

STATEMENT OF FINDINGS
FOR
EXECUTIVE ORDER 11990 WETLAND PROTECTION

**HIGHWAY 12 IMPROVEMENTS TO COQUINA/LIGHTHOUSE ROAD
INTERSTECTION**

PEPC #104285

CAPE HATTERAS NATIONAL SEASHORE
NORTH CAROLINA

Recommended:

Superintendent, Cape Hatteras National Seashore

Date

Certification of technical adequacy and servicewide consistency:

Chief, Water Resources Division

Date

Approved:

Acting Director, Interior Region 2

Date

TABLE OF CONTENTS

Introduction.....	3
Proposed Action	3
Wetland Protection	4
Wetlands Within the Project Area	5
Site Description	5
Wetland Resources	5
Wetland Plant Communities.....	6
Wetland Animal Communities.....	7
Wetland Hydrologic Characteristics.....	8
Statement of Qualifications	8
Evaluation of Proposed Project ACTIONS	8
No-Action.....	8
IMPROVEMENTS TO NC HIGHWAY 12	9
Proposed Impacts to Wetland Function and Values	9
Biotic Functions	9
Hydrologic Functions	10
Cultural Values.....	10
Research/Scientific Values.....	11
Economic Values and Recreation and visitor experience	11
Wetland Impact Mitigation	11
Summary	13
References.....	14
Attachments	15

INTRODUCTION

PROPOSED ACTION

Cape Hatteras National Seashore (CAHA) and North Carolina Department of Transportation (NCDOT) propose to conduct improvements to NC Highway 12 at the intersection of Coquina Beach Access Area and Bodie Island Lighthouse Road in Dare County (Figure 1) as a modification to a National Park Service (NPS) special use permit condition for the construction of the B-2500 Bonner Bridge replacement project. The purpose of this project is to improve highway, visitor, and employee safety by constructing longer turning lanes on to each road for both north bound and south bound traffic. The current turn lanes are narrow and short and there are no turn lanes into Coquina Beach Access area for northbound vehicles. The highway speed limit (55 mph) and the high volume of traffic and frequency of vehicles turning onto these two roads dictates a great need to improve the flow of traffic for visitor and staff safety.

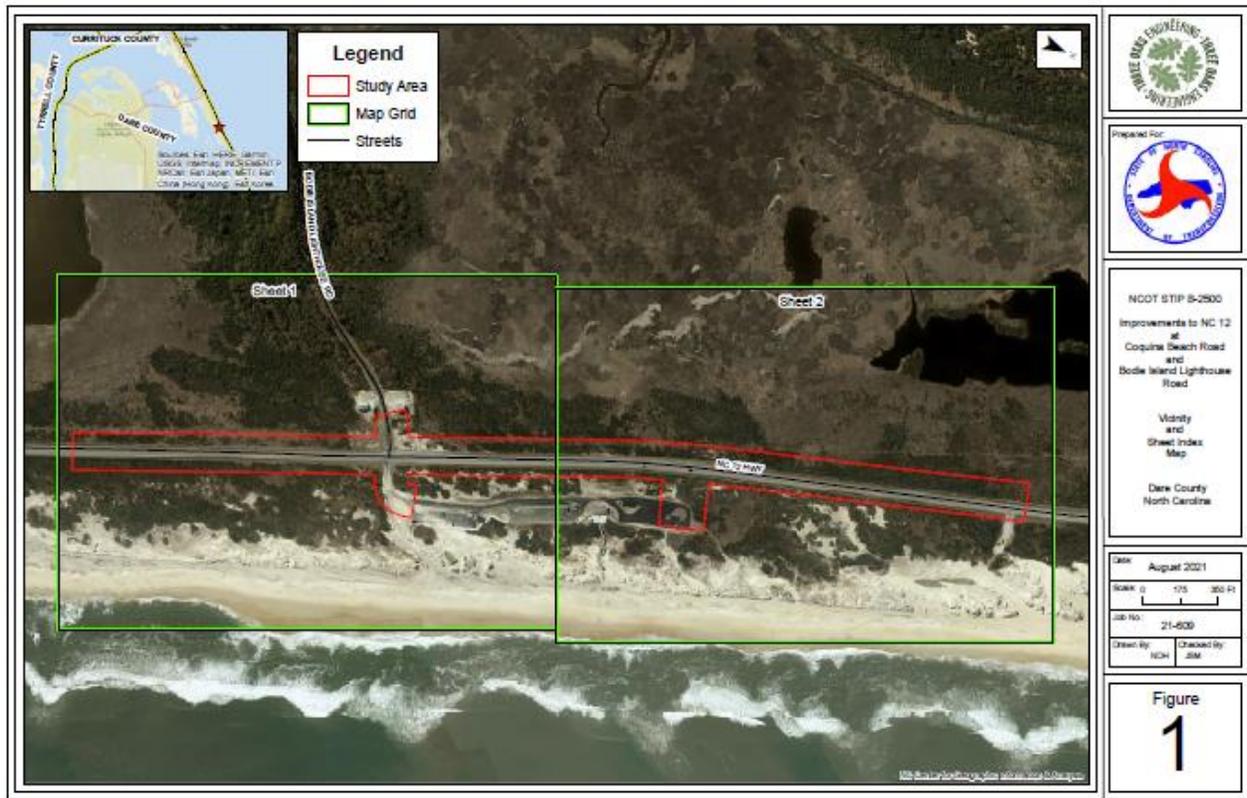


Figure 1: Coquina Intersection Project Site

As a condition of the National Park Service’s Special Use Permit (SUP) on the B-2500 project, NDOT was to provide an additional motor vehicle/pedestrian ramp access from Highway 12 or the modification to an existing ramp to the ocean beach north of Ramp 4 to mitigate impact on visitors' access to the beach caused by the B-2500 Project. After the SUP was issued on the project, it was determined by the National Park Service that an additional motor vehicle/pedestrian ramp access from Highway 12 or the modification to an existing ramp would not be needed. The National Park Service made access improvements to the Cape Hatteras National Seashore separate from the B-2500 project, and an additional ramp would not be required

to meet their access needs. In lieu of meeting Condition 43 on the SUP #USA15-5700-029, the NPS and the NCDOT have agreed to an intersection improvement project on NC 12 at Coquina Beach Road and Bodie Island Lighthouse Road. Lack of turn lanes, short turn lane tapers, and/or limited or non-existent storage at this intersection is problematic for drivers unfamiliar with the area. These factors contribute to accidents and erratic maneuvers by drivers, especially those of long vehicles (Motorhomes, Fifth-wheel campers, trucks w/ boats, etc.). Peak traffic during summer months further complicates safe maneuvers at this intersection. Construction of turn lane improvements at this intersection will fulfill the conditions of the NPS' B-2500 SUP.

This Statement of Findings is presented to acknowledge wetland resources that may be affected by the proposed project, to document compliance with Director's Order (DO) 77-1 and Procedural Manual (PM) 77-1 through avoidance and minimization of impacts and mitigation of unavoidable adverse impacts to these resources.

WETLAND PROTECTION

Executive Order (EO) 11990, "Protection of Wetlands" directs federal agencies: (1) to provide leadership and to take action to minimize the destruction, loss, or degradation of wetlands; (2) to preserve and enhance the natural and beneficial values of wetlands; and (3) to avoid direct or indirect support of new construction in wetlands unless there are no practicable alternatives to such construction and the proposed action includes all practicable measures to minimize harm to wetlands.

DO 77-1: Wetland Protection and PM 77-1: Wetland Protection establish National Park Service (NPS) policies, requirements, and standards for implementing EO 11990. In accordance with these orders and procedures, the NPS adopts a goal of "no net loss of wetlands" and strives to achieve a longer-term goal of net gain of wetlands Servicewide. In support of these goals, the NPS will use "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al. 1979) as the standard for defining, classifying, and inventorying wetlands. For proposed new development or other new activities, plans, or programs that are either located in or otherwise have the potential for direct or indirect adverse impacts on wetlands, the NPS will employ a sequence of:

1. avoiding adverse wetland impacts to the extent practicable,
2. minimizing impacts that could not be avoided, and
3. compensating for remaining unavoidable adverse wetland impacts via restoration of degraded wetlands.

Consistent with these policies, compensatory mitigation for wetland degradation or loss will be at a minimum 1:1 ratio. Actions proposed by the NPS that have the potential to have adverse impacts on wetlands will be evaluated through the National Environmental Policy Act (NEPA) planning and compliance process. Regardless of the associated NEPA compliance pathway (environmental assessment, environmental impact statement, or categorical exclusion), a Wetland Statement of Findings documenting compliance with this DO 77-1 and PM 77-1 will be completed for proposed actions that would result in adverse impacts on wetlands. Actions that may be excepted from this Statement of Findings requirement are identified in the Procedural Manual.

WETLANDS WITHIN THE PROJECT AREA

SITE DESCRIPTION

The project area is a 4.07-acre area on along 0.367 miles of NC Highway 12 on Bodie Island near NPS Hwy 12-mile marker 22 located at approximately 35°49'45.49"N, 75°33'29.55"W (Figure 1 and Attachment 1).

The design for creating and or expanding turning lanes within the project area are expected to impact 0.14 acres of wetlands permanently (Table 1; Attachment 2). The disturbance outside the existing transportation facilities (roadway and ditches) would be approximately 1.28 acres.

WETLAND RESOURCES

A formal wetland delineation was conducted by Three Oaks Engineering, Inc. within the study area on July 26, 2021. Eleven potential wetlands were identified within the study area (Table 1; Attachment 1). No potential streams or surface waters (ponds, basins and/or tributaries) were identified within the study area (Figure 1). This project is located in the Pasquotank River Basin (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] 03010205).

Table 1: Potential and Actual Wetland Impacts

Map ID	NWI Classification	Area (ac.) Study Area	Area (ac.) Actual Wetland Impacts
WA	E2SS3P	1.05	0.0360
WB	E2SS3P	0.04	
WC	E2SS3P	0.27	0.1030
WD	E2SS3P	0.01	
WE	E2SS3P	0.01	
WF	E2SS3P	0.03	
WG	E2SS3P	0.01	
WH	E2SS3P	<0.01	
WI	E2SS3P	0.13	
WJ	E2SS3P	0.46	
WK	E2SS3P	0.51	
WL	E2SS3P	0.04	0.0054
WM	E2SS3P	0.02	

Wetland A, B, D, E, F, G, H and I are all nontidal freshwater marsh habitat possess similar landscape positions, hydrology, floristic compositions and soil properties. These wetlands are subject to semi-permanent inundation of saturation but are not subject to regular or occasional flooding by tides. This wetland type is considered a transitional wetland type. These wetlands are saltmarsh wetlands with both persistent emergent vegetation and mixed deciduous scrub-shrub and broadleaved vegetation, that is subject to an irregular tidal flooding regime (Cowardin class E2SS3P). Wetland A and B are part of the upper most

wetland periphery of the Bodie Island Lighthouse pond. Wetlands D, E, F, G, H, I are adjacent to tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or intermittent connections to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. Soils are Duckston fine sand with less than a 2% slope.

Wetland C and L are are estuarine intertidal saltmarsh wetlands with both persistent emergent vegetation and mixed deciduous scrub-shrub and broadleaved vegetation, that is subject to an irregular tidal flooding regime (Cowardin class E2SS3P). These wetlands include the disturbed ditch along Highway 12 which occasionally ponds during rain events.

Wetland J, K possesses a similar landscape position, as well as hydrologic, floristic and edaphic properties. They are estuarine intertidal saltmarsh wetlands with both persistent emergent vegetation and mixed deciduous scrub-shrub and broadleaved vegetation, that is subject to an irregular tidal flooding regime (Cowardin class E2SS3P).

Wetland M is an estuarine intertidal saltmarsh wetland with both persistent emergent vegetation and mixed deciduous scrub-shrub (Cowardin class E2SS3P).

WETLAND PLANT COMMUNITIES

At the time of the 2021 wetland delineation site visit, vegetation at the proposed project location appeared primarily undisturbed and was typical of barrier island dune systems along a highway in this coastal region.

This wetland plant community is characterized by a heterogeneous patchwork of shrub-dominant vegetation (scrub-shrub wetland) interspersed with infrequent but very dense stands of saltmarsh graminoid species (emergent saltmarsh). Within the wetland survey limit, dominant species in scrub-shrub Wetlands A, B, D, E, F, G, H and I areas include wax myrtle (*Morella cerifera*), swamp bay (*Persea palustris*), and yaupon, (*Ilex vomitoria*). The herbaceous layer is characterized by Erect centella (*Centella erecta*), common soft rush (*Juncus effuses*), common threesquare (*Scheoenoplectus pungens*), needlegrass rush (*Juncus roemerianus*), forked rush (*Juncus dichotomus*). Small areas of periodic hydrological connections have wetland graminoids, such as saltmeadow cordgrass (*Spartina patens*), spikerush (*Eleocharis* spp.), and star rush (*Rynchospora* spp). Woody vines consisted of laurelleaf greenbriar (*Smilax laurifolia*) and climbing hempvine (*Mikania scandens*).

In Wetland J, K dominant vegetation includes common reed (*Phragmites australis*), *Morella cerifera*, *Persea palustris*, and *Ilex vomitoria*.

Wetland M contains a few small patches of *Spartina patens* surrounded by shrub thickets.

The wetland plant community observations closely match the vegetation data published in the “Vegetation Mapping at Cape Hatteras National Seashore” report (McManamay 2014). This report identified the wetlands vegetation as part of the “Atlantic Coast interdune Swale” vegetation class described as wax myrtle/salt meadow cordgrass shrubland. As described in McManamay 2014, Atlantic Coast interdune swale vegetation occurs in wetland flats, back dunes, and interdune swales along the Atlantic Coast from New Jersey to Florida. The substrate may be sand or loamy sand, sometimes with a thin layer of organic matter. It occurs beyond the reach of most storm tides but may be affected by salt spray. The water table is often less than 0.5 meter below the surface. Canopy closure varies from densely closed to moderately open. This vegetation is dominated by a 2–8-meter-tall shrub layer dominated by wax myrtle, sometimes

intermixed with southern red cedar, northern bayberry (*Morella pensylvanica*), flameleaf sumac (*Rhus copallinum*), saltbush, or yaupon holly (*Ilex vomitoria*). The herbaceous layer is characterized by salt meadow cordgrass. Other ground flora associates include eastern poison ivy (*Toxicodendron radicans*), switchgrass (*Panicum virgatum*), broomsedge bluestem (*Andropogon virginicus*), forked rush (*Juncus dichotomus*), seaside goldenrod (*Solidago sempervirens*), greenbrier (*Smilax spp.*), Virginia creeper (*Parthenocissus quinquefolia*), grape (*Vitis spp.*), and common threesquare (*Schoenoplectus pungens*).

The shrub thickets of this plant community are early successional stages of coastal woodlands, which sometimes persist for a long time. Though less prone to soil disturbance from overwash, this plant community is subject to regular tidal flooding and occasional severe storm disturbance regimes. The shrub thicket communities of Cape Hatteras support moderate to very dense vegetative cover (50–90%). During periods of relatively little storm flooding, scattered individual plants of wax myrtle, saltbush, and Jesuit's bark (*Iva frutescens*) grow on overwash terraces and on the high marsh. The high marsh is more frequently flooded, so it tends to remain in the open, savanna-like shrub stage, allowing these three species grow rapidly to recolonize the marsh if a major storm eliminates most of the vegetation. Frequent exposure to flooding and occasional severe disturbances drive long-term stability of this highly interspersed and heterogeneous wetland plant community and structure.

WETLAND ANIMAL COMMUNITIES

No formal animal species inventories have been conducted for Cape Hatteras National Seashore. No records specific to animal communities in the project area are available.

Cape Hatteras National Seashore contains many ecologically important habitats, such as marshes, intertidal flats, and beach areas that support a variety of shorebirds including threatened species and species of special concern. It was designated a Globally Important Bird Area by the American Bird Conservancy in 2001 in recognition of its value for bird migration, breeding, and wintering. A variety of wildlife species depend on the habitats at CAHA. Although a large number and variety of species—including more than 400 species of birds—use the seashore at some point within their life cycle, only a small fraction of these have strong links to the wetland habitat resources within the proposed project area. Many of the protected bird species found at CAHA feed upon invertebrates. Some, like colonial waterbirds, feed over the open waters of the ocean, inlets, and sounds, capturing small fish, shrimp, and other invertebrates. Common bird species such as Cooper's hawk, harrier, bald eagle, osprey may be present adjacent to the project area.

Common wildlife which may cross through the project area includes white-tailed deer (*Odocoileus virginianus*), common grey fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), coyotes (*Canis latrans*). Bodie Island supports smaller native mammal populations, including eastern cottontail (*Sylvilagus floridanus*), nutria (*Myocastor coypus*), northern raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*).

Habitat for the federally threatened piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*), green (*Chelonia mydas*) and loggerhead (*Caretta caretta*) sea turtles and seabeach amaranth (*Amaranthus pumilus*); the federally endangered West Indian manatee (*Trichechus manatus*), Hawksbill (*Eretmochelys imbricate*), Kemp's Ridley (*Lepidochelys kempii*) and Leatherback (*Dermochelys coriacea*) sea turtles and experimental red wolf (*Canis rufus*), do not occur within the project area and project actions would have no effect on these special species of concern.

The federally endangered Red-cockaded woodpecker (*Picoides borealis*) occurs in Dare County, however, there are no records for this species on the Outer Banks. The proposed project would likely have no effect on the Red-cockaded woodpecker.

There are recent element occurrences for the federally threatened northern long-eared Bat (*Myotis septentrionalis*) in Dare County within Alligator River National Wildlife Refuge. However, there are no known hibernation or roost sites in Dare County. The proposed project would have no effect on the northern long-eared bat.

WETLAND HYDROLOGIC CHARACTERISTICS

Bodie Island consists of relatively flat, low-lying topography. Sand and soil were removed from portions of the island to create a roadbed for Highway 12, and to develop Nags Head. This created depressions in the topography, and drainage channels, which became wetland complexes. The fill material placed for Highway 12 and to develop the town of Nags Head, raised the topography in those areas and removed vegetation, and altered the hydrology of the project area. The Town of Nags Head Flood Control projects include the extension of detention ponds, which may create additional open water wetlands, or convert existing wetlands.

Within the survey limits, wetlands are a portion of the marine tidal salt marsh complex connected to the sound ward side of the island, however, the edges of these wetlands within or adjacent to the highway right of way have been impacted by the change to topography to construct the highway through Bodie Island. Soils throughout this wetland complex are quite variable, from rapidly drained sand to somewhat poorly to well-drained fine sand. At a local scale, topographic variations and ground disturbance produce isolated areas of permanent flooding or ponding and raised areas with no exposure to tidal groundwater. Soil disturbances include human disturbance from the construction of the highway including ditches, installation of utilities and continue impacts from vehicle tire ruts, as well as natural disturbances such as heavy rains from hurricanes.

STATEMENT OF QUALIFICATIONS

Three Oaks Engineering, Inc. staff member Nathan Howell conducted the original site investigation within the study area on July 26, 2021 on behalf of NCDOT. Mr. Howell is an environmental scientist Mr. Howell has 6 years' experience specializing in wetland and stream delineations, natural community assessments and GIS mapping in North Carolina.

EVALUATION OF PROPOSED PROJECT ACTIONS

NO-ACTION ALTERNATIVE

The no-action alternative proposes no changes to the existing highway and continuation of current management. Under this alternative, no improvements are proposed.

PREFERRED ALTERNATIVE -IMPROVEMENTS TO NC HIGHWAY 12

The proposed action would include the construction of widening and lengthening the existing southbound turn lane into Bodie Island Lighthouse Road. The southbound turn lane into Coquina Beach Access area would also be widened and lengthen. The northbound turn lane into Bodie Island Lighthouse Road would be widened and lengthen. A new northbound turn lane in Coquina would be constructed. The entrance to Coquina would be widened from the highway to the beginning of the parking lot. Signage would also be installed within the highway right of way. This project would afford drivers with increased decision/reaction time, as well as much needed storage for turning vehicles. These improvements would create a safer functionality at this intersection for visitors to CAHA and the traveling public

PROPOSED IMPACTS TO WETLAND FUNCTION AND VALUES

This section addresses potential impacts to wetland function and values for the proposed action only. The Council on Environmental Quality (CEQ) regulations define effects or impacts as “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives” (40 CFR §1508.1). Proposed short-term impacts are construction-related and would be expected to occur for less than six months. Proposed long-term impacts would be permanent.

Constructing longer turn lanes and tapers for all directions at the proposed project location would have direct and indirect impacts on the saltmarsh wetland resources at the site. The proposed project would require clearing of existing vegetation and surface grading, resulting in the permanent loss of approximately 0.1344 acres (5844 square feet) of total wetlands (see Table 1 and Attachment 2). These permanent impacts would be primarily attributable to excavation of fill construction of the turn lanes and recontouring of the ditches. During the site design process, road locations and drainage slopes were adjusted to avoid these wetland impacts to the maximum extent practicable while still delivering the intended facility function and capacity. Temporary construction impacts would result from the relocation of the underground water line. The water line would be trenched outside of wetlands and directionally bored under wetland areas.

Site access and equipment staging would occur outside of wetland areas. All non-paved impacted areas would be revegetated with native vegetation following construction completion.

BIOTIC FUNCTIONS

The most significant impacts to wetland biotic function would be the permanent loss of 0.1344 acres of vegetation in Wetland A, C and L (see Attachment 2) from excavation. These impacts are unavoidable due to the required placement of road ditches from the expansion of highway to accommodate longer and wider turn lanes into the intersection. The proposed impacts represent the minimum possible impact while satisfying NCDOT’s highway construction requirements. The loss of approximately 0.1344 acre of wetland represents 5% of the total 2.58 acres of wetlands that occur within the survey boundary.

No effects to protected or special-status species are proposed. Several federal or state protected plant and animal species occur on Bodie Island, primarily sea turtles and shorebirds and sea beach amaranth.

However, these species do not inhabit the wetland areas within the project area and are generally found only along the beach and in the open ocean. No occurrence of protected species has been documented within the project limit. It has been determined that the proposed project would have no effect to protected species.

Some wetland vegetation losses would be anticipated during the construction of expanding the highway and relocating the underground water line. Indirect impacts from equipment staging and recontouring of the ditches would likely be limited to the edges of the wetland, as nearly all ongoing maintenance and operations work would use the new road system.

Construction of the expanded highway may also adversely impact wildlife within the wetland. These impacts include displacement of wildlife and negligible loss of suitable habitat resulting from vegetation removal and grading for road and ditch construction. The area is currently in a degraded condition that provides limited ecological services due the construction of the highway. The wetlands on the edges of this highly trafficked highway year-round, do not lend themselves to suitable wildlife habitat.

Nearly all habitat impacts result from surface grading and road construction. Proposed impacts from construction of the turning lanes are minimal due to the design. Temporary construction impacts to wildlife would include vegetation removal and soil disturbance for staging areas construction of underground water lines. The long-term presence of the expanded intersection and turning lanes would not increase visitor traffic nor noise within the project area and therefore would not further displace wildlife than is currently expected at a busy highway intersection. In addition, species that inhabit these wetlands are generally highly mobile species such as rodents and songbirds, which are likely to continue to use the area despite this disturbance.

HYDROLOGIC FUNCTIONS

No significant changes to wetland hydrology are proposed. Grading for improvements may have minor short-term impacts to surface water drainage patterns. However, like the existing highway roads on Bodie Island, proposed new improvements would be packed graded sand and asphalted and would continue to restrict surface water drainage or infiltration as currently the existing highway does. All surface water from the highway would drain directly into ditches adjacent to the highway. Because the hydrology of the wetlands has been previously modified by the construction of the highway, these minor changes to surface water drainage would have a negligible effect on the hydrologic function of the wetlands.

CULTURAL VALUES

There are no known historic or archeological resources considered eligible for the National Register identified within the proposed project area. A pedestrian survey for historic and archaeological artifacts was conducted November 6-8, 2021, yielding no cultural materials. Should archeological resources be uncovered during construction, work would be halted in the discovery area and CAHA staff would consult with the North Carolina State Historic Preservation Officer regarding treatment. Given these mitigative precautions, the proposed project would have no impacts to historic or archaeological cultural resources.

No cultural landscape areas have been designated at the proposed project location. Therefore, the proposed project is not expected to have adverse impacts to cultural landscapes.

RESEARCH/SCIENTIFIC VALUES

Although there are numerous scientific and research projects associated with the barrier island habitat of Bodie Island, there are no studies that specifically occur within the project area. Most scientific studies in the vicinity focus on protected species and their habitat along the beach shoreline. Projects that do involve the salt marsh and dune meadow habitats within the project area tend to be large-scale studies that encompass the entire island, and typically involve remote sensing methods such as aircraft or satellite imagery. The proposed project would have no significant effect to such large-scale studies. The construction of the highway improvements and associated loss of wetland and upland vegetation may affect the environment in the immediate vicinity. However, this disturbance is relatively small in comparison to Bodie Island as a whole. Similarly, because the island is already an established recreational destination with significant use, highway improvements are not expected to substantially increase visitation use beyond what is typical highway traffic along this section of highway intersection.

ECONOMIC VALUES AND RECREATION AND VISITOR EXPERIENCE

The improvements to Highway 12 would provide a safe highway intersection for visitors to CAHA and travelers along the highway would not adversely affect the economic values of the park. This project would provide a safer visitor experience to those who are visiting the Bodie Island Lighthouse and/or Coquina Beach Access areas. The proposed project would not be expected to attract new visitors, increase highway traffic, nor increase economic value to the area.

WETLAND IMPACT COMPENSATORY MITIGATION

CAHA and NCDOT would commit to following mitigation measures to offset the potential adverse impacts to wetlands resulting from the improvements to Coquina Intersection. In accordance with the NPS goal of “no net loss of wetlands” and with established wetland protection policies, permanent and temporary loss of wetlands with the construction of new and longer turn lanes and ditches, would be directly offset by active restoration and management of approximately 0.67 acres of degraded wetland habitat at another location. This proposed mitigation site is also on Bodie Island, almost adjacent to the project area at the Bodie Island Lighthouse Pond (vicinity of 35°49'7.07"N, 75°33'48.60"W). (see Attachment 3. Final Wetland Mitigation Plan B-2500). The NPS identified restoration of high-quality wetland communities designated as Significant Natural Heritage Areas (SNHAs) within CAHA as the highest priority mitigation option. Many sites with high-quality or rare natural communities, rare species, and special animal habitats have been identified by the NPS and North Carolina Heritage Program (NCNHP) as being important for conservation of the State's biodiversity. The ecological significance of these areas has been documented through a 1987 Registry agreement, as amended, for the protection and management of SNHAs. The Bodie Island Lighthouse Pond has been identified as a SNHA.

The Bodie Island Lighthouse Pond is located on the Oregon Inlet 7.5 USGS topographic quad map, approximately 3 miles north of Oregon Inlet. It is the largest pond in the Seashore, measuring nearly one mile long and 0.4 mile wide. This fresh to slightly brackish pond is likely not a natural body of water. It was probably created by a waterfowl hunt club by placing a dam on a small outlet stream to the Pamlico Sound. However, the history of the pond is poorly known, and it predates the designation of the Cape Hatteras National Seashore.

Today, the Lighthouse Pond is primarily used for nature study. Large numbers of birdwatchers and sightseers visit the pond each year, accessing the Pond area on a recently upgraded (now handicap-accessible) wildlife viewing platform. Hunting and fishing are prohibited. The site was described by the NCNHP as having significance due to its outstanding collection of water birds, with several rare plant and animal species. Historically, the pond was bordered by a diverse, though somewhat narrow, border of fresh-brackish marsh.

It is important to note wetland values have been slightly degraded at the Bodie Island Pond due to the infestation of the common reed (*Phragmites australis*). The European genotype of the common reed (*P. australis*) occurs in large bands around the edge of the pond; this is an exotic species which is now abundant in habitats once occupied by the genotype native to the United States. Population decline and local extinctions of the native genotypes may be a result of competitive displacement by the exotic genotype and/or anthropogenic disturbance. In 2008, the NPS originally estimated and mapped approximately 35 acres of marsh infested by the exotic *P. australis* within the Bodie Island Lighthouse Pond SNHA. In 2011, NCDOT in coordination with NPS mapped 51.73 acres of phragmites within the marsh at Bodie Island Lighthouse pond. The NCDOT proposes a 5:1 ratio for wetland restoration of 0.67 acres of phragmites dominated wetland within the Bodie Island Lighthouse Pond using herbicide treatments to offset wetland impacts associated with the intersection improvements. NCDOT and NPS developed a wetland mitigation plan (Attachment 3) for wetland impacts associated with the NC Highway 12 replacement of the Herbert C. Bonner Bridge over Oregon Inlet. This final Wetland Mitigation Plan describes standards, monitoring and maintenance requirements and schedule for the compensatory mitigation.

Restoration of the saltmarsh plant community would more than offset the loss of biotic wetland functions at the proposed project location. Cultural, research/scientific, and economic values are unlikely to be significantly changed by this mitigation.

During construction, ground protection mats would be placed in high traffic areas to reduce temporary trampling impacts on vegetation from heavy machinery. Slopes of the newly constructed ditches would also be graded at a 3:1 slope, just like the current slopes to ensure hydrologic functions of the ditches continue as the current design (Attachment 2). After grading, the slopes would be reseeded with an NPS approved seed mix and matted/thatched to help stabilize the slopes until they are revegetated. To minimize the risk of invasive species being introduced or spread, all construction vehicles would be washed and inspected prior to use in the project area and after construction prior to demobilization from the project area.

Construction would be scheduled to occur during December 2021 through April 2022 to reduce impacts to visitors and nesting wildlife. The project would be funded and managed by NCDOT under a contract with the intent to complete the highway modifications before the summer of 2022. Herbicide treatments within the Bodie Island Pond would be implemented twice a year by NCDOT for up to 5 years to ensure a 5:1 ratio of the B-2500 project is successfully met. Construction contractors would implement best management practices, appropriately handling and disposing of packing materials and other debris to ensure it does not escape beyond the construction limits. Construction activities for this project would occur only during daylight hours.

SUMMARY

The National Park Service has determined that implementing the proposed project in conjunction with the proposed mitigations would not result in any measurable loss of wetlands or wetland function and values. To offset the permanent loss of 0.14 acre of wetlands associated with the construction of the new turn lanes, a wetland mitigation site has been identified, yielding a net increase of wetland area and a 5:1 mitigation ratio.

REFERENCES

- Cowardin, Lewis M. 1979. Classification of wetlands and deepwater habitats of the United States. Washington, D.C.: Fish and Wildlife Service, U.S. Dept. of the Interior.
- Executive Order No. 11988. 42 F.R. 26951 (1977) "Floodplain management."
- Executive Order No. 11990. 42 F.R. 26961 (1977) "Protection of Wetlands."
- McManamay, R. H., S. C. Heath, and L. Baron. 2014. Vegetation mapping at Cape Hatteras National Seashore. Natural Resource Data Series NPS/SECN/NRR—2014/710. National Park Service, Fort Collins, Colorado. National Park Service. 2002. National Park Service Director's Order 77-1: Wetland Protection.
- National Park Service. 2016. National Park Service Procedural Manual 77-1: Wetland Protection.

ATTACHMENTS

- Attachment 1. Coquina Intersection Study Area
- Attachment 2. Coquina Intersection Wetland Impacts
- Attachment 3. Final Wetland Mitigation Plan B-2500