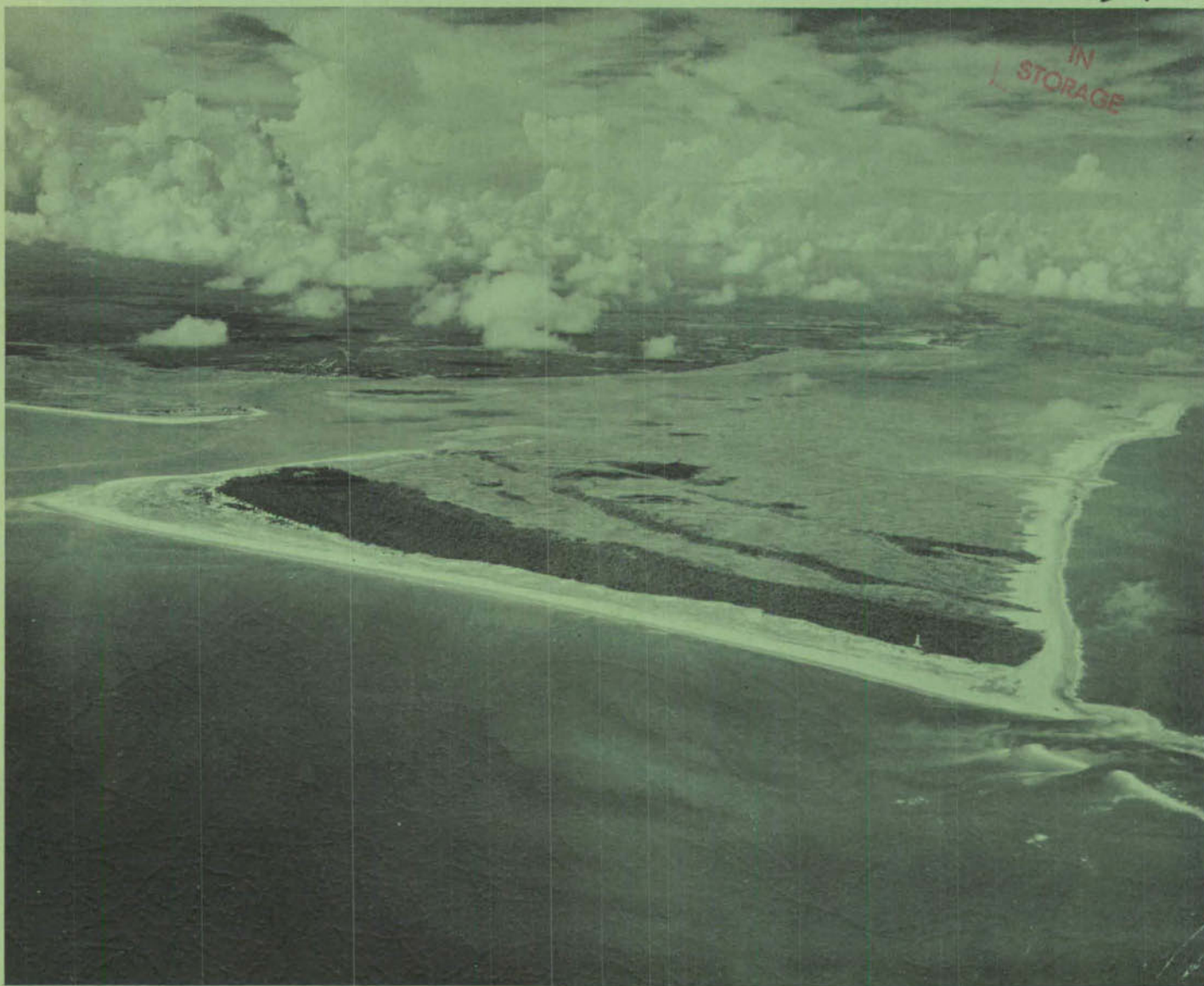


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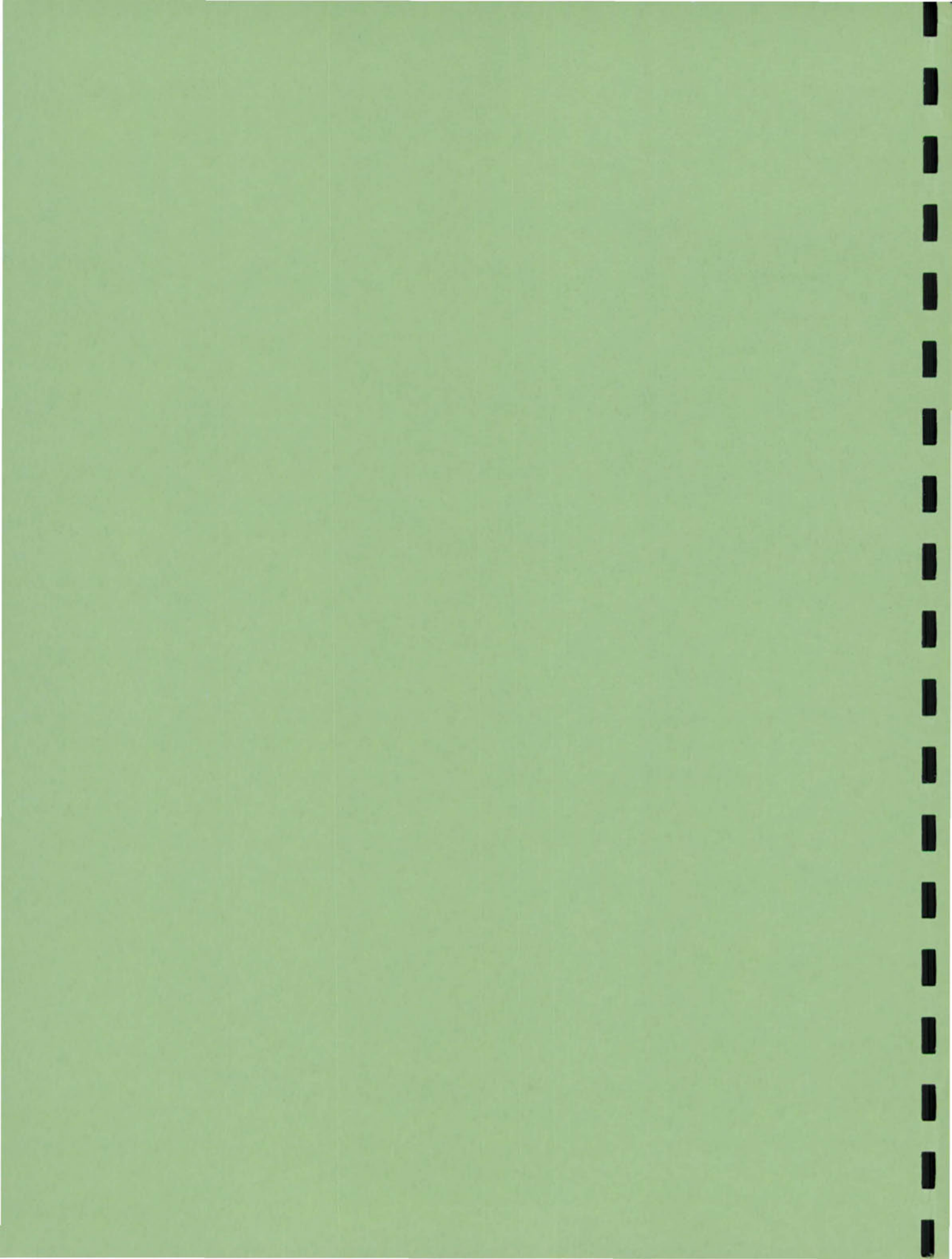
*suggested* **CAPE FEAR**

P37

*National  
Monument*

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SPECIFIC AREA REPORT  
SUGGESTED CAPE FEAR NATIONAL MONUMENT

United States  
Department of the Interior  
National Park Service

Southeast Region  
Richmond, Virginia

May 1967

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NORTH CAROLINA

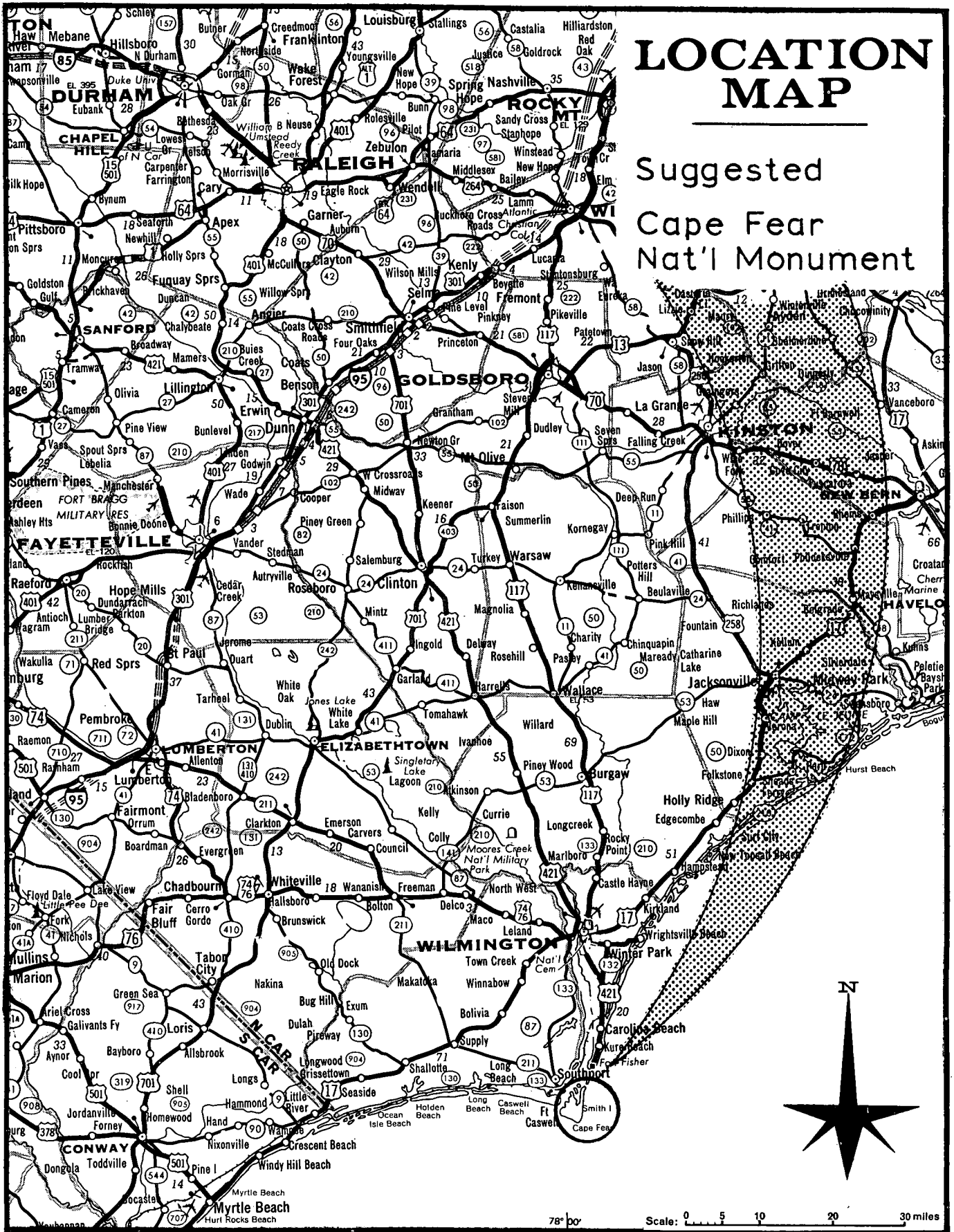
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# LOCATION MAP

## Suggested Cape Fear Nat'l Monument



## CONCLUSIONS AND RECOMMENDATION

### CONCLUSIONS

The suggested Cape Fear National Monument offers a nationally significant opportunity to preserve and protect a rare undeveloped coastal area for public use and enjoyment.

The Smith Island portion of the suggested national monument is one of the few remaining areas on the Atlantic Coast where man's effect on the landscape has been relatively limited. Considered in its entirety as a natural complex, Smith Island is one of the wildest and most primitive areas on the Atlantic Coast.

The live oak forest is one of the best examples of this type of sand strand forest in existence and one of the very few remnants of coastal forest which can still be recognized as part of the primitive native forest.

The 9,000 acre complex of salt marsh and shallow water, almost completely undisturbed, is an outstanding example of this natural community type.

The suggested national monument possesses (within the maximum boundaries proposed) outstanding historical values and excellent potential for development of recreational facilities.

Only by bringing these resources into public ownership will they be permanently protected and preserved for public use and enjoyment.

The boundaries proposed encompass a definite geographic unit which can be effectively preserved, administered, developed, maintained and operated for public use.

### RECOMMENDATION

It is recommended that the suggestion to add Smith Island, and adjoining area, to the National Park System as Cape Fear National Monument be favorably considered.





THE SUGGESTED CAPE FEAR NATIONAL MONUMENT. CAPE FEAR IS AT LOWER RIGHT.

## I. INTRODUCTION

### A. NAME AND LOCATION OF THE AREA

The suggested Cape Fear National Monument is on the Atlantic Ocean in Brunswick and New Hanover Counties, North Carolina. It extends from the Atlantic Ocean on the south to the town of Fort Fisher on the north, and from the Atlantic Ocean on the east to the Cape Fear River on the west. Battery Island, Striking Island, and Shellbank Island are within the proposed boundaries.

Because Cape Fear has been for centuries a well known landmark, it seems fitting to give its name to the suggested national monument.

### B. BACKGROUND

The campaign to preserve and protect Smith Island, started half a century ago by a few voices, has recently been greatly intensified.

For some 30 years, Smith Island has been number one on the North Carolina Division of State Parks' list of areas recommended for addition to the state park system. One early result of the efforts of the Division of State Parks to acquire Smith Island was ratification on March 23, 1937, by the General Assembly of North Carolina of "An Act to Empower the Department of Conservation and Development to acquire Smith's Island at the mouth of the Cape Fear River." This act was passed to authorize the Department to acquire the area from Brunswick County at a tax sale. Unfortunately, no money was appropriated to implement the act, and thirty-five days after its passage the Board of County Commissioners of Brunswick County gave a private individual an option on the property. About a year later it was purchased by the present owner.

The National Park Service's interest in Smith Island runs back thirty years or more. The first field investigation of the area by the Service is reported in "Report - Potential Area, Smith Island, Brunswick County, North Carolina" dated May 25, 1937. At least one other field investigation and report was made in the '40's. Smith Island was carefully examined and evaluated during the course of the seashore recreation area survey conducted by the National Park Service in 1954-1955. Information on it is included in "A Report on the Seashore Recreation Area Survey of the Atlantic and Gulf Coasts" published in 1955, and it is the subject of a separate report issued in the same year and entitled "Smith Island Area, North Carolina, A Report Prepared by the Seashore Recreation Area Survey."

During the last two years or so, proposals to intensively develop Smith Island have generated intense interest in preserving it and efforts to do this have reached a high pitch. Interest in the question of whether Smith Island should be preserved and protected in its natural state or be intensively commercially developed reached such proportions that the Board of Conservation and Development, sitting as a committee of the whole on April 1 and 2, 1966, made a field trip to the area and heard advocates of both schools of thought.

Many individuals and organizations are hard at work on bringing Smith Island into public ownership. Wildlife Preserves, Inc. has devoted a great deal of time and effort to the problem and, in cooperation with the North Carolina Academy of Science, in 1964 published "Smith Island and the Cape Fear Peninsula - A Comprehensive Report on an Outstanding Natural Area."

Because of the current interest in Smith Island and the fact that its last study of the area was made in 1955, the National Park Service deemed it advisable to make a field investigation and prepare a current report. The owner very kindly authorized the National Park Service to make a restudy of Smith Island for the purposes of re-evaluating the historical, biological, scenic, cultural and recreational values of the area. In company with officials of the North Carolina Department of Conservation and Development and others, representatives of the National Park Service made the field investigation during the week of July 26, 1965.

This report is based on that field study.

## II. THE AREA

### A. ACCESSIBILITY

Except for its northern edge, the proposed national monument is accessible only by boat. There are no roads or causeways to Smith Island, nor any regularly scheduled passenger boat or ferry service. Rental boats are scarce, but the state owned small boat harbor at Southport offers excellent docking, berthing and other services.

Fort Fisher and Federal Point are connected to Wilmington by U. S. Highway 421, and the state operates a toll ferry between Federal Point and the mainland of Brunswick County.

Wilmington is the nearest point with railroad and airline service. Five major highways, U. S. Highways 17, 74, 76, 117 and 421 pass through Wilmington, and Southport is accessible from U. S. 17 via State Highways 87, 133 and 211.

### B. POPULATION

Smith Island is uninhabited except for an employee of the owner who occupies quarters there periodically.

In 1960, the population of Brunswick County was 20,278, and that of New Hanover 71,742. Within 250 air miles of the island there is a population of more than 9,000,000. Cities within this radius include Richmond, Norfolk and Roanoke in Virginia, all major cities in North and South Carolina except Asheville, and Augusta and Savannah in Georgia.

### C. GENERAL CHARACTERISTICS

The area proposed for the national monument is a natural entity whose dominant components are ocean beach, dunes, forest and salt marsh. The Smith Island portion is as little disturbed by human activity as any on the sandy shores of the Atlantic Ocean and far less than all but a precious few.

The best known geographic features are Cape Fear and Frying Pan Shoals which extend seaward more than twenty miles from the cape. Both the cape and the shoals were known to early voyagers along the coast of the New World and scores of shipwrecks have occurred on them.

About thirteen miles of ocean shore are within the maximum boundaries proposed. Approximately three miles of shore run in a northwesterly

direction from Cape Fear to the mouth of the Cape Fear River, and approximately ten miles run northeasterly from Cape Fear. Of this ten miles almost seven are in Brunswick County, the remainder is in New Hanover.

In the area between Cape Creek and Fort Fisher, inlets open and close. Hazel's Inlet, opened by Hurricane Hazel in 1954, was virtually closed by 1960. Corncake Inlet has opened and closed often since Colonial times and was closed when the field investigation was made, at which time only a very small inlet at New Inlet was open.

Estimates of the acreage of the Smith Island portion vary, but in any event not more than 3,000 acres of it is upland, and this is mostly on the three northwest-southeast trending relic beach ridges now known as Bald Head Island, Middle Island and Bluff Island. Between these islands, and beyond them to Federal Point, lies the salt marsh dissected by numerous tidal creeks. A dense live oak forest covers a considerable portion of the three islands.

#### D. CLIMATE

Though not directly applicable, the climatic data collected by the weather station at Southport do serve as a guide to the climate on Smith Island, as do the data collected on the island by the Coast Guard and its predecessors. As these data indicate, Smith Island is blessed with generally mild pleasant climate most of the year.

Wind dominates the weather. In spring and summer winds are generally from the southeast and are usually balmy breezes. In late fall and winter, winds are consistently stronger and mostly northeasterly to northerly. Occasionally winds reach gale force. Sometimes Smith Island is hit by hurricanes. Weather records at Southport show the temperature there to average about 48° in January, about 80° in July, with a mean of about 64°. The percentage of all possible sunshine varies from about 53 in winter to about 68 in autumn. Coast Guard records indicate that temperatures above 92° in summer or below 25° in winter are uncommon on Smith Island. An extreme high of 94° and an extreme low of 12° were recorded by the Coast Guard.

Precipitation probably averages about 50 inches annually.

#### E. GEOLOGY AND SOILS

Although no geological research has been done on Smith Island and very little published general work pertains to it, certain generalizations about its geological history may be made.

During the most recent high stand of sea, which is estimated to have occurred some 100 - 125,000 years ago, the sea is thought to have reached an elevation 25-30 feet higher than its present elevation. Presumably, Smith Island was at this time covered by the sea. At the onset of the Wisconsin glaciation, perhaps 50 - 75,000 years ago, this sea, called by geologists the Sangamon Sea, began withdrawing. It receded gradually, with pauses of sufficient duration to allow the formation of well defined ridge features. On Smith Island, the ridges composing Bluff, Middle, and Bald Head Islands are thought to mark three successive pauses of a retreating sea, with Bluff Island the oldest and Bald Head the most recent. These ridges appear to be continuous with similarly well-defined ridges on the Brunswick County mainland and the whole complex marks pauses of a falling sea coincident with the advance of the Wisconsin Ice sheet.

At the time of the Wisconsin glacial maximum, perhaps 18 - 20,000 years ago, the sea stood between 300 and 400 feet below its present elevation, and Smith Island was part of an extensive upland extending well seaward into what is now Frying Pan Shoals. There is no conclusive data on the subject, but it is possible that the climate and vegetation were much different at this time. Mean winter temperatures may have been as much as 8° C, and mean summer temperatures as much as 5° C lower than present temperatures. Both climate and vegetation may have been of a much more boreal type than those now prevailing.

Sea level rose as the Wisconsin Ice sheet began melting some 18,000 years ago. Some 10 - 11,000 years ago it had risen to perhaps 80 - 90 feet below its present elevation. Unpublished data, gathered by Redfield and Cooper in 1964 from Walden Creek just north of Southport, indicate that as recently as 4000 years ago sea level was 9.5 - 10.0 feet lower than it is today and the rise to its present level has been essentially straight-line. Smith Island, then, is the last remnant of a more extensive Wisconsin Cape Fear Peninsula drowned by a rising sea.

There are basically two types of surficial material on Smith Island. The woodland and some of the dune and shrub areas are underlain by sands which have undergone sufficient weathering to develop a cambic, or color, B horizon. There is little evidence of clay accumulation and little structure. The reddish-yellow color of the subsoil can be taken as evidence of an extended period of oxidation. In the forested areas a heavy layer of slowly decomposing oak leaves lies on the surface of the soil and gives rise to a well developed top soil. Along the beaches and in the dune areas the older sand is overlain with sand of modern origin drifted into place and moved by recent winds and seas. All of the present beaches and high dune areas consist of such sand.

Wind and sea are ever at work and evidences of current geological activity are numerous. Inlets open and close, the wind constantly

moves sand, and under the influence of storm winds the sea changes the shore.

## F. ECOLOGY

### 1. Natural Communities.

Four major natural communities exist within the proposed area above low water: the dune and strand, shrub thicket, forest and salt marsh communities.

The dune and strand community comprises the zone of barrier dunes and open beach between the forest and the open ocean on the south and between the islands and marsh and open ocean on the east. This zone is of varying size and stability and is best developed on the southern shore where the beach is from 100 to 300 feet wide and the distance from low water to the forest varies from one-fourth mile near Cape Fear to over one mile near the river shore. Along this shore the beach is paralleled by well-developed fore dunes. On the eastern end where the beach is narrowest, the dunes are lowest, averaging 5-10 feet in height. Toward the river side the beach widens and where it swings north along the river is 200 to 300 feet wide. Here the dunes are quite high, averaging 20-30 feet. (These are the dunes which give Bald Head its name). At the edge of the forest is another line of dunes, larger than the line along the beach and averaging some 30 feet in height and in many places rising to more than 50 feet. Between these two lines of dunes the topography is low and hummocky, with numerous small dunes and swales. The most striking feature of the entire southern shore is the dense growth of sea oats (Uniola paniculata L.) which covers all of the dunes and low hummocks. In mid-summer the dunes have the aspect of a dense field of waving grain and in many places it is difficult to take a single step without walking on a clump of sea oats.

On the eastern shore, south of the inlet, the dune and beach zone is narrow, varying from 500 to 700 feet wide except at the eastern ends of Bald Head, Middle and Bluff Islands where in places it is less than 100 feet wide. The dunes on this strand are not continuous but consist of isolated hummocks separated by extensive areas of level duneless beach less than 5 feet above mean sea level. On this shore some entries in the log of the battle between land and sea are easily read. Here, as aerial photographs clearly show, the truncation by sand of the heads of Bald Head, Cape, and Deep Creeks records the fact that the sea has washed over many times. Where Hazel's Inlet closed about 1960, the land is making a counter-attack. Here, in the summer of 1965, numerous small dunelets were forming around small clumps of sea oats of seedling origin. Mostly these dunelets averaged from 1 to 2 inches to 1 to 2 feet high but a few were as high as four feet. Numerous one and two year old sea oat seedlings had each begun to collect small

quantities of sand. Dune building by natural process, free from constant interference by man, is clearly illustrated on this section of shore.

On Federal Point the dune community is wider than elsewhere but the site of Fort Fisher has been severely eroded and only a portion of this Civil War fort remains on dry land.

The shrub thicket community is nowhere well developed on Smith Island. It is evident only on the southwest corner of the island at the base of the inner dunes, along the eastern margins of Bald Head, Middle and Bluff Islands where beach and upland meet, and on the numerous small sand "islands" scattered throughout the salt marshes. It appears that the shrub thicket community suffered extensive destruction during the earlier period of grazing and burning and is now rapidly regenerating. The abundant and vigorous reproduction of cedar (Juniperus virginiana L.), groundsel (Baccharis halimifolia L.), and wax myrtle (Myrica cerifera L.) on the southern shore in the low areas between the two dune lines suggests that in time a much more extensive shrub thicket community will exist than is now the case.

On Federal Point the shrub thicket community is more evident but is still not nearly as well developed as in many other coastal areas.

The forest community on Smith Island is one of the very few relatively undisturbed extensive fragments of live oak forest remaining on the Atlantic Coast. The bulk of this forest is on Bald Head Island. On Middle and Bluff Islands, and the small un-named islands scattered through the salt marsh, the live oaks (Quercus virginiana Mill.) and palmettos (Sabal palmetto Lodd. ex Schult.) are more scattered than on Bald Head and in many places the dominant vegetation is primarily shrubby.

Early records indicate that as long ago as 1805 there was a live oak forest similar to the present one although the stand was much closer to the ocean on the southern shore. The forest is still present, and is extensive and well developed, but it is not undisturbed. During the Civil War much palmetto was cut for fortifications on Smith Island and at Fort Fisher, and the western end of Bald Head is badly disturbed by activity in connection with building Fort Holmes. Red cedar was heavily cut in 1926 and dogwood has been harvested. There is no evidence that the stand was ever extensively clear cut and the only cultivation for at least thirty years has been in a small area near the river lighthouse. Thus, despite the disturbances, this live oak forest is one of the best on the Atlantic Coast.

The salt marsh community is the largest, the least disturbed, and most important economically in the suggested area. These vast marshes





THE MARSHES FROM BALD HEAD LIGHTHOUSE.

occupy the low saline soils between Bald Head and Federal Point. They are the best examples of unspoiled low smooth cordgrass (Spartina alternifolia Loisel.) salt marsh on the North Carolina Coast. Several major community types are found in the general salt marsh community. The distribution of these types appears to be determined primarily by tide-elevation relationships and secondarily by salinity and nutrient relationships.

Smooth cordgrass is the dominant species at elevations below approximately mean high water where the surface is more or less regularly inundated by tides. Along the edges and levees of tidal creeks where the soil salinities are about equal to sea strength and inundation is regular, smooth cordgrass grows quite tall, up to 6 or 7 feet. It diminishes to less than a foot high on broad intercreek flats where salinities are higher (often approaching twice sea strength) and inundation is less regular. So far as is known, these differences in height are entirely due to environment and there are no genetic differences between the two height forms. Smooth cordgrass is limited to the low marsh by its moderate salinity and high soluble iron requirements. It becomes chlorotic and grows poorly at the upper margin of the low marsh where soluble iron contents are low.

In areas lying at just about mean high tide, generally at the heads of major creeks or at the edge of the marsh where it joins the upland, pure stands of black needle rush (Juncus roemerianus Scheele.) occur. In the high marsh, above mean high tide, there is an abrupt shift from cordgrass or black needle rush to saltmeadow grass (Spartina patens (Ait.) Muhl.), saltgrass (Distichlis spicata (L.) Greene), and sea oxeye (Borrchia frutescens (L.) DC.) which in turn grades rapidly into a shrub thicket.

The salt marsh is of great economic and ecologic importance because it is biologically a very productive community and because much of this productivity ultimately finds its way into the estuary. It is estimated that each acre of salt marsh produces somewhere between 12.5 and 15 tons of organic matter per acre per year. This compares favorably with the productivity of many other natural communities and far exceeds that of most cultivated crops. The organic detritus washed out of the marshes by tides is a major source of food for many important shellfish and game and commercial fish. Furthermore, the shallow waters surrounding these marshes inhibit the entry of larger carnivorous species and this permits the successful spawning and early development of smaller fish.

In addition to these major communities there are two small areas of fresh-water marsh and a number of linear wet depressions in the live oak forest which were wet underfoot in July 1965, and presumably could be classed as a reasonably permanent fresh water habitat. Immediately

south of Bluff Island there is an extensive area in which fresh water becomes ponded in winter. Old photographs suggest that this area was once wetter and less vegetated than it now is. It appears that natural plant succession and drift of sand from its eastern end have contributed to the filling of the pond.

## 2. Plants.

In the dune portion of the dune and strand community sea oats is by far the most abundant plant. The only other plants regularly occurring in the dunes with it are Iva imbricata Walt. and Croton punctatus Jac. Beach pea (Strophostyles helvola (L.) Ell.) is particularly abundant between the two dune lines on the southern shore. The majority of the relatively moist low swales between the dunes, which presumably accumulate fresh water during the winter, have rather dense growth of saltmeadow grass and broomsedge (Andropogon Sp.) with several species of Juncus also present. Also found in the swales are numerous young plants of wax myrtle, groundsel, and cedar. The young myrtle and groundsel are confined almost entirely to the low swales but numerous young cedars are found on the drier hammocks as well as in the swales.

Because of the dense growth of sea oats the dunes are very stable in most places and at present show little evidence of active migration. The sand binding capabilities of natural vegetation in the absence of man's disruptive activities is here vividly demonstrated. In July 1965, heavy reproduction of sea oats from seed was observed. Seedlings were confined mostly to the area between the base of the fore dunes and the high tide drift line. Where this area was fairly wide, there were many seedlings and they were accumulating considerable sand. Where the high tide washed to the base of the dunes no seedlings were observed.

The composition of the shrub thicket community is similar to that of such communities elsewhere. The dominant shrubs are yaupon (Ilex vomitoria Ait.), cedar, wax myrtle, and groundsel.

Live oak is the dominant tree throughout the forest community, but a number of other species are present and these may be locally dominant. Palmetto is abundant throughout. Other important trees and shrubs are red bay (Persea borbonia (L.) Sprengel), laurel cherry (Prunus caroliniana Aiton), American holly (Ilex opaca Aiton), yaupon, American olive (Osmanthus americanus (L.) Gray), loblolly pine (Pinus taeda L.), French mulberry (Callicarpa americana L.) wax myrtle, and dogwood (Cornus florida L.). The dominant trees average 50 feet in height. In some places, the top of the canopy forms a more or less continuous smooth surface created by the shearing effect of salt spray laden winds blowing off the ocean. In others, the canopy is much less dense and the shrub layer is more continuous. The live

oaks are often very large in diameter with wide crowns. Several herbaceous species not commonly found so close to the ocean thrive within the forest because the live oak protects them from the salt spray. The vegetation in the linear wet depressions consists of dense stands of grasses, sedges (Carex spp.), Scirpus americanus Pers., and other Cyperaceae, with willows (Salix sp.) scattered about.

In the salt marsh community, in addition to smooth cordgrass, black needle rush, salt meadow grass, saltgrass and sea oxeye, a few other plants occur. In the very highest parts of the smooth cordgrass zone, where salinities are usually greatest, glasswort (Salicornia sp.), sea lavender (Limonium sp.), and salt marsh aster (Aster tenuifolius L.) are mixed with the cordgrass.

In the two small areas of fresh water the vegetation consists of bulrush (Scirpus robustus Pursh), cattail, saltmeadow cordgrass, Fimbristylis castanea (Michx.) Vahl, Lythrum lineare L., and several large clumps of Phragmites communis Trin.

### 3. Animals

The dune and strand community seems to have the least animal life. Here the tracks of feral pigs, and sometimes the pigs themselves, may be seen. No signs of rabbit and few signs of mice and other rodents were evident when the field investigation was made. The enormous numbers of sound whole beach pea seed found in low pockets in the dunes lead to the inference that there are low populations of these animals in the dunes.

In the forest community, raccoon and grey fox appear to be common. Opossum are now uncommon and those resident may have been introduced. Gray squirrel populations appear to have declined in recent years. Otter and mink, common in the marshes, probably occur on the upland ridges from time to time. Golden mouse and cotton mouse nests have been found, and Florida wood rats were collected in 1940. Subsequent efforts to collect this wood rat have failed, but if it is still present this station is the northernmost record for it.

The salt marsh community abounds with animal life. There is a sizeable resident population of clapper rails. Egrets, herons, and other wading and shore birds feed in the marshes, as do raccoons, otter and mink. In the marsh proper are large numbers of salt marsh grasshoppers, snails, fiddler crabs, and mussels. The tidal creeks are the abode of oysters, clams and blue crabs and the nursery for shrimp and many species of game and commercial fish.

Six species of amphibians and fourteen of reptiles have been reported from the suggested area, but this information is obviously incomplete.

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CLAPPER RAIL NESTING.

Birds are found in association with all of the natural communities and many species are of taxonomic interest because the suggested national monument lies in a zone of intergradation between southern and northern sub-species.

During a recent three-day study of the birds (see Appendix II) 74 species were identified. As expected, the species associated with the salt water habitats were the most common and the density of land birds was low. White ibis and the herons were common in the salt marshes, and along the tidal creeks shore bird migration was well underway. Of especial interest was the presence of American, Upland, and Wilson's Plover among the 21 species recorded. Of the species of tern seen, the Royal Tern was most common. Mourning doves were common throughout the area and the cardinal was by far the most common Passerine of the uplands. Much less common, but found throughout the uplands, were the Carolina wren and the painted bunting.

Battery Island has been a shorebird nesting colony for many years and the site of a large heronry since 1936. Thousands of wading birds, including common, snowy, and cattle egrets, glossy and white ibis and herons inhabit the rookeries. In all, ten species of wading birds as well as terns, black skimmers and shore birds nest here.

#### 4. Marine Life

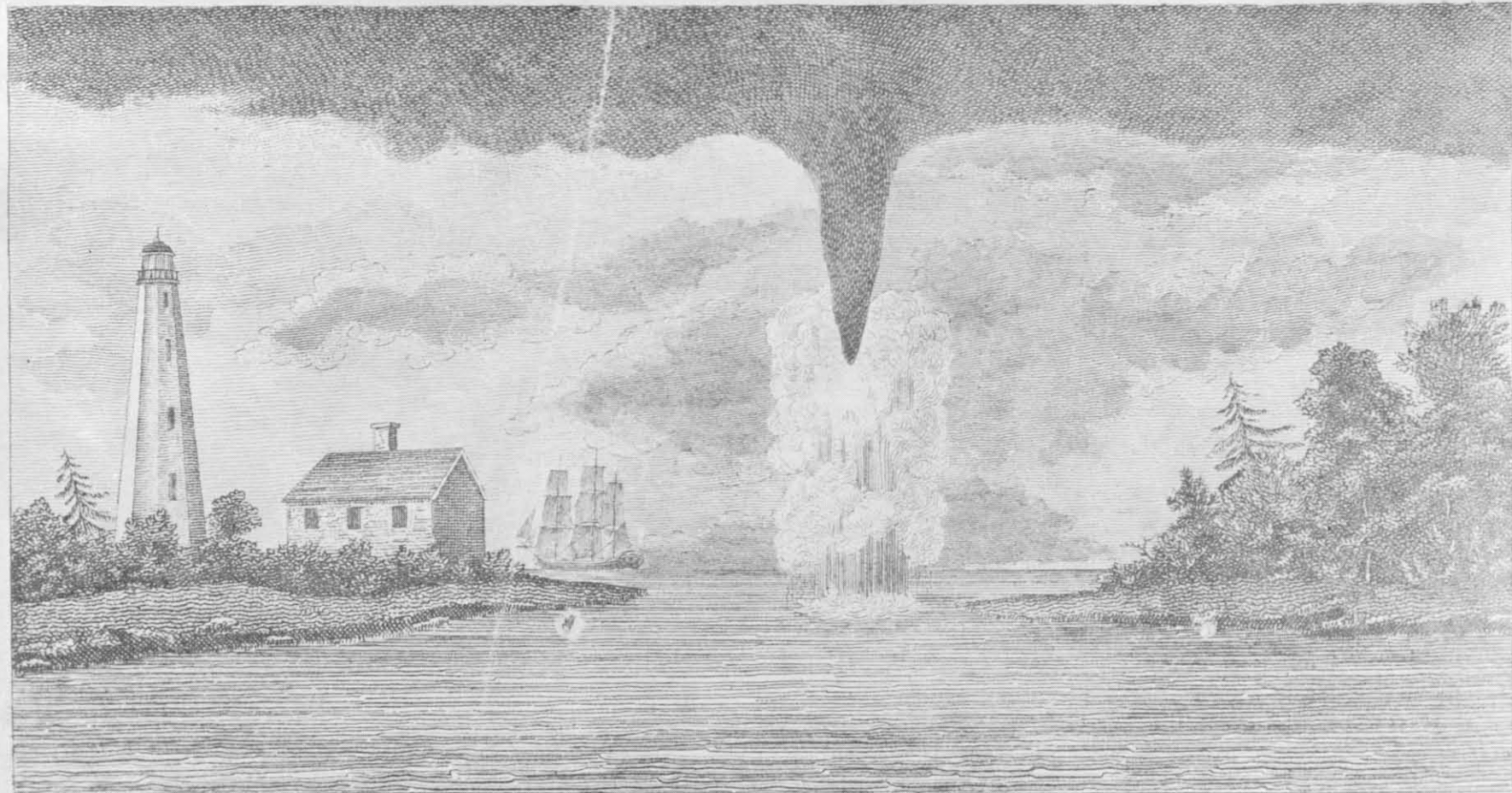
The four major marine zones associated with the Cape Fear Peninsula are tidal creek and river, ocean beach and surf, inshore Frying Pan Shoals and "The Lumps", and offshore waters on and around the shoals. An abundant vertebrate marine fauna lives in or uses these zones.

The tidal creeks and adjacent marshes are nursery areas for juvenile shrimp and fish. The rich marine life and undisturbed sand beaches of the marshes are an excellent habitat for the diamond backed terrapin and this species is abundant. In the tidal creeks on the island's northwestern side are croackers, pigfish, occasional spot, and some big tarpon.

From the ocean beach, surfcasters catch, in their season, whiting, bluefish, channel bass and other species. It is in the ocean beach and surf zone that the Atlantic loggerhead turtle is seen. This giant turtle, sometimes weighing as much as half a ton, is perhaps the most publicized animal associated with Smith Island. On the full moon during June, female loggerheads come to the island's beaches and lay their eggs in holes they dig in the sand.

The summer months bring large populations of bluefish and Spanish mackerel to the inshore parts of Frying Shoals. Spotted weakfish, flounder, black drum, and bluefish seek food in the channels and currents between the ever-changing shoals of "The Lumps."





*A view of a Water spout, seen at the entrance of Cape Fear River.*  
1805

"A VIEW OF A WATER SPOUT SEEN AT THE ENTRANCE OF THE  
CAPE FEAR RIVER" IS THE CAPTION OF THIS 1805 ENGRAVING.



In the offshore waters over and around the shoals are king mackerel, dolphin, amberjack, barracuda, and false albacore. Porpoise are frequently seen and sperm whales, humpbacked whales and black fish are occasionally sighted.

#### G. ARCHEOLOGY

From the little information available it appears that Indians camped on Smith Island, and possibly the Federal Point area, in summer and moved inland in winter to hunt. Several sites of Indian occupation have been found on Middle Island. These sites, dating from around 1500 A.D., were probably used by small family groups. Large villages are not indicated.

#### H. HISTORY

The Cape Fear Peninsula has interesting historical associations embracing some four hundred and fifty years. Giovanni da Verrazzano is thought to have gone ashore in 1524 just north of Cape Fear while in search of a port. In the summer of 1526, operating under a patent from Charles V of Spain, Lucas Vasquez de Allyon sailed from Hispaniola with a fleet of six vessels bound for the area between the Cape Fear and Savannah Rivers where lay lands patented to him. Allyon's party lost its first ship at the entrance of a large river believed to have been the Cape Fear. Massachusetts colonists had established themselves upriver from Cape Fear by the winter of 1662-63 but left before the end of 1663 because the Lords Proprietors, who in March 1663 were granted the area between 31° and 36° by Charles I of England, would not honor their claims. In May 1664 settlers from the Barbados under the leadership of John Vassall arrived, and by 1666 their frame houses and cleared fields were scattered along the west bank of the Cape Fear River from its mouth to some sixty miles upstream. By the end of 1667 these settlers had abandoned their lands on the Cape Fear for the Albemarle settlements and Tidewater Virginia.

During the late seventeenth and early eighteenth centuries, piracy flourished in the Cape Fear estuary. The most fearsome of the region's pirates was Stede Bonnet who with 39 others was captured on September 27, 1718 near the shores of Bald Head by a party commanded by Colonel William Rhett. After being tried in Charleston, most of these men were hanged.

Colonization of the lower Cape Fear River was resumed in 1725, this time permanently.

The area of the suggested national monument was involved in both the Revolution and the Civil War. During the spring of 1776 troops under command of Sir Henry Clinton occupied Smith Island, and, from June to October of that year, a garrison on Bald Head and several naval vessels kept the river entrance closed to commerce.

During the Civil War blockade running made the area militarily significant, especially after 1863 when Wilmington became so important to the Confederacy. Fort Holmes on Smith Island and Fort Fisher just north of New Inlet on Confederate Point (now Federal Point) were major units in the large defensive system the Confederacy maintained to protect "the lifeline of the Confederacy."

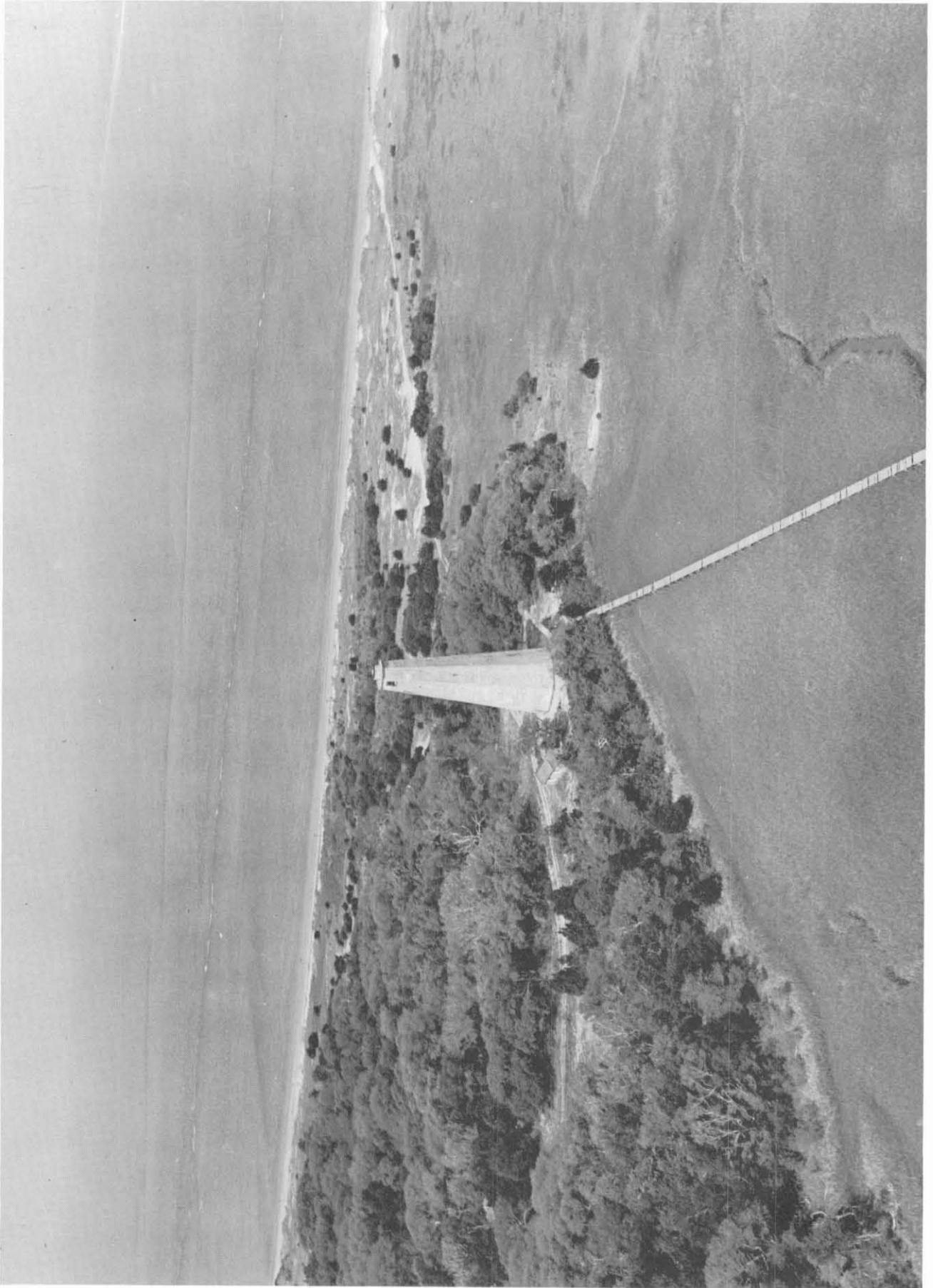
Fort Holmes, a large earthwork structure built hurriedly in the fall of 1863, is located on the western side of Smith Island between Bald Head Light and Bald Head Point. In the fall of 1864 its five batteries mounted 15 guns. The fort is very well preserved and the main breastwork, although overgrown, is still intact.

Fort Fisher, which became one of the strongest installations in the world and the largest earthwork in the Confederacy, was constructed primarily of sand and marsh grass, and mounted 48 guns. It was L-shaped with its landward (north) face extending about 2000 feet across the peninsula and its sea (east) face running well over a mile down the beach. On December 24-25, 1864, a Federal fleet of 50 vessels under Rear Admiral David D. Porter subjected Fort Fisher to a terrific bombardment. Shortly after dawn on January 13, 1865, the Federal fleet again opened fire, and the second battle of Fort Fisher began. The bombardment continued all that day and into the night. Under its cover, Major General Alfred H. Terry, who had replaced Major General Benjamin F. Butler, landed eight thousand men on the beach north of Fort Fisher. The fierce Naval bombardment continued all day and all night on January 14, and until mid-afternoon on January 15 when the Federal forces began their attack on the fort. When that attack began to falter, the Naval bombardment was resumed to support Terry's troops. Finally, about 10 p. m., the Confederate forces surrendered and one of the most important engagements in the Civil War ended. The loss of the mouth of the Cape Fear River sealed the doom of the Confederate States of America.

Today, only a part of Fort Fisher remains. The rest has been obliterated by the sea.

On Smith Island, as elsewhere on the North Carolina coast, the U. S. Lifesaving Service made heroic rescues. From 1882 to 1913 the Lifesaving Service maintained a station on Cape Fear itself. This was replaced by a station located about halfway between the Cape and the mouth of the river. This later station remained in operation until 1937.

Aside from Forts Fisher and Holmes, there are two other structures of historical interest--the old Lighthouse and "The Rocks." The lighthouse, built in 1817, is the oldest lighthouse tower standing on the North Carolina coast. Except for the fourteen year period between



"OLD BALDY." THE BALD HEAD LIGHTHOUSE--BUILT 1817.

1866 and 1880, the Bald Head light was in continuous service until finally extinguished in 1935. The 85 foot brick tower appears still to be structurally sound. "The Rocks", a stone dam or levee, was constructed by the Corps of Engineers to close New Inlet which had opened in 1761. Built between 1875 and 1882 at a cost of \$480,000, the project was a major undertaking of its time.

The interesting history of the Cape Fear River pilots goes back more than 200 years. Now operating out of Southport, many lived on Smith Island.

In 1963 Captain Charlie Swan, retired Cape Fear lighthouse keeper, reminisced about the pilots and their community:

"Yes, there was a settlement on Bald Head. Call it a town, if you will. It was named Bald Head. Back in the 1880's there were at least 150 persons living over there. There were the lighthouse keepers and their families.

"As you know, piloting was a highly competitive business back in those days. The first pilot boat to reach a ship preparing to enter the harbor, got the job of taking them over the bar and up the river. For that reason, many of the pilots moved over to Bald Head, to get a start on those who stayed on the mainland. The minute a ship was safely through the channel, friendly relations all started again. The pilots all built houses close together. It was a community in the woods. There were perhaps twenty-five or thirty Negroes brought over. These also lived on the island and helped launch, and secure, the pilot boats. A few of these were pretty big affairs--regular two-master schooners."



ABANDONED COAST GUARD BUILDINGS NEAR CAPE FEAR.

### III. PRESENT DEVELOPMENT AND USE

On Smith Island the only development, aside from the abandoned Coast Guard installations, is the caretaker's quarters. The major developments on Federal Point are Fort Fisher State Historic Site, the State ferry landing, U. S. Highway 421 terminating at the ferry landing, and a few scattered minor structures. Development at the state historic site includes a visitor center and parking areas completed in 1965.

The principal present uses are outdoor recreation and commercial fishing. On Smith Island, these uses are sporadic. Federal Point is more heavily used for outdoor recreation because of easy access over U. S. Highway 421 and the existence of the state historic site.





SABAL PALMETTO REACHES ITS NORTHERN LIMIT AT SMITH ISLAND.

#### IV. SIGNIFICANCE AND NEED FOR CONSERVATION

##### A. SIGNIFICANCE

The suggested Cape Fear National Monument has three-fold significance. It possesses rare natural values, it is associated with outstanding historical events and includes important historic structures, and it offers excellent opportunity for recreational use of natural resources.

Considered in its entirety as a natural complex, Smith Island is one of the wildest and most primitive areas on the Atlantic Coast. Only one or two other areas equal or surpass it in this respect. The live oak forest is one of the best examples of this type of sand strand forest in existence and one of the very few remnants of coastal forest which can still be recognized as part of the primitive native forest. The extensive stable dune system on Smith Island is especially interesting because it is one of the very best illustrations of the degree to which coastal dunes may become stabilized by entirely natural processes. The lush growth of dune grasses, developed naturally without planting or fertilizing, is especially noteworthy. The 9000 acre complex of salt marsh and shallow water, entirely free from diking, drainage, and other management practices, highly productive of shell fish, and harboring extensive populations of clapper rails, is an excellent example of this natural community type. The shores of Smith Island are one of the last safe breeding areas for loggerhead turtles left in southeastern United States. Palmetto here reaches the northernmost limits of its distribution as does a common lichen of coastal forests in the deep south, Herpothallon sanguineum (Sw.) Tobl. The heron rookery on Battery Island supports a great volume of diverse bird life.

The historical values, especially those related to the Civil War, are quite significant.

The suggested area would provide many recreation opportunities. Boating, fishing, nature study, photography, painting, beachcombing and hiking would be among these. Facilities for more concentrated uses, camping and picnicking for example, could be provided on Federal Point without damaging or detracting from the major natural values.

The infinite beauty of the area is a delight to the beholder. The cloud patterns in the sky, the foaming surf, the sandy beaches, the sea oats bending gracefully in the wind, the stillness of the live oak forest, the variety of birds in their seasons, and the broad marshes cut into free flowing patterns by the tidal creeks are all part of the scene that greets the eye.

In its natural state, the Smith Island portion of the suggested area is admirably suited as a place where long range scientific research can be carried on. Assistant Secretary Cain stressed the need for such areas in these words:



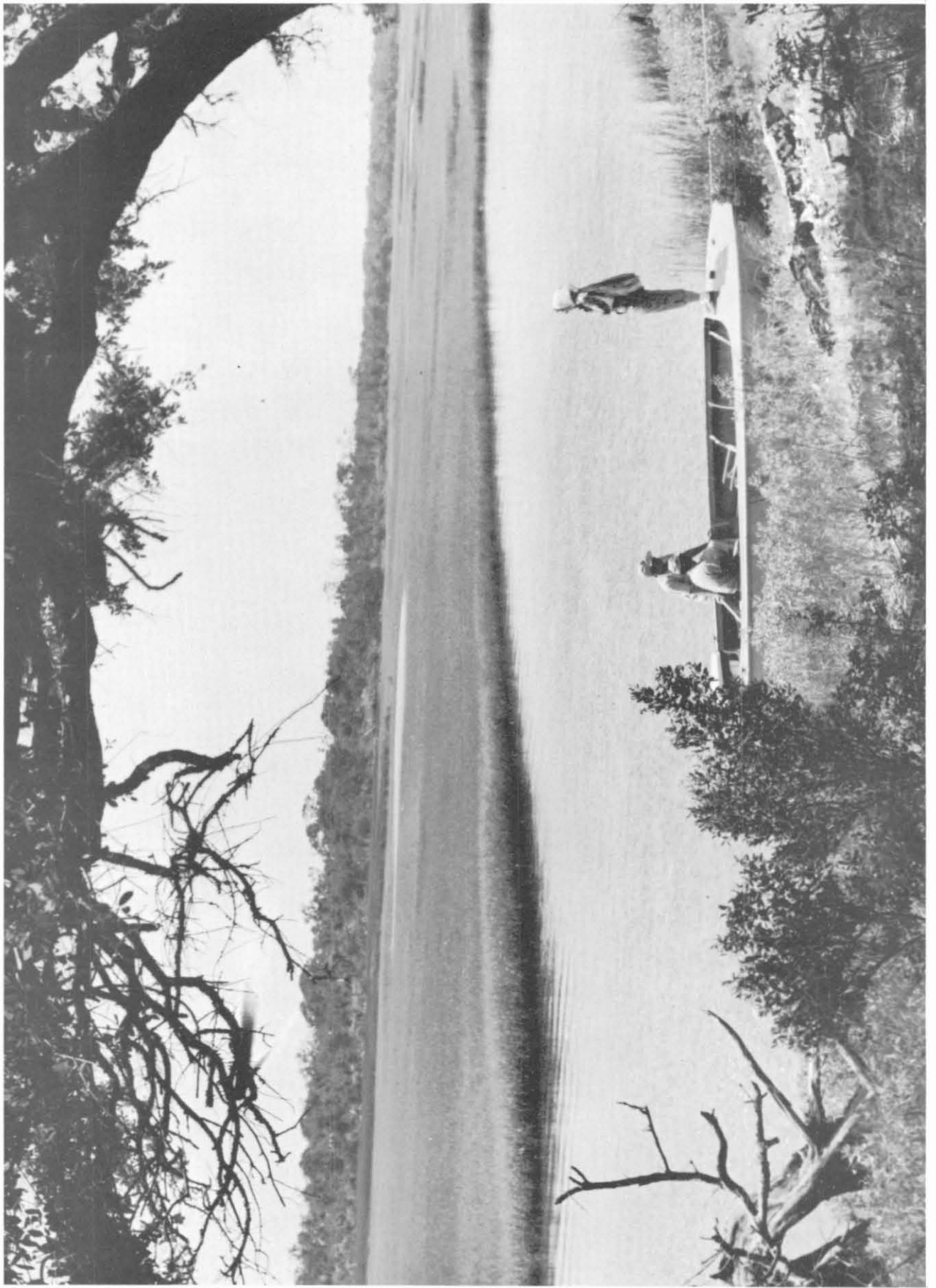
"I would add yet another category to the wild lands to be preserved. It can be accommodated in most cases among the kinds of areas I have already mentioned. There is a need for areas where natural history and scientific research can be carried on over many years with reasonable freedom from disturbing developments and use. Despite all our proud advances in science, we know remarkably little about nature. The science of ecology is still in its infancy. Although applicable also to managed forests and pastures and to agricultural fields, ecological knowledge of natural communities can provide an invaluable--I believe indispensable--baseline from which we can measure and evaluate the changes which man imposes on nature."

Smith Island would be invaluable as a research and control area for shore erosion control. Our dune building and stabilizing programs are now based on a very superficial understanding of natural processes and, if our programs are ever to become more effective, we must understand much more thoroughly how, in nature, dunes are built, stabilizing grasses germinate and grow, and under what conditions dunes are most susceptible to destruction by storm forces. Basic research in coastal geomorphology and sedimentation is an urgent, immediate necessity.

#### B. NEED FOR CONSERVATION

Left in private ownership the suggested Cape Fear National Monument would inevitably be intensively commercially developed.

When the development plan for Smith Island completed in the fall of 1963 is carried out, not one square foot of the highland will be left untouched by the bulldozer and not one square foot of marsh left undisturbed by dredging operations. When the development proposed in this plan is completed, the natural features, as they exist today, will be irrevocably destroyed. It appears to be the owner's intention to push this development forward as rapidly as it can be financed. Only in public ownership will the natural values of the suggested monument area be protected and preserved.



BALD HEAD CREEK BETWEEN BLUFF AND MIDDLE ISLANDS.

## V. SUITABILITY AND FEASIBILITY

### A. SUITABILITY

Smith Island is one of the few remaining areas on the Atlantic Coast where man's effect on the landscape has been relatively limited. The island still has about it an aura of primitive wildness, and the integrity of the ecology has been less violated than that of almost any other area on the Atlantic Coast. Although Smith Island is not a virgin area, most of the major influences of man, except the roads, have been repaired by entirely natural processes and are not now apparent. The salt marshes, the dunes, and much of the forest bear virtually no signs of man's presence. In short, the island today probably looks much like it did to the Indians and the first white settlers.

Federal Point, though not distinguished by its natural features from many other beach areas, still presents a quite natural appearance.

Of the historic structures, the old Bald Head Lighthouse could fairly easily be restored to its original appearance except possibly for the light itself. Restoration of the southeastern face of Fort Holmes, if desired, should present no problems. The other two sides have been generally obliterated by sand, and their restoration would be much more difficult. A good deal of the site of Fort Fisher is now under water.

With boundaries as proposed in Plan 1, the suggested Cape Fear National Monument would be adaptable to effective monument preservation, administration, interpretation, development and use.

Development for and volume of visitor use cannot be unlimited but must be scaled to that which would not impair natural values on Smith Island.

Very interesting interpretive programs featuring both natural and human history could be carried on.

The boundaries in Plan 1 would comprise a comprehensive unit adequate for effective preservation, administration, and development for visitor use. The smaller areas in Plans 2 and 3 would include the most important natural features, but would exclude the most important historical feature--Fort Fisher. Very little development for recreational use would be possible in the Plan 3 area. These smaller areas might not, in the long run, prove entirely adequate for effective preservation.

Smith Island is now accessible only by boat. Federal Point is accessible from the north via U. S. Highway 421 and from the west via state operated toll ferry. Boat access could be augmented by regularly scheduled passenger boat service.

B. FEASIBILITY

It is believed that all of the privately owned acreage in the Smith Island portion and most of that in the Federal Point portion could be purchased by negotiation. The State of North Carolina might be willing to donate the state owned marsh and water within the suggested area, but what the State's position is on including Fort Fisher is not known.

There is widespread interest and support for the preservation of Smith Island in its natural state. There is also interest in some quite influential quarters in commercial development of the suggested area.

## VI. BOUNDARIES AND ACREAGES

Three alternate plans may be considered for the suggested Cape Fear National Monument.

Plan 1 would include all land, marsh and water bounded on the north by the northern boundary of Fort Fisher State Historic Site, on the south and east by the Atlantic Ocean, and on the west by the Cape Fear River. The western boundary would extend into the river sufficiently to include Battery Island and Striking Island. Estimates of the acreages within these boundaries vary but the 1955 Seashore Recreation Area Survey places the acreage at about 13,000. Less than one third of this is land.

The Plan 1 boundaries will provide the area required for including all features, both natural and historical, while also providing the space for a large volume of active recreation use.

Plan 2 would exclude from the Plan 1 boundaries Fort Fisher State Historic Site and with it the most important historical feature. Acreage would be about 200 acres less than on Plan 1.

Plan 3 would exclude from the Plan 1 boundaries all of Federal Point including Fort Fisher. About 12,000 acres of land, marsh and water, would be included in these boundaries. Only about a fourth of the area would be land. To protect natural values, recreational use would have to be quite limited.

## VII. LAND STATUS

Ownership of all land, marsh and tidal creeks south of a point about a mile north of the Brunswick-New Hanover County line is claimed by one person. This tract includes all of Smith, Battery and Striking Islands and an estimated 12,000 acres. However, the office of the Attorney General of North Carolina has stated that the State of North Carolina probably owns the marshes and tidal creeks, which make up some 9,000 of the 12,000 acres. A title search and survey would be required to prove this.

That portion of the approximately 1,000 acres on Federal Point lying between U. S. Highway 421 and the Cape Fear River is owned or leased by the Department of Defense as a part of the Sunny Point Ordnance Depot. The remainder is in several privately owned tracts and the state historic site.

## VIII. RESOURCE USE AND POSSIBLE DEVELOPMENT

### A. RESOURCE USE

The area should be divided into two zones--one south of New Inlet and one north of it.

The area south of New Inlet, including Smith, Battery and Striking Islands and their adjacent marshes and tidal creeks, should be zoned as the natural area. In this area preservation and protection of the natural features for certain types of public use and enjoyment would be paramount. Preservation, protection and interpretation of historic values and scientific research would also be important uses.

The area north of New Inlet, comprising Federal Point, should be zoned as the recreational and historical area, that portion required for protection, preservation and interpretation of Fort Fisher being the the historical area and the remainder the recreational area.

### B. POSSIBLE DEVELOPMENT

In the portion of the suggested national monument south of New Inlet, development should be strictly limited to that required for preservation and protection of the area, and such development for public use and scientific research as can be provided without damage or disturbance to natural values. Development for public use should include only reasonable boat access and facilities for interpretation of the natural and historical features. No causeways or other structures to provide vehicular access should be built.

That portion of the national monument north of New Inlet is the only portion that can be intensively developed for recreational use without extensive damage to natural values. It should be so developed with, of course, due care for the preservation and protection of the important historic features and values. Development should include the facilities required for such public uses as swimming, fishing, boating, camping, and picnicking and facilities for interpretation. Motels, hotels, restaurants and the like can and should be provided by private enterprise outside the boundaries of the monument.

It might be advisable to locate the headquarters area in or near Southport.

LIST OF VASCULAR PLANT SPECIES COLLECTED ON SMITH ISLAND

(Arrangement by families and nomenclature according to "Guide to the Vascular Flora of the Carolinas")

Pteridaceae

*Pteridium aquilinum*

Aspleniaceae

*Asplenium platyneuron*

Polypodiaceae

*Polypodium polypodioides*

Pinaceae

*Pinus taeda*

Cupressaceae

*Juniperus virginiana*

Typhaceae

*Typha latifolia*

Poaceae

*Andropogon* sp.

*Arthraxon hispidus* var. *cryptatherus* ?

*Cenchrus pauciflorus*

*Chloris petraea*

*Elymus virginicus* var. *glabriflorus*

*Melica mutica*

*Panicum commutatum*

*Panicum lancearium*

*Panicum sphaerocarpon*

*Paspalum ciliatum*

*Phragmites communis*

*Spartina alterniflora*

*Spartina patens*

*Sphenopholis obtusata*

*Uniola laxa*

*Uniola paniculata*

Cyperaceae

*Carex longii*

*Dichromena colorata*

*Fimbristylis spadicea*

*Scirpus americanus*

*Scirpus robustus*

*Scleria nitida*

*Scleria triglomerata*



Arecaceae

Sabal palmetto

Commelinaceae

Commelina erecta

Juncaceae

Juncus biflorus

Juncus bufonius

Juncus megacephalus

Juncus platyphyllus

Juncus roemerianus

Liliaceae

Smilax auriculata

Smilax bona-nox

Yucca sp.

Myricaceae

Myrica cerifera

Salicaceae

Populus alba

Salix caroliniana

Salix nigra

Betulaceae

Carpinus caroliniana

Fagaceae

Quercus laurifolia

Quercus virginiana

Moraceae

Morus rubra

Ficus carica

Urticaceae

Boehmeria cylindrica

Parietaria floridana

Polygonaceae

Polygonum punctatum

Rumex hastatulus

Chenopodiaceae

Salicornia virginica

Phytolaccaceae

Phytolacca americana

Caryophyllaceae

Arenaria lanuginosa  
Arenaria serphyllifolia  
Schleranthus annuus  
Silene antirrhina

Magnoliaceae

Magnolia grandiflora

Lauraceae

Persea borbonia

Brassicaceae

Lepidium virginicum

Rosaceae

Crataegus uniflorus  
Prunus caroliniana  
Rubus betulifolius

Leguminosae

Desmodium paniculatum  
Melilotus officinalis  
Robinia pseudo-acacia  
Strophostyles helvola

Rutaceae

Zanthoxylum clava-herculis

Euphorbiaceae

Croton punctatus  
Euphorbia polygonifolia  
Euphorbia supina

Anacardiaceae

Rhus copallina  
Rhus radicans

Aquifoliaceae

Ilex opaca  
Ilex vomitoria

Rhamnaceae

Berchemia scandens

Vitaceae

Ampelopsis arborea  
Parthenocissus quinquefolia  
Vitis aestivalis  
Vitis labrusca  
Vitis rotundifolia

Malvaceae

Kosteletzkya virginica

Hypericaceae

Ascyrum hypericoides

Cistaceae

Lechea villosa

Passifloraceae

Passiflora lutea

Cactaceae

Opuntia drummondii

Lythraceae

Lythrum Lineare

Onagraceae

Oenothera humifusa

Araliaceae

Aralia spinosa

Apiaceae

Hydrocotyle umbellata

Ptilimnium capillaceum

Sanicula canadensis

Spermolepsis divaricata

Cornaceae

Cornus florida

Ericaceae

Vaccinium arboreum

Vaccinium corymbosum

Plumbaginaceae

Limonium nashii ?

Sapotaceae

Bumelia lycioides

Oleaceae

Osmanthus americanus

Loganiaceae

Gelsemium sempervirens

Polypremum procumbens

Gentianaceae

Sabatia stellaris

Apocynaceae

Nerium oleander

Asclepiadaceae

Cynanchum palustre

Convolvulaceae

Cuscuta sp.

Polemoniaceae

Phlox drummondii

Verbenaceae

Callicarpa americana

Lippia nodiflora

Verbena scabra

Lamiaceae

Monarda punctata

Solanaceae

Physalis viscosa ssp. maritima

Solanum gracile

Scrophulariaceae

Linaria canadensis

Verbascum thapsus

Plantaginaceae

Plantago aristata

Plantago lanceolata

Rubiaceae

Galium hispidulum

Galium pilosum

Caprifoliaceae

Lonicera sempervirens

Campanulaceae

Specularia perfoliata

Asteraceae

Ambrosia artemisiifolia

Aster tenuifolius

Baccharis angustifolia

Baccharis halimifolia  
Borrichia frutescens  
Elephantopus nudatus  
Erigeron canadensis  
Eupatorium capillifolium  
Gaillardia pulchella  
Gnaphalium chilense  
Gnaphalium purpureum  
Helianthus argyrophyllus  
Heterotheca subaxillaris  
Lactuca canadensis  
Lactuca graninifolia  
Solidago sempervirens  
Sonchus oleraceus

Collections made by:

R. E. Coker, University of North Carolina April 1918  
Robert Wilbur, Duke University June 1959  
A. W. Cooper, N. C. State University July 1965,  
September 1965

## BIRDS

The following is a list of the birds observed by Paul W. Sykes, Jr. on Smith Island, Brunswick County, North Carolina, on 27, 28 and 29 July 1965.

|  | 7/27 | 7/28 | 7/29 |
|--|------|------|------|
| Brown Pelican ( <u>Pelecanus occidentalis</u> )            | 2    |      |      |
| Double-crested Cormorant ( <u>Phalacrocorax auritus</u> )  |      |      | 1    |
| Common Egret ( <u>Casmerodius albus</u> )                  | 2    | 8    | 3    |
| Snowy Egret ( <u>Leucophoyx thula</u> )                    | 10   | 15   | 8    |
| Louisiana Heron ( <u>Hydranassa tricolor</u> )             | 18   | 18   | 10   |
| Little Blue Heron ( <u>Florida caerulea</u> )              | 4    | 16   | 6    |
| Green Heron ( <u>Butorides virescens</u> )                 | 8    | 6    | 4    |
| Black-crowned Night Heron ( <u>Nycticorax nycticorax</u> ) | 1    |      | 4    |
| Least Bittern ( <u>Ixobrychus exilis</u> )                 |      | 1    |      |
| Glossy Ibis ( <u>Plegadis falcinellus</u> )                |      | 4    |      |
| White Ibis ( <u>Eudocimus albus</u> )                      | 18   | 35   | 12   |
| Black Duck ( <u>Anas rubripes</u> )                        | 6    |      |      |
| Osprey ( <u>Pandion haliaetus</u> )                        | 3    | 4    | 4    |
| Clapper Rail ( <u>Rallus longirostris</u> )                | 1    | 12   | 3    |
| American Oystercatcher ( <u>Haematopus palliatus</u> )     |      | 6    |      |
| Semipalmated Plover ( <u>Charadrius semipalmatus</u> )     | 2    | 15   | 1    |
| Piping Plover ( <u>Charadrius melodus</u> )                |      | 4    |      |
| Wilson's Plover ( <u>Charadrius wilsonia</u> )             |      | 46   |      |
| American Golden Plover ( <u>Pluvialis dominica</u> )       |      | 1    |      |
| Ruddy Turnstone ( <u>Arenaria interpres</u> )              |      | 5    |      |
| Whimbrel ( <u>Numenius phaeopus</u> )                      | 24   | 50+  | 40+  |
| Upland Plover ( <u>Bartramia longicauda</u> )              |      |      | 2    |
| Spotted Sandpiper ( <u>Actitis macularia</u> )             | 12   | 14   | 15   |
| Solitary Sandpiper ( <u>Tringa solitaria</u> )             |      |      | 2    |
| Willet ( <u>Catoptrophorus semipalmatus</u> )              | 18   | 40+  | 35   |
| Greater Yellowlegs ( <u>Totanus melanoleucus</u> )         | 4    | 1    |      |
| Lesser Yellowlegs ( <u>Totanus flavipes</u> )              | 1    | 2    |      |
| Knot ( <u>Calidris canutus</u> )                           |      | 3    |      |
| Least Sandpiper ( <u>Erolia minutilla</u> )                |      | 6    |      |
| Short-billed Dowitcher ( <u>Limnodromus griseus</u> )      | 9    | 40+  | 10   |
| Stilt Sandpiper ( <u>Micropalama himantopus</u> )          |      | 1    |      |
| Semipalmated Sandpiper ( <u>Ereunetes pusillus</u> )       |      | 12   | 6    |
| Western Sandpiper ( <u>Ereunetes mauri</u> )               |      | 4    |      |
| Marbled Godwit ( <u>Limosa fedoa</u> )                     |      | 12   |      |
| Sanderling ( <u>Crocethia alba</u> )                       | 50+  | 100+ | 14   |
| Great Black-backed Gull ( <u>Larus marinus</u> )           | 1    |      |      |
| Herring Gull ( <u>Larus argentatus</u> )                   | 40+  | 20   | 9    |
| Ring-billed Gull ( <u>Larus delawarensis</u> )             | 8    | 6    |      |

|   | 7/27 | 7/28 | 7/29 |
|---|------|------|------|
| Laughing Gull ( <u>Larus atricilla</u> )                  | 15+  | 18+  | 10   |
| Gill-billed Tern ( <u>Gelochelidon nilotica</u> )         | 14   | 30   | 12   |
| Forster's Tern ( <u>Sterna forsteri</u> )                 |      | 12   | 4    |
| Common Tern ( <u>Sterna hirundo</u> )                     | 25   | 8    | 6    |
| Least Tern ( <u>Sterna albifrons</u> )                    | 40+  | 25+  | 15   |
| Royal Tern ( <u>Thalasseus maximus</u> )                  | 225+ | 150+ | 30   |
| Caspian Tern ( <u>Hydroprogne caspia</u> )                | 1    |      |      |
| Black Tern ( <u>Chlidonias niger</u> )                    |      | 7    |      |
| Black Skimmer ( <u>Rynchops nigra</u> )                   |      | 6    |      |
| Mourning Dove ( <u>Zenaidura macroura</u> )               | 2    | 42   | 22   |
| Ground Dove ( <u>Columbigallina passerina</u> )           |      | 3    |      |
| Great Horned Owl ( <u>Bubo virginianus</u> )              |      |      | 1    |
| Chimney Swift ( <u>Chaetura pelagica</u> )                |      |      | 1    |
| Ruby-throated Hummingbird ( <u>Archilochus colubris</u> ) |      |      | 1    |
| Belted Kingfisher ( <u>Megaceryle alcyon</u> )            | 2    |      | 1    |
| Eastern Kingbird ( <u>Tyrannus tyrannus</u> )             | 1    |      |      |
| Tree Swallow ( <u>Iridoprocne bicolor</u> )               | 2    | 2    | 35   |
| Barn Swallow ( <u>Hirundo rustica</u> )                   | 75+  | 100+ | 45+  |
| Purple Martin ( <u>Progne subis</u> )                     | 10   |      | 6    |
| Carolina Wren ( <u>Thryothorus ludovicianus</u> )         | 3    | 1    | 15   |
| Long-billed Marsh Wren ( <u>Telmatodytes palustris</u> )  | 1    | 2    |      |
| Mockingbird ( <u>Mimus polyglottos</u> )                  |      |      | 2    |
| Blue-gray Gnatcatcher ( <u>Polioptila caerulea</u> )      | 1    |      | 4    |
| White-eyed Vireo ( <u>Vireo griseus</u> )                 |      |      | 7    |
| Black-and-white Warbler ( <u>Mniotilta varia</u> )        |      |      | 1    |
| Prothonotary Warbler ( <u>Protonotaria citrea</u> )       |      |      | 1    |
| Prairie Warbler ( <u>Dendroica discolor</u> )             |      | 1    | 10   |
| Yellowthroat ( <u>Geothlypis trichas</u> )                | 2    | 1    | 1    |
| American Redstart ( <u>Setophaga ruticilla</u> )          |      |      | 1    |
| Red-winged Blackbird ( <u>Agelaius phoeniceus</u> )       | 8    | 20   | 17   |
| Orchard Oriole ( <u>Icterus spurius</u> )                 |      |      | 1    |
| Boat-tailed Grackle ( <u>Cassidix mexicanus</u> )         | 30   | 80+  | 45+  |
| Cardinal ( <u>Richmondena cardinalis</u> )                | 72   | 2    | 52   |
| Indigo Bunting ( <u>Passerina cyanea</u> )                | 1    |      |      |
| Painted Bunting ( <u>Passerina ciris</u> )                | 1    | 2    | 10   |
| Seaside Sparrow ( <u>Ammospiza maritima</u> )             | 1    |      | 1    |
| <hr/>   |      |      |      |
| TOTAL SPECIES FOR EACH DAY:                               | 44   | 52   | 49   |
| TOTAL SPECIES FOR THE THREE DAYS: -----                   |      |      | 74.  |

SCALE: 0 4000 8000 FEET

**suggested**  
**Cape Fear**  
**National**  
**Monument**

- LEGEND
- - BOUNDARY 1
  - ▨ - BOUNDARY 2
  - ▩ - BOUNDARY 3

LEGEND

O N S L O W

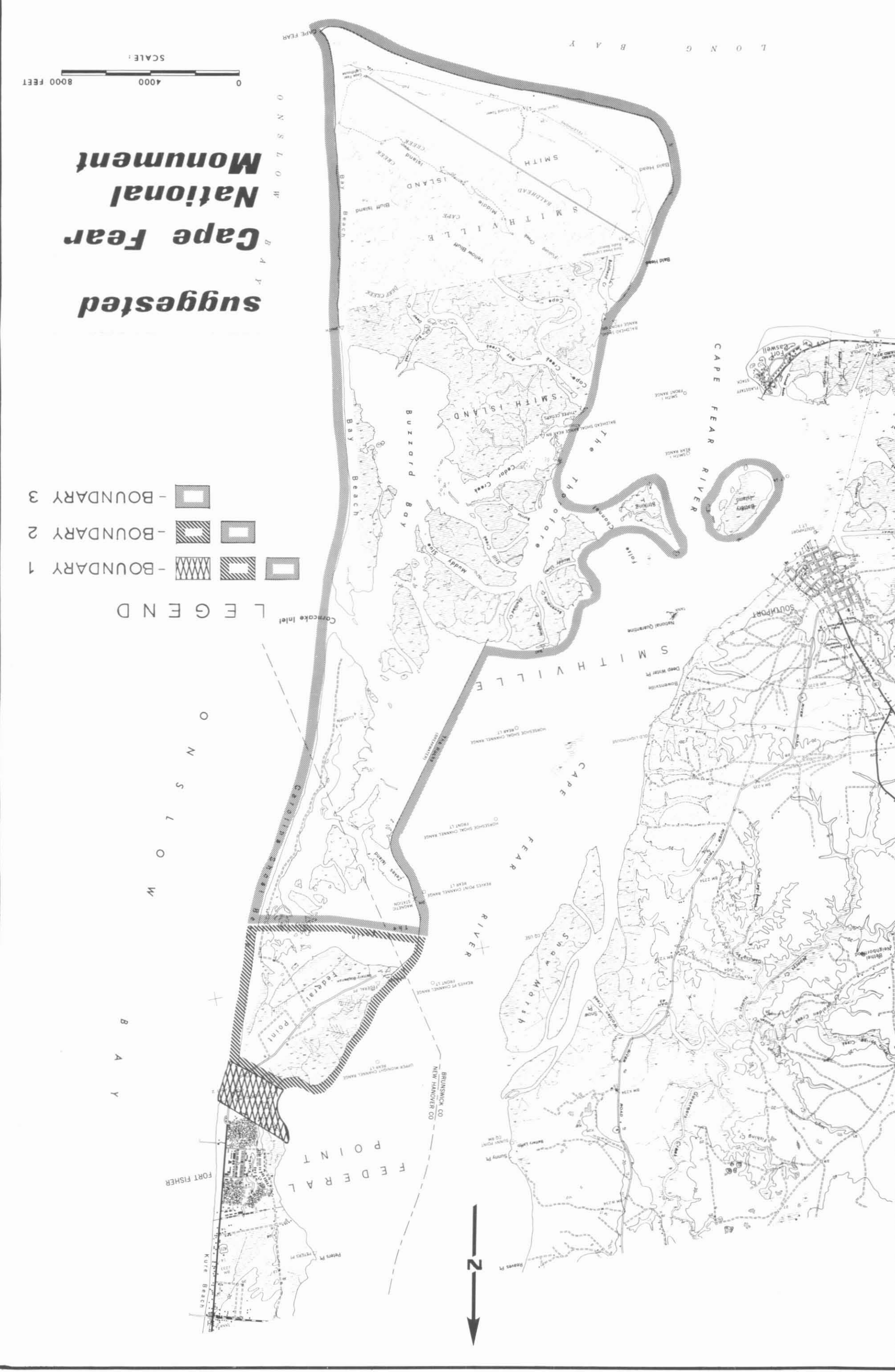
B A Y

FEDERAL POINT

FORT FISHER

Peters Pt  
Kure Beach

BRUNSWICK CO  
NEW HANOVER CO



L O N G

O N S L O W

B A Y

CAPE FEAR RIVER

SOUTHPORT

SMITHVILLE

CAPE FEAR RIVER

RIVER

SNOW MOUND

Buzzard Bay

Smithville

Corncocke Inlet

FEDERAL POINT

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| National Park Service  | 3                     |

