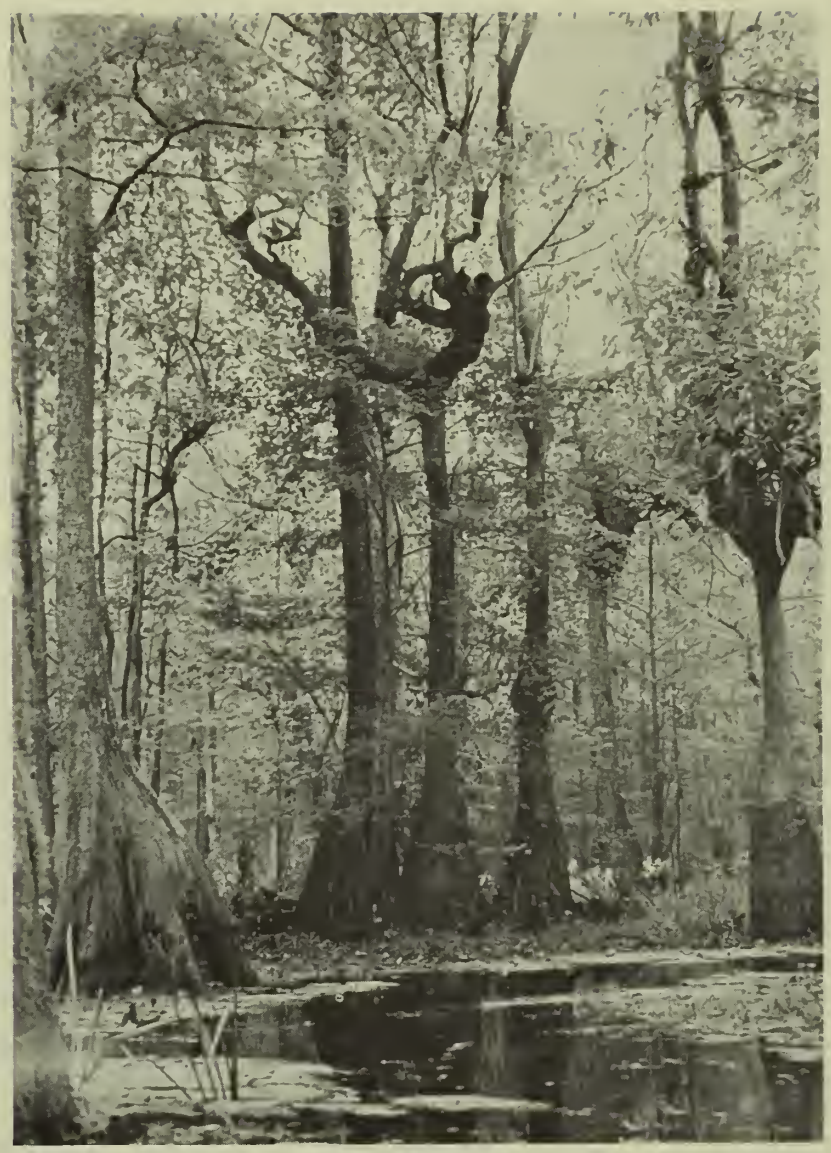
1. In the case of state parks possessing unique or exceptional scenic value:
   (a) completely include the scenic or natural features the area is established to protect and preserve;
   (b) provide sufficient buffer area to protect the scenic or natural features from outside influences or encroachments;
   (c) provide a reasonably satisfactory habitat for indigenous wildlife; and
   (d) permit the development of recreational and public use areas if these can be provided without damage to or impairment of the primary purpose of preserving the scenic or natural features, and if geographic location or public need justify development of such areas. Under normal conditions, 400 acres of land well adapted to state park use and development shall be considered as a minimum size for each state park site possessing unique or exceptional scenic values.
2. In the case of state parks possessing distinctive scenic values and excellent recreational opportunities:
   (a) completely include the distinctive scenic features of the area and, if possible, one or more complete landscape units;

(b) provide sufficient buffer area to protect the distinctive scenic features from outside influences or encroachments;
(c) amply accommodate the recreational and public use developments required to meet present and future public needs and to accommodate these developments in such a way that various types of public use will not interfere with each other or destroy the effect of a natural environment; and
(d) provide extensive use amid unspoiled and relatively unmodified natural surroundings. Under normal conditions, 400 acres of land well adapted to state park use and development shall be considered as a minimum size for each state park site.

Development

State parks possessing unique or exceptional scenic value shall receive only such development as is necessary to protect and preserve the scenic and natural values, provide public access, protect public health and provide adequate interpretive programs, and the development of such other recreational and public use facilities as can be provided to meet justifiable public needs without damage to or impairment of the scenic and natural values. All developments shall be planned and executed so as to in no way impair, damage or detract from the scenic or natural values which the areas were established to preserve and protect.

State parks possessing distinctive scenic values and excellent opportunities for the development of facilities for active recreational use of natural resources shall receive all development required to protect and preserve the distinctive scenic values, provide public access, protect public health, provide recreational use of natural resources and provide adequate interpretive programs. Development for public use of natural resources shall primarily include facilities for such outdoor activities as picnicking, swimming, boating, fishing, hiking, nature study and camping, and for vacation use when desirable.




RESOURCE ANALYSIS

PHYSIOGRAPHY

Merchants Millpond lies at the juncture of the Tidewater and Middle Coastal Plain units of the Coastal Plain region. This region is composed of a series of seven terraces, each representing a former floor level of the Atlantic Ocean.

The overall relief of the Tidewater unit, comprised of the two lower marine terraces, is nearly level with occasional low ridges and gentle slopes, particularly near streams. Elevations seldom exceed 25 feet. The land area is intersected by large sounds and wide streams which are near sea level. Between these streams are numerous broad areas which are poorly drained, causing large swamps to develop in some areas.

In the Middle Coastal Plain, the overall relief is undulating to gently rolling. This unit is comprised of the three middle terraces, and the highest points are rarely over 100 feet above sea level. Streams penetrate most parts of this unit, and the drainage ranges from somewhat poor to good.

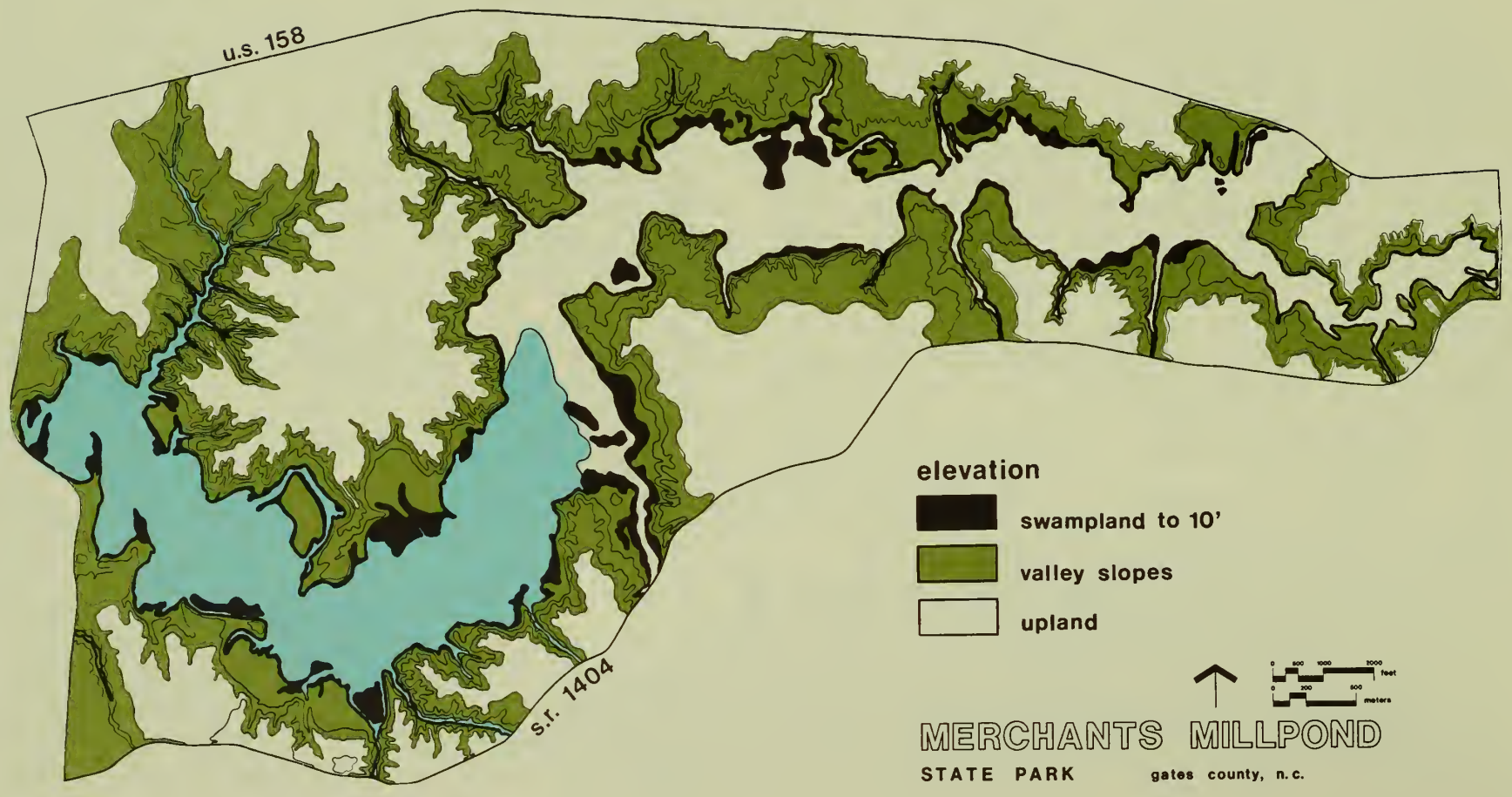
In the immediate vicinity of the Millpond, elevations range from 6.5 feet (pond level) to 39 feet. The ridges on either side of the Millpond are relatively flat; however, the terrain becomes rough and broken near the drainage channel, resembling the Piedmont in character. This is particularly true in the small ravines which drain into Bennetts Creek. Short, steep slopes frequently occur near its edge.

GEOLOGY

Sands and clays of Quaternary age, ranging in thickness from 15 to 40 feet, mantle the entire county. This material, composed of light-colored, iron-stained sands and clays, occurs at elevations ranging from nearly 80 feet to the northwestern part of the county, to less than 20 feet in the southeastern part of the county. Several former beach ridges developed in this material, particularly northeast of Hobbsville and Sunbury.

Underlying the superficial material are clays, sands, and shell beds of the Yorktown formation of late Miocene age. In some localities the Yorktown formation consists of a blue-gray marine clay, with underlying sand and shell beds. This formation, over 100 feet thick east of Gatesville, generally causes poor drainage over much of the county, accounting for the extensive development of swamps within the area.

Beneath the Yorktown formation are deposits of Middle Miocene age. The deposits are approximately 30 feet thick in the vicinity of Gatesville, and composed of 20 percent brown phosphate.


u.s. 158
s.r. 1404
elevation
swampland to 10'
valley slopes
upland
0 500 1000 2000 feet
0 200 600 meters
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

GROUNDWATER

As of 1959 all domestic supplies of water in the area were obtained from wells (Gates County was still without public water systems). Quaternary-age surficial and near-surface sand, and shell beds of the Yorktown formation are tapped by large numbers of dug and driven wells, ranging in depth from 10 to 60 feet. These wells yield between three and 20 gallons per minute.

Water at depths greater than 40 to 50 feet throughout the county is under artesian pressure and will rise to within five to 30 feet of the surface at most places. Of the four wells in the immediate vicinity of the Park on which data are available, two are relatively deep (about 375 feet), and the others are shallow (eight and 42 feet).

The chemical quality of the water is adequate for most domestic purposes. Water from the shallow sand is soft but is often corrosive and may contain objectionable quantities of iron. Water from the deeper aquifers is soft sodium bicarbonate water. Paleocene and Cretaceous aquifers may yield water excessively high in fluoride (as is the case at the Millpond), but is otherwise acceptable in quality.

HYDROLOGY

Merchants Millpond lies within a portion of the headwaters of Bennetts Creek, a tributary of the Chowan River. The Millpond has a watershed of about 79.6 square miles. The entire watershed possesses a water quality classification of Class "C."

At present, there are no users of the surface waters of the Bennetts Creek sub-basin, and no waste discharge points. However, the non-point sources of pollution in the watershed are considered to have a significant impact. Agriculture and the wood products industry comprise the bulk of these non-point sources. Runoff from agricultural fields carries both toxic chemicals and fertilizer compounds. Unnecessary siltation, from poor timber harvesting and farming practices (unwise location of logging roads and plowing across contour), greatly accelerates eutrophication of the Millpond.

No information is available on average discharge, low-flow, or flood levels for the Bennetts Creek watershed. Available data are insufficient for planning purposes because of infrequent data monitoring. These available data indicate water temperatures ranging from 54° F (12° C) to 86° F (30° C). Neither is likely to be an extreme, however. Dissolved oxygen ranges from 0.7 mg/1 to 7.0 mg/1, with a mean of 4.6. The pH ranges from 4.4 to 7.2 with a mean of 6.1.

The estimated flow for a 100-year flood is 6,500 cubic feet per second (cfs).

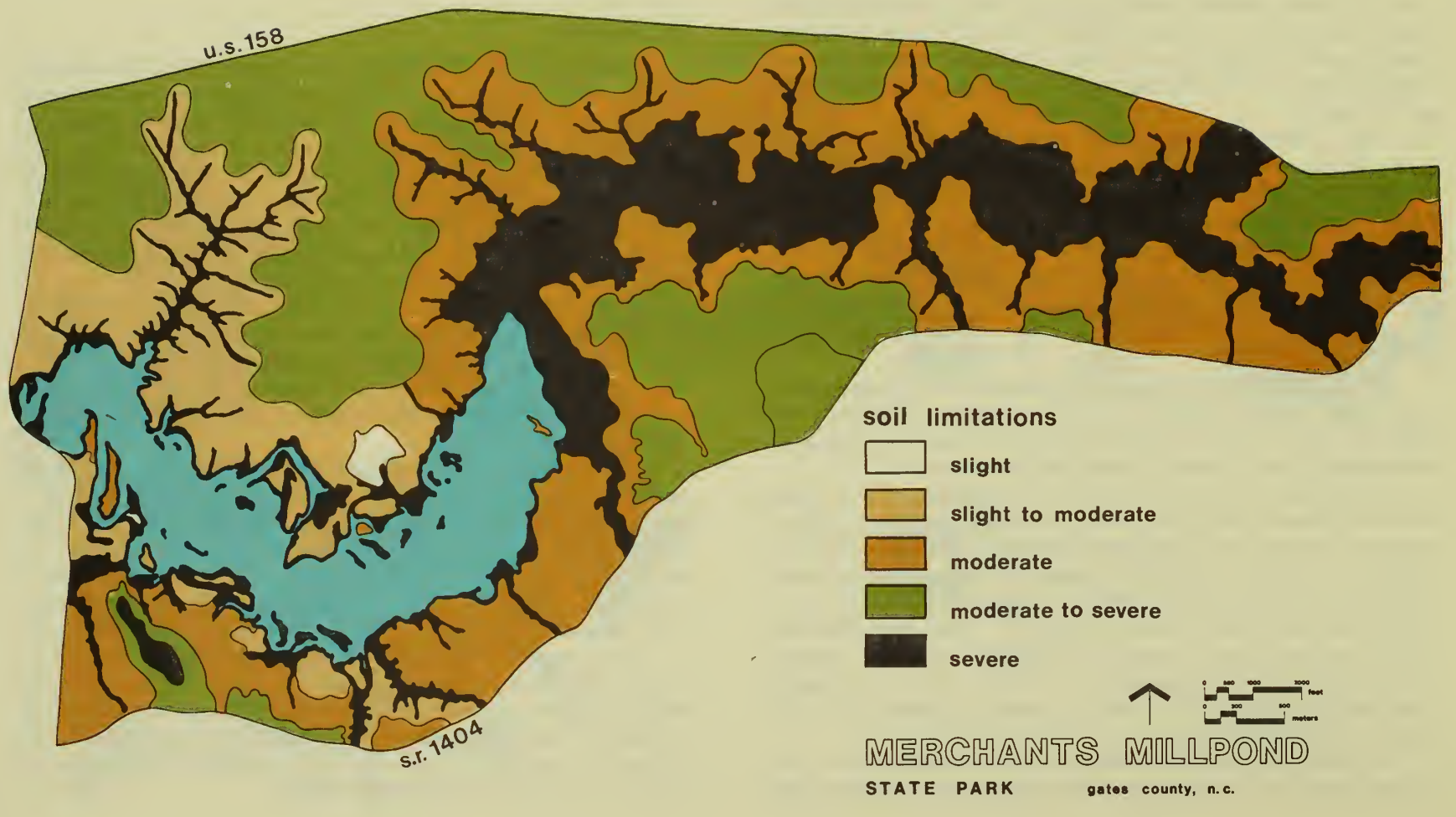
CLIMATE

Based on data from Edenton, Elizabeth City, and Norfolk, Virginia, Merchants Millpond has a moderate climate, with mild winters and warm summers. The proximity of large bodies of water tends to have a moderating effect on temperatures. The average annual temperature is about 60° F, with an average of 44° F in January and 80° F in July. The maximum recorded temperature is 107° F and the minimum is −2° F. In the autumn, the first frost normally occurs around October 20; the last frost in the spring normally occurs about April 1.

The average annual rainfall is about 50 inches, with monthly averages ranging from three inches in October to seven inches in July. The maximum precipitation recorded is 11.4 inches in a 24-hour period, and 15.6 inches in a one-month period. The maximum snowfall is 17.7 inches in a 24-hour period, and 18.6 inches within a month.

The prevailing wind direction is southwest for most of the year; however, the direction is northeasterly for the months of September and October and north-northeast in February. Because the area is south of the average path of storms originating in the higher latitudes and north of the usual track of hurricanes and other tropical storms, exceptionally high winds are infrequent. The maximum recorded wind speed is 80 MPH.

The relative humidity varies with the time of day; on an average it rises to 80 percent or a little higher in the early morning hours, dropping off steadily after sunrise and reaching 60 percent or lower by mid-afternoon. More than half the daylight hours are sunny in all seasons; in summer the sun shines, on the average, about two-thirds of the daytime period.

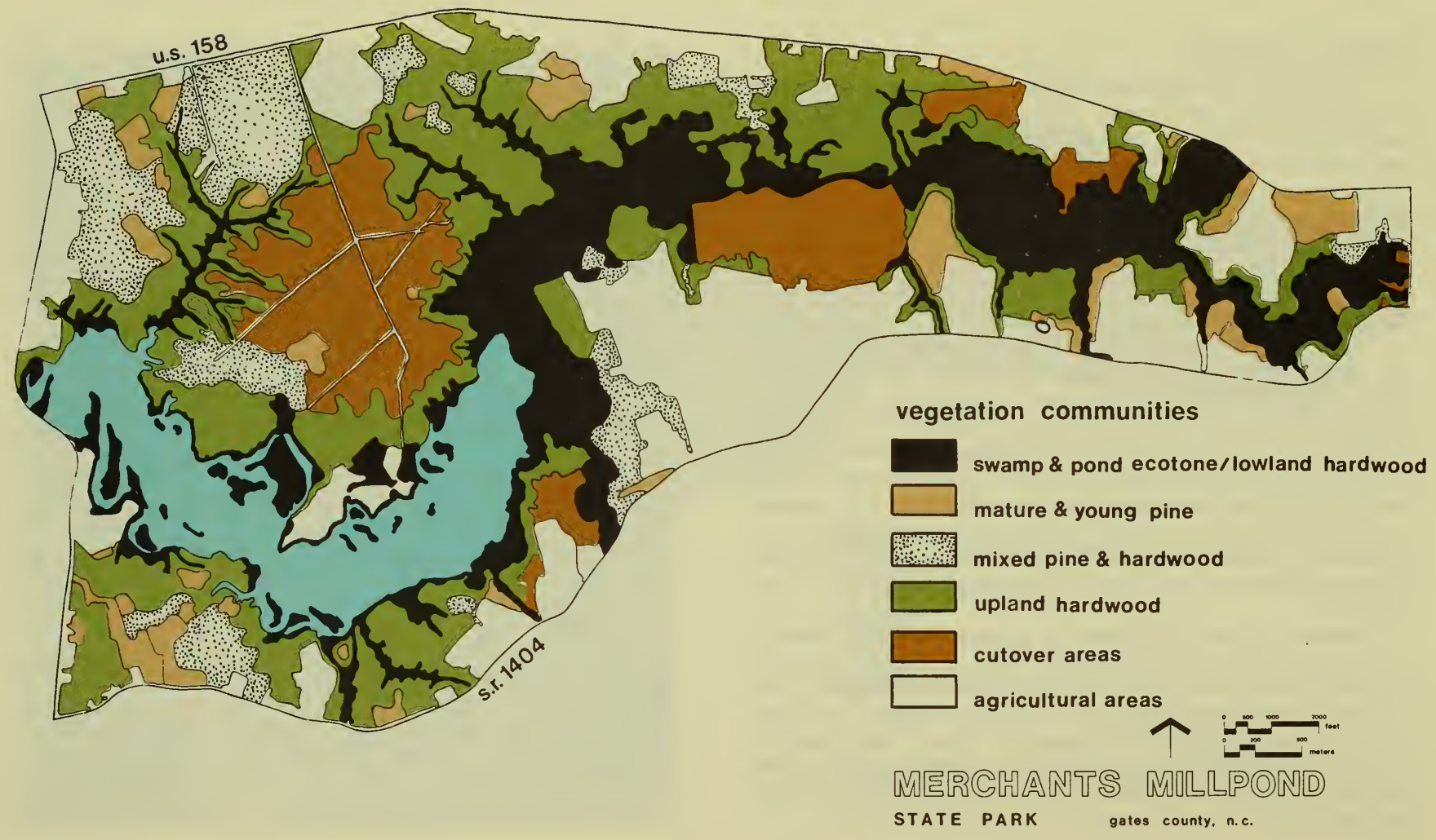

u.s. 158
s.r. 1404
soil limitations
slight
slight to moderate
moderate
moderate to severe
severe
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

SOILS & SLOPES

The soils in the Millpond area are comprised of 15 soil series within two major associations. The Johnston-Bibb Association lies around the Millpond and in the Swamp. Here the soils are generally poorly or very poorly drained with black to dark gray sandy surfaces and gray, stratified sands, sandy loam or silt subsurface layers. They are subject to flooding for undetermined periods. The Lenoir-Craven-Dunbar Association generally lies on the ridges and slopes on either side of the Millpond and Swamp. These soils are poorly to moderately well drained soils with gray sandy surfaces, over firm to very firm sandy clay or clay subsoils.

Regarding the individual soil series, updated soils information is insufficient for a substantial portion of the study area. Thus, part of the soils data are based on inadequate information supplied by the 1929 "Soil Survey of Gates County, North Carolina." Updated data have been requested and should be analyzed before implementation of a plan. However, the information currently available indicates a variety of soils, with limitations ranging from slight to severe. Wetness or flooding cause most limitations; however, some of the soils have problems such as slow percolation, high shrink-swell potential, low strength, and seepage.

Steeper slopes occur primarily at the edge of the Millpond and Swamp, and in the ravines which drain into them. Though generally short, these slopes often exceed 15 percent with a vertical drop of 10 to 30 feet, depending on location. The most severe slopes occur on the northeast side of the Millpond and the large ravine which empties into it. Thus, several small bluffs overlook both the Millpond and the creek flowing at the bottom of the large ravine.


u.s. 158
s.r. 1404
vegetation communities
swamp & pond ecotone/lowland hardwood
mature & young pine
mixed pine & hardwood
upland hardwood
cutover areas
agricultural areas
feet
meters
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

VEGETATION COMMUNITIES

Merchants Millpond represents a unique mingling of a coastal pond and southern swamp forest. A remarkable collection of bald-cypress *(Taxodium distichum)* and water gum *(Nyssa aquatica)* dominate the Millpond. Remnants of older, larger trees are in evidence, particularly in the area known as "the cathedral." Massive stumps, scattered throughout the Millpond area, provide habitat for many terrestrial and semi-aquatic species. The living swamp tree species also provide hold-fast points for epiphytic species and numerous lichens. Resurrection fern and Spanish moss shroud most of the trees.

An interesting feature of the Millpond is its water. Similar in many respects to the "blackwater" lakes of the coastal plain, it is pure, but by no means sterile. Its surface is frequently dotted with the leaves of spatterdock *(Nymphaea luteum),* while pondweed *(Potamogeton sp.),* is one of the best duck-food plants. The smallest known flowering plant, dwarf duckweed *(Wolffia columbiana),* is present in limited quantity, while duckweed *(Spirodela polyrrhiza sp.)* completely blankets many of the shallow coves, creating a picturesque setting. Water lily, tapegrass *(Vallisneria sp.)* and water shield *(Brasenia schreberi)* are the most common species.

Around most of the Millpond edge, swamp forest species rapidly grade into less hydric species. Within these moisture-related species gradients, upland species, mesophytic species, and alluvial species are commonly found within a 30-foot distance. The Millpond edge is fairly consistent with respect to community composition. Most of the Millpond edge is a hydric-based ecotone. Plant invasion proceeds toward the usual constricting and filling process typical of most shallow lakes. Cypress reproduction is greatest along silt bars and delta regions.

The upper Millpond or swamp area is shallower, and represents a finer example of swamp habitat than does the Millpond edge. Peculiar mats of "trembling earth" provide an atmosphere like that of the Okefenokee Swamp of Florida. One of the swamp's most interesting dendrological curiosities is an "enchanted forest" of grotesque water gum. The trunks and branches are often swollen, gouty, and frequently festooned with luxuriant growths of resurrection ferns. Mistletoe is believed responsible for these curious distortions.

Though swamps usually lack a large variety of herbaceous species, other characteristic trees generally fill the gap. At Merchants, these include the swamp red maple *(Acer rubrum* var. *carolinianum),* pumpkin ash *(Fraxinus profunda),* pop ash *(Fraxinus caroliniana),* and swamp hickory *(Carya aquatica).* Sweet gum *(Liquidambar styraciflua)* is common on the swamp border. Alluvial and bottomland species are often mixed with the swamp species.

Two interesting vines typical of southern swamps are noteworthy here. Rattan *(Berchemia scandens)* and cross vine *(Anisostichus capreolata)* add character to the forest.

The Bottomland Hardwood Community occurs in most of the ravines, the lower portions of the slopes near the Millpond edge, and in some areas adjacent to the swamp. It generally makes a rather abrupt transition with the swamp community. Though generally low-lying, its most identifiable characteristics are the absence of standing water throughout most of the year and the near-absence of cypress.

On the upper slopes and on the relatively flat ridges, a mixture of mesophytic and upland hardwoods frequently occurs. Most notable is the appearance of almost pure stands of American beech, with a sparse understory. Such stands are particularly prevalent on the bluffs or ridges which jut toward the northwest side of the Millpond.

Also on the relatively level upland terrain are mixed pine and hardwood communities. These stands are dominated by loblolly pine and light tolerant hardwood species characteristic of earlier successional stages, such as sweet gum and yellow poplar. This community type is particularly prevalent in the northwest corner of existing park property.

A number of pine stands in various stages of development appear throughout the study area. They vary from dense young stands (about 15 years old) with little or no understory, to mature

stands with dense hardwood understories. Loblolly pine predominates.

Substantial acreage within the study area consists of cutover woodlands. Although several smaller areas are scattered, only the two largest cutover stands have a significant bearing on the Park. Unfortunately, the recent timber harvests have tremendously devalued the natural character of pre-existing stands. The largest cutover area, 514 acres on the north side of the Millpond, is currently owned by the State. Cut about six years ago, it was predominately upland hardwoods and mixed pine hardwood. Although some early-successional species have benefited from the timber harvesting, most of the older successional communities have suffered tremendously. Presently, most of this property is a tangle of young hardwood sprouts and greenbriers with substantial slash and other logging debris.

The other major cutover area consists of 148 acres on the south side of Lassiter Swamp, within proposed Park boundaries. Until this past year, this area was the major portion of a remnant virgin cypress swamp. Fortunately, the largest trees, some well over 100 feet tall, were spared. However, a great deal of slash remains. A smaller portion of the remnant virgin cypress swamp persists on the north side of the swamp. With regard to the Park, this area should be considered one of critical importance.

Open land, primarily active pastures and agricultural fields, dominates the perimeter of the study area. Soybeans, peanuts, and corn are the major crops. However, one cluster of fields comprises a major inholding on the north bank of the Millpond. These latter fields, along with the two fields immediately south of the dam, are essential to the protection and operation of the Park. All the other agricultural and pasture lands are marginally important. Virtually all are in private ownership, except for those in proximity to the dam.

FAUNA

Merchants Millpond excels as a wildlife sanctuary. Wintering waterfowl are abundant. Woodpeckers and an interesting variety of songbirds, including the beautiful prothonotary warbler, nest within its boundaries. Other songbirds include the wood thrush, mockingbird, tufted titmouse and swainson's warbler. The osprey, a magnificent raptor feared to be approaching endangered status, will nest regularly if afforded protection from hunters. Perhaps greatest in number is the green heron, although other water-loving species, such as the great blue heron, snowy egret, black and wood ducks, and hooded merganser, are well represented. Several species of hawks, red-tailed, red-shouldered, and broad-winged, have been identified. Several species of woodpecker, including the pileated, red-bellied, and red headed, are known to the area.

Fish studies within the Millpond show that panfish (i.e. bluegill and warmouth) maintain high densities with a good proportion of predatory species (largemouth bass, longnose gar, and chain pickerel). Largemouth bass comprise about 10 percent of the fish population; other game fish collected include bluegill, black crappie, chain pickerel, and pumpkinseed. Unfortunately, non-game fish are fairly abundant in the Millpond, with the creek chubsucker being the most numerous species collected. Other non-game species collected include the golden shiner, Longnose gar, and brown bullhead.

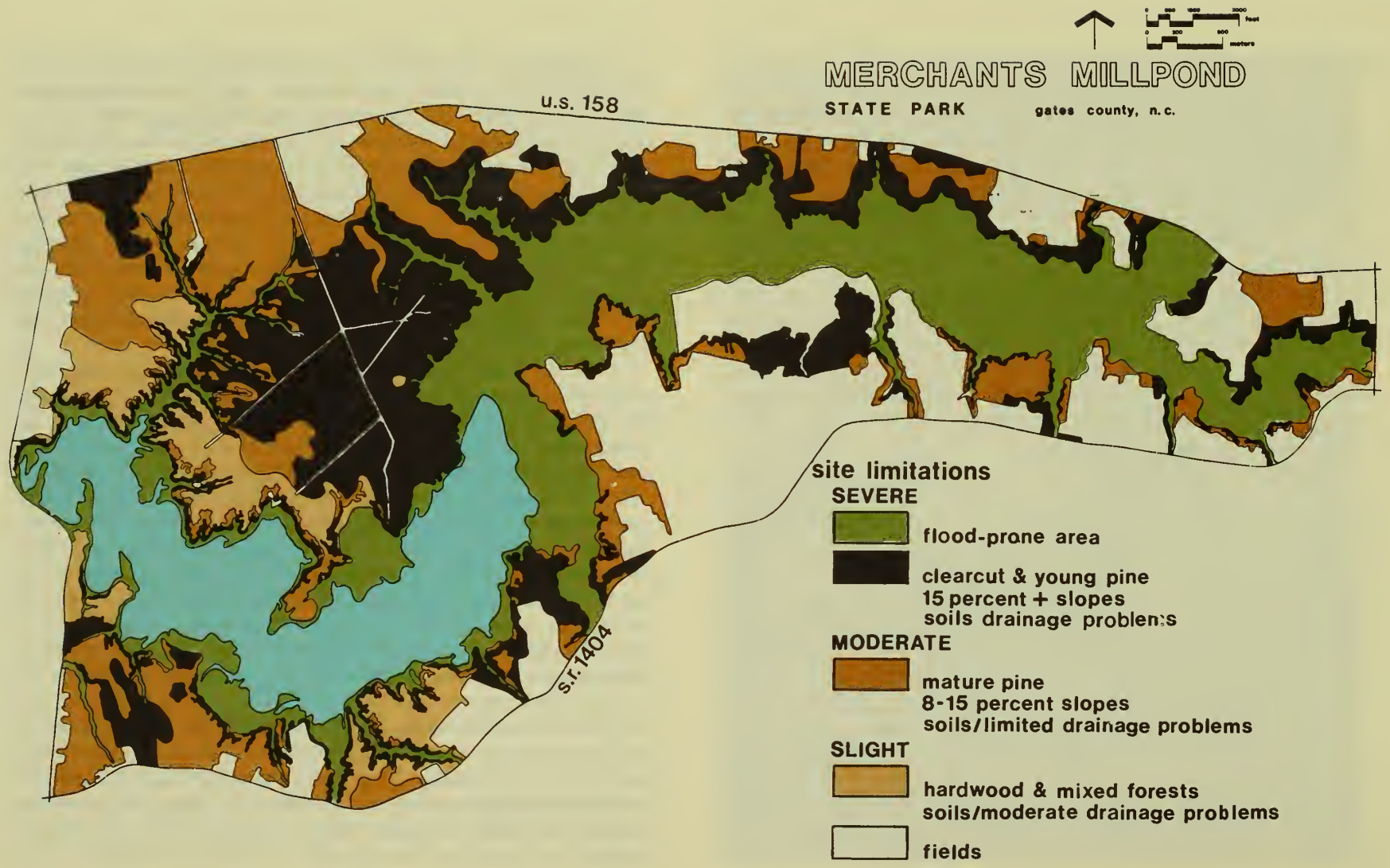
As a result of the large non-game population, the Wildlife Resources Commission practices an annual 14-inch drawdown from November to mid-March (before the water temperature reaches 50° F). This action is designed to reduce the aquatic vegetation and forage fish population. The gates are replaced prior to the spawning time of the creek chubsucker.

Reptiles and amphibians are varied and abundant. Many turtles bask on available tree stumps or logs. Those identified include the eastern box, eastern mud, and eastern painted turtles. During high water in the swamp, red-bellied and brown water snakes are common on lower limbs of young cypress trees. The eastern cottonmouth is conspicuous during periods of low water in the swamp, and the southern copperhead appears on the upland clearcut area. Frogs and toads are also abundant. Several species of frogs, the bull, green, and leopard frogs, and the Fowlers and southern toads are a few of the common amphibians. Two species of salamander have been observed — the dusky and slimy salamanders.

The most abundant insects in the swamp are mosquitoes, biting flies (deer and yellow flies), ticks, and mites (chiggers and red bugs). The swamp-pond ecotone and upland contain many mosquitoes, deer flies, and yellow flies, making the area somewhat uncomfortable between the months of June and October.

The swamp/pond complex is an excellent home for many species of mammals. Furbearers identified at Merchants Millpond are raccoon, opossum, skunk, rabbit, muskrat, river otter, mink, beaver, and bobcat. The bobcat is the only member of the cat family residing in the area. River otter and mink are scarce; however, a beaver colony has settled in Lassiter Swamp, just above the Millpond. A series of dams and a lodge were located, but field observations indicate that the colony is probably only several years old.

The white-tailed deer is an important game species in North Carolina. Historically, sport hunting concentrates on deer in this area. The former Georgia-Pacific property was hunted for years before the company donated the land to the State. Although the current population is undetermined, deer tracks and other signs suggest the presence of an ample population on the site.


MERCHANTS MILLPOND
STATE PARK
gates county, n.c.
U.S. 158
S.R. 1404
site limitations
SEVERE
flood-prone area
clearcut & young pine
15 percent + slopes
soils drainage problems
MODERATE
mature pine
8-15 percent slopes
soils/limited drainage problems
SLIGHT
hardwood & mixed forests
soils/moderate drainage problems
fields

DEVELOPMENT LIMITATIONS

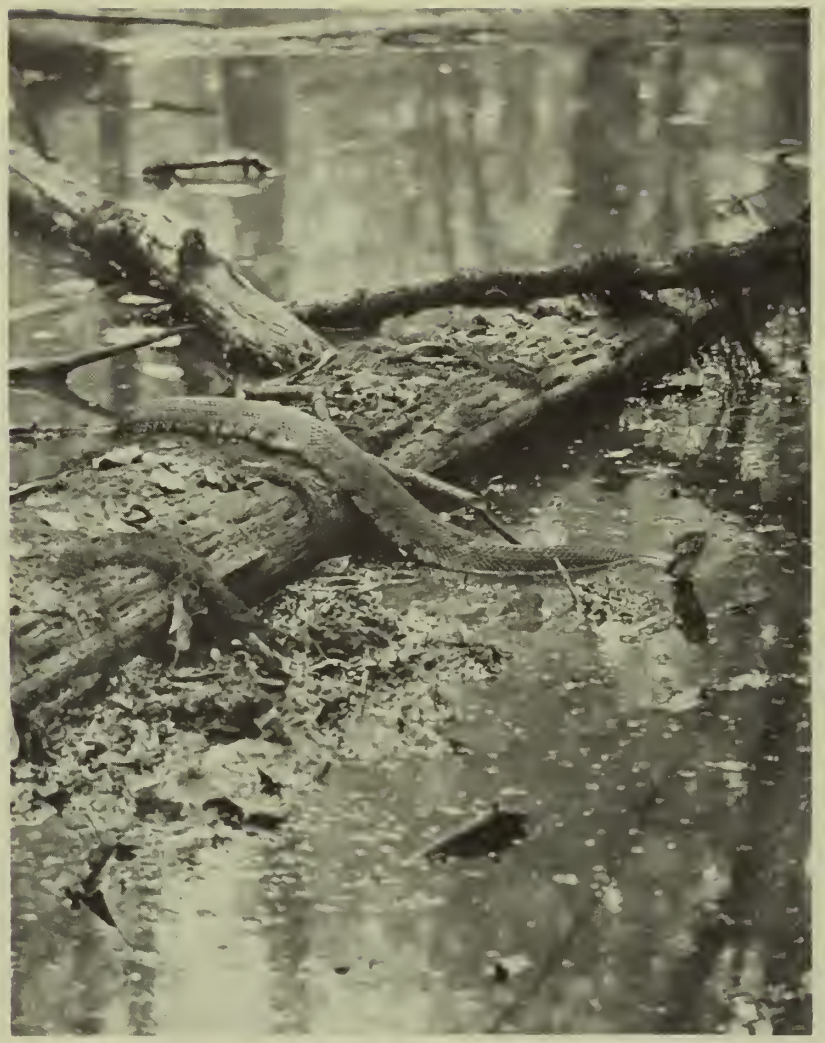
Development limitations at Merchants Millpond State Park are based on a number of criteria. In the low-lying areas, flooding tendencies and high water table severely limit development potential. Many of these areas are frequently submerged.

The physical properties of the soils often pose less severe problems on higher ground. Low-bearing strength, slow percolation, high shrink-swell potential, and poor drainage caused by level terrain are the most common limitations for these soils. Near the Millpond and Lassiter Swamp, steep slopes separate the higher-level terrain from the low-lying ground. These slopes are frequently over 15 percent, effectively eliminating most types of park development (except for trails).

Clearcutting activities have drastically altered the natural characteristics of the landscape in several areas, particularly on the high ground north of the Millpond, and in the "Big Tree" area of Lassiter Swamp. The impact will likely be detrimental for several decades since no slash treatment or reforestation efforts were made in either of these two major impact areas. Consequently, these areas are considered presently unsuitable for park-related activities.

The young pine stands are also unsuitable for most park activities, at least for the next two or three decades. However, even mature pine stands should not be considered as desirable as mixed pine-hardwood or hardwood stands. Though the latter forest communities are more desirable for typical park uses, significant alteration of their natural character must be avoided. This is particularly true of the pure beech stands which appear on the promontories jutting into the northwest side of the Millpond.

Development of particular natural or scenic attractions, such as Lassiter Swamp, the "cathedral," the "enchanted forest," or the beaver constructions, should be avoided.



MASTER PLAN

MILLPOND PROTECTION & RECREATION

The primary purpose of a State Park development plan is to protect significant geological features, botanical communities, or other lands having important natural features, as well as allowing public access and recreational activities compatible with the site. Protection of the Millpond and Lassiter Swamp is the primary objective of the plan. Present State ownership includes the Millpond and adjacent property on the north and south sides of the Millpond, approximating 1947 acres. Approximately 121 acres should be acquired from the present Park boundary at the dam to Lassiter Swamp for the protection of the southern shore of the Millpond. This property consists of a 100- to 150-foot buffer along the shore that could be acquired by fee simple or as a scenic easement. A scenic easement permits a property owner to retain title to the land and allows him a property tax reduction for the rights acquired by State Parks. The wetland in Lassiter Swamp, approximately 670 acres, should be acquired in fee simple ownership by the State. Protection of the cypress-gum community is the highest priority. The largest cypress trees are located midway between the Millpond and U.S. 158 on Bennetts Creek. This area is beautiful and would significantly expand the Park's nature interpretation program.

The principal theme of the Millpond's Nature Interpretation program will center on the physical and biological components constituting a pond-swamp ecosystem. The history of the Millpond and related natural and cultural factors that have influenced the Millpond's current features will be illustrated.

Ideally, a visitor center will orient park visitors to the site and will be the focal point for all nature study activities. The building will contain areas for exhibits, a laboratory, administrative offices, restrooms, utilities, and storage. This facility requires an interior space of 3000 square feet.

Trail booklets illustrating the location of hiking trails, and specialized pamphlets describing points of interest will supplement exhibits in the visitor center. These publications will stress the qualities and significance of various features, and emphasize that collecting or destroying flora and fauna in the Park is strictly prohibited.

Approximately 15 miles of hiking trails will emanate from the visitor center to areas of interest in the Park. Self-guided trails will direct the visitor to specific areas of natural significance and to other recreational activities on the site. Special trails for handicapped individuals (non-ambulatory and blind) will be provided near the visitor center. Trails for guided tours and hikers will lie along the shore to illustrate various habitat types; interconnecting trails will provide hikes of various lengths. Outdoor display cases and exhibits along the trails at various points will provide directional and general information about specific areas. Trails will be designed so that outstanding natural sites are accessible by foot or water excursions. The "cathedral," "enchanted forest," and Lassiter Swamp are areas requiring a two-mile hike or a three-mile water trip.

All primary hiking trails will be surfaced with wood chips or other natural materials. Heavily used trails suffering from soil erosion should be hard-surfaced if other alignments are not available. Trails located in areas where intermittent standing water is present will be elevated on wooden walkways. This situation occurs in the "enchanted forest" and Lassiter Swamp. The walkways should be a minimum of five feet wide, and vary in elevation according to the average water level.

Use of the Millpond will be limited to fishing and canoeing. Lightweight fishing boats, with or without electric motors, and canoes will be the only watercraft allowed. A boat launch for fishermen and canoeists is located near the dam site along S.R. 1400. A parking lot for 25 vehicles, or 12 vehicles with trailers, has also been provided. This facility also accommodates parking for individuals wishing to fish from the bank below the dam. No parking will be permitted along the 60-foot highway right-of-way on S.R. 1400. The old, eroded launch site adjacent to the dam will be stabilized by landscape planting.

For those families or groups who do not have a suitable watercraft, but wish to explore the Millpond from the water, a canoe concession is proposed in coordination with the visitor center. Approximately seven miles of canoe trails are proposed in the Millpond, with an additional three miles of swamp trail.


Entrance
canoe portage
lassiter
swamp
duka swamp
area of environmental
concern
area of
environmental
concern
MASTER PLAN
Existing Park Boundary
Proposed Park Boundary
Existing Roads
Proprosed Roads
Hiking Trails
Canoe Trails
Clearcut Area
0 500 1000 2000 feet
0 200 500 meters
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

MASTER PLAN SYMBOLS KEY

When water levels are low, only half of Bennetts Creek from the Millpond to U.S. 158 is navigable by canoe.

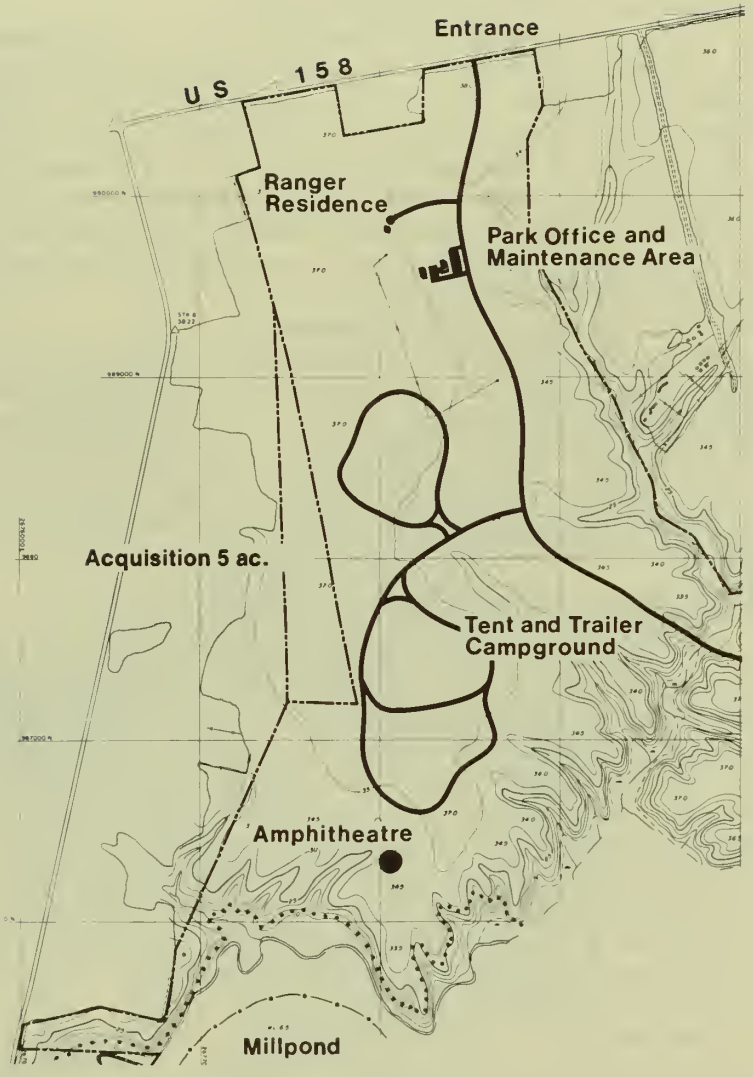
At this time, it is difficult to estimate the number of canoes that can be allowed on the Millpond, while still maintaining a wilderness character. Initially, only 36 canoes will be provided (approximately one canoe for every 1000 feet of canoe trail). Later, canoes will be added as demand indicates; however, the impact of this concession should be evaluated yearly and a limit of 100 canoes not exceeded (one canoe for every 300 feet of trail). The primary objective of the trail is to allow the visitor to enjoy the plants and animals; therefore the quality of the experience must not be destroyed by overuse.

Guided and self-guided canoe trails will be provided. Water-based nature walks, bird watching, and studies of pond and swamp ecology are possible topics for the program. Where necessary the trails can be marked with either an anchored buoy or a tree blaze. Although water markers could detract from the wild character of the Millpond, they can be placed in discrete locations to minimize their visual impact.

NORTHSIDE RECREATION ACTIVITIES

In order to protect the Park as well as effectively manage public recreation facilities, one entrance is proposed on U.S. 158. Enough land is available on the north side of the Millpond to accommodate recreational activities requiring vehicular access. For this reason, the family and group picnic area, family tent and trailer camp, visitor center and boat concession, and group tent camps will be located on this side of the Millpond. Other activities requiring a secluded area will be located either on the south side of the Millpond or further east, in Lassiter Swamp. Access to these areas will be provided by either trail or canoe. Other than hiking and canoeing, primitive camping for families and groups is the only activity provided here.

The main park office will be located just south of the new park entrance off U.S. 158. This office will be the primary information and administrative center for the Park. Camping permits, information, and other requests will be handled here. Twelve parking spaces for visitors are proposed.



Northside Park Development (Sheet 1)

Scale: 1"= 450'

Park maintenance is one of the most important functions of the staff. The physical appearance and condition of the Park can influence the visitor's attitude while he is here. For this reason, the Division requires a rigorous maintenance program for every site.

Proper location of the maintenance area is important for efficiency. The area should be convenient to the park office and major use areas, and in this case, would be best located in conjunction with the park office. Storage space for park supplies, equipment, and vehicles, along with a workshop for minor machinery repair and park construction, will be provided. In a small park, these functions could be combined in the same building with the park office, or they could be located in a separate building screened from the park office. In either case, park personnel could service both sides of the Park, continue repair duties in the maintenance area, and still monitor the office.

A residence for the park superintendent will be provided just inside the main gate to assure easy access to the office, and to control the park entrance in case of nighttime emergency.

The main family overnight use area is the tent and trailer campground, located south of the park office along the main park road. Sufficient land is available to develop three 40-site camping loops. Every campsite offers a 12' x 15' tent pad, cooking grill, picnic table, and a 50-foot pull-off for trailers. The individual sites are approximately 100 feet apart along the loop road, and each loop is located a minimum of 300 feet from the park road.

The camping loops will develop as demand indicates; however, no more than two loops should be in use during a season. This practice allows rotation of campsites should overuse become apparent on any loop. The first loop of 40 campsites and washhouse is designed to accommodate 140 visitors, and will require approximately 15 acres of land. The remaining 80 campsites and two washhouses will occupy 30 to 40 acres.


Park Entrance
Park Entrance
Group Picnicking
Family Picnicking 65 tables
Family Picnicking 120 tables
Parking
Swamp Trail and Interpretive Shelter
Acquisition – 75 acres
hiking trail
canoe trail
Group Tent Camps
Reforest
canoe trail
Visitor Center
Canoe Concession
Northside Park Development (Sheet 2)
scale: 1" = 750'
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

DAY USE

The main day use area for the Park will be located on the ridge east of the park office and family camp. The park road would continue across the creek, separating the family camp from the picnic area and visitor center. As previously mentioned, the visitor center and boat concession are combined in one area overlooking the Millpond, and a dock and boathouse for canoe storage are proposed for the site. A concession stand with limited provisions and conveniences desired by park users will be provided at the visitor center. The visitor center/boat concession complex is designed to accommodate approximately 2500 day use visitors; this figure includes an estimate of seven to eight turnovers per day. Parking required for this use totals 90 spaces, with an additional 50 spaces for visitors who use the hiking and canoe trails. Primitive campers using the south side Millpond sites would embark from this complex; thus 40 additional parking spaces would be required.

The family and group picnic area is located west of the visitor center on the same ridge. Approximately 23 acres of family and 12 acres of group picnicking are proposed. These figures represent the optimum capacity for this area. The family picnic area provides 185 tables with three comfort stations, and four decentralized parking lots to reduce the development impact. The area averages from six to eight picnic tables per acre with a maximum walking distance of 300 feet to a comfort station. The group area represents approximately 40 percent of the total picnic use. Three group areas are available within the 12-acre site. Each of the group areas has a 750-square-foot shelter, a 25-car parking lot, and 48 picnic tables — an average of 16 tables per acre. Each area will accommodate a group of 50 to 150 individuals; three comfort stations will be required to serve the entire group picnic area.

The remaining activity requiring vehicular access is the group tent camp. This facility would accommodate organized groups of 150 or less, such as Scouts or 4-H'ers, and will be available by reservation. Usually groups of this size bring much equipment and require easy access to the site. Each tent camp will take four to five acres and will have 12 to 15 campsites. Two acres of open space, a circle for cooking and assembling, and small washhouse will be provided for each camp.

Two group tent camps are located east of the visitor center along the main park road. Three existing agricultural fields would serve this type of use. They are secluded from the other family activities and are within walking distance of the visitor center. Each camp requires parking for 50 cars and three buses.

Southside Park Development

scale: 1" = 625'

SOUTHSIDE PRIMITIVE CAMPS

The primitive camp offers the most secluded camping because it is located in the most remote and unique area of a park. For this reason, primitive camps are proposed for Lassiter Swamp and the south side of the Millpond. Sites are designated along trails, and each camp is provided with a clearing for a tent and fire. All camps are 200 feet apart and have a centralized water supply and pit toilet.

The group primitive camp is designed to accommodate groups of 50 people or less. Twelve tent sites are designated for each camp. A common space for cooking and assembly is provided along with a water source and pit toilet. An open space for informal games can be incorporated where convenient to the site.

One family camp (with 15 individual sites) and two group camps are proposed for the south side of the Millpond. The family camp and one group camp are located on property leased to the North Carolina Division of Mental Health by the Coleman Family. The local Mental Health Office in Ahoskie was operating Camp Chowanoc, for 30 children, adjacent to the Park. To supplement the activities of the camp, wilderness activities, camping, and hiking are planned for the Coleman property. These uses are compatible with the Park, and hopefully a cooperative agreement concerning development and use of these facilities can be reached. The other group camp is located further north on current State Park property.

A hike of 3.8 miles, or a canoe trip of 1.5 miles, is required to reach these camps from the visitor center. While the canoe trail would be the most scenic and efficient means of travel through the Millpond, a hiking trail will be available for those who prefer to walk.

As part of the protection and management of the south side of the Millpond, a ranger's residence will be located along S.R. 1400, west of Group Primitive Camp One. This ranger will be able to monitor use of the boat launch and be available should an emergency arise during the night in the primitive camps.

LASSITER SWAMP

One family primitive camp with ten sites and one group primitive camp proposed for Lassiter Swamp offer the park visitor an overnight experience in a swamp environment. Access will be provided by hiking or canoe trail. A hike of approximately one mile will be required from a 25-space parking lot located at the upstream end of the Millpond on the north side. In addition to the hiking trail, a two-mile nature trail through the swamp/pond ecotone will be provided. Part of this trail will be elevated, allowing access to Bennetts Creek and Lassiter Swamp. Canoe access by Bennetts Creek will be marked and portages over the existing beaver dams provided.

The period of high water during early spring and summer after the winter draw-down is the most suitable time for a canoe trip through Lassiter Swamp. A canoe access at the U.S. 158 bridge will serve visitors who wish to canoe Bennetts Creek from the bridge to the Millpond during high water. Parking will be allowed along the highway right-of-way, a launching trail to the creek will be built, and a water trail to the Millpond will be marked.

PROJECTED PARK USE

Park development totals just over 160 acres. This figure includes activity areas, road alignments, and hiking trails. Of the total proposed land area, a little over six percent will potentially be developed. A substantial natural area composed of Lassiter Swamp and the Millpond will be protected, and the 500-acre clearcut on the north side of the Millpond will not be suitable for development until the forest is reestablished.

The proposed facilities will accommodate approximately 1750 day users per day and 800 overnight users. Approximately 70 percent of the total park visitation is day use, and the remaining 30 percent is overnight use. These figures reflect projected group uses that average about one percent of the total park use. Combining these daily use figures with the average seasonal visitation of other State Parks renders a yearly use figure ranging from 75,000 to 150,000 visitors per year.

The Millpond's visitation pattern will vary from that of other State Parks because of the unpleasant summer weather typical of a southern swamp. The most pleasant seasons to visit the area are late fall and early spring. For this reason the Park should attract heavy use in the spring and fall, particularly on weekends.

INTERIM USE FACILITIES

Before major park development begins, interim use facilities will open at Merchants Millpond. A temporary family picnic area with ten tables, a well, and two pit toilets has already been located in the field adjacent to the old boat launch just south of the dam. This site was an agricultural field owned by members of the Coleman family who have agreed to relinquish their agricultural rights. In conjunction with the picnic area, a temporary park office, maintenance area, and park residence will service the south side of the Millpond.

In order to accommodate fishermen and canoeists, the permanent boat launch has been placed adjacent to the parking area. A gravel lot for 25 cars and 12 vehicles with trailers serves the picnic area and launch. The old boat launch will be closed to vehicular traffic and stabilized. People fishing at the dam can also park in this area, and cars will be prohibited from parking on the road shoulder. A temporary gate will be placed at the entrance off S.R. 1400. The park office and residence have been located so that the park ranger can visually monitor access to the Millpond anytime of the day or night. In addition, family and group primitive campsites will be established. Eight family primitive sites are already in existence. Hiking and canoe trails will also be established.

SERVICES TO PARK USERS

Established programs currently practiced in other State Parks, particularly those for visitor protection and law enforcement, must be emphasized at Merchants Millpond State Park. The legal authority vested in park personnel controls misuse of the Park and encroachment upon its land.

Patrol of the Park should be conducted systematically, including use areas, roads, and hiking and canoe trails. Park boundaries should be well marked and patrolled regularly, preventing encroachment, development of new trails, unwanted uses, and so forth. The mobile patrolling units should be radio-equipped, as should the park office. A good working relationship with local law enforcement agencies is desirable.

A fire control plan should be developed with the assistance of the North Carolina Division of Forest Resources. This plan would utilize existing roads, paths, trails, and easements, establishing a unified fire trail system. Fire-fighting equipment stored at critical points around the Park will be readily accessible to both park staff and visitors in an emergency.

A well designed and up-to-date information service for park visitors is essential. Visitors should be well oriented to location of park facilities, trails, features, and available programs. In addition, through the information facilities, visitors should be acquainted with park regulations and philosophy.

The park office and visitor center will provide information regarding orientation and activities. Supplementary information will be available at various use areas. A trail map will illustrate the location and destination of the hiking, canoe, and self-guided nature trails. Additionally, pamphlets and exhibits will describe points of interest on each trail. Again, all printed material will stress that collecting or destroying fauna and flora is strictly prohibited.

ENVIRONMENTAL MANAGEMENT

Human activity has in several ways encroached upon the Millpond and Swamp. The use of fertilizer and pesticides, particularly on fields adjacent to the Millpond, poses a threat to the local environment. Plowing across contours appreciably adds to the sedimentation and nutrient content of the Millpond and accelerates eutrophication. For these reasons it is desirable to acquire those fields immediately adjacent to the Millpond's north bank, and to purchase filter strips or buffers elsewhere along the edges of the Millpond and Swamp. Changing or modifying those agricultural practices detrimental to the Millpond and Swamp could also alleviate the environmental problems.

In order to determine the most beneficial modifications, the Department of Natural Resources and Community Development would conduct water quality studies. Of particular importance are the levels of agricultural chemicals, detergent, and fecal coliform bacteria. The content of silt and biological oxygen demand should also be determined in this study.

The overabundance of aquatic vegetation in the Millpond should be controlled by annually lowering the Millpond's water level approximately 14 inches. This practice exposes the aquatic vegetation to winter weather from November through March, and has been moderately successful in causing a partial dieback of excessive aquatic vegetation. At the same time, this practice reduces the forage fish population. Care should be taken to replace the control gates prior to the spawning time of the creek chubsucker (before water temperature reaches 50° F, about the middle or latter part of March). This would prevent undesirable restocking of the Millpond with this species. The Division of Inland Fisheries, North Carolina Wildlife Resources Commission, currently manages the Millpond in this manner. This practice should be allowed to continue; however, the Inland Fisheries Divisions, in cooperation with the Division of Parks and Recreation, should annually review the Millpond management practices. Park development, policies, and changes in adjacent land use can necessitate Millpond management changes.

Unfortunately, recent timber harvests have had a tremendously detrimental impact upon the natural character of approximately 500 acres of the upper hardwood and pine barren areas. About 350 acres were clearcut, leaving a young stand of naturally regenerated loblolly pine and sweetgum. Interspersed within this area are several patches of 30-year old pines totalling about 20 acres. The two largest patches were thinned by the loggers in 1971. Approximately 125 acres consist of an overstory of 40-year old hardwoods, mostly maple and sweetgum, with an understory of young pine, maple, and sweetgum.

None of these areas currently has any appreciable recreational value, with the possible exception of the 40-year old hardwoods. Accordingly, the North Carolina Division of Forest Resources was asked to make recommendations for improving the environmental quality.

The resulting "woodland management plan" recommended that the large clearcut area be left as is because it is already satisfactorily stocked with pines. Although this area will resemble a "jungle" for the next decade, the pines are expected to begin out-competing the hardwood sprouts in about 10-15 years. Twenty years hence, this area will have an overstory of pine trees with a hardwood understory. The "jungle" effect will be basically eliminated with the shading out of the dense understory of briars, shrubs, and young trees. Eventually, the pines will predominate. However, the management plan recommends that logging skid trails, as well as the edge of the main road be seeded with wildlife food species.

Likewise, it was recommended that the pine patches be left to grow as they are presently. No improvement work, including wildlife food plots, is needed.

Several alternatives were considered for the 125-acre hardwood overstory area. But, based on Division of Parks and Recreation management goals and objectives, natural succession was chosen as the primary management tool. Again, the management plan recommends that logging skid trails be seeded as wildlife food plots. Thus, the fauna capacity of the local habitat will be substantially increased.

Although this area will maintain a relatively dense understory of young pines and briars for the next few years, eventually the hardwoods will spread their crowns and dominate. In 20 years, a stand of slow growing hardwoods will provide an excellent wildlife habitat. In 60 years, there should be a stand of large, low quality hardwoods with an occasional loblolly pine.

PARK DEVELOPMENT PHASING

PHASE I (Interim Facilities)

Park Office (temporary)*

Picnic Area
- 10 tables*
- 2 pit toilets and water source*

Public Boat Access
- 1 gravel ramp*

Parking Lot for Boat Launch and Picnic Area
- 12 double spaces*
- 25 single spaces*
- 2 spaces for park personnel*

Ranger's Residence (South Side) (temporary)*

Family Primitive Camp (North Side)
- 8 sites*
- 1 pit toilet*
- 1 boat dock

Group Primitive Camp (South Side)
- 12 sites
- 2 pit toilets

Hiking Trails
- 1.46 miles (dam to primitive camp)*
- .25 miles of boardwalk (picnic area to Pond island).

Canoe Trail
- 7.23 miles (pond trail and Lassiter Swamp loop)

Roads
- .04 miles of access road*
- .01 miles residence access*

PHASE II

Park Office and Maintenance Area
- 12 parking spaces
  restroom and water source
- 1 maintenance shed, storage building/office

Ranger Residences
- 1 new residence (north side)
- 1 seasonal barrack (6 persons)

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* These facilities have already been recently established.

Family Picnic Area
- 60 tables
- 60 parking spaces
- 1 comfort station & water source

Group Picnic Area
- 1 comfort station/shelter (750 sq. ft.)
- 48 tables
- 25 parking spaces and 2 bus spaces

Tent & Trailer Camping
- 1 loop (40 sites)
- 1 washhouse and water source

Family Primitive Camp (swamp area)
- 5 sites
- 5 parking spaces
- 1 pit toilet

Group Primitive Camp (replaces interim picnic area)
- 12 sites (retain water source and privies)
- 12 parking spaces and 1 bus space (located at boat concession)
- 1 boat dock

Group Tent Camp
- 1 camp (150 persons maximum)
- 50 parking spaces and 3 bus spaces
- 1 washhouse

Canoe Concession
- 36 canoes and canoe shelter
- 50 parking spaces (includes 32 parking spaces for wilderness campers, 16 of which are temporary)
- 2 temporary pit toilets and water source

Swamp Interpretive Trail and Shelter
- 1 interpretive shelter
- 3.45 mile interpretive trail ("Big Tree" loop)/ .5 miles of boardwalk
- 25 parking spaces, 3 bus spaces

Hiking Trails
- 3.40 miles (north side — dam to Swamp Trail parking lot)

Roads
3.20 miles (new) public access
1.46 miles (upgrade existing road) public access
1 bridge
close public access to temporary picnic area (south side), retain for ranger access (only)

PHASE III

Visitor Center (3000 sq. ft.)
60 parking spaces (20 spaces for wilderness campers)

Canoe Concession
36 canoes, expand canoe shelter
18 parking spaces (replaces temporary wilderness camp spaces)

Family Picnic Area
60 tables
60 parking spaces
1 comfort station and water source

Group Picnic Area
1 comfort station/shelter (750 sq. ft.)
48 tables
25 parking spaces and 2 bus spaces

Tent and Trailer Camping
1 loop (40 sites)
1 washhouse and water source

Family Primitive Camps (2 camps total)
7 sites (south side); (15 sites total)
7 parking spaces
1 pit toilet
5 sites (swamp area); (10 sites total)
5 parking spaces

Group Primitive Camp (3 camps total)
12 sites (swamp area)
12 parking spaces and 1 bus space
2 pit toilets

Group Tent Camp
1 camp (150 persons maximum); (2 camps total)
50 parking spaces and 3 bus spaces
1 washhouse

Hiking Trails
2.88 miles (south side of Pond)
.50 miles of board walk

PHASE IV

Visitor Center
50 additional parking spaces (110 total including 20 for wilderness campers)

Canoe Concession
28 canoes (100 total), expand canoe shelter
20 parking spaces (70 total including 20 for wilderness campers)

Family Picnic Area
65 tables (185 total)
65 parking spaces (185 total)
1 comfort station with water source

Group Picnic Area
1 comfort station/shelter (750 sq. ft.)
48 tables
25 parking spaces

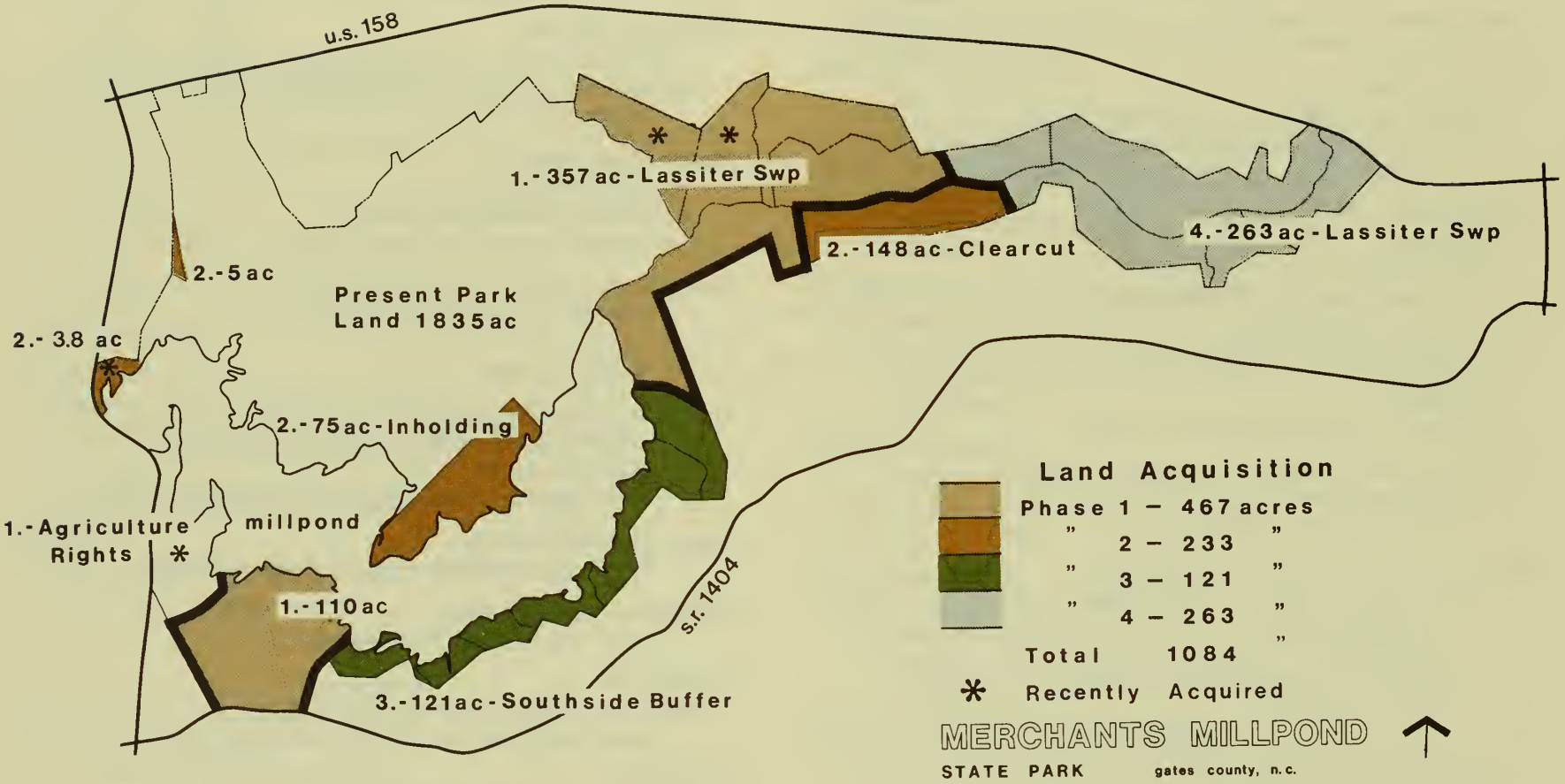
Tent and Trailer Camping
1 loop (40 sites) — to be used in rotating loops (120 sites total)
1 washhouse and water source (3 washhouses total)

Family Primitive Camps
water source (south side and swamp camps)

Designated Canoe Access
(U.S. 158 bridge, Duke Swamp)

Canoe Trail
2.88 miles (Duke Swamp to beaver dam)
canoe portages around beaver dams.

Hiking Trail
2.13 miles (East Lassiter Swamp loop)
.50 miles of boardwalk


u.s. 158
1.-357ac-Lassiter Swp
2.-148ac-Clearcut
4.-263ac-Lassiter Swp
2.-5ac
Present Park
Land 1835ac
2.-3.8 ac
2.-75ac-Inholding
1.-Agriculture
Rights
millpond
1.-110ac
s.r. 1404
3.-121ac-Southside Buffer
Land Acquisition
Phase 1 – 467 acres
" 2 – 233 "
" 3 – 121 "
" 4 – 263 "
Total 1084 "
Recently Acquired
MERCHANTS MILLPOND
STATE PARK
gates county, n.c.

ACQUISITION PHASING

Existing Acreage — 1947.1 acres[1]

PHASE I (Interim) — 467 acres

1. Obtain agricultural rights — former A. B. Coleman property[2]
2. Sub-lease Michael Coleman property; initiate acquisition proceedings should Camp Chowanoc ever terminate operation — 110 acres.
3. Acquire undisturbed portions of Lassiter Swamp between Pond and "Big Tree Area", inclusive — 357 acres.[3]
4. Recommend inclusion of Lassiter Swamp, Duke Swamp, Raynor Swamp, and Bennetts Creek in their entirety as "conservation zones" under provisions of the North Carolina Coastal Area Management Act.

PHASE II — 233 acres

1. Acquire inholding on north side of Pond — 75 acres.
2. Acquire two small tracts north of dam — 8.8 acres.[4]
3. Acquire cutover portion of Lassiter Swamp in "Big Tree Area" — 148 acres.

PHASE III — 121 acres

1. Acquire buffer on south side of Pond — 121 acres.

PHASE IV — 263 acres

1. Acquire remaining portions of Lassiter and Duke Swamps to U.S. 158 - 263 acres.

Total Park Acreage (Existing and Proposed) — 2919 acres.

[1]Includes additional 112 acres recently acquired

[2]Recently acquired

[3]108 acres recently acquired

[4]3.8 acres recently acquired

PERSONNEL STAFFING

PHASE I (Interim)

Permanent	—	Park Ranger II
Seasonal	—	Park Attendant (6 mo.)
"	—	Naturalist
Temporary	—	Labor support (as needed)

PHASE II

Permanent	—	Park Superintendent
"	—	Park Ranger I
Seasonal	—	Typist Clerk
"	—	2 Boathouse Attendants
"	—	Park Attendant (6 mo.)
Temporary	—	Labor support (as needed)

PHASE III

Permanent	—	Park Ranger — Naturalist
"	—	Clerk Typist II
Seasonal	—	Refreshment Stand Manager
"	—	Refreshment Stand Clerk
"	—	Naturalist
"	—	Park Attendant (6 mo.)
Temporary	—	Supportive Labor (as needed)

PHASE IV

Seasonal	—	Park Attendant (6 mo.)
"	—	Boathouse Attendant
Temporary	—	Labor support (3 mo.)

PARK UTILITIES

Electricity and telephone service are available through Virginia Electric and Power Company and Bell Telephone Company, respectively. Lines for both power and telephone presently run through and adjacent to State Park property. All lines within park property will run underground, preferably within park road right-of-ways.

Since wells in the area normally yield from three to 20 gallons per minute, several wells will be required within the Park to meet water supply needs. Many will be shallow, so some users may utilize hand pumps. This will be ideal in isolated use areas, particularly the wilderness camps. Most wells in the area are only 10 to 60 feet deep and, where water occurs at depths greater than 40 to 50 feet, it is likely to be under artesian pressure.

The more intensive use areas must rely on a central water and/or sewer system; however, a series of common septic fields may suffice for use areas within reasonable distances of each other.

PHASE I — Interim

Temporary Park Office	—	100 gal/day, telephone and electricity
Rangers Residence	—	200 gal/day with septic system, telephone and electric service.
Temporary Picnic Area	—	400 gal/day (20 gal/site)
Family Primitive Camp	—	160 gal/day (20 gal/site) (provided at Office parking lot)
Group Primitive Camp	—	250 gal/day (provided at Office parking lot)

PHASE II

Park Office/ Maintenance Area	—	1000 gal/day with sewer or septic system, telephone and electrical service.
Ranger Residence North Side	—	200 gal/day with septic system-sewer, telephone and electricity.

Barracks	— 300 gal/day with septic system-sewer, telephone and electric service.
Family Picnic Area	— 3600 gal/day with septic system-sewer for comfort station.
Group Picnic Area	— 2880 gal/day with septic system-sewer for comfort station.
Tent & Trailer Camping Area	— 6000 gal/day (150 gal/site) with septic system-sewer for washhouse and electric service.
Family Primitive Camp	— 100 gal/day (20 gal/site) to be provided at Park Office.
Group Primitive Camp	— 250 gal/day (sufficient supply available due to removal of temporary tent camp sites and picnic area).
Group Tent Camp	— 2250 gal/day with septic system-sewer for washhouse, and electricity.
Canoe Concession	— 720 gal/day

PHASE III

Visitor Center	— 18,750 gal/day with septic system-sewer, telephone and electricity.
Family Picnic Area	— 3,600 gal/day (additional) with septic system-sewer for new comfort station.
Group Picnic Area	— 2,880 gal/day (additional) with septic system-sewer for existing comfort station.
Tent & Trailer Camping Area	— 6,000 gal/day (additional) with septic system-sewer for new washhouse, and electricity.
Family Primitive Camps South Side	— 190 gal/day (additional); (sufficient supply available at site of removed interim ranger residence).
Family Primitive Camp Swamp Area	— 100 gal/day (supply at Park Office).
Group Primitive Camp Swamp Area	— 250 gal/day (supply available at Park Office).
Group Tent Camp Swamp Area	— 2,250 gal/day with septic system-sewer for washhouse, and electricity.

PHASE IV

Family Picnic Area	— 3,900 gal/day (additional) with septic system-sewer for new comfort station.
Group Picnic Area	— 2,880 gal/day (additional) with septic system-sewer for new comfort station.
Tent & Trailer Camping Area	— 6,000 gal/day (additional) with septic system-sewer for new washhouse, and electricity.
Family Primitive Camps	
South Side	— 300 gal/day (new well on site)
Swamp Area	— 200 gal/day (new well on site)
Group Primitive Camps	
South Side (one camp)	— 250 gal/day (share well with south side Family Wilderness Camp).
Swamp Area	— 250 gal/day (new well on site)
Group Tent Camp	— 2,250 gal/day with septic system-sewer for washhouse, and electricity.

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