Pamlico Citizens' Advisory Committee
Hatteras Community Center
Hatteras Village, NC
June 17, 1989
2:00 pm

Attendance - See Attachment A

Chairman Carter called the meeting to order at 2:05 pm and welcomed those present. He briefly described the Albemarle-Pamlico Estuarine Study (A/P Study) to the members of the public that were present and recognized the P-CAC members in attendance.

In discussing the agenda he explained that the last several P-CAC meetings were being held in the outer reaches of the Pamlico area to make possible public comment from the people living there. Also, the format of inviting experts on issues of local interest to those localities, serves as an opportunity to educate the public on those issues, an aim of the A/P Study.

A motion by Luther Daniels to accept the minutes of the previous meeting (May 17) ws made and seconded by Ernie Larkin. Motion carried.

Program Update - Joan Giordano for Bob Holman - See Attachment B.

Public Participation Update - Joan Giordano. See Attachment C.

Elaboration of the purpose of the Status and Trends document was made. It was determined that the CACs needed to define/resolve their role (beyond those members sitting on S&T task forces) concerning the document. Dr. Larkin suggested that perhaps a committee of P-CAC members could look at the draft copy of the document and give every member the opportunity to comment. Chairman Carter suggested that the August P-CAC meeting could be dedicated to that purpose. It was decided that a draft copy of the Status & Trends document be sent to the CACs three weeks prior to the next CAC meetings (August). The Status & Trends document is due in draft form by the first week of August.

The subject of vacancies on the P-CAC was discussed. Chairman Carter reported that there were two formal resignations with a very strong possibility of a third occurring. He asked the P-CAC to keep in mind potential nominees' expertise and geographic location, in order to retain the recommended balance for the committee. The Policy committee, scheduled to meet on Aug. 31, has the final authority in naming persons to the CACs.

Chairman Carter introduced Donna Moffitt, Director of the Outer Continental Shelf Office, Dept. of Administration, who presented a program on "Mobil Oil Co.'s Offshore Exploration Proposal." See Attachment D. Questions and answers ensued.

Chairman Carter then introduced Rich Shaw, Div. of Coastal Management, NRCD, who presented a program on Maritime Forests. See Attachment E. Questions and answers ensued.

There being no further business, the meeting was adjourned at 4:45 pm. The next meeting will be held in August (No July meeting) at a time and place to be arranged.

Pamlico Citizens' Advisory Committee
Hatteras Community Center
Hatteras Island
June 17, 1989
2:00 pm

AGENDA

Welcome	Chairman Carter
Consideration of Minutes	
Program Update	Joan Giordano
Public Participation Update	Joan Giordano
Introduction of Donna Moffitt	Chairman Carter
Mobil Oil Co.'s Offshore Exploration Proposal	Donna Moffitt OSC Office N.C. Dept. of Admin.
Introduction of Rich Shaw	Chairman Carter
Maritime Forests	Rich Shaw Div. of Coastal Mgmt. NRCD
Questions/Answers & Public Comment	
Adjourn	

Attachment A

P-CAC attendance Sheet
June 17, 1989

Name	Affiliation
Joan Giordano	A/P Study
J.J. Giordano	self
Holly Reid (+family)	USEPA
Phil Olsen	HIOU
Ernie Larkin	CAC
[illegible] W Daniels	CAC
Todd Miller	NCCF
Peggy Gorman	self
Debbie Wells - Ocracoke	self / Legasea
Pat Garber	self
Bacon Wright	Self
Ann Ehringhaus	Ocracoke Island
Mickey Baker	Ocracoke / Legasea
~~[illegible]~~	~~Ocracoke Legasea~~
JACK MITCHELL	Friends of HATTERAS / FRISCO League
Joan & Jack Bartlett	Frisco Civic League
Chas. J. Harbrader, Jr.	Friends of Hatteras
Carleton A. & Doris Harbrader	Friends of Hatteras
Ronald & Patricia McLaren	Friends of Hatteras
Betty & Rick Gray	Washington Daily News
Jeff Furness (for Rann Carpenter)	Texasgulf - CAC
Derb Carter	P-CAC
Todd Miller	P-CAC
Jeff Smith	P-CAC
Ralph Jarvis	P-CAC

Attachment B

ALBEMARLE-PAMLICO ESTUARINE STUDY
DIRECTOR'S REPORT
PAMLICO CITIZENS' ADVISORY COMMITTEE
JUNE 17, 1989

1) FY 1989 BUDGET

a) Annual Work Plan for OMEP tentatively approved and funds being transferred to EPA IV Office

b) All cooperative agreements completed and sent to EPA Region IV Office by June 1, 1989

2) EARLY DEMONSTRATION PROJECTS

a) Greenville Urban BMP project has been tentatively approved by OMEP on June 6, 1989

b) There is a possibility of additional funds for another demonstration project but we will not know about this potential funding until August.

3) DATA MANAGEMENT

a) Draft Users' Needs Assessment Report (UNAR) being sent out this week to the Data Management Subcommittee for review.

b) A companion document to the UNAR entitled "Functional Description" will be sent to the subcommittee in early July, 1989, for their review. This second document provides a conceptual view of the software functions and interaction of the geographic information system from a user's perspective.

c) Land Resources Information Service (LRIS) is developing an atlas of all the information layers that are currently available from the geographic information system (GIS). The atlas will be available in the Fall of 1989.

4) STATUS AND TRENDS PRELIMINARY REPORT

a) Final meeting of four working groups (critical areas, water quality, fisheries and human environment) the week of June 20

b) Draft report of each section due to B. J. Copeland on July 15, 1989

c) Public document (non-technical version) draft due for completion first week of August, 1989

d) Both documents will be reviewed in September and printed during October, 1989.

Attachment C

PUBLIC INVOLVEMENT COORDINATOR'S REPORT June 17, 1989

1. Public Involvement Plans has been printed and is being sent to all committee members this week.

2. Next edition of the newsletter will be sent in July.

3. Lib Willard's PSAs, 5 @ 30 seconds each are complete and are running on various T.V. Stations throughout the state.

4. An answering machine has been added to the Public Involvement Office to handle inquiries before and after regular office hours.

5. Public Involvement Office has received some other new equiptment in form of camera and tape recorder.

6. A/P Study Exhibit was displayed at NC Coastal Federation's Annual Meeting earlier this month. It was also utilized at Kitty Hawk Kites's press conference announcing "Discover Wind Cruising" this week. The exhibit will go to Fort Fisher Aquarium on June 28th for a 2 month stay (at their request).

7. Public Involvement Office has completed contacts for collection of photos needed for State of the Estuary Booklet. Scheduled date of completion is September 1989.

8. Public Involvement Office has completed rendering of State Fair Exhibit on Primary Nursery Areas. Arrangements for the building of the exhibit in conjunction with the Division of Coastal Management and Soil and Water are being made. State Fair committee meets monthly in Raleigh.

9. A/P Study's first of several planned press conferences was held in Washington on June 14th . Three T.V. networks NBC, CBS & ABC were in attendance as were five newspapers.

10. Public Involvement coordinator did presentation on A/P Study and conducted a tour of Washington Regional Office of NRCD in June for students and faculty of ECU.

11. All P.I.s for third funding cycle attended an information meeting at Public Involvement Office to become aquainted and apprised of each others work.

12. A meeting with all three COGs in A/P Study area was held at Public Involvement Office for the purpose of involving them in the governmental liaison network proposed in the Public Involvement Plan.

13. All second cycle Public Participation Projects are either completed or are progressing on schedule.

14. A radio show, very similar in format to the interactive radio show project funded during the third cycle, was arranged by Public Involvement Office. Dr. Mike Orbach was the interviewee. The program aired on WBTB AM 1400.

15. Public Involvement Coordinator has met with Lee Wing and Sid Baines of the Agency for Public Telecommunications and N.C. Wildlife Resources Commission respectively, for the purpose of APES participation in their educational efforts. A similar meeting with the Ag Extension service in the near future.

Attachment D

OCS UPDATE

Published by Outer Continental Shelf Office
N.C. Department of Administration, 19 W. Hargett St., Ninth Floor, Raleigh, N.C. 27601, 919 733-1656
Kim Crawford, Editor

Vol. No. 4 *June 1989*

June Working Group Meeting

At the June 14 Working Group Meeting, William Wilson, N.C. Natural Gas Corp., Fayetteville, spoke about natural gas usage in North Carolina. Transcontinental Pipeline Company, based in Texas, is virtually the only supplier of natural gas to the state, which has 13,260 miles of gas pipeline and 475,000 metered users. When asked why much of eastern North Carolina is not served by N.C. Natural Gas Corp., Wilson explained that the amount of consumption (population density) would not provide a return (profit) on the cost of extending the pipeline. But Wilson did state that a new source of gas originating offshore could, in his opinion, be piped and distributed to the easternmost counties of the state, primarily because these areas would be at the front end of the distribution lines. Wilson did not speculate where a pipeline landfall would be located in the event of a major natural gas discovery. He did note, however, that the state should begin preparing for a commercial discovery in order to influence pipeline siting decisions.

The U.S. Coast Guard, addressing the topic of oil spill contingency plans, was represented at the meeting by CAPT Paul Pluta and LCDR Charles Barrett of the Marine Safety Office in Wilmington, and LT Phil Biedenbender with the Atlantic Strike Force Team in Mobile, Alabama. Chief Ted Lewis with the Coast Guard's Marine Safety Office in Norfolk, Virginia, also attended the meeting.

CAPT Pluta explained that, under a memorandum of understanding with MMS, the Coast Guard reviews seven required elements in OCS oil spill plans: 1) risk analysis (number and size of spills that could occur); 2) recovery equipment (identification of equipment that will be deployed); 3) equipment availability; 4) response time (6-12 hours); 5) drills (conducted at least annually under realistic conditions); 6) support vessels; and 7) dispersant equipment (identification of equipment and location of stockpiles).

Responsibility for responding to an OCS oil spill lies first, CAPT Pluta explained, with the party responsible for the spill. The state, he said, should serve as the supervisor and monitor of the cleanup activities. If the responsible party is unable to handle the spill, which the Captain at the nearest Coast Guard Marine Safety Office can determine, then the U.S. Coast Guard can provide additional help--consultants and equipment--from its National Strike Force Team.

LT Biedenbender said that the Coast Guard is required to get two people to the scene immediately, and 12 people and equipment to the scene in six hours. Sea conditions, viscosity (thickness) of the oil, and flammability, he said, affect oil spill recovery. In colder waters, such as Alaska, the oil becomes much harder to contain and recover because it thickens very rapidly. Conditions differ greatly on each coast, Biedenbender noted, making if difficult to predict the nature of a potential spill or the most effective cleanup strategy.

July Working Group Meeting

The Governor's Working Group on Mobil's offshore drilling will meet on Tuesday, July 18 at 10:00 a.m. in the Ground Floor Hearing Room of the Archdale Building in Raleigh. Jane Ledwin, environmental policy analyst for the OCS Office, will discuss the state's oil spill sensitivity mapping project, and Dr. Edward Erickson, an economics professor at N.C. State University, will discuss economic factors influencing the location of natural gas pipelines. A representative from the Federal Energy Regulatory Commission has also been invited to talk about environmental regulations governing natural gas pipelines. Working Group Meetings are open to the public. For more information, contact Kim Crawford at the OCS Office.

State Officials Meet with Mobil Executive

Governor Martin and Attorney General Thornburg met with Allen E. Murray, Mobil Corp. Chairman, in Washington on June 1 to encourage Mobil to urge MMS to conduct a new EIS before allowing Mobil to drill an exploratory well off the N.C. coast. Secretary of Administration Jim Lofton, Donna Moffitt, director of the state's Outer Continental Shelf Office, and Clark Wright, with the attorney general's Ocean Unit, also attended the meeting.

The governor and attorney general were unable to persuade Murray that a full EIS is warranted for exploratory drilling. The attorney general stated that the impasse might result in the state filing a lawsuit in hopes of forcing MMS to conduct the study. Martin, calling the targeted drilling site a "pioneer region," said the state will continue to urge MMS to conduct the study before granting Mobil permission to drill. Both Martin and Thornburg stated that the public should have the right to review and comment on the information that would be contained in a new EIS.

Upon further questioning by Governor Martin of Mobil's development intentions if a large oil discovery is made, the Mobil Chairman assured the governor that Mobil intends to use

MANTEO EXPLORATION UNIT*

SHOREBASE FACILITIES
(Morehead City)

Vessels:	2 - 210' cargo vessels
	1200 gallons fuel each per day
	1 - 125' crew boat, 1200 gallons fuel per day
	1 - stand-by vessel, 200 gallons fuel per day
	1 - drill ship (if Mobil decides to drill the wildcat well with a drill ship rather than a semi-submersible), 6000 to 8000 gallons fuel per day
Air Support:	1 or 2 large helicopters such as Bell 412 or Sikorsky S-76 (average 2 flights per day)
Employment:	4 persons full time on shore (12 hour shifts)
	Up to 6 part time for onloading
	2 or 3 helicopter maintenance personnel
	4 pilots
Dockage/ Equipment	1 to 2 acres for staging area.
	200 to 300 foot water frontage with 14 foot draft
	Operations office - trailer, 12' x 20'
	24 hr. dispatcher
	Telephone and radio communications
	Water and fuel
	Space for drilling mud materials and cement storage
	Pipe racks for tubular goods
	Leased 25 to 30 ton crane
	Domestic waste disposal
	Potable water supplies

(Figures do not include oil spill response vessels, spill containment equipment or clean-up supplies.)

OCS EXPLORATION APPROVAL

The following time sequence is established in the regulations and the Outer Continental Shelf Lands Act for the process of reviewing and approving the Mobil Oil Plan of Exploration (POE) and conducting state consistency determination under the Coastal Zone Management Act (CAMA).

Day 1 — Plan of Exploration submitted to Minerals Management Service (MMS) of Department of Interior. It includes the certification of consistency with the State's coastal plan, the Oil Spill Contingency Plan[1] (OSCP), and all environmental analyses.

Day 10 — Regional Supervisor of MMS must determine:

A. POE is complete and required number of copies have been submitted or

B. Additional information or copies are needed.

Day 12 — Regional Supervisor submits POE to the State for comment and sets the time for comments to be submitted.

Day 32[2] — State comments on POE and Oil Spill Contingency Plan (OSCP) due back to MMS.

Day 40 — Regional Supervisor acts on the POE by either.

A. Approve (POE can be approved prior to State's completion of consistency review but a drilling permit cannot be issued by MMS until the State finds that the POE is consistent with our coastal management program);

B. Require modifications; or

C. Disapprove due to human safety, environmental, or national defense reasons that cannot be avoided by modifying the plan.

---

[1]The lessee can elect to submit the Oil Spill Contingency Plan for review and approval prior to the submission of the Exploration Plan. §205.42. No time for approval is set in this regulation.

[2]Regulations do not set a specific time for state review. Normally, 20 days is allowed.

Case 1 A - B

GAS DISCOVERY

EXPLORATION AND DEVELOPMENT SCHEDULE

YEAR AFTER SALE	WILDCAT DRILLING	DEVELOPMENT DRILLING			PLATFORM		PIPE LINE
		Delineation	Development	Dry	Design	Build/Set	
1 st	Surveys & permitting						
2 nd	1 Well						
3 rd		2 Wells	Surveys & permitting				
4 th							
5 th							
6 th							
7 th			5 Wells	1 Dry	GAS PRODUCTION STARTS 7th YEAR		
8 th			5 Wells	1 Dry			
9 th			5 Wells	1 Dry			
10 th			1 Well	1 Dry			
			Total 16 Wells	Total 4 Dry Holes			

Case 1 A - B

GAS PRODUCTION SCHEDULE

YEARS AFTER SALE	ANNUAL GAS PRODUCTION Billion Cubic Feet
1	
2	
3	
4	PRODUCTION BEGINS 7 th YEAR
5	
6	
7	3.2
8	8.1
9	12.9
10	15.9
11	15.5
12	15.0
13	14.4
14	13.8
15	13.3
16	12.8
17	12.3
18	11.7
19	11.2
20	10.6
21	10.3
22	9.9
23	9.6
24	9.3
25	9.0
26	8.7
27	8.4
28	7.9
29	5.5
30	3.0
31	0.6
	PRODUCTION ENDS 31 st YEAR

253 Billion Cubic Feet - Total Gas Production

Attachment E

An Assessment of Maritime Forest Resources on the North Carolina Coast

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Marine Laboratory
Beaufort, NC 28516

Jonathan P. Evans*
Duke University
Marine Laboratory
Beaufort, N.C. 28516

and

Richard E. Shaw
North Carolina Division of Coastal Management
Raleigh, NC 27611

Final Report Submitted to:

North Carolina Department of Natural Resources and Community Development
Division of Coastal Management
512 North Salisbury Street
Raleigh, North Carolina 27611

*** Address Correspondence To:**

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November 1988

Executive Summary

Maritime forests can be defined as the woody plant communities that develop as an end result of primary succession on coastal barrier islands. Maritime forests generally develop on stabilized dune systems located on the sound-side of islands whose width, topography and orientation provide sufficient protection from storm exposure. Maritime forests are composed of a unique assemblage of species adapted to survive and reproduce under the harsh conditions associated with a coastal barrier system such as: salt spray, wind shear, nutrient poor soils and low water availability.

From early native American settlements to current condominium construction, maritime forests along the North Carolina coast have experienced centuries of use and abuse by man. Today, these unique forests are virtually gone and what remain are a series of isolated tracts, encroached upon yearly by an ever increasing tide of coastal development. As presented in this report, there are less than 25 large maritime forest sites (i.e., greater than 20 acres) remaining on the barrier islands (see Fig. 1). If we exclude northern Currituck Banks (5,000 acres of indiscrete sound side forest fringe) these sites total less than 7000 acres. Of these sites, 18 are partially or entirely in private ownership (see Appendix B). Given the current rate of barrier island development, most of this privately owned forest will be destroyed or significantly altered within the next decade. The goal of this report is to provide the information necessary to allow future management decisions to be made on a scientifically sound and comprehensive basis so that maritime forests can be conserved as part of our coastal heritage.

This report represents the first assessment of what remains of the maritime forest ecosystem in North Carolina. A total of 24 forest areas were surveyed on 16 barrier islands in North Carolina (see Fig. 1). Potentially forested areas were first identified from large-scale aerial photos. Field trips were then made to each of these areas to verify the existence of intact forests. Each site was described from an ecological standpoint, surrounding land uses were recorded and boundaries of the intact forest areas were delineated. Tax records were then used to compile a list of landowner names and addresses, as well as acreages for each surveyed parcel.

General information concerning the history of forest use on different islands was obtained from the literature, town halls, and personal communications, and is described in the forest site summaries. In addition to an inventory of specific forest tracts, this report also contains a general review of the ecology, conservation biology, and current management of maritime forests in this state.

One of the important facts we are only now beginning to realize about maritime forests is that they are particularly susceptible to the deteriorating effects of fragmentation. This is largely due to the severe environmental conditions under which they exist. Patches of maritime forests that are left in areas that have been partially cleared for development, rapidly deteriorate due to the sudden exposure to salt spray, wind shear, altered drainage, the invasion of weedy species and other factors. This deterioration starts at the forest edges and works inward. Substantially larger areas than one would normally leave inland, must be left intact during development if the ecological integrity of a maritime forest stand is to be maintained.

One result of fragmentation is the loss of continuity with other forest areas and with other habitat types. This is a critical loss to animal species that depend on the maintenance of forest transition areas for their survival. Fragmentation isolates forest populations by resticting dispersal and preventing gene flow. This can ultimately lead to increased homozygosity and a build-up of lethal recessive genes within a population.

By being located on islands, maritime forests are already isolated to a certain degree. Fragmentation dramatically compounds the ecological effect of this isolation by essentially creating islands of forest within islands. The greater the density of development allowed, the more the forest will become fragmented. There is a minimal area at which a forest fragment is still capable of maintaining itself in terms of seedling recruitment into the canopy population. There is also a minimum area which will support the same number of plant and animal species as would a comparable area of undisturbed forest. Below this minimum size, species will be lost, and those still present may no longer be capable of replacing themselves. The loss of species and individuals will continue until the forest fragment no longer retains any of its original character.

Unfortunately this theoretical "minimum area" is site specific and depends upon a variety of environmental conditions. Since in practical terms it is often necessary to specify an ecologically sound minimum area, it is best to err on the safe side and allow a very wide margin of buffer between clearings. As a rule, lot sizes of 80,000 sq. ft. should be considered a lower limit in any maritime forest site.

Forest clearing and filling of wetlands can alter the hydrology of a maritime forest and even the hydrology of an entire island. Maritime forests serve to protect and recharge freshwater aquifers that develop within barrier islands. These aquifers are often the sole source of fresh water for the inhabitats of an island and so their protection is vital.

Maritime forests can and should be managed in a manner that avoids or minimizes harmful impacts to the ecosystem. This protection can be acheived through the implementation of one or a combination of the following measures:

1. Preservation through public acquisition (federal, state, or local government) or by conservation organizations.

2. Enforcement of existing federal and state environmental regulations.

3. Resource management through designation as an Area of Environmental Concern (AEC) by the N.C. Coastal Resources Commission.

4. Resource management through local government zoning.

5. Conservation through development policies and land classifications prescribed in the local land use plan.

6. Conservation through landowner's voluntary protection. (Possible registration with the NC Natural Heritage Program as a protected natural area.)

This report reviews the current and potential effectiveness of these measures. It was generally found that federal and local measures are inadequate and that the greatest level of future protection for maritime forests lies at the state level.

There is a clear mandate implicit in the North Carolina Coastal Area Management Act (CAMA) of 1974 (N.C.G.S. 113A-100 et seq.) for the protection of maritime forest resources. State protection for maritime forests would be available if the N.C. Coastal Resources Commision (CRC) were to designate maritime forests as "areas of environmental concern" (AECs). CAMA authorizes the CRC to manage development in AECs by requiring that development within these areas be consistent with standards designed to protect critical coastal resources. While we have general AEC categories covering the estuarine system, public trust waters and beaches, there is currently no uniform category regulating development in the maritime forest ecosystem, even though it is a important component of the barrier dune system as specifically covered under CAMA.

The CRC could decide to create a new maritime forest AEC category and establish management objectives and general use standards for new development proposed within the AEC. This would be a preferred option over the designation of specific areas on an independent basis, since a set of uniform state standards would provide the most comprehensive regulation and would the most fair since since no one forest area would be treated differently from another.

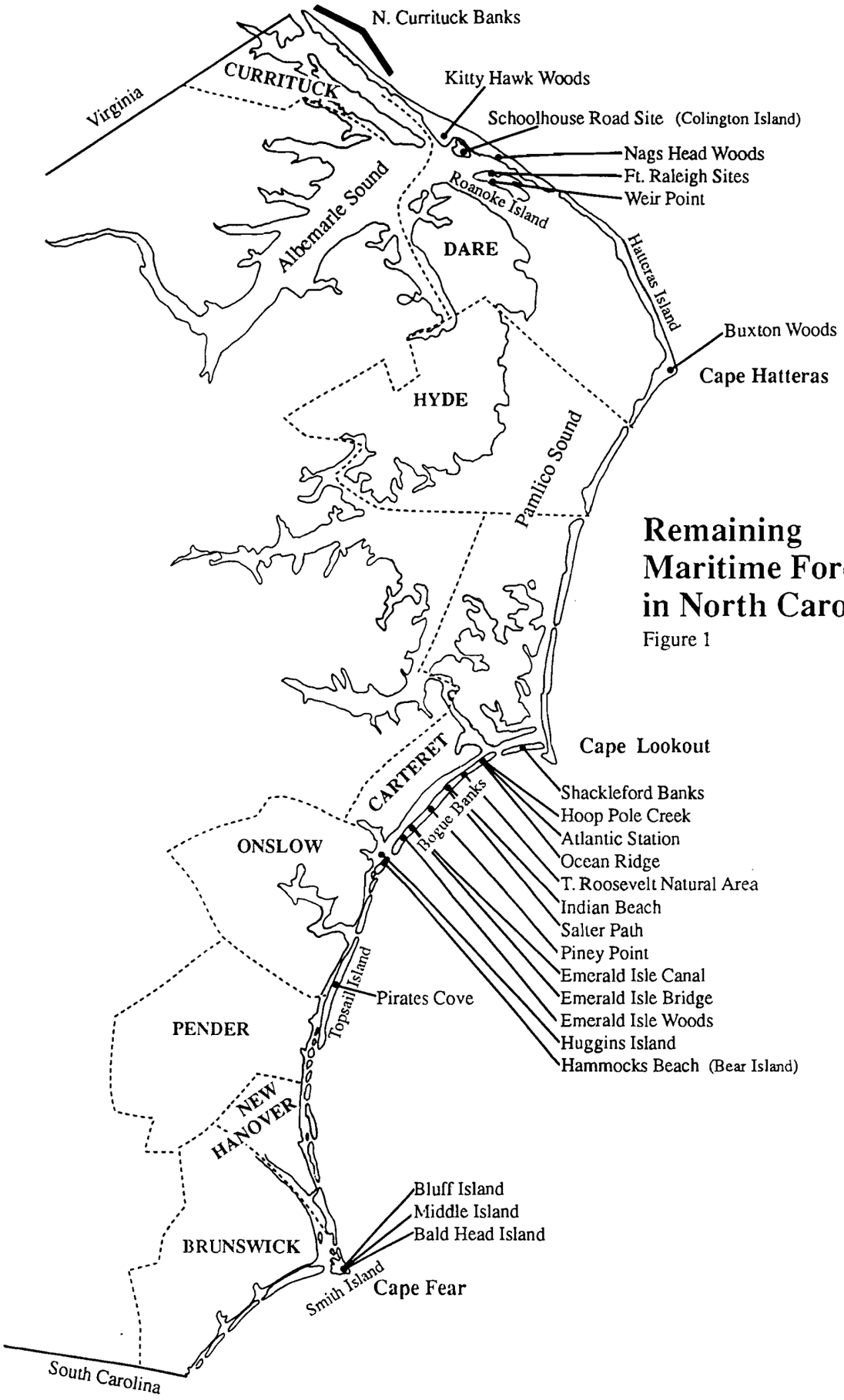
We are at a critical juncture in the fate of maritime forests in North Carolina. Major changes in policy need to be made soon to prevent the loss of this unique ecosystem. It is highly recommended that the following actions be taken towards maritime forest protection and preservation in this state:

1. Development of maritime forests should be slowed down; uniform standards should be imposed on a state-wide basis to insure adequate protection. Area of Environmental Concern status, such as has been given to salt marshes and other important natural systems, should also be applied to the maritime forest ecosystem as a whole (as delineated in this report).

2. Current and future regulations need to be more rigorous with regard to the conservation of maritime forests. Regulations, whether they be local development standards, AEC use standards or Corps 404 wetland regulations, should be strictly enforced.

3. Attempts should be made at the state and federal level to purchase priority forest areas (See Appendix B). Those sites with the highest habitat diversity and largest size should be the initial focus of this drive.

4. Future research in maritime forests needs to be encouraged; public awareness and education programs are needed to convey the importance of maritime forests as an essential part of the barrier island environment and as a unique component of our coastal heritage.



Remaining Maritime Forest Sites in North Carolina

Figure 1

APPENDIX A

Remaining Maritime Forest Tracts in North Carolina

Currituck Island

1) Northern Currituck Banks: Sound side strip including the Audubon Preserve (Pine Island) and the Currituck Shooting Club lands from the end of NC 12 to Corolla. 5000 acres

2) Kitty Hawk Woods: US 158 Bypass north of Kill Devil Hills. The area is between US 158 and Main Road, which runs through the center of the tract. 540 acres

3) Nags Head Woods: NC 12 West of Nags Head, north of Jockey's Ridge. Nature Conservancy land is accessible by Ocean Acres Drive in Kill Devil Hills. 755 acres

Colington Island

1) Schoolhouse Rd.: The forest area is located along Schoolhouse Rd., which is the first left after the second bridge on Colington Island. The sand road runs parallel to Colington Cut. 120 Acres

Roanoke Island

1) Forth Raleigh City-NPS: The site is located in and around the Fort Raleigh National Historic Site. One tract (100 acres) is located along US 64-264, three miles north of Manteo. The forest is at the end of a service road leading from the park headquarters, and extends beyond the Park Service boundaries up to SR 1161. A second tract (5 acres) is located on US 64-264, three miles west of Manteo. This tract is in the vicinity of the park nature trail and restored fort. 105 Acres (Total)

2) Weir Point: At the western tip of Roanoke Island, on the south side of US 64-264 approx. four miles west of Manteo. The site is immediately behind a rest area facility just before the bridge crossing Croatan Sound. 86 Acres

Hatteras Island

1) Buxton Woods: Sound side of NC 12 from Frisco to Buxton. 3000 acres

Shackleford Banks

1) Shackleford: South of Beaufort across Back Sound. Access by boat. 90 acres

Bogue Banks

1) Hoop Pole Creek: Atlantic Beach. From the western corporate boundary, 0.6mi. east on the northern side of NC 58. Access via a sand road at the historical marker marking the landing site of Northern troops during the seige of Ft. Macon. 12 Acres

2) Atlantic Station: Atlantic Beach. West side of Atlantic Station parking lot. Extends west along NC 58 to Hoop Pole Creek. Located on sound side of the island. 45 Acres

3) Ocean Ridge: Atlantic Beach. Across from the Atlantic Station shopping mall on the south side of NC 58. 15 Acres

4) Theodore Roosevelt Natural Area: Pine Knoll Shores. Extends from Pine Knoll Blvd. west on the north side of NC 58 for approx. 1.0mi. 290 Acres

5) Indian Beach: Indian Beach. About 0.5mi. within Indian Beach eastern limit on the north side of NC 58. Western boundary is a large vacant lot. 33 Acres

6) Salter Path: Salter Path. Immediately west of Salter Path Family Campground on the north side of NC 58 (40 Acres). There is also a smaller tract located directly across NC 58 (12 Acres) 52 Acres (Total)

7) Piney Point: Emerald Isle. Along immediate western boundary of Piney Point subdivision on the north side of NC 58. Heading west on 58, access is easiest by making a right on Lee Ave. Western boundary is Live Oak St. 50 Acres

8) Emerald Isle Canal: Emerald Isle. Just before Emerald Isle bridge. Accessible through the western boundary of the Emerald Isle Plantation development. 64 Acres

9) Emerald Isle Bridge: Located at the intersection of NC 58 and Coast Guard Rd. Sound side corner. Continues west to the Cape Emerald development (0.6mi.). 86 Acres

10) Emerald Isle Woods & Sound Strip: Coast Guard Rd. in Emerald Isle. The site is located between two developments, starting west of Cape Emerald subdivision west to a yet un-named development on the south side of Coast Guard Rd. 75 Acres

Huggin's Island

1) Huggin's Island: Bogue Inlet. West of the Emerald Isle bridge, East of Cape Carteret. Access is by boat from the NC 24 bridge leading to Swansboro (Cape Carteret side). 100 Acres

Bear Island

1) Hammocks Beach State Park: Swansboro. NC 24 south to Swansboro (there will be a sign). From June to September months there is a free ferry to Bear Island. The forest is on the north end of the island on the sound side. 70 Acres

Topsail Island

1) Pirates Cove: Surf City. The site is three miles south of the northern NC 210 bridge, on the sound side of NC 50. Access is by way of a sand road that cuts back into the forest. 54 Acres

Cape Fear

1) Bluff Island: Access from East Beach. 70 Acres.

2) Middle Island: Access via Federal Rd. from Bald Head. 100 Acres.

3) Bald Head Island: Access via private ferry from Southport. 414 Acres.

APPENDIX B

North Carolina Maritime Forest Sites: Protection Priorities

I. Top Priority Sites	Ownership *
A. >100 Hectares	
1. Kitty Hawk Woods	P
2. Buxton Woods	F,S,P
3. Bald Head Island	P
4. Nags Head Woods	L,P
5 Theodore Roosevelt Natural Area	S
B. >25 Hectares	
1. Bridge Site, Emerald Isle	P
2. Emerald Isle Woods and Sound Strip	P
3. Huggin's Island	P
4. Canal Site, Emerald Isle	P
5. Salter Path, Bogue Banks	P
6. Shackleford Banks	F
7. Bluff Island, Cape Fear	S
C. >10 Hectares	
1. Pirates Cove, Topsail Island	P
2. Piney Point, Emerald Isle	P
3. Indian Beach, Bogue Banks	P
4. Schoolhouse Rd. Site, Colington Island	P
II. High Priority Sites	
A. >100 Hectares	
1. Northern Currituck Banks	P
B. >25 Hectares	
1. Fort Raleigh City, Roanoke Island	F
2. Middle Island, Cape Fear	P
3. Bear Island	S
C. >10 Hectares	
1. Weir Point, Roanoke Island	P
D. >5 Hectares	
1. Ocean Ridge, Bogue Banks	P
2. Atlantic Station, Bogue Banks	L
3. Hoop Hole Creek, Bogue Banks	P

* F=Federal; S=State; L=Local; P=Private
1 Hectare= 2.47 Acres