



## BEACH RESTORATION TO PROTECT NC HIGHWAY 12 CLEAN WATER ACT 404 AND NPS SPECIAL USE PERMITS

### FINDING OF NO SIGNIFICANT IMPACT

The National Park Service will implement Alternative 3, which is described on pages 41–57 of the Environmental Assessment (EA). The National Park Service will issue a one-time Special Use Permit to Dare County for beach nourishment during fair-weather months using an offshore borrow area and placement along 15,500 linear feet of shoreline along Cape Hatteras National Seashore in accordance with this decision. The selected alternative will likely cause some short-term adverse environmental impacts, but these will be limited in extent and partially offset by management activities designed to minimize impacts. The selected alternative will not have a significant adverse effect on the human environment and does not constitute an action that requires preparation of an Environmental Impact Statement. The selected alternative will not result in significant impacts on physical resources, water resources, natural resources, cultural resources, or other unique resources within the project area. No highly uncertain or controversial impacts, or unique or unknown risks were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal actions are consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of the National Environmental Policy Act (NEPA), and that they will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102 (2) (c) of NEPA.

Recommended: \_\_\_\_\_

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Date: 2/18/16

David Hallac  
Superintendent  
Cape Hatteras National Seashore

Approved: \_\_\_\_\_

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Date: 2/19/16

Stanley Austin  
Regional Director  
Southeast Region, National Park Service

## INTRODUCTION

The Department of the Interior, National Park Service (NPS), has prepared this Finding of No Significant Impact (FONSI) for the *Beach Restoration to Protect NC Highway 12 Clean Water Act 404 and NPS Special Use Permits Environmental Assessment* (EA) for Cape Hatteras National Seashore in North Carolina. The Army Corps of Engineers is the lead agency and the National Park Service is the cooperating agency for this project. This FONSI states what the NPS decision is, identifies the other alternatives considered, identifies the environmentally preferred alternative, discusses the basis for the decision, lists measures to minimize and/or mitigate environmental harm, and briefly describes public and agency involvement in the decision-making process. A non-impairment determination for the selected action is attached to this FONSI. The FONSI also concludes the NPS responsibilities under Section 106 of the National Historic Preservation Act, and the implementing regulations at 36 CFR 800.8, by committing to the mitigation to avoid adverse effects to historic properties.

This FONSI, the EA, and the determination of non-impairment comprise the complete record of environmental analysis for the project. Under the selected alternative, the National Park Service will grant a one-time Special Use Permit to Dare County (Applicant) to place sand along a 3-mile length of beach in the Seashore. The purpose of the Applicant's project is to provide a wider beach to serve as a critical buffer for storm waves between the ocean and NC 12, the main highway serving the Seashore and local communities. The National Park Service will issue the special use permit in coordination with the Army Corps of Engineers issuing a Clean Water Act 404 permit for the project.

## NPS SELECTED ALTERNATIVE

The National Park Service will implement Alternative 3, which was identified as the preferred alternative in the EA. The complete description of the selected alternative can be found in Chapter 2 of the EA in the *Preferred Alternative 3 – Summer Construction* section. A summary of the key points of the selected alternative is provided below.

Under the selected alternative, the National Park Service will take final agency action when it issues a one-time Special Use Permit to Dare County for beach nourishment during fair-weather months using an offshore borrow area and placement along 15,500 linear feet of shoreline along the Seashore in accordance with this decision.

The Applicant may place up to 2.6 million cubic yards of sand along 3 miles of beach to widen it an average of about 150 feet. The project will be completed within a single year during fair-weather months when dredging efficiency and safety can be maximized. Construction mobilization activities could extend the overall period of operations to be outside wildlife nesting seasons.

Sand will be excavated using ocean-certified dredges from an offshore borrow area approximately 1.7 miles seaward of the Cape Hatteras Lighthouse. Data provided by the applicant indicates that the designated borrow area has sand that closely matches the existing beach sand and meets North Carolina standards for beach fill projects. Excavation activities will be restricted to the approved offshore borrow area and will avoid cultural resources, shipwreck debris, or obstructions that may be present.

Beach nourishment will involve two placement options: 1) *Continuous placement* along the active beach zone at or below the +7 ft North American Vertical Datum contour at grades and slopes matching the existing dry-sand and wet-sand beach and 2) *Modified continuous placement* along the active beach zone at or below the mean low water contour extending across the inner surf zone (i.e., inside the outer bar), leaving isolated undisturbed areas landward of the approximate low watermark. The *continuous placement* option will be implemented except where NPS biologists have identified active nesting areas for migratory birds. If nesting birds are present, then fill placement near the nesting area will be postponed. If nesting activity remains as construction progresses near the area (provided no areas remain where operations can be shifted), then the *modified continuous placement* option will be implemented. This option would place nourishment seaward of mean low water over the length of the nest closure area to keep equipment as far as possible from species of concern.

### **Mitigation and Monitoring**

The project will require coordinated permits and approvals from federal and state agencies. These approvals will encompass the whole project and include a variety of conditions specifically related to the protection of natural and cultural resources from construction-related impacts. The Applicant will be responsible for complying with the terms and conditions stipulated for this project in the NPS Special Use Permit. The NPS Special Use Permit will incorporate all mitigations and consultation requirements from the Fish and Wildlife Service Biological Opinion, the Army Corps of Engineers Clean Water Act Section 404 permit, the 1997 National Marine Fisheries Service Regional Biological Opinion Concerning the Use of Hopper Dredges in Channels and Borrow Areas along the Southeast US Atlantic Coast (SARBO), the NC Department of Environmental Quality and Coastal Resources Commission Permit (No. 136-15), and NC 401 Water Quality Certification permit (No. 4040). The permits shall contain the final version of the draft monitoring and special conditions for summer construction described in Appendix G of the EA. The Applicant will also be responsible for monitoring activities before, during, and after construction in conformance with the permits issued for this project. The National Park Service will establish mechanisms to ensure that mitigation obligations for the Seashore are met, mitigation measures are monitored for effectiveness, and unsuccessful mitigation is quickly remedied.

The following mitigation measures and monitoring were specifically mentioned in the EA and will be included as conditions in the NPS Special Use Permit.

### ***Coastal Resources, Sand Resources, and Water Quality***

- A pre-construction environmental meeting will be convened with resource and regulatory agencies, the National Park Service, the contractor, and the engineer to review protocols and environmental protection measures mandated under the permits.
- Equipment mobilization and use will be via designated beach accesses and along the constructed berm so as to avoid impacts to vegetated areas.
- Pipe and material along the beach will be moved under escort by NPS biologists so as to avoid any nesting activity or sensitive habitat identified by the National Park Service.
- Appropriate measures will be employed to prevent or control spills of fuels, lubricants or other contaminants from entering waterways or sensitive areas. Actions will be consistent with state water

quality standards and the Clean Water Act Section 401 certificate requirements. A hazardous spill plan will be approved by the National Park Service and appropriate resource agencies prior to construction. This plan will state what actions will be taken in the case of a spill, notification measures and prevention measures to be implemented, such as the placement of refueling facilities, storage and handling of hazardous materials.

- Equipment on the beach will be moved to a safe location within the vicinity of the project area upon a weather forecast of high wave and water conditions.
- The contractor will not leave vehicles idling for excessive periods when parked or not in use.
- Surveys before and after sand placement will be used to confirm how much sand has been added in each section and whether the elevation and slope of the new beach conform to the plans and specifications for the project which reflect the approved profiles in the permits.
- Use of bulldozers at night will be reduced to the minimum required for safe operations as sand is being discharged.
- Dredging will cease, and the dredge relocated to other parts of the borrow area if incompatible material or cultural resources are encountered and the National Park Service will be immediately notified.
- Dredge track lines will be monitored via the Army Corps of Engineers Dredge Quality Management System so as to ensure excavations are within the permitted boundaries of the borrow area.
- The submerged pipeline to the beach will be monitored for leaks and repaired immediately so as to avoid accidental slurry discharges in unauthorized bottom areas.
- Sand placement will occur in approximately four reaches extending ~4,000 feet in either direction from two landing points.
- Fill placement activities will be confined to one reach before proceeding to another area, with direct impacts of construction lasting ~2–3 weeks in each reach. [Note: If two dredges are utilized, there may be limited periods of time when it is necessary to work from two areas for purposes of efficiency or avoidance of active nesting areas.]
- Numerous sand ramps will be placed over the trunk line as sections are completed to allow access for beach patrol vehicles and the public.
- A no-work buffer will be maintained along the backbeach between the toe of the foredune and the active fill area.
- Irregular mounds will be smoothed out as the project progresses and as soon as pipe is removed from completed sections.
- Escarpments formed during construction will be eliminated by scraping to gentle slopes similar to the natural swash zone slope.

### ***Biological Resources***

- The Applicant will coordinate with the National Park Service, the Fish and Wildlife Service, and North Carolina Wildlife Resources Commission regarding the need to restrict construction in the vicinity of active nest building by sea turtles, shorebirds, or nesting water birds.
- The Applicant will coordinate during dredging operations with National Marine Fisheries Service

and the National Park Service regarding specific restrictions, operations procedures, and protection of turtles, Atlantic sturgeon, whales, and other marine mammals.

- Certified endangered species observers will be stationed on dredges to alert dredging personnel and record encounters. This will include authority to suspend operations while wildlife resources officials are contacted in the event of a take as defined under the Biological Opinion.
- The order of work (sections to be filled) will be accomplished in close coordination with NPS officials so that there will be the least disruption to bird-nesting activities in the national seashore.
- Certified trawlers will be retained to trawl for sea turtles ahead of operating hopper dredges and relocate turtles if encountered, or operate as non-capture trawling per final recommendations of the National Marine Fisheries Service.
- Continuous nightly beach patrols will be performed by certified monitors to locate any turtles that are stranded behind the dredge pipe on the beach and relocate them to the waters' edge or deal with them according to directives by and in consultation with Fish and Wildlife Service and North Carolina Wildlife Resources Commission.
- Sea turtle nests found immediately prior to or during construction within the project Area will be relocated by trained observers under the guidance of Fish and Wildlife Service, National Park Service and North Carolina Wildlife Resources Commission officials.
- Vehicle ingress and egress at night will be escorted by certified, endangered species observers.
- Wildlife collisions will be reported to federal and state resource personnel.
- Injury or death of wildlife will be reported to the Army Corps of Engineers, NPS personnel and other applicable agencies, such as the Fish and Wildlife Service and North Carolina Wildlife Resources Commission
- Lighting at the work area on the beach will be minimized in conformance with Fish and Wildlife Service requirements for beach lighting.
- No-work buffers along the beach will be established around the turtle or bird nests in coordination with Fish and Wildlife Service, North Carolina Wildlife Resources Commission, and NPS officials.
- The nourishment berm will be modified if necessary to increase the separation between an active bird nest on the upper beach and the fill placement area along the lower beach. This may include nourishing a limited length of the project seaward of mean low water (i.e. fill placement option no. 2).
- No construction activities or equipment storage will occur on vegetated areas.
- A plan for post-project dune planting or sand fencing will be developed after the nourished beach undergoes natural equilibration only if it is determined that planting or fencing will help stabilize the beach.
- The schedule for completion of each reach will be coordinated with NPS officials to postpone operations where active bird nests are being monitored.
- No nourishment will be placed on existing sand bags, beach vegetation, or the foredune.

### ***Cultural Resources***

- Dredging will leave buffers around obstructions such as underwater cable, providing undisturbed areas in close proximity to excavated areas.
- Construction will be stopped if cultural resources are encountered, and the contractor will coordinate protective measures to minimize disturbance with the State Historic Preservation Officer (SHPO).
- Potential cultural resources detected in the offshore borrow area will be avoided during dredging operations by establishing no-work buffers around the resources.
- The Applicant will conduct additional Phase 2 surveys to identify a possible abandoned cable running across the borrow area.

## **OTHER ALTERNATIVES CONSIDERED**

### **Alternative 1 - No Action**

Under the No-Action Alternative, the Army Corps of Engineers and National Park Service would not issue permits to Dare County for beach nourishment along the shoreline in the Seashore and the Village of Buxton Beach. The No-Action Alternative provided a basis for comparing management direction and environmental consequences of the action alternatives. Under the No-Action Alternative, Dare County, the State of North Carolina, and local entities would respond to future maintenance needs associated with the current natural conditions of unabated erosion in the Buxton Action Area. Current responses to that erosion by the NC Department of Transportation would continue, including sand scraping and road repairs. As erosion progresses and sufficient room to maintain a protective dune no longer exists, the state and individual property owners would likely implement short-term emergency measures such as sand-bagging. This alternative assumed that a high potential exists for NC 12 to be closed due to major storm damage and that NC Department of Transportation would carry out repairs as needed to reopen the road. Possible emergency repair options to reopen the road would include a temporary bridge or emergency beach nourishment.

If a breach occurred during a major storm(s), Hatteras communities, as in the past, could be isolated from the mainland until the road was reopened. Emergency services would have to seek alternative ways of transporting sick or injured people off the island until repairs could be made. The normal transport of food and goods for families and materials to repair damaged houses and businesses would be interrupted. Other than helicopter lifts and boat traffic, travel would cease and transporting of goods and services would likely occur by ferry or small plane.

### **Alternative 2 - Winter Construction**

Under *Alternative 2 – Winter Construction*, the National Park Service would issue a Special Use Permit to Dare County for beach nourishment during the winter months via dredge using an offshore borrow area and placement of up to 1.3 million cubic yards of sand along approximately 15,500 linear feet of shoreline along the Seashore. The complete description of the selected alternative can be found in Chapter 2 of the EA in the *Alternative 2 – Winter Construction* section. A summary of the key points of the selected alternative is provided below.

Sand excavation and placement operations under the Winter Construction Alternative would be the same as for the Summer Construction Alternative, but differs in the amount of sand placed and the season of construction. Construction would occur during winter months (December 1 through March 31) when either severe weather or monthly average wave heights would limit periods for safe operations. Winter construction would depend on the number of operational days that are possible in the project area within the four-month window for construction. Construction would be limited to those days when waves are less than the threshold for safe operating conditions.

Unsafe operational conditions would require dredging equipment and personnel to move to a nearest safe harbor located 110 miles from the project area before a storm event occurs. Operations would only resume after seas return to operational conditions. When common winter storms pass through the Buxton area, pipe on the beach would have to be removed temporarily and stored on high ground.

Based on average winter storm frequencies in the project area, estimated dredging efficiency would be less than 50%. So the estimated total nourishment volume possible under the winter construction alternative would only provide about 3 years of erosion relief, offsetting average annual losses before the beach reverts back to a deficit volume. This is far less effective than the selected alternative that will provide about 10 years of erosion relief before the beach returned to deficit conditions.

### **Preliminary Alternatives Considered and Dismissed**

Several other alternatives were identified during the planning process. Some of these alternatives were determined to have unacceptable impacts or to be technically or economically infeasible. Other alternatives identified during initial scoping were determined to be outside the project purpose, not allowed under existing North Carolina laws, or beyond the means of the Applicant. The EA includes the rationale for dismissing each of these alternatives. The following alternatives were considered and dismissed:

- Alternate nourishment borrow sources
- Erosion control methods designed to retain sand
- Shore-protection methods involving hard structures
- Structure relocation, including NC 12 realignment
- Structure abandonment
- Alternative transportation systems
- Nourishment along other erosion hotspots such as the Hatteras Village reach west of Buxton, which is narrow and vulnerable to another breach

### **ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term

impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative (43 CFR 46.30).

*Alternative 3–Summer Construction* will provide greater project longevity and environmental benefits resulting from a wider, longer-lasting beach. Until the NC Department of Transportation, the National Park Service, and other stakeholders can reach consensus on a long-term strategy for NC 12, Alternative 3 is considered to provide the most environmentally beneficial remedy for chronic erosion and the narrow beach in the high-energy coastal setting at Buxton. Therefore, Alternative 3 is the environmentally preferable alternative for the project area.

## **WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria:

### ***1. Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS.***

The primary impact topics identified in the environmental analysis and documented in the EA included: coastal resources (including littoral processes), sand resources, water quality, essential fish habitat (EFH), biological resources, cultural resources, socioeconomics, and visitor use and public safety. The environmental consequences for each impact topic are summarized below. No major adverse or beneficial impacts were identified to be at a level of significance requiring analyses in an environmental impact statement. The environmental consequences for each impact topic are summarized below.

The selected alternative will augment the sand supply and have negligible impact on littoral processes. A wider beach will reduce runup levels and help promote natural dune growth which depends primarily on wind speed and the width of the dry sand beach. The adjusted profile after construction is expected to retain similar slopes and morphology as other stable beaches in the vicinity of the action area. The beneficial effects might last for up to one decade.

Sand quality is expected to closely match other native beaches in the area. By augmenting the littoral sand supply, the normal processes of erosion and accretion will occur with less direct impacts to the dune, NC 12, and existing structures. Breach events will be less frequent and dune building will occur via natural aeolian processes for the life of the project, rather than via artificial manipulation after storms. The offshore borrow area is an isolated shoal, which will be reduced in height by several feet upon excavation. Data indicate the underlying sediments match the borrow sediments. Thus, little change in substrate conditions should occur upon project completion. Overall, the selected alternative will have long-term (decade), beneficial impacts on sand resources on the beach and moderate, adverse impacts in borrow area.

Dredging operations will produce localized, short-term increases in turbidity at the borrow area and the slurry discharge area along the beach. The proposed borrow area consists of medium to coarse sand (mean grain size), with trace amounts of mud. Nearly all the sediment will settle rapidly (order of

seconds to minutes) based on the fall velocity of sandy materials. Turbidity impacts will be limited temporally and spatially due to the texture of the sediments. Overall, the selected alternative will have transient, short-term adverse impacts on water quality during construction.

Dredging operations offshore will produce localized, short-term, adverse impacts to the existing population of benthic organisms, removing biomass and prey from the surficial layer of sediment in the Cape Hatteras sandy shoal Habitat of Particular Concern (HAPC) and temporarily increase turbidity in marine water column EFH. Dredge operations may impact Sargassum HAPC by entrainment.

Excavations will leave undisturbed area and some irregular topography which may be attractive to some fish species and foster rapid recruitment of benthic organisms. Beach filling operations will bury sessile benthic organisms in the unconsolidated/ shallow subtidal bottom EFH, temporarily increase turbidity to marine high-salinity surf zone EFH, and/or bury Sargassum EFH that may be floating in the area. The borrow area is expected to undergo rapid (order of months) recolonization by similar species because of the similarity between surficial sediments and under-lying sediments. The nourished beach area is expected to undergo rapid (order of weeks to months) recolonization by similar species because of the textural similarity between native and borrow sediments. Overall, the selected alternative will result in site-specific, short-term, minor to moderate, adverse impacts to nearshore and offshore EFH or HAPC.

Adverse impacts during construction will include burial of benthic organisms and disruption of turtle nesting activities, or colonial seabird nesting and roosting activities. Following construction, the selected alternative potentially produces long-term (decade) beneficial impacts in the form of expanded beach habitat. Duration of beneficial impacts will be a function of the scale and longevity of the project. During construction, beneficial and adverse impacts will occur in the form of nutrients and biota dislodged in the borrow area and beach zone. This may attract predators as well as eliminate benthic organisms for a short period (weeks to months). Upon project completion, new habitat will be available (wider beach) for the benefit of some organisms and barrier island vegetation.

Atlantic sturgeon may likely be adversely affected by dredging, and adverse impact will likely occur to sea turtles that may be trying to nest (particularly to loggerhead and greens and less likely to Kemp's ridley and hawksbill) and to benthic organisms, which will be excavated or buried during construction (offshore and beach). All sea turtle nests in the project area will be relocated during construction. The post-construction-nesting beach will be wider. Benthic foraging habitats will be increased post-construction, as will overwash habitats preferred by some protected plants and protected birds for nesting, foraging, and roosting. Generally, the selected alternative will result in site-specific, short-term, adverse and beneficial impacts.

Nourishment will lessen the chance of undetected cultural artifacts being exposed on the beach. At the borrow site, cultural resources such as potential remains of shipwrecks will be avoided by placing no work buffers around any objects that may have historical value. The possibility of encountering and damaging undetected objects will be reduced by suspending operations and moving the dredge to other areas of the borrow site.

The wider beach that is possible under the selected alternative will provide a substantial reservoir of sand to feed the dune system and reduces damaging wave runup at existing structures. Property damages will be reduced or minimized for the project's duration. The potential economic benefits in the

form of reduced property damage, less frequent NC 12 repairs, preservation of access for visitors, and preservation of the tax base and property values are likely to be an order of magnitude greater than the cost of the project over a decade.

Beach nourishment will produce short-term (months) adverse impacts to visitor use and experience during the period of construction due to dredge pipelines and equipment on the beach. Upon project completion, visitor experience will improve for several years by way of a wider recreational beach, less exposure of emergency sand bags, and less frequent dune breaches and road closures.

The selected alternative will reduce the frequency of road closures or the threat of a barrier breach and helps maintain unimpeded access via NC 12 during medical and other emergencies. Fire, police, and park service operations are favorably impacted for up to one decade.

***2. The degree to which public health and safety are affected.***

The mitigation measures stipulated by the terms and conditions in the permits and described above will be implemented to ensure the safety of the public and workers during construction. Upon completion of the selected alternative, the widening of the beach will reduce the risk of a breach inlet or closure of NC 12 resulting in long-term benefits to public safety.

***3. Any unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).***

The EA examined in detail the unique characteristics of the area potentially affected by the selected alternative including cultural resources, critical and sensitive areas for threatened, endangered, or rare species, and essential fish habitat. See above for a summary of impacts on these resources. All of the impacts are limited in their spatial and temporal extent and will not adversely affect these resources on a large scale. Furthermore, mitigation measures included in the terms and conditions of the permits required for this project will be carried out to help protect these resources.

***4. The degree to which impacts are likely to be highly controversial.***

No impacts are considered scientifically controversial. Effects from beach nourishment projects, including beach nourishment along the North Carolina coast, are generally well studied. The effects analyses in the EA relied on the best available scientific information, including data from ongoing national seashore biological monitoring surveys and information collected from previous dredging and nourishment activities along the Outer Banks. Project specific studies have been undertaken including beach condition surveys, wave analysis, geotechnical survey, and remote-sensing archeological survey of the borrow site.

***5. The degree to which the potential impacts are highly uncertain or involve unique or unknown risks.***

Beach nourishment is a common solution to coastal erosion problems along the Atlantic coast. The project design is typical of beach nourishment operations. Mitigation and monitoring efforts will be similar to that undertaken for past projects and have been demonstrated to be effective. Based on past experiences constructing similar projects and implementation of previously implemented

mitigation measures, the effects of the proposed action are not expected to be highly uncertain and the proposed activities do not involve any unique or unknown risks.

***6. Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.***

No precedent for future action or decision in principle for future projects in Cape Hatteras National Seashore is being made in this NPS decision to issue a Special Use Permit. The NPS's decision to issue a permit for a one-time beach nourishment project does not dictate the outcome for future projects.

***7. Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects. Significance cannot be avoided by terming an action temporary or breaking it down into small component parts.***

Significance may exist if it is reasonable to anticipate cumulatively significant impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The EA (page 123) identified existing and anticipated future similar projects in the vicinity of the project area. The impacts from these other projects are not reasonably anticipated to incrementally add to the effects of the selected alternative to the extent of producing significant effects.

***8. The degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.***

The selected alternative is not expected to adversely affect historic resources. Seafloor-disturbing activities may occur during proposed construction activities. However, under the selected alternative, the project will include measures per the North Carolina State Historic Preservation Officer's (SHPO) recommendations and permit requirements to protect these known sites and undiscovered sites. The protection measures include maintaining avoidance buffers on potential sites in the borrow area, and carrying out unexpected discovery protocol in the permits issued for this project. The SHPO does not anticipate that sand placement on the beach will have any adverse effect on the two archeological interface sites. The SHPO also concurred with conclusions and recommendations in the cultural resources report for this project. This included identifying an avoidance buffer around potentially significant anomalies in the proposed borrow area and conducting additional archeological investigation to assess National Register of Historic Places eligibility if avoidance is not possible.

***9. The degree to which an action may adversely affect an endangered or threatened species or its habitat.***

Listed species present within the project area under Fish and Wildlife Service jurisdiction include sea beach amaranth, piping plovers, roseate tern, and the red knot. Listed species under National Marine Fisheries Service jurisdiction within the in-water dredging environment include four species of sea turtles, Atlantic sturgeon, shortnose sturgeon, and six federally listed species of endangered whales. The Army Corps of Engineers initiated formal consultation for this project by submitting the final

Biological Assessment to the Fish and Wildlife Service. The Fish and Wildlife Service issued its Biological Opinion for this project on February 8, 2016. The National Marine Fisheries Service has stated that formal consultation was not required because the project is covered under the Regional Biological Opinion Concerning the use of Hopper Dredges in Channels and Borrow Areas along the Southeast US Atlantic Coast (SARBO).

With terms and conditions for protecting these sensitive species stipulated in the permits for this project, including those required by the Biological Opinion and the SARBO, implementation of the selected alternative will avoid or minimize adverse effects and will not jeopardize the continued existence of any federal listed species. The required terms and conditions focus upon avoidance; limiting construction activities near active breeding areas; stopping construction when sea turtles are present; relocating sea turtle nests out of construction zone; limiting night lighting; using only compatible beach fill; reshaping newly added sand; preconstruction surveys; monitoring of dredging and construction activities in coordination with agency biologists; post construction monitoring; and close coordination with agency biologists. All of these terms and conditions will help avoid and minimize impacts on these species, particularly nesting shorebirds and sea turtles.

***10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.***

The Army Corps of Engineers, National Park Service and Dare County must comply with all federal, state, or local environmental protection laws in the implementation of this project. A list of the regulatory agencies consulted and environmental protection requirements fulfilled for this project are summarized in the Agency Consultation Section below.

## **PUBLIC INVOLVEMENT AND AGENCY CONSULTATION**

### **Internal and Agency Scoping**

Three pre-application meetings were convened (October 22, 2014, January 8, 2015, and July 29, 2015) at the regional office of the NC Department of Environment and Natural Resources in Washington, North Carolina to solicit input from state and federal resource agencies and the principal permit-issuing agencies for this project including Army Corps of Engineers, National Park Service, and NC Department of Environment and Natural Resource's Division of Coastal Management. In addition to the permit-issuing agencies, resource agencies in attendance included the Fish and Wildlife Service, National Marine Fisheries Service, and NC Department of Environment and Natural Resource's Wildlife Resources Commission, Division of Marine Fisheries, and Division of Water Resources. The pre-application meetings provided opportunities for park service resource personnel, state resource agencies, and the principal permitting agencies to outline issues of concern to be addressed in project documents under the NEPA process.

### **Public Scoping**

Dare County convened public forums in Manteo (county seat) and Buxton on August 18-19, 2014, and the park service convened public forums at the same localities on January 27-28, 2015. Public comments were solicited during a public scoping period between January 12 and February 27, 2015.

These were invited under formal NPS public scoping in response to a Notice of Intent published in the Federal Register on December 29, 2014, pursuant to Section 102(2)(c) of NEPA. The Notice of Intent to prepare an Environmental Impact Statement (EIS) notified the public of a request from Dare County, North Carolina for a Special Use Permit from the National Park Service for activities related to beach widening in the Buxton area within and adjacent to Cape Hatteras National Seashore. The public comment period extended to February 27, 2015, and written comments were collected through the Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/caha>).

Following receipt of public comments in response to the Notice of Intent, the National Park Service met with the Army Corps of Engineers officials and determined that the Proposed Action should be evaluated under one joint Environmental Assessment by the two agencies. Accordingly, the National Park Service issued a Public Notice of Termination (June 17, 2015) of the EIS and of its intent to prepare the present EA (FR Vol 80, No 116, pg 34691).

Over 260 comments on the Proposed Action were received. Most comments were concerns about not implementing the project soon enough because of the beach area is getting smaller due to on-going erosion resulting in less protection from storm events for NC 12 and Buxton area. A primary concern was the high risk of NC 12 becoming impassable because of ocean storm caused flooding, overwash, and sand deposition. The public was alerted to watch for updates and information on the Seashore website, at local media outlets, and on the PEPC website.

### **Public Review and Comment Period**

The *Beach Restoration to Protect NC Highway 12 Clean Water Act and NPS Special Use Permits Environmental Assessment* formal public review period occurred from September 18 through October 19, 2015. The Army Corps of Engineers issued a public notice announcing the availability of documents, including the EA, submitted with an application from Dare County seeking authorization to carry out the proposed action. The notice included information on how to comment on the project. The public notice was available on the Wilmington District Web Site at <http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/PublicNotices/tabid/10057/Article/617794/saw-2015-01612.aspx>. The EA with all the appendixes were also available on the PEPC website at <http://parkplanning.nps.gov/BeachRestorationPermits>. The National Park Service issued a news release announcing that a public meeting about the project would be held on October 15, 2015 in Buxton, NC. Approximately 40 individuals attended the meeting.

During the public review period, the Army Corps of Engineers received four letters from the public, plus agency letters from the Fish and Wildlife Service, National Marine Fisheries Service, NC State Historic Preservation Office, and NC Wildlife Resources Commission. The agency letters are in attachment B. The applicant's response letters to agency comments are in attachment C. A summary of public comments on the EA and responses are in attachment D.

## **Agency Consultation**

**Army Corps of Engineers.** The Applicant has submitted a Clean Water Act Section 404 permit application to the Army Corps of Engineers for the selected alternative because planned construction activities will affect waters of the United States. The Army Corps of Engineers is the lead agency for this project with the National Park Service working closely in planning and coordination of the environmental compliance processes for this project.

**Fish and Wildlife Service.** Informal consultation on this project with the Fish and Wildlife Service began in October 2014. A third-party contractor prepared a draft Biological Assessment for review by NPS and USFWS biologists. The Army Corps of Engineers initiated formal consultation by submitting the final Biological Assessment to the Fish and Wildlife Service on September 18th, 2015. The Fish and Wildlife Service issued their Biological Opinion on February 8, 2016, fulfilling Section 7 consultation requirements.

**NOAA National Marine Fisheries Service.** The Applicant has been consulting with the National Marine Fisheries Service since October 2014.

The Army Corps of Engineers initiated Endangered Species Act consultation by submitting the final Biological Assessment to the National Marine Fisheries Service on September 18th, 2015. The Corps later withdrew the formal consultation request (NMFS PCTS tracking number SER-2015-17495) on December 11, 2015 because the project is covered under the SARBO.

The National Marine Fisheries Service, Habitat Conservation Division indicated in a letter to the Army Corps of Engineers dated October 16, 2015 that it reviewed the project. Its letter stated that “Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to authorization of the proposed work.” This office also indicated that it is “fine with the project since EFH considerations in the document were developed in consultation with us” (December 9, 2015 email from Fritz Rohde [Fishery Biologist, National Marine Fisheries Service, Habitat Conservation Division] to William Swilling [Natural Resources Program Manager, Cape Hatteras National Seashore]).

**North Carolina Wildlife Resources Commission.** The Applicant has been consulting with the NC Wildlife Resources Commission about the project since October 2014. The Commission provided comments on the EA in a letter to the Army Corps of Engineers on October 19, 2015. The Commission expressed concerns about potential adverse effects on wildlife caused by implementing the project during the summer. But it does “not object to the issuance of the permit provided measures to minimize impacts to wildlife resources are included and NCWRC is allowed to work with our federal partners, county officials, and the contractor to ensure the most effective mitigation strategies are employed. These strategies include the permittee providing additional information regarding sea turtle trawling procedures (true relocation versus non-capture trawling), nighttime construction guidelines, educational outreach, and monitoring protocols, as well as other local measures to minimize potential sea turtle impacts post project.”

**North Carolina State Historic Preservation Office.** NC Department of Environmental Quality, Division of Coastal Management transmitted the Coastal Area Management Act Permit Application and EA for this project to the SHPO on October 15, 2015. The EA included the *Phase I Remote Sensing Archeological Survey of a proposed Borrow Site off Buxton, Dare County, North Carolina* report in Appendix F of the EA.

The SHPO, in a letter to NC Department of Environmental Quality, Division of Coastal Management (November 16, 2015) provided their comments “pursuant to Section 106 of the National Historic Preservation Act of 1966, North Carolina legislation (G.S. 121-22 to 28, Article 3), and the Abandoned Shipwreck Act of 1987 (P.L. 100-2e8).” The SHPO stated that “It is not anticipated that sand placement on the beach would have any adverse effect on” two archeological interface sites located at the northern end of the proposed beach nourishment area. The SHPO also concurred “with conclusions and recommendations in the report, identifying an avoidance buffer around potentially significant anomalies in the proposed borrow area. . . . If these buffers cannot be avoided, additional archeological investigation is warranted to assess National Register of Historic Places eligibility.”

The SHPO called for any permits issued for the project to clearly state the “Unexpected Discovery Protocol” recommended in the cultural survey report that states: “In the event that any project activities expose potential prehistoric or historic cultural material not identified during the remote-sensing survey, the dredging company under contract to Dare County should immediately shift operations away from the site and notify the respective Point of Contact for CS&E, Dare County Commissioners, the North Carolina SHPO (Raleigh) and the UAB (Kure Beach, NC). Notification should address the exact location, where possible, the nature of material exposed by project activities, and options for immediate archaeological inspection and assessment of the site.”

**North Carolina Department of Environment and Natural Resources.** The Applicant received a NC 401 Water Quality Certification permit (No. 4040) for the selected alternative pursuant to Section 401 of the Clean Water Act issued by the NC Department of Environment and Natural Resources Division of Water Resources on November 23, 2015.

**North Carolina Department of Environmental Quality and Coastal Resources Commission.** The NC Department of Environmental Quality and Coastal Resources Commission issued a Coastal Area Management Act permit (No. 136-15) for Major Development in an Area of Environmental Concern pursuant to NCGS 113A-118 and Excavation and/or Fill pursuant to NCSG 113-229 to Dare County for the selected alternative on December 15, 2015.

## **IMPAIRMENT**

In addition to reviewing the list of significance criteria, the NPS has determined that the selected alternative will not constitute impairment to the Seashore resources and values. The non-impairment determination for the selected alternative is in Attachment A.

## **CONCLUSION**

The selected alternative does not constitute an action that requires preparation of an Environmental Impact Statement (EIS) and will not have a significant adverse effect on the human environment. The selected alternative will not result in significant impacts on physical resources, water resources, natural resources, cultural resources, or other unique resources within the region. Some short-term adverse environmental impacts will likely occur, but these will be limited in extent and partially offset by management activities designed to minimize impacts. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places or other unique characteristics of the region. No highly uncertain or controversial impacts, or unique or unknown risks, cumulative effects or elements of precedent were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

## **Attachment A**

### **NON-IMPAIRMENT DETERMINATION**

#### **For Beach Restoration to Protect NC Highway 12 Clean Water Act 404 and NPS Special Use Permits Cape Hatteras National Seashore**

The National Park Service (NPS) has determined that implementation of the selected alternative (*Alternative 3 – Summer Construction*) will not constitute impairment to the resources or values of Cape Hatteras National Seashore (Seashore). This conclusion is based on a thorough analysis of the environmental impacts described in the *Beach Restoration to Protect NC Highway 12 Clean Water Act 404 and NPS Special Use Permits Environmental Assessment*, relevant scientific studies and cultural resource reports, and the professional judgment of the decision-maker guided by the direction in *NPS Management Policies 2006*. The selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for the Seashore; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the Seashore's general management plan or other relevant NPS planning documents.

This non-impairment determination has been prepared for the selected alternative described in the Finding of No Significant Impairment (FONSI) for the topics listed below. An impairment determination is not made for socioeconomics, visitor use and experience, and public safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the 1916 Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. Specific impact areas and the detailed analysis that led to the non-impairment determination are described below.

#### **Findings on Impairment for Coastal Resources**

The Seashore is at the near-shore confluence of the Gulf Stream and Labrador currents shaped by coastal geologic, hydrologic, and weather processes, which together contribute to the evolution of these barrier islands (2011 *Foundation Statement for Cape Hatteras National Seashore*). Perpetuation of natural coastal processes is important for maintaining the barrier island ecosystems in the Seashore. The 1984 *General Management Plan for Cape Hatteras National Seashore* calls for allowing natural seashore dynamics to occur except in instances when life, health, significant cultural resources, or the transportation link along NC 12 would be jeopardized.

Natural processes applicable to this project include barrier-island evolution, erosion, accretion, and longshore transport in the littoral zone. The selected alternative will augment the sand supply and have negligible impact on littoral processes. A wider beach will reduce runup levels and help promote natural dune growth which depends primarily on wind speed and the width of the dry sand beach. The adjusted profile after construction is expected to retain similar slopes and morphology as other stable beaches in the vicinity of the action area. The beneficial effects will extend up to one decade. Impacts on coastal resources will not prohibit the national seashore from fulfilling its

purposes or conflict with the national seashore's general management plan of other relevant NPS policy or guidance. Therefore, the selected alternative will not impair coastal resources.

### **Findings on Impairment for Sand Resources**

The 1984 *General Management Plan* provides guidance for managing the ocean/ beach management unit that extends almost the entire length of the Seashore and is relatively narrow from the ocean to the dune line. It is characterized by constantly shifting sands, frequent overwash, and limited grass vegetation on the dunes. The sand resources contribute to the national seashore significance as essential habitat for plant and animal communities, including many threatened, endangered, and rare species. The beaches provide the visitor with opportunities for high quality recreation. A key management objective in General Management Plan is to manage the Seashore to perpetuate the shoreline and dune processes upon which the barrier island ecosystems depend. However, maintaining the existing NC 12 transportation link to the mainland is also an important management consideration in the plan.

The 2012 *National Park Service Beach Nourishment Guidance* states that “sediment used for beach nourishment should ideally be indistinguishable from native site sediment in terms of color, shape, size, mineralogy, compaction, organic content, and sorting.” Sediment grain size is the single most important borrow material characteristic. The grain size will affect the shape of the nourished beach, the rate at which fill material is eroded from the project, and the biological habitat. North Carolina has detailed, quantitative requirements regarding sediment compatibility and regulations regarding sediment compatibility sampling techniques. These requirements and regulations will be followed for the Buxton Beach nourishment project.

The selected alternative will add about 2.6 million cubic yards of new sand to the beach. Sand quality is expected to closely match other native beaches in the area. By augmenting the littoral sand supply, the normal processes of erosion and accretion will occur with less direct impacts to the dune, NC 12, and existing structures. Breach events will be less frequent and dune building will occur via natural aeolian processes for the life of the project, rather than via artificial manipulation after storms. The offshore borrow area is an isolated shoal, which will be reduced in height by several feet upon excavation. Data indicate the underlying sediments match the borrow sediments. Thus, little change in substrate conditions should occur upon project completion. Overall, the selected alternative will have long-term (decade), beneficial impacts on sand resources on the beach and moderate, adverse impacts in borrow area. Impacts on sand resources will not prohibit the national seashore from fulfilling its purposes or conflict with the national seashore's general management plan of other relevant NPS policy or guidance. Therefore, the selected alternative will not impair sand resources in the national seashore.

### **Findings on Impairment for Water Quality**

Good water quality is essential for maintaining the national seashore's natural functioning aquatic and terrestrial ecosystems and visitor use and enjoyment of seashore waters.

Dredging operations will produce localized, short-term increases in turbidity at the borrow area and the slurry discharge area along the beach. The proposed borrow area consists of medium to coarse sand, with trace amounts of mud. Nearly all the sediment will settle rapidly (order of seconds to

minutes) based on the fall velocity of sandy materials. Turbidity impacts will be limited temporally and spatially due to the texture of the sediments. Overall, the selected alternative will have transient, short-term adverse impacts on water quality during construction. Impacts on water quality will not prohibit the Seashore from fulfilling its purposes or conflict with the Seashore's general management plan or other relevant NPS policy or guidance. Therefore, the selected alternative will not impair water quality in the national seashore.

### **Findings on Impairment for Essential Fish Habitat**

Affected essential fish habitat (EFH) in and near the Seashore includes all waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity and includes habitat for individual species and assemblages of species. EFH contributes to the Seashore's significance as being important for the wellbeing of the native aquatic species populations and their value to recreational and commercial fisheries.

Dredging operations offshore will produce localized, short-term, adverse impacts to the existing population of benthic organisms, removing biomass and prey from the surficial layer of sediment in the Cape Hatteras sandy shoal Habitat of Particular Concern (HAPC) and temporarily increase turbidity in marine water column essential fish habitat. Dredge operations may impact Sargassum habitat of particular concern by entrainment. Excavations will leave undisturbed area and some irregular topography which may be attractive to some fish species and foster rapid recruitment of benthic organisms. Beach filling operations will bury sessile benthic organisms in the unconsolidated/ shallow subtidal bottom EFH, temporarily increase turbidity to marine high-salinity surf zone EFH, and/or bury Sargassum EFH that may be floating in the area. The borrow area is expected to undergo rapid (order of months) recolonization by similar species because of the similarity between surficial sediments and under-lying sediments. The nourished beach area is expected to undergo rapid (order of weeks to months) recolonization by similar species because of the textural similarity between native and borrow sediments. Overall, the selected alternative will result in site-specific, short-term, minor to moderate, adverse impacts to nearshore and offshore EFH/HAPC. Impacts on EFH will not prohibit the national seashore from fulfilling its purposes or conflict with its general management plan or other relevant NPS policy or guidance. Therefore, the selected alternative will not impair EFH in or near the Seashore.

### **Findings on Impairment for Biological Resources**

The Seashore supports resident and seasonal populations of federally listed and state-listed plants and animals including the piping plover, American oystercatcher, gull-billed tern, green sea turtles, loggerhead sea turtles, seabeach amaranth, and more (2011 *Foundation Statement for Cape Hatteras National Seashore*). The Seashore's 1984 *General Management Plan*, 2006-2011 *Strategic Plan*, and 2007 *Interim Protected Species Management Strategy* provide guidance for protecting and maintaining the integrity of biological resources, especially the local populations of federally or state listed species and their habitat. Many of these species have specialized habitat requirements and the Seashore serves as a refuge from surrounding habitat alterations due to coastal development. The Seashore, a Globally Important Bird Area, serves as a major resting and feeding grounds for migratory birds and is also important to shorebirds and sea turtles that use the Seashore as nesting grounds. The presence and viewing of wildlife, such as shore birds and sea turtles, is a significant

component to the visitor experience in the Seashore that is not commonly available in adjacent developed areas.

In total, there are 14 federally listed threatened or endangered species with the potential to occur in or near the project area. These 14 species include three birds, two fish, five sea turtles, three whales, and one plant. There are also up to 37 species of marine mammals that are protected under the Marine Mammal Protection Act that could occur within the project area.

Adverse impacts during construction will include burial of benthic organisms and disruption of turtle nesting activities, or colonial seabird nesting and roosting activities. Following construction, the selected alternative potentially produces long-term (decade) beneficial impacts in the form of expanded beach habitat. Duration of beneficial impacts will be a function of the scale and longevity of the project. During construction, beneficial and adverse impacts will occur in the form of nutrients and biota dislodged in the borrow area and beach zone. This may attract predators as well as eliminate benthic organisms for a short period (weeks to months). Upon project completion, new habitat will be available (wider beach) for the benefit of some organisms and barrier island vegetation.

Atlantic sturgeon may likely be adversely affected by dredging, and adverse impact will likely occur to sea turtles that may be trying to nest (particularly to loggerhead and greens and less likely to Kemp's ridley and hawksbill) and to benthic organisms, which will be excavated or buried during construction (offshore and beach). All sea turtle nests in the project area will be relocated during construction; post-construction-nesting beach will be wider. Benthic foraging habitats will be increased post-construction, as will overwash habitats preferred by some protected plants and protected birds for nesting, foraging, and roosting.

The implementation of mitigation measures that focus upon avoidance; limiting construction activities near active breeding areas; stopping construction when sea turtles are present; relocating sea turtle nests out of construction zone; limiting night lighting; using only compatible beach fill; reshaping newly added sand; preconstruction surveys; monitoring of dredging and construction activities in coordination with agency biologists; post construction monitoring; and close coordination with agency biologists will help avoid and minimize impacts on these species, particularly nesting shorebirds and sea turtles. With terms and conditions for protecting these sensitive species stipulated in the permits for this project, including those required by the 1997 National Marine Fisheries Service Regional Biological Opinion Concerning the Use of Hopper Dredges in Channels and Borrow Areas along the Southeast US Atlantic Coast and the Fish and Wildlife Service biological opinion (FWS 2016), implementing the selected alternative will avoid or minimize adverse effects and will not jeopardize the continued existence of any federal listed species.

Project impacts on biological resources will not prohibit the national seashore from fulfilling its purposes or conflict with its general management plan or other relevant NPS policy or guidance. Therefore, the selected alternative will not impair biological resources in the Seashore.

### **Findings on Impairment for Cultural Resources**

The Seashore's artifacts, historic sites, and geographic setting provide tangible links to understanding humankind's ability to adapt in a harsh and changing coastal environment in isolation from the mainland (2011 *Foundation Statement for Cape Hatteras National Seashore*). The 1984 *General*

*Management Plan* calls for the preservation, restoration, protection, interpretation, use, study, and management of significant cultural resources within the Seashore. There are two archeological interface sites located at the northern end of the project area in the park. The cultural resources study for this project also identified anomalies in the borrow area, which is located outside the Seashore that are potential resources.

Under the selected alternative, the project will include measures per the North Carolina State Preservation Officer's (SHPO) recommendations and permit requirements to protect these known sites and undiscovered sites. The protection measures include maintaining avoidance buffers on potential sites in the borrow area, and carrying out Unexpected Discovery Protocol in the permits issued for this project. The SHPO does not anticipate that sand placement on the beach will have any adverse effect on the two archeological interface sites. The SHPO also concurred with conclusions and recommendations in the cultural resources report for this project. This included identifying an avoidance buffer around potentially significant anomalies in the proposed borrow area and conducting additional archeological investigation to assess National Register of Historic Places eligibility if avoidance is not possible. Impacts on cultural resources will not prohibit the Seashore from fulfilling its purposes, compromise the integrity of cultural resources, or conflict with the national seashore's general management plan or other relevant NPS policy or guidance. Therefore, the selected alternative will not impair cultural resources of the Seashore.

## **CONCLUSION**

As described above, the adverse effects and environmental impacts anticipated as a result of implementing the selected alternative will not rise to levels that will constitute impairment of Cape Hatteras National Seashore values and resources.



**Attachment B**

**AGENCY CORRESPONDENCE**

**For Beach Restoration to Protect NC Highway 12  
Clean Water Act 404 and NPS Special Use Permits  
Environmental Assessment**

**United States Fish and Wildlife Service**

**and**

**NOAA National Marine Fisheries Service**

**and**

**North Carolina Wildlife Resources Commission**

**and**

**North Carolina State Historic Preservation Officer**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Raleigh ES Field Office

Post Office Box 33726

Raleigh, North Carolina 27636-3726

October 19, 2015

Mr. Raleigh Bland  
U. S. Army Corps of Engineers  
Washington Regulatory Field Office  
2407 West Fifth Street  
Washington, North Carolina 27889

Subject: Dare County – Buxton Beach Restoration Project  
Action ID #SAW- 2015-01612

Dear Mr. Bland:

This letter provides the comments of the U. S. Fish and Wildlife Service (Service) on the subject Public Notice (PN), dated September 18, 2015, for Dare County, North Carolina. Dare County proposes to dredge 2.6 million cubic yards (cy) of beach quality sand from an offshore borrow area and deposit the material along approximately 2.9 miles of oceanfront shoreline at the Cape Hatteras National Seashore and the Village of Buxton, in Dare County, North Carolina. Dredging and sand placement activities are proposed to be conducted in any month of the year. The Service has been participating in interagency team meetings for this project, and has reviewed the Biological Assessment (BA) and the Environmental Assessment (EA). We previously provided comments on the draft documents (emails to the National Park Service (NPS) dated April 6, 2015, June 15, 2015, June 18, 2015, and July 8, 2015). Some of these comments are repeated below, because most of our recommendations were not incorporated into the final EA. These comments are submitted in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d). Comments related to the FWCA are to be used in your determination of compliance with 404(b)(1) guidelines (40 CFR 230) and in your public interest review (33 CFR 320.4) in relation to the protection of fish and wildlife resources. Comments related to the District Engineer's determination of project impacts in the BA, pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543) will be addressed during formal consultation.

## **Project Area, Proposed Activities, and Anticipated Impacts**

The project area is the shoreline along NC Highway 12 in and north of the Village of Buxton, and the adjacent Atlantic Ocean. The substrate of the project area is primarily sand. The proposed project includes dredging of material from an offshore borrow area located in federal waters, offshore of Dare County. Sand will be pumped onto the beach and spread by land-based equipment in the beach zone between the toe of the dune/mid-dry sand beach and the low watermark. Sand placement activities will be conducted along approximately 4,500 lf of beach in the Village of Buxton, and approximately 11,000 lf of beach owned by the NPS. The maximum project length is 2.9 miles. The stated purpose of the project is to provide a wider beach and buffer storm waves along critically eroding sections of Hatteras Island and to protect NC Highway 12 and community infrastructure.

## **Federally Protected Species**

The Service has reviewed available information on federally-threatened or endangered species known to occur in Dare County. Our review indicates that several species may occur in the project area, including the West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*), seabeach amaranth (*Amaranthus pumilus*), and the Kemp's Ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), and green (*Chelonia mydas*) sea turtles. Of the five sea turtle species, the loggerhead, green, leatherback, and Kemp's ridley sea turtle may nest in the project area.

Whales, shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and sea turtles in the water are under the jurisdiction of NOAA Fisheries' Protected Species Division.

The Corps has made a determination of May Affect, Not Likely to Adversely Affect Federally-listed endangered or threatened species. There was no species list included in the public notice.

## **Service Concerns and Recommendations**

1. Because sand placement activities are proposed to occur during any season of the year, but particularly during spring, summer, and fall, the Service cannot concur with the Corps' determination of May Affect, Not Likely to Adversely Affect for the West Indian manatee, piping plover, red knot, seabeach amaranth, and Kemp's Ridley,

loggerhead, leatherback, and green sea turtle. We look forward to working with the Corps and NPS during the ESA Section 7(a)(2) formal consultation process.

Specifically, the Service is concerned with the potential for adverse impacts to sea turtle nests that are not detected during daily monitoring, and potential adverse impacts to females attempting to nest, eggs in nests, or hatchlings attempting to leave a nest in the project area. In addition, work during spring, summer, and fall months may adversely affect migrating piping plovers, red knots, and roseate terns, and the West Indian manatee. Work conducted during the growing season may bury seabeach amaranth individuals, which would be an adverse effect.

The Service is concerned in general with the increasing number of proposals to dredge and nourish during the nesting season for sea turtles and shorebirds, and the growing season for seabeach amaranth. In addition to potential adverse effects to Federally-listed species, the Service is concerned about the potential adverse effects to other shorebirds. The Service believes it is important to adhere to the winter work windows if at all possible. The avoidance of work during spring, summer, and fall is particularly important for piping plover and red knot. Avoiding work during these seasons will also protect other shorebirds that migrate through, overwinter or nest in the project area. These species are not federally-listed under the Endangered Species Act, but many are considered to be at-risk and all are protected under the Migratory Bird Treaty Act (16 USC 703-712).

2. The Service also has concerns related to potential cumulative impacts from multiple projects conducted during the nesting season and growing season. The cumulative loss or degradation of nesting habitat for sea turtles, piping plovers, and other shorebirds, and loss or degradation of foraging, and roosting habitat for piping plovers, red knots, and other shorebirds, is of great concern to us. The Service will attempt to address these concerns during formal consultation for these and other projects.
3. Pages 43 and 44, and Figure 2.3 discuss "No-work buffers" around turtle or bird nests in coordination with the Service, NCWRC, and NPS officials. However, as we discussed with the NPS at the July 29, 2015 interagency meeting, the Service does not believe that this method is appropriate for use around sea turtle nests, and also has concerns with the use of these methods near bird nests. The Service will require the relocation of all sea turtle nests within the work area.

The Service is also concerned about the use of these "No-work buffers" as potential avoidance and minimization measures for colonial waterbird nests. We are concerned

that this method is not appropriate or effective for avoidance of impacts to bird nests, and that there could be impacts to hatchlings. We note that the Migratory Bird Treaty Act currently does not provide for incidental take. Therefore, regardless of the avoidance and minimization actions that may be taken, actions that result in loss of chicks or adult birds may constitute a violation of the Migratory Bird Treaty Act.

4. On Page 56 (last bullet), the EA states that injury or death of wildlife would be reported to the Corps, NPS, and other agencies such as the Service and NCWRC. The Service will require that any injuries or deaths of wildlife be reported to our office and to the Service's Law Enforcement (LE) officer for this area, Jason Keith. Mr. Keith's contact information is below, and will also be provided in the biological opinion.

Jason Keith  
U.S. Fish and Wildlife Service  
551-F Pylon Drive  
Raleigh, NC 27606  
(919) 856-4786, extension 34

5. Chapter 3, Page 84 and Appendix G Figures 4.4 – 4.7. The borrow area has regions with large amounts of shell – ranging from 4.8% to 49% in individual samples, with an average of 15%. There are also a few areas of large amounts of gravel (greater than 10%). These areas, such as the area around Buxton-25, Buxton-24, and Buxton-02 should be avoided. There is no discussion of avoidance of these high-shell areas. The Service would be concerned with the dredging and placement of incompatible material onto the beach. Material that is incompatible with the native beach material may delay recovery of red knot and piping plover prey species (invertebrates). Incompatible material may also adversely affect sea turtles. Sand compaction may increase the length of time for female sea turtles to excavate nests and cause increased physiological stress to the animals (Nelson and Dickerson 1988). The placement of rocky or shelly material may have similar effects, and may also make it difficult for hatchlings to emerge from the nest. The Service will recommend rigorous monitoring of sediment as it is discharged from the pipe. Remediation may be required if incompatible material is placed on the beach.
6. Chapter 4, Page 154, Table 4.2. The Service does not concur with the determination of effects from the three alternatives to federally-listed species, specifically piping plover, red knot, seabeach amaranth, and the loggerhead, leatherback, green, and Kemp's ridley sea turtles. The Service believes that Alternatives 2 and 3 may cause


adverse effects to these species. Alternative 3 (preferred alternative) would likely have more adverse effects than Alternative 2.

7. Chapter 4, Page 157, Table 4.3. The Summary effects determinations in this table do not agree with the effects discussed in Table 4.2. The Service also does not concur with the determinations listed for piping plover, red knot and seabeach amaranth in the table. Piping plover and red knot should have a determination of May Affect, Likely to Adversely Affect, while seabeach amaranth should have a determination of May Affect, Not Likely to Adversely Affect. We note that the BA also has not yet been revised to incorporate our previous recommendations for effect determinations.
8. Chapter 4, Pages 121, 159, 162, 166, and 167, Cumulative Impact on Piping Plover, red knot, sea turtles, and seabeach amaranth. The Service does not believe that the cumulative impacts discussion is adequate. The Service previously recommended and continues to recommend that this section discuss the potential for up to 33% of Dare County shorelines to be under construction within the same year and season (summer of 2016), and how that may affect all federally-listed species. The Service does not agree that the "incremental adverse impacts of any of the three alternatives are imperceptible when added to the cumulative effects of the three proposed northern Outer Banks nourishment projects, replacement of the Bonner Bridge," or other development projects (as stated in the EA). The purpose of the cumulative impacts assessment is not to determine whether a project is significant or insignificant when compared to the whole, but to examine how this project along with the others causes impacts.
9. Chapter 4, Pages 165 and 166: This section does not adequately discuss the potential impacts to nesting sea turtles. Potential adverse impacts to sea turtles include: (1) destruction of nests that may be constructed and eggs that may be deposited and missed by a nest survey, nest mark and avoidance program, or egg relocation program within the boundaries of the proposed project; (2) destruction of nests deposited during the period when a nest survey, nest mark and avoidance, or egg relocation program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the relocation site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (5) misdirection of nesting and hatchling turtles on beaches adjacent to the sand placement or construction area as a result of project lighting; (6) behavior modification of nesting females due to escarpment formation within the Action Area during the nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to

deposit eggs; and (7) Destruction of nests from escarpment leveling within a nesting season.

The Service appreciates the opportunity to comment on this project. We look forward to working with the Corps and NPS during formal consultation. If you have questions regarding these comments, please contact Kathy Matthews at 919-856-4520, ext. 27 or by e-mail at <kathryn\_matthews@fws.gov>.

Sincerely,

  
for Peter Benjamin  
Field Supervisor

cc:

Daniel Holliman, USEPA  
Fritz Rohde, NOAA Fisheries, Beaufort  
Maria Dunn, NCWRC, Washington  
Doug Huggett, NC DCM, Morehead City  
Debra Wilson, NC DCM, Wilmington  
Karen Higgins, NC DWR, Raleigh  
Steven Culver, NPS, Colorado (electronic copy)  
Dave Hallac, NPS, Cape Hatteras National Seashore (electronic copy)

Reference:

Nelson, D.A. and D.D. Dickerson. 1988. Hardness of nourished and natural sea turtle nesting beaches on the east coast of Florida. Unpublished report of the U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration

**NATIONAL MARINE FISHERIES SERVICE**

Southeast Regional Office

263 13th Avenue South

St. Petersburg, Florida 33701-5505

<http://sero.nmfs.noaa.gov>

October 26, 2015

(Sent via Electronic Mail)

Colonel Kevin P. Landers Sr., Commander  
U.S. Army Corps of Engineers Wilmington District  
69 Darlington Avenue  
Wilmington, North Carolina 28403-1398

Dear Colonel Landers:

NOAA's National Marine Fisheries Service (NMFS) reviewed the projects described in the public notice(s) listed below.

Based on the information in the public notice(s), the proposed project(s) would occur in the vicinity of essential fish habitat (EFH) designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to authorization of the proposed work.

<u>NOTICE NO.</u>	<u>APPLICANT</u>	<u>NOTICE DATE</u>	<u>DUE DATE</u>
2015-01612	Dare County	September 18, 2015	October 19, 2015

Please note these comments do not satisfy your consultation responsibilities under section 7 of the Endangered Species Act of 1973, as amended. If the activity "may effect" listed species or critical habitat that are under the purview of NMFS, consultation should be initiated with our Protected Resources Division at the letterhead address.

Sincerely,

Pace Wilber (for)

Virginia M. Fay  
Assistant Regional Administrator  
Habitat Conservation Division





State Historic  
Preservation Office  
NATURAL AND  
CULTURAL RESOURCES

RECEIVED

OCT 16 2015

U.S. ARMY CORPS ENG  
Washington Regulatory File 91

Ramona M. Bartos  
Administrator

October 9, 2015

Raleigh Bland  
US Army Corps of Engineers  
Washington Regulatory Office  
2407 West Fifth Street  
Washington, NC 27889

RE: Beach Restoration to Protect NC Highway 12 at Buxton, SAW-2015-01612, Dare County,  
ER 15-2201

Dear Mr. Bland:

We have reviewed the public notice concerning the Dare County – Buxton Beach Restoration Project's proposal to perform oceanfront beach nourishment with sand dredged from an offshore borrow area near Buxton Village and would like to take this opportunity to comment.

There are two (2) archaeological interface sites identified at the northern end of the proposed beach nourishment area. These beach sites are periodically buried or exposed and represent portions of shipwrecks lost along the Outer Banks over the last 400 years. It is not anticipated that sand placement on the beach would have any adverse effect on these sites. However, prior to commencement of sand placement, the NC Underwater Archaeology Branch (910.458.9042) should be contacted for the last known locations of sites NHB004 and NHB015. We would also like your agency, the applicant, and any equipment operators to be aware that the possibility exists that proposed work may unearth an unknown beached shipwreck or shipwreck fragment. In the event that such occurs, work should move to another area and the Underwater Archaeology Branch be contacted, so a staff member can be sent to assess the wreckage and determine the proper course of action.

Drawing Sheet 7 references a "Phase I Remote Sensing Archaeological Survey of a Proposed Borrow Site off Buxton, Dare County, NC" prepared for CSE Inc., May 2015 by Tidewater Atlantic Research (TAR) in the Map Legend. Please forward a copy of this report to our office as staff will need to review this report before final comments can be submitted.

These comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, North Carolina legislation (G.S. 121-22 to 28, Article 3), and the Abandoned Shipwreck Act of 1987 (P.L. 100-298).



State of North Carolina | Department of Natural and Cultural Resources  
State Historic Preservation Office  
4617 Mail Service Center | Raleigh, NC 27699-4617  
919 807 6583 T | 919 807 6599 F

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the ER tracking number 15-2201.

Sincerely,



for Ramona M. Bartos

cc: Dr. Tim Kana, Coastal Science and Engineering, Inc.  
Robert Outten, Dare County – Buxton Beach Restoration Project




## ☒ North Carolina Wildlife Resources Commission ☒

Gordon Myers, Executive Director

### MEMORANDUM

**TO:** Raleigh Bland  
US Army Corps of Engineers, Washington Field Office

**FROM:** Shannon Deaton, Manager  
Habitat Conservation 

**DATE:** October 19, 2015

**SUBJECT:** Comments on Buxton Beach Restoration Project, c/o Mr. Robert Outten,  
Dare County, North Carolina.  
**SAW-2015-01612**

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) reviewed the public notice with regard to impacts on fish and wildlife resources. The proposed project would occur adjacent the Atlantic Ocean for approximately 4,500' (0.9 mile) in the Village of Buxton and for 11,000' (2.1 miles) fronting the National Park Service property to the north of Buxton, NC. The applicant's stated purpose is to provide a wider beach and buffer storm waves along a critically eroding section of Hatteras Island and to protect NC Highway 12 and community infrastructure. Our comments are provided in accordance with provisions of the Coastal Area Management Act (G.S. 113A-100 through 113A-128), as amended, Sections 401 and 404 of the Clean Water Act, as amended, and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Dare County proposes to dredge a maximum of 2,600,000 cubic yards of sand from an offshore borrow source 1.7 miles east of Cape Hatteras to nourish 3.0 miles of oceanfront beach. Material will be removed by hydraulic and/or hopper dredge and placed in the beach zone between the toe of dune/mid-dry sand beach and the low watermark and manipulated by land-based equipment. The project will affect 200 acres, of which 140 acres are directly in front of Park Service property. The applicant has requested the ability to work 24 hours per day, 7 days per week, during any time of the year. This application was received on September 18, 2015 and therefore does not assess any effects of the recent storm activity.

The NCWRC has reviewed the public notice and is concerned with the impacts the project may have on wildlife resources if conducted during the nesting seasons of shorebirds and sea turtles. Federally protected species that utilize the area include piping plover (*Charadrius melodus melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*) and Kemp's Ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), and green (*Chelonia mydas*) sea turtles. Conducting nourishment activities during the nesting shorebird moratorium, April 1 – August 31, and the sea turtle nesting moratorium, May 1 – November 15, or until the last known nest has hatched, may have an adverse effect on some individuals even if measures are taken to minimize impacts. These moratoria were established to protect threatened and endangered

species that use the shoreline for foraging and nesting. The applicant states the need to work during these moratoria is due to adverse weather and the increased cost of the project. Although we understand weather during the winter months will make the project more difficult, the impact of this project and the cumulative impact of other projects during the nesting season may adversely affect wildlife resources.

The proposed construction schedule includes the time of peak migration for beach nesting shorebirds. These birds forage in the project area during their migration along the Atlantic shore. Potential impacts may include direct disturbance of birds as a result of continuous construction activities and decreased recruitment of invertebrates that provide food. Placement of material on the beach during the summer season would decrease invertebrate populations, especially if beach nourishment work is done in subsequent years. Placement of material on the beaches outside the summer months would minimize these impacts.

Dredging, especially by hopper dredges, during May through November would increase the likelihood of sea turtle take incidents. The NMFS limits the number of incidental takes of sea turtles by dredging activity in the southeastern U.S. Should this project result in turtle mortality, we assume they would contribute to the overall allowance of incidental takes for dredging activities in the southeast. Additionally, the placement of material on beaches may disrupt turtle nesting by causing lost nesting opportunities, destruction of unmarked nests (not all eggs can be successfully located by nesting monitors), and the misorientation of hatchlings due to artificial lights used at night on construction equipment. Even with the proposed intensive monitoring for nesting turtles, a percentage of nests are still expected to be unsuccessful due to missed nests or relocation failures. Some indirect impacts may include an increased disturbance of nesting females and reduced availability of suitable nesting habitat due to changes in the beach's physical characteristics, such as increased escarpment formation, increased compaction levels, and other changes.

Beach quality material that is compatible with native beach material and meets the NC Division of Coastal Management's sediment criteria is essential. If during construction non-compatible material is placed on the beach, nourishment activities should stop, state and federal agencies should be notified, and it should be determined if the dredge needs to move to an alternative location within the borrow source to obtain compatible material. Additionally, state and federal agencies should assess the non-compatible material for removal to determine if mitigation is required.

In conclusion, the NCWRC is concerned with the increased frequency and extent of beach nourishment and the potential cumulative impact of these projects to shoreline habitats. However, we recognize the complexities of maintaining access to an arterial route for residents, recreation and tourism in such a dynamic environment. Although the effects of nourishment on beach habitats are not fully understood, this project may result in a net increase of foraging and nesting opportunities. While we prefer the project be constructed outside of the sea turtle and shore bird nesting moratoria, the complexities of this area, such as the northerly orientation of the beach, wave height, and distance from deep water inlets, complicate nourishment outside the recommended moratoria. Therefore, we do not object to the issuance of the permit provided measures to minimize impacts to wildlife resources are included and NCWRC is allowed to work with our federal partners, county officials, and the contractor to ensure the most effective mitigation strategies are employed. These strategies include the permittee providing additional information regarding sea turtle trawling procedures (true relocation versus non-capture trawling), nighttime construction guidelines, educational outreach, and monitoring protocols, as well as other local measures to minimize potential sea turtle impacts post project.

We appreciate the opportunity to review and comment on this permit application. If you need further assistance or additional information, please contact me at (919) 707-0222 or at [shannon.deaton@ncwildlife.org](mailto:shannon.deaton@ncwildlife.org).

**Attachment C**

**APPLICANT'S RESPONSE LETTERS TO AGENCY LETTERS**

**For Beach Restoration to Protect NC Highway 12  
Clean Water Act 404 and NPS Special Use Permits  
Environmental Assessment**




# COASTAL SCIENCE & ENGINEERING

PO BOX 8056 COLUMBIA SC 29202 • TEL 803-799-8949 • FAX 803-799-9481 • EMAIL cse@coastalscience.com

## MEMORANDUM

DATE: November 12, 2015

TO: Raleigh Bland  
US Army Corps of Engineers  
Wilmington District, Washington Field Office

FROM: Timothy W Kana PhD PG (CSE)   
Haiqing L Kaczowski PhD PE (CSE)  
Julia Berger MS (CZR Incorporated)

RE: Beach Restoration to Protect NC Highway 12 at Buxton, Dare County, North Carolina  
SAW 2015-01612 [CSE 2403]  
**Response to USFWS Comments**

We received a letter (dated 26 Oct 2015) from the USACE requesting “a resolution and/or rebut any and all concerns” stated in the comment letter provided by the US Fish and Wildlife Service (USFWS) on 19 October 2015 for the above-referenced project.

On behalf of the applicant (Dare County), we have reviewed the USFWS comments and will answer them in the order they appeared in the comment letter. Please refer to the original letter for the detail of the comments.

**Comment 1) The first comment includes the following points listed under 1a, 1b, and 1c:**

*1a) The 18 September 2015 Public Notice (page 6) indicates the Corps of Engineers determined that the “proposed project May Affect, Not Likely to Adversely Affect federally listed endangered or threatened species or their formally designated critical habitat”. USFWS cannot concur with the Corp’s determination for Piping plover, red knot, seabeach amaranth, etc.*

The applicant is very appreciative of the guidance and review during production of the Buxton Environmental Assessment (EA) and Biological Assessment (BA – Appendix B of EA) and looks forward to further collaboration and guidance during Section 7 formal consultation between the federal agencies. Please note that the USACE public notice inadvertently stated the proposed project ...”not likely to adversely affect...endangered species...”. The determinations in the EA and BA are correct in indicating the project is likely to affect sea turtles and Atlantic sturgeon and therefore requires formal consultation under Section 7 of the ESA.

**Piping Plover** – As stated in Table 4.2 of the Buxton EA, page 153, no piping plover nests have been documented, none are likely to occur, and existing foraging habitat is limited. The proposed project would be a likely benefit to both foraging and resting habitat. While the piping plover is not likely to attempt to



rest in the vicinity of the active beach construction zone, neither would one likely attempt to rest in the vicinity of active Off-Road Vehicle (ORV), or other active human use of the beach; there would be abundant nearby adjacent areas available for resting for such a bird in need of rest. For these reasons, the applicant believes the determination of May Effect, Not Likely to Adversely Affect piping plover remains appropriate.

**Roseate Tern** – As stated on page 45 of the BA (Appendix B of the Buxton EA) the roseate tern is exceedingly rare in North Carolina although there are July records in the Seashore during its migration period of May through September. As stated on page 85 of the BA, no nests have been documented in North Carolina, and their preferred foraging habitat (shallow bays, tidal inlets, channels, sandbars) and preferred resting habitat (sheltered estuaries, inshore waters, and creeks) do not occur within the area of sand placement or construction-related activities. Should a bird select the shore for resting, there would be ample adjacent shore available which is more likely to be chosen. For these reasons, the applicant believes the determination of May Effect, Not Likely to Adversely Affect roseate tern remains appropriate.

**Red Knot** – As stated on page 46 of the BA, rufa red knot have been documented in mudflat habitats on points and spits within the Seashore; neither habitat is found within the project area. NPS resource managers state that foraging habitat in the project area is very marginal due to high wave energy and the eroding beach face. As stated on page 86 of the BA, suspected stress and bio-energetic effects of the proposed project are difficult to measure, meaningfully quantify, or evaluate. However, it is known that compatible sediments placed in a configuration appropriate to the local geomorphology and profile geometry result in short-term impacts to the infauna of the surf zone. In such configurations, viable communities can be present in the first year and recolonization begins to occur rapidly for many species. This can be true especially during peak productivity periods with adjacent undisturbed areas nearby as would be the case for the Buxton nourishment project. For these reasons, the applicant believes the determination of May Effect, Not Likely to Adversely Affect rufa red knot remains appropriate.

**Seabeach Amaranth** – As stated on pg 64 of the BA in the species description, the primary habitat of seabeach amaranth consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches on barrier island beaches. It also may be found as small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach nourishment or dredge spoil (source for these sentences–USFWS 1993, 2011).

USFWS (US Fish and Wildlife Service). 1993. *Formal Conference Report Regarding Seabeach Amaranth, In: 1993 Biological Opinion Concerning Beach Nourishment Projects at Masonboro Island, Wrightsville Beach, Topsail Beach and West Onslow Beach*. 22 pp

USFWS (US Fish and Wildlife Service). 2011. *Seabeach amaranth (*Amaranthus pumilus*)*  
[http://www.fws.gov/raleigh/species/es\\_seabeach\\_amaranth.html](http://www.fws.gov/raleigh/species/es_seabeach_amaranth.html)

While the Buxton BA did not directly state that these preferred habitats are not found within the project area, as the project area is a highly eroding beach and not located at an accreting end of an island, these habitats are not present. Additionally, the other habitats where it may be found as small temporary



populations also do not occur in the project area: there are no sound-side beaches within the project area, the dunes in the project area are frequently manipulated by NCDOT, and any blowout of the artificial dunes would be quickly bulldozed back into the expedient NCDOT-built dune configuration. As stated on page 96 of the BA, the deteriorated condition of the beach and absence of backshore area free of vegetation with a stable dry beach to sustain the species continue to make the project area unsuitable for seabeach amaranth.

While some colonization by seabeach amaranth has occurred after some nourishment projects (Bogue Banks, Wrightsville Beach), it is impossible to know whether the seeds for the colony arrived with the nourishment sediments, or whether the scraping of the beach exposed the seed bank, or whether the seeds arrived via wind or water after nourishment. Grey literature does indicate offshore dredge sediments can contain seeds of this species which can occasionally be deposited favorably during sand placement activities of a nourishment project (Claudia Jolls, Associate Professor, Plant Ecology, East Carolina University, pers comm, 6 November 2015). While such a favorable deposit of seeds may or may not occur with the Buxton project, for up to 10 years post-project, the post-nourishment area should provide non-eroding beach conditions which allow for a more stable, natural dune system to form which would provide improved habitat for the species. This was certainly the case along Bogue Banks following nourishment of Pine Knoll Shores, Indian Beach, and Emerald Isle in 2001–2003. Prior to nourishment in August 2001, a total of 36 individual plants were found. After nourishment, annual plant numbers rose to over 5,000 each year in August 2002, August 2003, and August 2004 along a 16-mile-long project area (CSE 2004).

CSE. 2004. *Survey report 2004, Bogue Banks, North Carolina. Monitoring Report for Carteret County Shore Protection Office, Emerald Isle, North Carolina. Coastal Science & Engineering, Columbia (SC) and Morehead City (NC), 82 pp + 4 appendices.*

As stated on page 3 of the Seashore's 2014 annual monitoring report for the species  
[http://www.nps.gov/articles/caha\\_sba2014.htm](http://www.nps.gov/articles/caha_sba2014.htm):

*No plants have been observed since that time [2005] and the plant is currently thought to possibly be extirpated from the Seashore. The area on Bodie Island spit where amaranth had been located in 2004 and 2005 has been continuously protected through summer and winter resource management closures. At Cape Point, a portion of the area where amaranth was historically found has also been continuously protected through summer and winter resource closures. No plants were found within any of these protected areas. At Hatteras Inlet, large portions of the historic range are simply no longer present due to continued erosion. While it is thought that the plant may possibly be extirpated from the Seashore, it should be noted that since plants are not evident every year, but may survive in the seed bank, populations of seabeach amaranth may still be present even though plants are not visible for several years (USFWS 2007).*

For these reasons, the applicant believes that a No Effect determination remains appropriate.



Of additional interest, in the Seashore's 2014 annual monitoring report, after the table which shows seabeach amaranth population decline in the four Seashore "sites" (Bodie Island spit, Cape Pt/South Beach, Hatteras Island spit, and Ocracoke Island) since 1981, the report states on page 5:

*Nationwide, amaranth populations have similarly declined since 2000. Numbers have dropped from 249,261 plants observed in 2000 to 1320 plants in 2013, a 99.5 percent decline (Dale Suiter, pers. comm.). The species' recovery plan is due for a 5-year review by US Fish and Wildlife Service. The Service is trying to understand rapid species decline and is considering options for reintroduction attempts in suitable areas. CAHA has been discussed as a potential reintroduction site since the CAHA Off-Road Vehicle Management Plan/EIS calls for possible development of a restoration plan in suitable habitat (NPS 2010). Park staff has been tasked with drafting a comprehensive report analyzing past and current amaranth research and reintroduction attempts in similar locations along the Atlantic coast. This report will be used to determine the feasibility of a seabeach amaranth restoration attempt at CAHA.*

***1b) The second paragraph of the USFWS comment specifically includes concerns about the West Indian manatee.***

Rationale for exclusion of species for detailed analysis in the BA is provided on page 37 of the BA and the ninth bullet on page 41 of the BA provides more detail for exclusion of the West Indian manatee from further analysis based on lack of habitat in the project. While manatee are documented in the shallow warm water of the sound behind the project, their usual avenue to the sound is either the Intracoastal Waterway or coastal inlets. The nearest inlet to the project is 12 miles to the southwest.

***1c) The third paragraph of the USFWS comment includes concerns about complying with the Migratory Bird Treaty Act.***

Every effort will be made to minimize harm to any protected species through continued coordination with all resource agencies and implementation of proven prudent and reasonable minimization and mitigative measures. USFWS's definition of "take" does not include activities that unintentionally "harm" or "harass" wildlife. Regarding those species protected under the MBTA, courts have ruled that MBTA "take" includes just migratory birds deaths resulting from affirmative activities directed against wildlife. The proposed action has no activities specifically directed at any wildlife, there is no intent to harm or harass any wildlife, and efforts to minimize harm to any migratory bird will be fully implemented.

**Comment 2) Concerns related to potential cumulative impacts from multiple projects.**

Applicant respectfully looks forward to continued interagency communication and the formal consultation process.

**Comment 3) Concerns about the use of "No-work buffers" around turtle or bird nests.**

The applicant recognizes that all sea turtle nests will be relocated outside the work area and that despite best practices and vigilance of nest surveyors and optimal selected sites for nest relocations, some nests may be missed and not safely relocated, and some relocations may be unsuccessful.



Adjusting work area boundaries to avoid areas with sensitive resources is a common resource protection practice for any construction project. Under Alternative 3, the “no-work buffer” is an adjustment to the work area boundary designed to help avoid working in areas with nesting wildlife. To help protect nesting turtles and birds, the National Park Service uses buffers around nest areas to exclude ORVs and visitors. The Park Service consulted with the USFWS on the ORV Management Plan that calls for application of “buffers” to exclude ORVs from nest areas as an effective means to help protect nesting animals. Where there is adequate beach width, no-work buffers are intended to decrease or minimize the level of disturbance to any marked bird nests.

Regarding the Migratory Bird Treaty Act (MBTA), please see response 1c (on page 4).

**Comment 4) USFWS Law Enforcement officer contact information in case of any injuries or deaths of wildlife.**

Duly noted and acknowledged.

**Comment 5) The fifth comment includes the following points as 5a, 5b, 5c:**

***5a) Shell and gravel contents in the borrow area***

The arithmetic mean of the shell and gravel content along the native beach are 6.2% and 6.6% (respectively) (see Table 3.3 in Appendix C of the Buxton EA – Geotechnical Data). Three offshore cores (Buxton-2, Buxton-24, and Buxton-25) have higher-than-average shell content of 21.7%, 22.3%, and 25.6% (respectively) (see Table 4.4a in Appendix C). But the gravel content of these borings is lower than average [ie – 1.6%, 2.2%, and 5.2% (respectively)]. The North Carolina Technical Standards For Beach Fill Projects (15A NCAC 07H.0312) Items #3d and 3e require that:

*3d. The average percentage by weight of gravel (greater than or equal to 4.76 millimeters and less than 76 millimeters) in a borrow site shall not exceed the average percentage by weight of gravel-sized sediment for the recipient beach characterization plus five percent;*

*3e. The average percentage by weight of calcium carbonate in a borrow site shall not exceed the average percentage by weight of calcium carbonate of the recipient beach characterization plus 15 percent;*

The shell content at Buxton-2, Buxton-24, and Buxton-25 marginally meet the above-stated criteria, but the gravel content at these stations is well below the North Carolina thresholds. Therefore, the applicant believes that the material at these locations should be considered compatible and should not be excluded from being used in this project.

***5b) Sediment quality monitoring for incompatible material during construction***

The characteristics of the sand pumped to the beach will be monitored by the contractor and project engineer during construction. If the continuous monitoring detects that material being pumped onto the beach contains incompatible materials including mud, mud balls, coarse gravel, or organic materials, the



contractor will stop dredging immediately and relocate the dredge to a different part of the borrow area where acceptable material is available.

In addition, the applicant's engineer will collect composite-grab sediment samples during construction along the nourished beach. A composite sample consists of a series of grab samples at approximately 10-foot spacing along each transect from the landward limit of fill to the low-tide line mixed together to form one representative sample for the given station. Some additional single-point grab samples in the vicinity of the discharge point will also be collected. In addition to visual inspection, sand samples will be analyzed to quantify and confirm grain-size distribution as a means of monitoring the quality of the material actually placed on the beach.

***5c) Possible impact on beach compaction after construction***

If required by state and federal agencies, the applicant will conduct compaction tests along both the nourished beach and the native beach. Compaction results will be used to determine if the nourishment project alters the beach characteristics for turtle nesting and whether beach tilling is advisable and necessary.

***Comment 6) Alternative 2 versus Alternative 3.***

The applicant agrees that Alternative 3 would likely have more adverse effects than Alternative 2 for sea turtles. Please refer to Comment 1 above for additional response.

***Comment 7) The summary effects determined in Table 4.3 do not agree with the effects discussed in Table 4.2.***

The applicant believes that the summary effects listed in Table 4.3 agree with effects discussed in Table 4.2. Please refer to Comment 1 above for additional response.

***Comment 8) Potential cumulative impact on piping plover, red knot, sea turtle, and seabeach amaranth.***

As stated in the first paragraph of the Buxton EA Chapter 4, page 121 (first full paragraph), the shoreline referenced for cumulative impacts is the 70-mile Dare County ocean beach north of Cape Point, a large component of the 120-mile Cape Henry to Cape Hatteras littoral cell. This entire littoral cell is characterized with similar wave climate and coastal processes which, among other environmental and geodynamic variables, influence, and even dictate, occurrence or suitability of habitat for numerous species. We note that USFWS previously issued Biological and Conference Opinions in 2008 related to piping plover and sea turtles in connection with the Bonner bridge project. Cumulative impacts were considered in the EIS and EA for that project (NPS 2015).

*National Park Service (NPS). 2015. Record of Decision: Replacement and demolition of the Herbert C. Bonner Bridge, North Carolina DOT Final Environmental Impact Statement (2008)/Environmental Assessment (2010). NPS Outer Banks Group, Southeast Regional Office, 26pp.*



It appears that the USFWS concern expressed in this comment revolves around their statement that “*up to 33% of Dare County shorelines to be under construction within the same year and season (summer of 2016), and how that may affect federally protected species.*” The Buxton EA Chapter 4, page 121 (second full paragraph) actually reads “...a total of 23 miles (~33%) of the Dare County shoreline north of Cape Hatteras is likely to receive nourishment *over the 10-year period 2010–2020*” {emphasis added}. Using the distances in the same paragraph, the four Dare County beach restoration projects proposed to occur in 2016 total 11 miles, or ~16% of the Dare County shoreline north of Cape Hatteras. For 2016, these 11 miles represent ~11% of the entire ~101-mile Dare County ocean shoreline, 9% of the 120-mile Cape Henry to Cape Hatteras littoral cell, and 3% of the entire 326-mile North Carolina ocean coastline. It is also worthy to note that the direct, indirect, and cumulative impacts on species or their habitats in these 11 miles would be spread over a much larger portion of the NC/Dare County shoreline than the impacts of the Nags Head beach nourishment project permitted and completed in 2011 (the project took place on a contiguous 10-mile segment of shoreline.) For the 2010–2020 period, the 23 miles represent ~23% of the entire Dare County shoreline, 19% of the shoreline in the Cape Henry to Cape Hatteras littoral cell, and 7% of the entire North Carolina coastline.

The cumulative effects of beach nourishment projects can be complex in both time and space for various species and can be both adverse and beneficial in either short- or long-term duration. For example, properly designed and implemented beach nourishment widens the beach and decreases the slope, both of which increase foraging/nesting/resting habitat for shorebirds and nesting habitat for sea turtles. The same project can also temporarily decrease foraging habitat for birds and some fish by the disturbance to benthic communities during construction.

Sea turtle species are threatened by mortality or injury from fisheries by-catch, collisions with vessels, entanglement with marine debris, ingestion of marine pollution, disease, and contamination. Threats to nesting and hatchling success are directly linked to humans (eg – predation for eggs/shell, coastal development, artificial lighting, pets, beach vehicles, human debris left on beach) and the natural environment (nest washouts and predation). During construction of multiple, beach restoration projects in the summer, female turtles who try to come ashore to nest may be disturbed by the activities or disoriented by night lighting and expend energy with false crawls.

While the proposed Buxton beach restoration project and the other three northern beach nourishment projects would contribute to some of these cumulative effects, they all aim to provide the benefit of a more stable, wider beach to both sea turtles and shorebirds. The Buxton project is separated by ~55 miles from the three northern projects and will mostly occur along a beach that will remain undeveloped compared to the northern projects which front more developed shorelines. However, the portion nourished in Buxton Village and the three other projects may encourage additional tourism and or development with concomitant associated sea turtle hazards (eg – an increase in nest/hatchling predators like raccoons, foxes, cats, and dogs; increased lighting which can disorient females and hatchlings; increased ORV use) or associated disturbance to nesting/foraging/resting shorebirds across the 11-mile footprint of the four projects.



According to the batched BA and final EA prepared for the three proposed northern Dare County projects, there are 124 miles of North Carolina shoreline that are either actively managed in a beach nourishment program or are under development for one (CPE 2015). This document also indicates that when the municipalities that potentially could seek management in the future are added, the amount of managed shoreline could reach 163 miles. Under the CPE (2015) worst-case scenario of 37 miles of shoreline/year under active nourishment, only the portions north of Cape Hatteras would likely require summer construction; therefore, this scenario would result in fewer cumulative impacts to nesting or hatchling sea turtles than the potential annual mileage might indicate. Resting and foraging and some nesting habitat for all shorebirds along the entire mileage in the worst-case scenario could be affected annually; however, these 37 miles represent a small portion of habitat available in the state (11%).

CPE. October 2015. Final environmental assessment: Town of Kill Devil Hills shore protection project.  
Prepared for Town of Kill Devil Hills, North Carolina. CPE, Wilmington, NC, October, 158 pp. [Similar EAs are prepared for Ktty Hwak and Duck.]

For all species mentioned in this comment (piping plover, red knot, sea turtles, and seabeach amaranth), the Dare County shoreline north of Cape Hatteras has historically documented much less utilization than the shoreline to the south due to multiple factors which are a result of both natural geodynamics (eg – steeper slope, narrow beach width, rate of erosion, sea level change) and human causes (eg – artificial dunes, NC 12 maintenance activities, inlet stabilization).

**Comment 9) The potential impacts to sea turtles nesting.**

The applicant recognizes that all sea turtle nests will be relocated outside the work area and that despite best practices and vigilance of nest surveyors and optimal selected sites for nest relocations, some nests may be missed and not safely relocated, and some relocations may be unsuccessful. Additionally, there is a potential for eggs to be damaged by their movement or for unknown biological mechanisms to be affected. Nest relocation can have effects which may include changes in incubation temperature which can alter sex ratios, gas exchange parameters, hydric environment of nests, hatching success, and hatchling emergence. Nests relocated into oxygen- or moisture-deficient sands can result in mortality, morbidity, and reduced behavioral competence of hatchlings.

Comparisons of hatching success between relocated and *in situ* nests have noted significant variation. However, as shown in Table 9.1 of the BA (Appendix B of the Buxton EA, page 89) specific data from Cape Hatteras National Seashore sea turtle nest relocations for the past three years (2012–2014) indicates an average of 25.7% of nests were relocated and that in each year, mean hatch success, mean emergence success, and nest success were higher in the relocated nests than in the *in situ* nests.

As stated in Table 4.2, page 154 of the Buxton EA, mitigation for Alternative 3 would include “no night work OR night work using turtle friendly lighting” (emphasis added). The applicant acknowledges that night work will be required due to operational and economic reasons given the large number of personnel who must be mobilized from abroad for ocean dredging work. Night work will be necessary and, therefore, it will be performed with turtle-friendly lighting. As also stated in Table 4.2, night-time



monitors will survey the beach to be affected by the next day's work, and no work can begin the following day until the early morning survey is completed within any given area about to receive nourishment.

Strict adherence to decision criteria for relocation and use of only highly trained personnel for surveys and relocation can improve the effectiveness of nest relocation and nest discovery, both of which will help minimize impacts.

As stated in the Kill Devil Hills Final EA (CPE 2015), projects utilizing fill material that is similar in grain size and composition to the nourishment area may prevent or reduce some of the adverse effects associated with nourishment efforts (Crain et al 1995). The design of the beach involves the use of compatible beach material to widen the existing dry beach, thereby increasing the amount of available, suitable nesting habitat for sea turtles. In April 2008, the North Carolina Coastal Resources Commission (NCCRC) adopted State Sediment Criteria Rule Language (15A NCAC 07H .0312) for borrow material aimed at preventing the disposal of incompatible material on the beach. The new rule limits the amount of material by weight in the borrow area with a diameter equal to or greater than 4.76 millimeters (mm) and less than 76 mm (gravel), between 4.76 mm and 2.0 mm (granular) and less than 0.0625 mm (fine) to no more than 5% above that which exists on the native beach. The material proposed for use in the project will meet these criteria (See Buxton EA Table 3.1 and Table 3.2) and consequently reduces many of the potential impacts to nesting and hatchling sea turtles.

*Crain, DA, AB Bolten, and KA Bjorndal. 1995. Effects of beach nourishment on sea turtles: review and research initiatives. Restoration Ecology 3(2), pp 95-104.*

The proposed nourishment will be limited to the zone of the active beach with a berm elevation closely matching the native dry-sand beach elevation. The nourishment berm will be designed to be overtopped by waves during minor storm events. Such post-project overwash will redistribute sediment into natural slopes, reducing the likelihood of persistent escarpments. Such escarpments are more likely to occur along nourished beaches where the constructed berm elevation is several feet above the normal wave runup limit.

Visual surveys of escarpments will be made along the beach fill area immediately after completion of construction. Escarpments in the newly placed beach fill that exceed 18 inches for greater than 100 ft will be graded to match adjacent grades on the beach. Removal of any escarpments during the sea turtle hatching season (May 1 through November 15) will be coordinated with the North Carolina Wildlife Resources Commission (NCWRC), USFWS, and USACE. The likelihood of escarpment formation can be reduced by incorporating a beach design that closely resembles the native beach in terms of berm elevation, sediment size, and sediment sorting characteristics. The proposed project will be designed with a berm elevation of +7 ft NAVD'88 and sediment characteristics that fall within the ranges required by the North Carolina State Sediment Criteria.



November 23, 2015

Ms. Courtney Spears, Assistant Major Permits Coordinator  
Division of Coastal Management  
Department of Environmental Quality  
400 Commerce Avenue  
Morehead City, NC 28557

RE: **Beach Restoration to Protect NC Highway 12 at Buxton, Dare County, NC**  
ER 15-2201 Comment Letter from NCDNCR SHPO [CSE 2403]

Dear Ms. Spears:

This letter is to acknowledge that we have received a copy of a letter dated 16 November 2015 from Ramona M Bartos at NC State Historic Preservation Office to your office (c/o Heather Coats) regarding certain protection measures to be a condition of a Major CAMA permit for the Buxton beach nourishment project. The protection measures include:

- Contractor notification of the two archaeological interface sites (NHB004 and NHB015) at the northern end of the proposed beach nourishment area.
- Potential to unearth unknown beached shipwreck or shipwreck fragments.
- The need to maintain avoidance buffers in the proposed borrow area as outlined in the permit application.

As agent for the applicant, Dare County, my firm agrees to contact NC Underwater Archaeology Branch at 910-458-9042 should the project encounter any archaeological or cultural resource objects in the course of construction.

Thank you for your review of the permit application and the supporting cultural resource documents.

Yours truly,

Coastal Science & Engineering (CSE)

Timothy W Kana PhD PG  
Project Director

cc: Raleigh Bland, USACE, Wilmington District  
Josh Pelletier, USACE, Wilmington District  
Dave Hallac, Superintendent, CAHA National Park Service  
Robert Outten, Dare County, Manager  
Lynn Mathis, NCDCM  
Haiqing Kaczkowski, CSE Project Engineer




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MEMORANDUM

DATE: November 12, 2015

TO: Raleigh Bland  
US Army Corps of Engineers, Wilmington District Washington Field Office

FROM: Timothy W Kana, PhD PG 

RE: Beach Restoration to Protect NC Highway 12 at Buxton, Dare County, North Carolina —  
SAW 2015-01612 — **Response to NCWRC Comments** [CSE 2403]

We received a letter (dated 26 October 2015) from the USACE requesting “*a resolution and/or rebut any and all concerns*” stated in the letter provided by the North Carolina Wildlife Resources Commission (NCWRC) on 19 October 2015 for the above-referenced project.

The applicant (Dare County) and the National Park Service appreciate that NCWRC reviewed the proposed project and provided supportive guidance in the letter. Every effort will be made to minimize harm to wildlife resources through continued coordination with all resource agencies and implementation of proven prudent and reasonable minimization and mitigative measures as stated in the letter.

The materials to be excavated from the borrow areas are believed to be medium and clean sand that is compatible with the native beach. During construction, the characteristics of the sand pumped to the beach will be monitored, and composite-grab sediment samples will be collected and analyzed along the nourished beach. If material being pumped onto the beach contains incompatible materials, the contractor shall stop dredging immediately and relocate dredging to a different part of the designated borrow area where acceptable material is available.

## Attachment D

# SUMMARY OF PUBLIC COMMENTS on the Beach Restoration to Protect NC Highway 12 Clean Water Act 404 and NPS Special Use Permits Environmental Assessment

## INTRODUCTION

The *Beach Restoration to Protect NC Highway 12 Clean Water Act and NPS Special Use Permits Environmental Assessment* (EA) formal public review period occurred from September 18 through October 19, 2015. The Army Corps of Engineers issued a public notice announcing the availability of documents, including the EA, submitted with an application from Dare County seeking authorization to carry out the proposed action. The notice included information on how to comment on the project. The public notice was available on the Wilmington District Web Site at <http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/PublicNotices/tabid/10057/Article/617794/saw-2015-01612.aspx>. The EA and appendixes were also available on the PEPC website at <http://parkplanning.nps.gov/BeachRestorationPermits>. The National Park Service issued a news release announcing the public meeting about the project to be held on October 15, 2015 in Buxton, NC. Approximately 40 individuals attended the meeting. A summary of the scoping for this project is described under the *Scoping Process and Public Participation* section of the EA on pages 17 to 20.

## SUMMARY OF PUBLIC COMMENTS

During the public review period for the EA, the Army Corps of Engineers received four letters from the public, plus agency letters from the Fish and Wildlife Service, National Marine Fisheries Service, NC State Historic Preservation Office, and NC Wildlife Resources Commission. The agency letters and the applicant's responses to those letters are included in separate attachments to the NPS Finding of No Significant Impact (FONSI).

Comments on the Environmental Assessment (EA) were classified as substantive or non-substantive. A substantive comment is defined as a comment that does one or more of the following:

- Question, with a reasonable basis, the accuracy of information presented in the EA;
- Question, with a reasonable basis, the adequacy of the environmental analysis;
- Present reasonable alternatives other than those presented in the EA; or
- Cause changes or revisions in the proposal.

Two letters were from individuals that supported the project. Letters of support are not considered substantive. One individual submitted a road design for stabilizing NC 12. This proposed NC12 road design alternative is outside the scope of the project and therefore not substantive. Several comments that were considered substantive are addressed below.

**Comment 1.** As described in our February 27, 2015 scoping letter to David Hallac, beach nourishment has well-established adverse environmental effects. As outlined in that letter, those effects range from burial of benthic macroinvertebrates, interference with overwash processes, and direct loss of habitat due to construction activities.

**Response 1.** *The Army Corps of Engineers received the letter from the scoping letter during the public scoping period. The issues raised in the letter were addressed in the EA, including project effects on natural resources and natural processes.*

**Comment 2.** Alternative 3 will have adverse effects on nesting wildlife that have an established history of using the section of beach that would be renourished. According to the most recent annual reports, Seashore beach within the project area has significant American oystercatcher and colonial waterbird nesting activity. The American oystercatcher report demonstrates that this area has been an important nesting area from 2009-2014. The Colonial Waterbird report documents similarly nesting use by various colonial waterbirds between 2009-2014.

Alternative 3 is not the least environmentally damaging practicable alternative. The proposed mitigation measures will not protect nesting birds for two reasons. First, mitigation measures are only triggered by active nests, colonies, or chicks. The EA appears not to address the disturbance of courtship activities or nest and colony establishment. Beach nourishment will turn nesting beaches into a construction zone and will discourage courtship and nesting. Unless habitat is protected during these sensitive time periods, there will not be nests, colonies, or chicks that could trigger mitigation measures.

Second, mitigation measures prioritize renourishment over wildlife protection. The described mitigation measures would "postpone operations as long as practicable where active bird nests are being monitored."<sup>4</sup> Therefore, it appears that even an active nest would not be protected during the construction process if doing so was not "practicable."

This elevation of beach nourishment over wildlife protection cannot be authorized under the NPS mandate to protect the Seashore. See 16 U.S.C. § 1, 459, 459a-2; NPS Management Policies 2006, § 1.4.3. The Corps cannot permit Alternative 3 because Alternative 2 is practicable and avoids all of these impacts to nesting birds. Further, Alternative 2 eliminates impacts to sea turtles. Therefore, Alternative 2 is unquestionably the least environmentally damaging practicable alternative.

**Response 2.** *The Army Corps of Engineers and National Park Service weighed the long-term environmental impacts against short-term impacts in identifying the environmentally preferable alternative. Alternative 3 will have greater potential for short-term adverse impacts on some wildlife than alternative 2 because of the season of construction and its larger scale. However, Alternative 3 will have a greater long-term environmental benefits resulting from a wider, longer-lasting beach that will provide more habitat for birds and sea turtles.*

*The EA addressed the effects of Alternative 3 on nesting wildlife, including the impacts on the American Oystercatcher. Alternative 3 will have short-term, adverse effects on some nesting birds. To help protect nesting birds, NPS biologists will establish pre-nesting closures when breeding behaviors are noted and maintain buffers around active nests and around unfledged chicks where no construction can occur. These buffers will help to minimize and avoid adverse impacts to birds, including the American oystercatcher. Alternative 3 will widen the beach 150 feet along 15,500 feet providing additional nesting and foraging habitat for birds. This will have a much greater benefit to birds compared to alternative 2 that would only widen beach habitat by about 70 feet.*

*The mitigation measures do not prioritize beach nourishment over wildlife protection as the commentor suggested. To clarify this, the mitigation measure text for protecting bird nests was revised to:*

- *The schedule for completion of each reach will be coordinated with NPS officials to postpone operations where active bird nests are being monitored.*

*The NPS Management Policies 2006 under Section 1.4.3 “give the Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values.” The National Park Service has determined that implementation of Alternative 3 will not constitute impairment to the resources or values of Cape Hatteras National Seashore. This conclusion was based on a thorough analysis of the environmental impacts described in the Environmental Assessment, relevant scientific studies and cultural resource reports, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies 2006.*

**Comment 3.** The EA does not address future impacts. The EA does not adequately analyze cumulative impacts. Under the National Environmental Policy Act, cumulative "is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The EA does not adequately address cumulative impacts because it does not account for reasonably foreseeable erosion of the renourished beach.

As discussed in our scoping comments, beach renourishment cannot address long-term erosive forces that naturally reshape barrier islands such as Hatteras Island. The EA recognizes that even the preferred alternative is only expected to last "up to one decade." The EA does not address the long-term plan for dealing with reasonably foreseeable erosion that will occur beyond the effect of any renourishment approved in this process. Those impacts may be severe, both with respect to the borrow area and the Seashore's beaches. The EA fails to analyze the cumulative impacts of subsequent renourishment plans or other strategies for responding to the inevitable migration of Hatteras Island.

**Response 3.** *Reasonable foreseeable future actions do not include those actions that are highly speculative or indefinite (43 CFR 46.30). The Army Corps of Engineers and National Park Service analyzed the applicant's request for approval of a one-time event to address the immediate problem of beach erosion along critically eroding sections of Hatteras Island and to protect NC State Highway 12 and community infrastructure. The National Park Service will issue a single Special Use Permit to the applicant to nourish the beach one time as described under Alternative 3. Neither Dare County nor the National Park Service has applied for permits to perform additional future beach nourishment projects in Cape Hatteras National Seashore.*

*The EA also acknowledges that the wider beach following nourishment will continue to erode and only provide protection to NC12 for a limited time. NC Department of Transportation is currently preparing a feasibility report to evaluate 5-year and 50-year alternatives for NC12. NC Department of Transportation is early in the planning process and has not proposed a specific project for protecting NC12 from erosion in the future.*