
**SUPPLEMENTAL
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

**PHASE II ARCHITECTURAL SURVEY REPORT
OF PEA ISLAND NATIONAL WILDLIFE REFUGE**

**HERBERT C. BONNER BRIDGE REPLACEMENT PROJECT
DARE COUNTY
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TIP NO. B-2500**

Prepared by

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Prepared for

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909 Aviation Parkway
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8 July 2003

Frances P. Alexander

**Principal Investigator
Mattson, Alexander and Associates, Inc.**

8 July 2003

Date

Barbara Church

**Historic Architectural Resources
North Carolina Department of Transportation**

July 25, 2003

Date

PROJECT DESCRIPTION

This North Carolina Department of Transportation project is entitled *Supplemental DEIS, Herbert C. Bonner Bridge Replacement Project, Dare County*. The TIP Number is B-2500. One proposed project alternative includes the northern end of the Pea Island National Wildlife Refuge on Hatteras Island. This Phase II historic architectural resources survey concerns the evaluation of the historical significance of this national refuge.

As shown on the accompanying corridor alternatives map (Figure A), the evaluation of the Pea Island National Wildlife Refuge was triggered by four proposed alternatives that would have had potential effects on the refuge property. Alternatives 1, 2, and 3 have been eliminated from consideration. Aside from the Pea Island National Wildlife Refuge, the historic resources within the area of potential effects for Alternative 4 are evaluated in the document, *Supplemental Draft Environmental Impact Statement, Phase II Historic Architectural Survey Report, Herbert C. Bonner Bridge Replacement Project Through Rodanthe, Dare County, TIP B-2500* (11 August 2003).

PURPOSE OF SURVEY AND REPORT

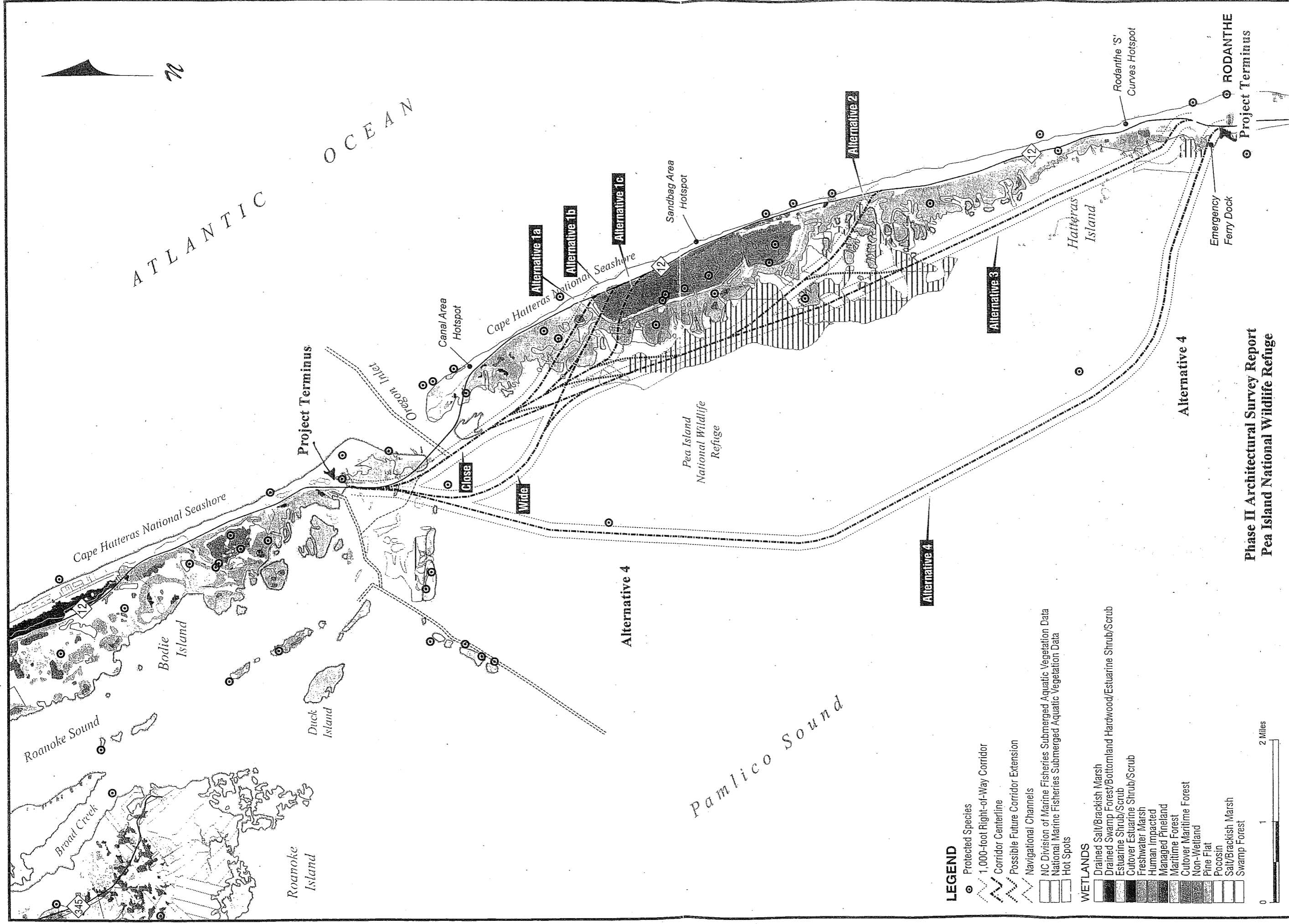
The survey of historic architectural resources was conducted and the results were compiled pursuant to the Department of Transportation Act of 1966, the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation's "Protection of Historic Properties (36 CFR 800)."

METHODOLOGY

The Phase I (reconnaissance) survey followed the requirements set forth in the North Carolina Department of Transportation document entitled *Historic Architectural Resources: Survey Procedures and Report Guidelines* (1994). The methodology consisted of historical research and fieldwork within the study area to identify National Register properties and all other resources considered worthy of further study.

During the research phase, the architectural survey files of the North Carolina State Historic Preservation Office (HPO) in Raleigh were searched for National Register and Study List properties, as well as for other previously surveyed resources located in or around the study area. The files of the Outer Banks History Center in Manteo, North Carolina, were also searched for information on the Pea Island Wildlife Refuge. Stephen Harrison with the National Park Service, Fort Raleigh, Roanoke Island, and Michael Bryant, Refuge Manager, Pea Island National Wildlife Refuge, were interviewed concerning the Pea Island National Wildlife Refuge.

The fieldwork consisted of an inspection of the Pea Island National Wildlife Refuge. The fieldwork was conducted in April 2003, and 100 percent of the refuge was examined. Where access was not possible, refuge maps were used to study land use.



Phase II Architectural Survey Report
Pea Island National Wildlife Refuge



CORRIDOR ALTERNATIVES AND RESOURCES
Replacement of the Herbert C. Bonner Bridge (Bridge No. 11) over Oregon Inlet
Dare County, NC

Figure A

SUMMARY RESULTS OF FINDINGS

The Pea Island National Wildlife Refuge is recommended as eligible for the National Register. The sanctuary is described and evaluated below.

Pea Island National Wildlife Refuge Hatteras Island, Dare County

Physical Description (Plates 1-8) (Figures 1-3)

Bounded by Pamlico Sound to the west and the Atlantic Ocean to the east, this Outer Banks sanctuary contains the northern thirteen miles of Hatteras Island south of Oregon Inlet. The refuge includes a system of dikes, freshwater/brackish ponds, salt flats, salt marshes, fields, dunes, and beaches to provide habitat for a variety of migratory waterfowl, shorebirds, and other wildlife. Originally 5,834 acres in area, the refuge has been reduced to just under 5,000 acres, a reduction caused primarily by erosion along the sound side of the property. The acreage includes about 1,000 acres of impoundments in three ponds, North Pond, South Pond, and New Field Pond. Refuge workers created New Field Pond from existing wetlands between the two original impoundments during the 1960s. The few simple, frame buildings and structures on the refuge were all erected in the latter twentieth century. Such public facilities were needed at the refuge following the paving of N.C. 12 along Hatteras Island in 1956 and the construction of Bonner Bridge across Oregon Inlet in 1964 both of which allowed easier public access to the wildlife sanctuary. The refuge contains a headquarters building, maintenance building, and staff dwelling, all built in the 1960s, a 1990s visitors' center, and several observation platforms, boardwalks, and boat ramps constructed in the 1980s. The levees that border the ponds form the main walking trails (Bryant 2003; Henderson 2003).

Although the landscape of the wildlife refuge has undergone some alterations since 1938, the tract remains substantially well preserved. A comparison of the 1950 U.S. Coast and Geodetic Survey map of the sanctuary with both the 1983 and current refuge maps reveals the landscape changes as well as the survival of significant elements. While erosion has altered the configuration of the sound-side boundary and reduced the acreage, the great majority of inlets, islands, and creeks remain. The configurations of North and South ponds remain virtually unchanged although a later dike has been constructed along the north side of North Pond which is now part of the nature trail. With the construction of this dike, the wetlands shown above the pond in 1950 have become primarily salt flats with smaller pools. According to the current refuge manager, New Field Pond was mainly the impoundment of a pond that already existed between North and South ponds (and evident in 1950). The adjoining marshes, fields, and dunes all survive although configurations have been modified slightly by natural forces, shaped in part by the construction and maintenance of the dune line just east of N.C. 12. The paved highway was completed in 1956 to replace the previously unpaved and loosely defined north-south route along the beach (**Figures 1-3**) (U.S. Coast and Geodetic Survey 1950; Bryant 2003).

Historical Background

Located on the Outer Banks of North Carolina, the Pea Island National Wildlife Refuge (originally the Pea Island Migratory Wildlife Refuge) was established in 1938 within the Cape Hatteras National Seashore. Extending for seventy-five miles, from Whalebone Junction in Dare County southward through Ocracoke Island, the Cape Hatteras National Seashore was the nation's first designated national seashore recreational area. The United States Congress authorized this area in 1937 although land acquisitions had begun two years earlier in 1935 and

continued until the 1950s when the boundaries were completed. Among the acquisitions were 5,834 acres of salt marshes, shifting dunes, and ocean beaches that the federal government set aside for the Pea Island National Wildlife Refuge. The refuge was placed under the management of the U.S. Biological Survey which later was reorganized as the U.S. Fish and Wildlife Service. Before the creation of the sanctuary, Pea Island had been owned by several private waterfowl hunt clubs including the Pea Island Gunning Club (Stick 1958: 282; "Prospectus of Cape Hatteras National Seashore" 1939; Morris 1998: 88-89; 100-102; Bryant 2003; Henderson 2003).

The Pea Island National Wildlife Refuge was part of a national movement to create wildlife sanctuaries that began after the Civil War and reached full stride in the early twentieth century. President Theodore Roosevelt created the national wildlife refuge system in 1903, and during his two terms in office (1901-1909) fifty-three refuges were created on federally owned lands. Significant funding for such sanctuaries began in the 1930s when the Migratory Bird Conservation Act of 1929 permitted the use of federal money for land acquisition. The Duck Stamp Act of 1934 provided funding for the purchase, improvement, and management of waterfowl refuges. By the mid-1950s, 272 national wildlife refuges were in operation, and by the 1990s, the National Refuge System covered nearly ninety million acres (Gabrielson 1943; "Pea Island Wildlife Refuge" 2002).

For the newly acquired national seashore lands and other work up and down the Outer Banks, the federal government engaged thousands of laborers supervised by both the Works Progress Administration and the Civilian Conservation Corps to build up the beaches and control sand erosion. The Civilian Conservation Corps (C.C.C.) was especially instrumental in shaping the new wildlife refuge at Pea Island. Established by the U.S. Congress in 1933 during the Great Depression, the mission of the corps was to employ young men in the conservation and development of natural resources while teaching them trades and self discipline. The U.S. Army furnished the commanding officers for the C.C.C. camps which were organized as companies. The departments of Agriculture and the Interior supervised the work and the Department of Labor did the recruiting. In North Carolina, fifty-two C.C.C. camps were created during the Great Depression, stretching from the Outer Banks on the coast to Hot Springs in the Blue Ridge Mountains. For work on the Outer Banks, a camp for Company 436 was completed on Roanoke Island in January 1935. C.C.C. efforts in this area included combating beach erosion and flooding by building miles of brush fences (which anchored and created dunes) and planting acres of grasses, trees, and shrubs (Stick 1970: 59-60; *High Tide* 1936: 4-10; Carter 1974: 12-13)).

Within the Pea Island National Wildlife Refuge, corps workers also constructed a system of dikes to create or modify existing ponds and marshes and planted the adjacent fields in green browse for habitat. The dikes are still in use though some have been repaired and rebuilt over the years. They help control water levels in the impoundments to imitate the dry and wet periods in natural wetlands. Controlled flooding in the fall and draw-downs in the spring produce maximum feeding grounds for wintering waterfowl and migrating shorebirds. Originally consisting of two ponds, North Pond and South Pond, a third pond (New Field) was created in the 1960s from marshland between the two original impoundments in the 1960s ("Pea Island National Wildlife Refuge" 1954, reissued 1963; Bryant 2003; Henderson 2003).

Along the beach, the workers erected a dune line to protect the impoundment areas. Now under the management of the North Carolina Department of Transportation, these dunes have been regularly stabilized and increased in size since the 1950s. In addition, the wildlife refuge staff conducts prescribed burning to produce plant food for wildlife. The surrounding salt meadows in

the refuge also provide feeding grounds for snow geese and a variety of other wintering waterfowl and shorebirds. The refuge remained isolated on the Outer Banks until the construction of the Herbert C. Bonner Bridge across Oregon Inlet in 1963-1964. A refuge headquarters building, a maintenance building, and a staff dwelling—all simple, frame structures—were erected near South Pond in the 1960s. During the 1980s, modest observation platforms were erected, and in the 1990s the visitors center and parking lot were constructed. At present, approximately two and a half million visitors enter the sanctuary annually (“Pea Island National Wildlife Refuge” 1954, reissued 1963; Bryant 2003; Henderson 2003).

Evaluation of Eligibility

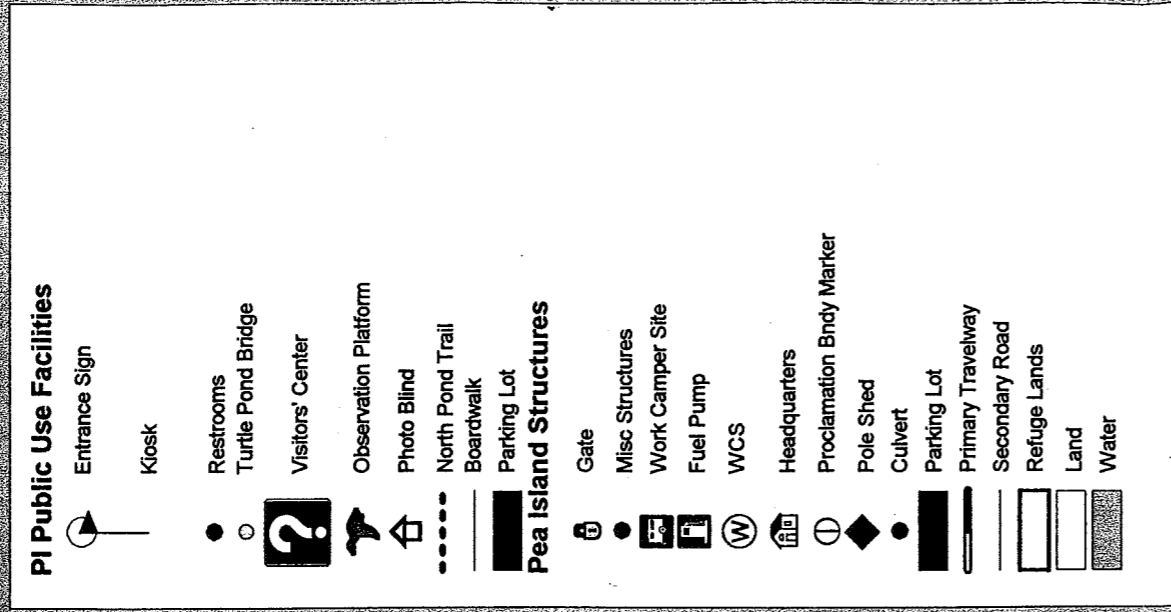
The Pea Island National Wildlife Refuge is recommended as eligible for the National Register under Criterion A in the areas of conservation and social history. The refuge is an outstanding example of the national wildlife refuges that arose during the early twentieth century. With its man-made dikes and dunes, the sanctuary also illustrates the efforts of the Civilian Conservation Corps on the Outer Banks to protect and revitalize natural resources. Typical of such cultural landscapes, the refuge has changed over time. The fragile coastline has experienced erosion along the sound side of the property; some modest buildings and structures have been erected; dikes repaired or rebuilt; a new pond created from wetlands; and monitored burnings and plantings have introduced new vegetation. However, the refuge retains its key original elements, and the changes do not significantly detract from its integrity.

The refuge is not considered eligible under any other Criterion. Pea Island National Wildlife Refuge is not eligible under Criterion B because it is not associated with individuals whose activities were demonstrably important within a local, state, or national historic context. It does not possess significant architectural or planned, landscape design features for eligibility under Criterion C. The property is also not considered eligible under Criterion D because the architectural components are not likely to yield information important in the history of building technology.

Boundary Description and Justification

The current boundaries of the Pea Island National Wildlife Refuge define the proposed National Register borders. While erosion has diminished the original acreage, the proposed acreage is located within the original refuge tract and contains all the key sanctuary features.

Pea Island NWR



1"=4000'

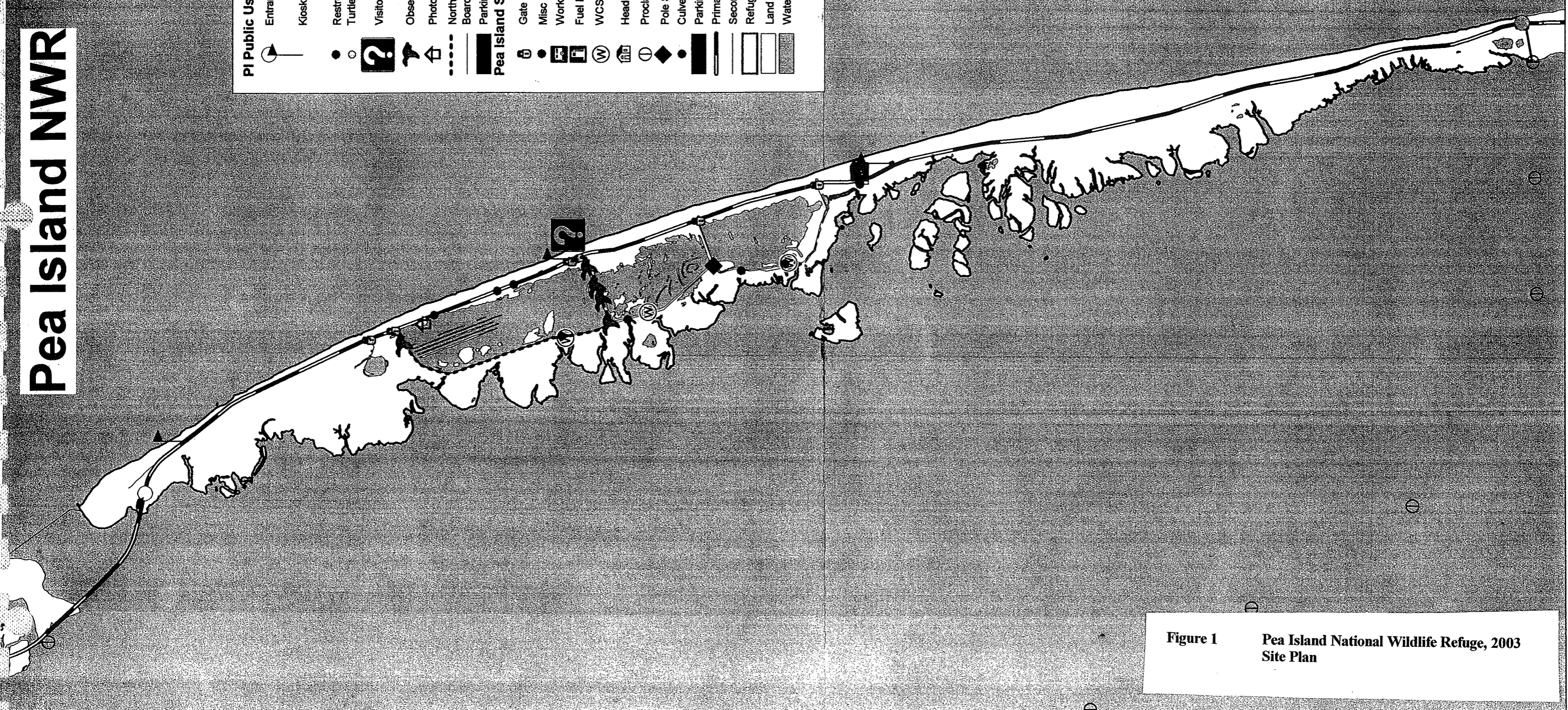


Figure 1 Pea Island National Wildlife Refuge, 2003 Site Plan

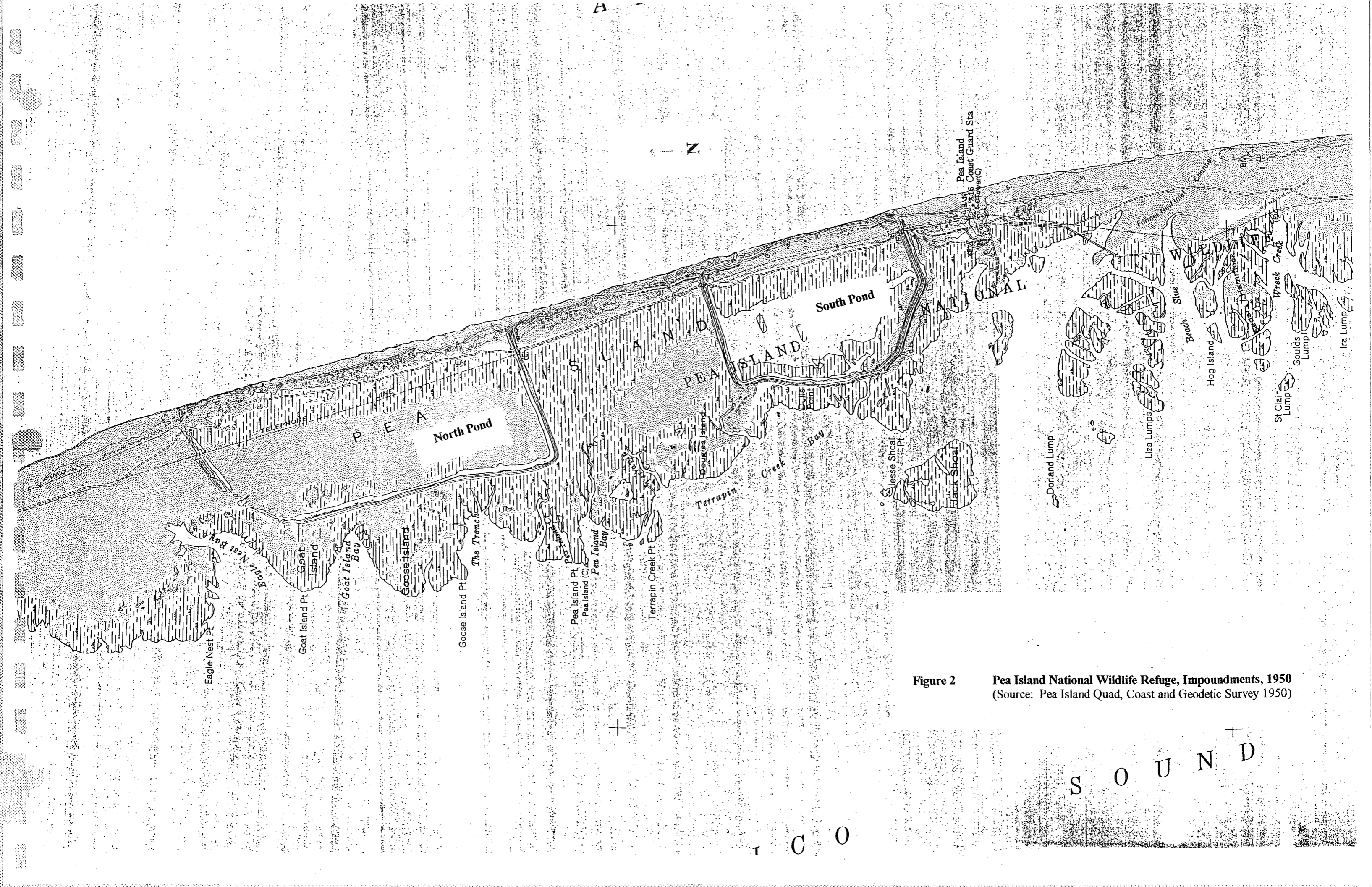
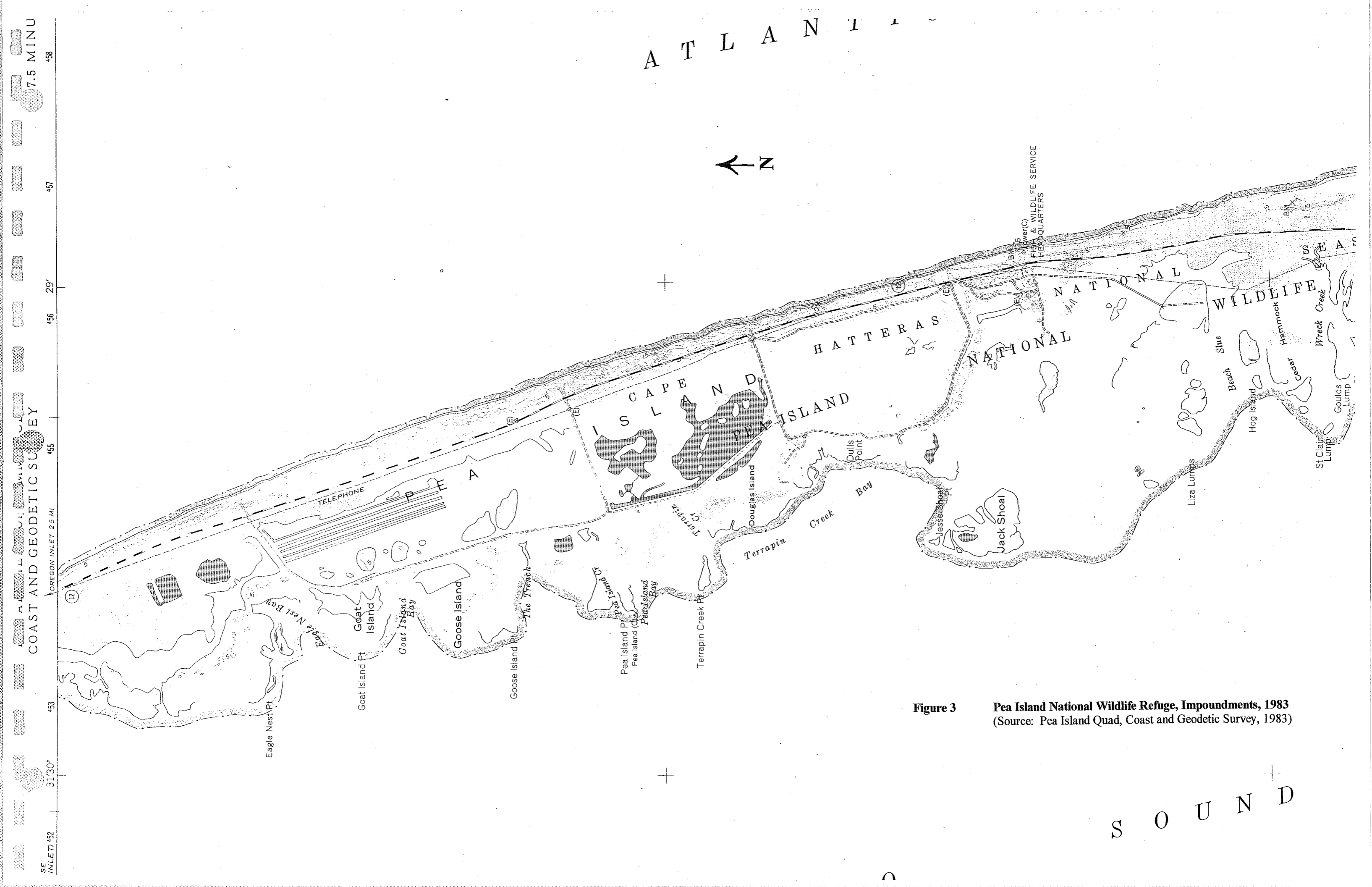


Figure 2 Pea Island National Wildlife Refuge, Impoundments, 1950
 (Source: Pea Island Quad, Coast and Geodetic Survey 1950)



A T L A N T I C



7.5 MINU

COAST AND GEODETIC SURVEY

SE INLET 452 31'30"

458 457 29' 456 455 2.5 MI 454 453

Figure 3

Pea Island National Wildlife Refuge, Impoundments, 1983
(Source: Pea Island Quad, Coast and Geodetic Survey, 1983)

S O U N D

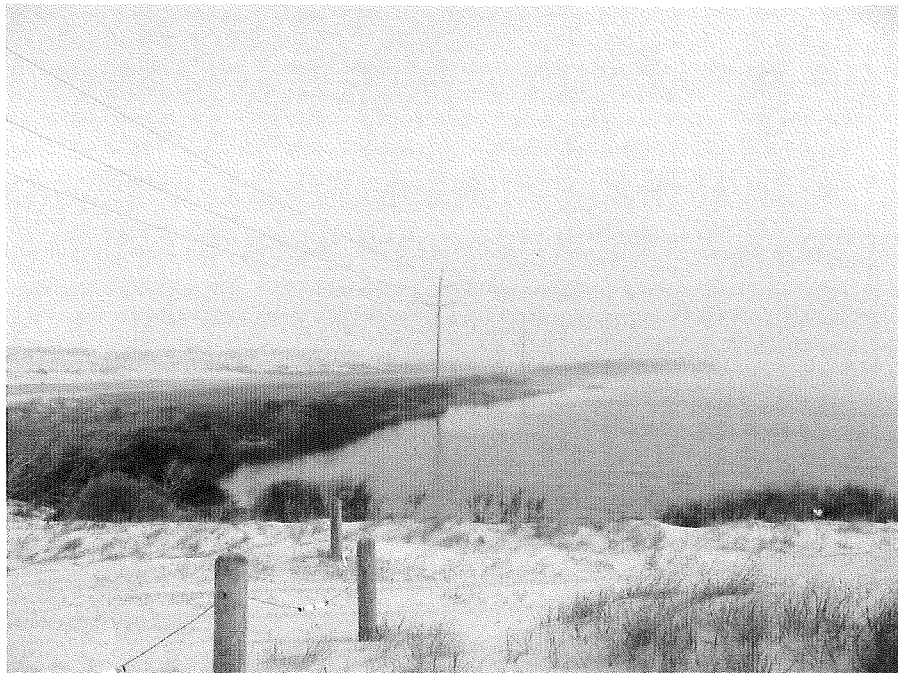


Plate 1. Pea Island National Wildlife Refuge, Looking South Across North Pond to N.C. 12



Plate 2. Pea Island National Wildlife Refuge, Looking East from Viewing Platform at North Pond Levee.



Plate 3. Pea Island National Wildlife Refuge, Looking Northeast from North Pond Levee at Viewing Platform.



Plate 4. Pea Island National Wildlife Refuge, Looking Southwest Across North Pond.

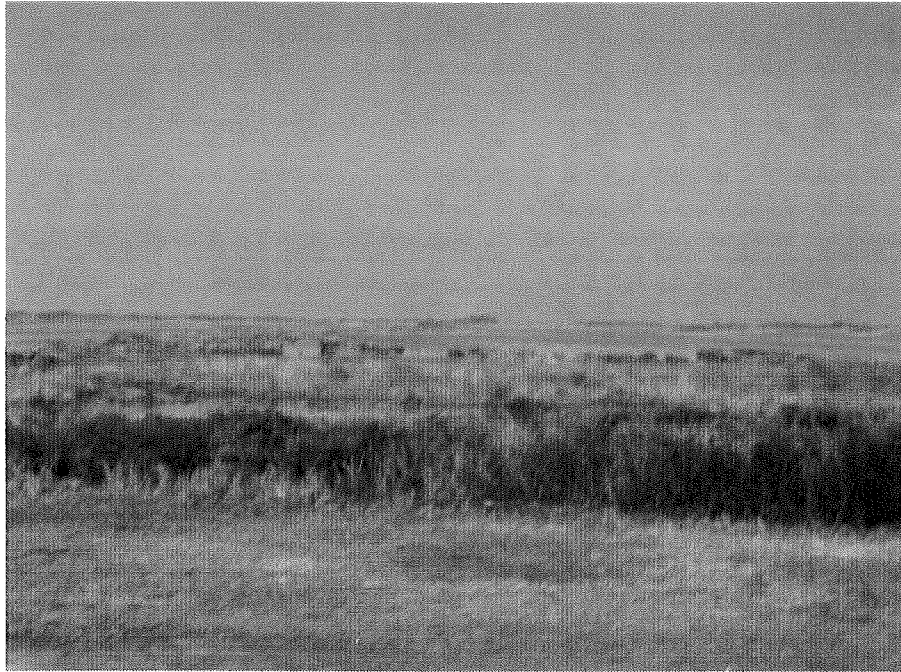


Plate 5. Pea Island National Wildlife Refuge, Looking West from Visitors Center.



Plate 6. Pea Island National Wildlife Refuge, Looking West Along Levee Walkway at Visitors Center.



Plate 7. Pea Island National Wildlife Refuge, Looking Northwest Across North Pond.



Plate 8. Pea Island National Wildlife Refuge, Looking Northwest Across South Pond.

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**North Carolina Department of Cultural Resources
State Historic Preservation Office**

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources

September 17, 2003

CITIZENS PARTICIPATION
RECEIVED

SEP 22 2003

MEMORANDUM

TO: Greg Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: David Brook *DLB for David Brook*

SUBJECT: Supplemental Draft Environmental Impact Statement, Phase II Historic
Architectural Survey Report of Pea Island National Wildlife Refuge,
Bonner Bridge Replacement, B-2500, Dare County, ER90-8304

Thank you for your letter of July 29, 2003, transmitting the Phase II Historic Architectural survey report by Frances P. Alexander of Mattson, Alexander and Associates, Inc.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the Pea Island Wildlife Refuge is eligible for listing in the National Register of Historic Places under Criterion A in the areas of conservation and social history. The refuge is an outstanding example of the national wildlife refuges that arose during the early twentieth century. The refuge retains many of its key original elements such as man-made dikes and dunes, illustrating the efforts of the Civilian Conservation Corps on the Outer Banks to protect and revitalize natural resources.

We understand that this report was prepared for an additional alternative for the Bonner Bridge Replacement. Please provide a map illustrating the Area of Potential Effect for this alternative. Minus the map, we wonder why the Oregon Inlet Coast Guard Station, a property listed in the National Register of Historic Places, was not included in the report.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

www.hpo.dcr.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6545 • 715-4801

September 17, 2003

Page 2

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

cc: ✓ Frances P. Alexander, Mattson, Alexander and Associates, Inc.
✓ Barbara Church, NCDOT

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Herbert C. Bonner Bridge Replacement; Pea Island National Wildlife Refuge.

On November 25, 2003, representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (HPO)
- Other

Reviewed the subject project and agreed

- There are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.
- There are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse.
- There is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.
- There is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Barbara H. Church 11/25/03
 Representative, NCDOT Date

Michael J. Dawson 11/25/03
 FHWA, for the Division Administrator, or other Federal Agency Date

Renee Bleckhill-Easley 11/25/03
 Representative, HPO Date

David Brook 11-25-03
 State Historic Preservation Officer Date

Properties within the area of potential effect for which there is no effect. Indicate if property is National Register-listed (NR) or determined eligible (DE).

Pea Island Wildlife Refuge (DE)

Properties within the area of potential effect for which there is an effect. Indicate property status (NR or DE) and describe the effect.

Oregon Inlet Coast Guard Station (NR) - adverse effect -
because of potential loss of access + potential
removal of terminal groin.

Reason(s) why the effect is not adverse (if applicable).

Initialed:

NCDOT

BHC

FHWA

MCJ

HPO

RSE