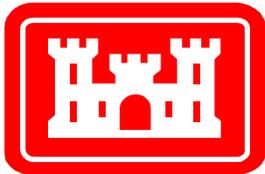

**FINAL
INTEGRATED
FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT
COASTAL STORM DAMAGE REDUCTION**

**BOGUE BANKS, CARTERET COUNTY
NORTH CAROLINA**

**APPENDIX L
PROJECT CORRESPONDENCE**



**US Army Corps
of Engineers
Wilmington District**

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United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Mr. Elden J. Gatwood
Chief - Planning and Environmental Branch
USACE - Wilmington District
69 Darlington Avenue
Wilmington, North Carolina 28403

MAR 12 2012

Dear Mr. Gatwood:

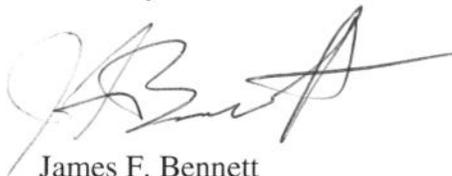
Thank you for your March 2, 2012, letter requesting that the Bureau of Ocean Energy Management (BOEM) become a cooperating agency during the preparation of an Environmental Impact Statement (EIS) for the island of Bogue Banks, North Carolina, Coastal Storm Damage Reduction (CSDR) Project. The proposed action, being evaluated by the U.S. Army Corps of Engineers (Corps) under a Congressional authorization, may involve beach nourishment of up to 24 miles of coastal shoreline from Beaufort to Bogue Inlets, North Carolina potentially using sand from borrow area located on the Outer Continental Shelf (OCS).

BOEM welcomes the opportunity to participate in this National Environmental Policy Act (NEPA) effort and agrees to serve as a cooperating agency since BOEM has jurisdiction over mineral leasing on the OCS. As a cooperating agency, BOEM expects to: participate and provide input in the NEPA process at the earliest possible time; assume, on the request of the Corps, responsibility for developing information and preparing environmental analyses for which BOEM has special expertise; make available staff support, at the lead agency's request, to enhance the interdisciplinary capability of the Corps; provide comment on draft versions of the EIS when requested; and use our own funds to accomplish these responsibilities.

BOEM also recognizes the importance of initiating and agrees to participate in the required Endangered Species Act (ESA) Section 7 consultation; the Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat (EFH) consultation (Section 305); the National Historic Preservation Act Section (NHPA) Section 106 process; and the Coastal Zone Management Act (CZMA) Section 307 consistency process. As the lead federal agency for ESA Section 7 and the EFH consultations, the Corps must notify the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) of its lead role and BOEM' cooperating role. BOEM would expect the Corps, as lead agency, to work with BOEM to ensure existing biological opinions from FWS and NMFS are applicable to BOEM's part of the Federal action and/or expect to jointly submit the ESA Section 7 and EFH assessments to FWS and NMFS. BOEM expects the Corps to be the lead federal agency for the NHPA Section 106 and CZMA Section 307 compliance with BOEM acting in a consulting role. BOEM requests that the Corps notify the State Historic Preservation Officer and North Carolina Division of Coastal Management of BOEM's involvement in the undertaking/proposed action.

BOEM looks forward to working with the Corps during this process. We would greatly appreciate be included on all correspondence to other federal and state agencies concerning this project. Likewise, we would appreciate the opportunity to join the Project Development Team if one is formed. If you would like to discuss any of these items further, please contact Jennifer Culbertson at (703) 787-1742 or by e-mail at Jennifer.Culbertson@boem.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Bennett', with a long horizontal flourish extending to the right.

James F. Bennett
Chief, Division of Environmental Assessment

cc: Mr. Eric Gasch
U.S. Army Corps of Engineers, Wilmington District

Mr. C. Broadwater
Bureau of Ocean Energy Management

BOEMRE COMMENTS (September 2013)

Draft Environmental Impact Statement: Coastal Storm Damage Reduction Project, Bogue Banks, Carteret County, NC			
General Comments			
A	<p>Consistent with the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, the Corps has combined the preparation of an Environmental Impact Statement (EIS) with a planning instrument. The draft Integrated Feasibility Report (IFR) and EIS integrate alternative development, engineering and economic analyses, and environmental review in a single document. In the draft document, the elements required in an EIS are presented in an atypical order, and the re-organization presents some fundamental challenges to the reader. For example, the reader must first read the Tentatively Selected Plan chapter (Chapter 6), the practical description of the proposed action, to fully comprehend the site-specific discussion of in the Affected Environment chapter (Chapter 2). Environmental commitments are enumerated before the presentation of the impact analyses in the Environmental Effects chapter (Chapter 7). Therefore, the reader must first read the effects analyses to fully appreciate the need and purpose of the proposed mitigation.</p> <p>BOEM recommends the Corps prepare prefatory guidance to better orient the reader to the organization of the document. Alternatively, the Corps could insert the Affected Environment chapter after the Tentatively Selected Plan chapter and before the Environmental Effects chapter. Mitigation should be linked in a logical manner to the effects analysis.</p>		
B	<p>Please include BOEM jurisdiction justification: Public Law 103-426 enacted 31 October 1994 gave BOEM the authority to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for shore protection; beach or wetlands restoration projects; or for use in construction projects funded in whole or part or authorized by the federal government. In implementing this authority, BOEM may issue a negotiated non-competitive lease agreement for the use of OCS sand to a qualifying entity. BOEM and the USACE are cooperating agencies having jurisdiction over different project facets and locations. OCS resources (beyond three mi) fall under BOEM's jurisdiction, as found in the OCS Land Act.</p>		
C	<p>Please indicate earlier in the document: BOEM and the USACE are cooperating agencies having jurisdiction over different project facets and locations. OCS resources (beyond three mi) fall under BOEM's jurisdiction, as found in the OCS Land Act.</p>		
D	<p>Please note this earlier in the document: Since most of the borrow areas identified for the proposed project are located on the Outer Continental Shelf (OCS), BOEM may need to authorize their use for initial and/or maintenance construction. The BOEM, as a cooperating federal agency, may undertake a connected action (i.e., authorize use of the OCS borrow area) that is related, but unique from the Corps's proposed action (i.e., construction of the project). Consequently, the purpose and need of the BOEM's proposed action is different. Ideally, the EIS should provide a more accurate description of the BOEM's involvement under the Corps' proposed action.</p> <p>The BOEM's proposed action is the issuance of a negotiated agreement pursuant to its authority under the Outer Continental Shelf Lands Act. The purpose of that action is to authorize the use of OCS sand (or other sediment) resources in beach nourishment and coastal restoration projects undertaken by federal, state or local government agencies, and/or in other federally authorized construction projects. The BOEM's action will be needed because the localities and the Corps submitted authorization requests to the BOEM.</p>		
E	<p>The Environmental Effects chapter (Chapter 7) offers a robust discussion of the potential environmental impacts related to the Tentatively Selected Plan. In contrast, the document offers a limited discussion of potential impacts associated with other alternatives, including the no action alternative. BOEM suggests the Corps clearly indicate which alternatives were dismissed and on what basis. Otherwise, the direct and indirect impacts of alternatives should be discussed in more detail and in context of their relative significance in the Environmental Effects chapter.</p>		
F	<p>The biological assessment discusses protected species that are likely to occur in the proposed project area. However, the draft IFR/EIS does not address other marine mammals without protection status, such as dolphin species, that are likely to be present and may be affected by the proposed action. They are mentioned in App G but should be addressed within the document text.</p>		
#	Page	Section	Specific Comments
1	2 App F	Fig. 1.1 Figure 1	Please add the OCS line to delineate Federal vs State waters
2	5 and 8	1.08 and Fig 1.2	No mention of the most recent 2013 Post Irene Renourishment Effort along BogueBanks
3	21	2.04.6	Please include a figure indicating hardbottom areas within and near offshore borrow areas. A more detailed description of offshore hardbottom would be helpful. A discussion of habitat association between benthic populations and habitat type (RSDs, hard bottom, sand and muddy substrate) should be provided. The benthic resources or hard bottom descriptions should include a detailed description of the occurrence and quality of benthic sargassum, corals, and sponges.
4	32	2.07	"In accordance with Section 7 (a)(2) of the ESA, the Corps has been in consultation with the USFWS and NMFS since beginning this study." Should indicate BOEM's involvement in the process to cover use of the OCS borrow site under ESA
5	33	Table 2.4	Update with new info on spp. Atl sturgeon are now endangered
6	38	2.08	There is no discussion of the potential for archaeological resources in the vicinity of pump-out locations and pipeline corridors, and the likely areas for those operations are not identified. Consideration of these areas may be important as they are subject to bottom disturbing activities such as anchoring, anchor drag, and pipeline emplacement
7		2.08	The Corps does not fully address the potential for prehistoric sites within the survey area. BOEM suggests that the following tasks relating to prehistoric site potential be addressed: 1. review current literature on late Pleistocene and Holocene geology, paleogeography, and sea level change in the area; marine and coastal prehistory; and previous archaeological resource reports in the area if available.

			<p>2. discuss relict geomorphic features and their archaeological potential that includes the type, age, and association of the mapped features; the acoustic characteristics of channels and their fill material; evidence for preservation or erosion of channel margins; evidence for more than one generation of fluvial downcutting; and the sea level curves used in the assessment.</p> <p>3. discuss, based on the capabilities of current technology in relation to the thickness and composition of sediments overlying the area of a potential site, the potential for identification and evaluation of buried prehistoric sites.</p> <p>The DEIS should incorporate information that summarizes the potential for prehistoric sites within the project area.</p>
8	40	2.12.1	Ambient and anthropogenic noise in the marine environment is not described.
9	72	Table 5.8	Table 5.8 does not address potential impacts from the range of beach fill and non-structural alternatives proposed to physical processes and non-listed marine mammals.
10	79		Please indicate state vs federal borrow sites or give some explanation to the difference.
11	81		Note that the recent FEMA project off Bogue Banks went from January to March 25th on the ODMDS and did not catch any turtles during relocation trawling
12	103		The description of and potential impacts to protected marine mammals and sea turtles are incorporated by reference to the biological assessment. BOEM recommends a brief summary be provided in the EIS, or, the biological assessment should be included as a physical attachment to the Final IFR/EIS.
13	105	7.02.7	Suggest referencing some more recent literature which can be found the recent review on this subject Michel et al, 2013.
14	109	7.02.8.2	It should be stated that cross-shore sediment transport will likely occur beyond the depth of closure, but ultimately depends on the forcing conditions and the profile state at the time of the forcing event.
15	111	7.02.8.5	What about potential impacts to benthic <i>Sargassum</i> ? It is noted to be in the area but then not further addressed.
16		7.02.8.6	Additional info from NASA Wallops Island EA (2013): “Dredging operations would cause sediment to be suspended in the water column. Studies of past projects indicate that the extent of the sediment plume is generally limited to between 1,640 – 4,000 ft from the dredge and that elevated turbidity levels are generally short-lived, on the order of an hour or less. (USACE 1983; Hitchcock et al. 1999; MMS 1999; Anchor Environmental 2003; Wilber et al. 2006).”
17		7.03.4	BOEM recommends a discussion of bird utilization of hard bottom areas and other offshore habitat.
18		7.03.5	It seems odd that T and E aren’t addressed until the terrestrial section although it includes offshore species. Would be helpful to include a section in the marine environment on offshore T and E spp.
19		7.09.1	Additional info from the NASA/BOEM Wallops 2013 EA that may be useful: “During the initial Wallops Island beach fill in summer 2012, NASA partnered with BOEM and USACE (Reine et al, 2013) to record background in-water sound levels at the both offshore borrow area and the nearshore pumpout area. Data were collected at two listening depths at each site; approximately 10 ft and 30 ft depths at the offshore shoal and 10 ft and 20 ft at the nearshore sites. During the study, the majority of data collected when winds were at least 4-7 miles per hour and wave heights were at least 1-2 feet. Therefore, the data do not reflect “calm” sea conditions. Background sound pressure levels (SPLs) averaged 117 dB across all sampling days, sites, water depths and weather conditions. Minimum measured sound levels ranged from 91 dB to 107 dB depending on sampling location and water depth; maximum levels ranged from approximately 128 dB to just under 148 dB (Reine et al. in prep). Highest SPLs were found at frequencies of less than 200 hertz. The authors note that sea state and the associated sounds generated by waves interacting with the survey vessel likely contributed to the elevated readings. Based upon data collected by Reine et al. (2013), sediment removal and the transition from transit to pump-out would be expected to produce the highest sound levels at an estimated source level (SL) of 172 dB at 3 ft. The two quietest dredging activities would be expected to be seawater pump-out (flushing pipes) and transiting (unloaded) to the borrow site, with expected SLs of approximately 159 and 163 dB at 3 ft, respectively.... Based upon attenuation rates observed by Reine et al. (in prep.), it would be expected that at distances approximately 1.6-1.9 mi from the source, underwater sounds generated by the dredges would attenuate to background levels. However, similar to in-air sounds, wind (and corresponding sea state) would play a major role in dictating the distance to which project related underwater sounds would be above ambient levels and potentially audible to nearby receptors”
20	137	7.11.4	The Corps should also discuss the potential benefits/costs of a borrow area management plan that requires the rotational use of borrow areas over initial and maintenance construction cycles as a means to mitigate cumulative effects to benthic communities and habitat.
21	144-145		The Corps has “lead agency” status for Section 7 and EFH consultations/coordination, and as “lead agency”, the Corps should notify NMFS HCD, NMFS PRD, and FWS of BOEM’s involvement in the proposed action.
22	Appendix F		Please indicates BOEM’s involvement with the Section 7 process within this Biological Assessment.
23	Appendix F	Table 1	Is trawling allowable under the SARBO? If trawling is to be completed it should also be noted and potential impacts addressed within the document text.
24	Appendix F		Will you be adding an analysis of potentials impacts to proposed loggerhead critical habitat?
25	Appendix	5.00	“The Corps will strictly adhere to all conditions outlined in the most current National Marine Fisheries Service RBO for dredging of channels and borrow areas in the southeastern United

	F		States.” Please include BOEM on any environmental requirements throughout 5.00 that apply to areas within our jurisdiction.
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Shore Protection Manager

Greg L. Rudolph
Tel: (252) 393.2663
Fax: (252) 393.6639
rudi@carteretcounty.gov.org



September 5, 2013

Eric Gasch
Environmental Resources Section (CESWA-TS-PE)
U.S. Army Corps of Engineers, Wilmington District
P.O. Box 1890
Wilmington, NC 28402

Re: Comments
Integrated Feasibility Report and Draft Environmental Impact Statement
Coastal Storm Damage Reduction
Bogue Banks, Carteret County, North Carolina

Dear Mr. Gasch,

Carteret County, through the auspices of its Shore Protection Office and Beach Commission and in cooperation with the municipalities of Bogue Banks would first like to compliment the Wilmington District for completing the Draft Bogue Banks Feasibility Report and compulsory Environmental Impact Statement (EIS). In the past we have been very critical of the duration and costs associated with this study, especially compared to the schedule provided in the Feasibility Agreement that was executed in 2001. We have spent considerable time over the past decade securing federal, State, and local funds for the study, which languished for reasons that were systemic Corps-wide and within the District. However there has been noticeable change the past couple of years, and again the District and upper Corps hierarchy should be commended for implementing Nation-wide directives to eliminate the backlog of studies and projects. Likewise, it takes the hard work of the personnel within local Districts to re-assess the goals and complete the Study, and this is duly noted along with the in-person District briefings provided to us over the past couple of years.

Pertaining to the Draft Report & EIS, we would like to go on record specifically at this time regarding the parking and access requirements, which is supported in the document by Appendix I. We have long questioned the interpretation and unilateral judgments the District and Division/Headquarters have applied to their own internal regulations (ER 1105-2-100 and ER 1165-2-130) that sometimes seemingly have no consideration for larger issues such as cost, practicality, and "quantity over quality (i.e., amenities)" of the access/parking facilities existing or planned. We have shared some of these concerns as well during and after the implementation of the Morehead Harbor Section 933 Project (2004 and 2007) and this correspondence should be considered as reiteration of these points in addition to the topics introduced below.

Draft Report is Missing Six Accesses and Parking Locations in Pine Knoll Shores – Attached is a map depicting the existing access and parking locations in Pine Knoll Shores. The accesses on this map from west to east are identified as; (1) Beacon's Reach West, (2) Beacon's Reach East, (3) The Qualls, (4) Dayton Place, (5) Dogwood, and (6) Knollwood; and are not reflected in the Draft Report. Moreover, these accesses have designated

parking areas also described in the attached that were designed to service the access points. Many of these access/parking areas were constructed in association with the aforementioned Morehead City Harbor Section 933 Project and were deemed to fulfill the Corps of Engineers requirements with full federal cost-sharing (65%) applied to the Project. We request the Draft Report to be modified to reflect these access/parking areas, and to also be considered to meet peak demand (see discussion below).

Waiver Requested in Indian Beach and Salter Path – The Draft Report identifies that, *“The distance between the Indian Beach Regional Access and the Salter Path Regional Access has been calculated to be 0.58 Miles.”* and *“The distance between Salter Path Regional Access and the Sea Plantation West Access has been calculated to be 0.59 Miles.”* (pages 2 and 3, Appendix I). The Draft Report further mentions to technically meet the access density requirements, an additional Public Access would be required between these points to meet the every 0.5 mile standard; yet because these distances are within 500 feet of the maximum allowable distance, the Corps may consider a waiver for these segments of the project. To this effect, we request a waiver be approved and formally incorporated into the Final Report, rather than undergoing a waiver decision-making process subsequent to its approval and Congressional authorization – especially considering the insignificant distances involved.

Peak Demand Calculations Needs to be Revisited – We disagree with the parking requirements in the draft report (copied below) and the peak demand methodology used to generate these numbers. Atlantic Beach represents roughly 5 of the 24 miles that encompasses Bogue Banks, or 20% of the geographic area. However the parking spaces required for Atlantic Beach is 2,303 of the total 3,271 spaces required for the entire island, or 70%. Considering the peak demand calculation is based upon the number of non-overnight visitors; this makes no sense. Obviously if there were more beach visitors on Atlantic Beach, then they *were* overnight visitors staying in larger hotels, *not* non-overnight visitors. This statement is also very consistent with the fact that almost all of the multiple-story hotels along the entire island reside in Atlantic Beach. This was also very much the case in 2003 when the peak demand analysis was conducted. The on-the beach and telephone surveys were apparently interpreted incorrectly and the current snapshot of peak demand is overstated in the Draft Report.

Town	Total Parking Spaces Needed	Current Parking Spaces
Emerald Isle	662	525
Salter Path/Indian Beach	96	141
Pine Knoll Shores	201	155
Atlantic Beach	2,303	1,011*
Total	3,271	1,832

*Includes parking spots available at Fort Macon State Park

We also contend the Corps’ forecasts for increases in peak demand envisioned for the project, which were based on increases to beach width is a false premise, and again needs to be revisited. Future visitation and demand are based on many other factors besides beach width including National and regional economic conditions, regional shifts in population that impact the day user segment, and infrastructure capacity – the latter is especially pertinent to Bogue Banks. The island is essentially “built out” and there is not a municipal sewer system that serves any of the political jurisdictions located on the island. Accordingly there are only finite amount of visitors (overnight or day visitors) that the island can support. Bogue Banks is also known and marketed as a family beach because of the high density of home rentals that accommodate week-long visits – this has and will continue to represent the highest visitation demographic (overnight) and parking for these

individuals is already accounted for when they rent property for the week, coupled with the many accesses already located on Bogue Banks. Also to this effect, many of the additional parking spaces that were recently constructed in Indian Beach/Salter Path and Pine Knoll Shores under the auspices of the Morehead City Harbor Section 933 Project have been empty on the busiest days of the year and should be able to accommodate any future growth. Therefore we contend that no additional parking spaces are required for these municipalities.

We hope the Wilmington District will incorporate all of these recommendations into the Final Feasibility Report. If the President's Budget and/or Congressional funding is received to construct the project and we do not have the requisite parking/access locations in-place at that time; we will work towards those ends to ensure the maximum federal cost-share (65%) is applied to the project. As mentioned earlier in respect to the Morehead City Harbor Section 933 Project (2004 and 2007), we have an excellent track record of providing high-quality accesses and parking areas/facilities after projects have been constructed that meet the Corps' standards for full federal participation. The aforementioned Section 933 Project included ~7 miles of beach and a total of 9 access/parking areas were constructed for this effort – all were completed well after sand placement activities were concluded.

Again we would like to congratulate the District for completing the Draft Report and & EIS, and look forward to working towards its final approval and Congressional authorization.

Respectfully,



Greg Rudolph
Shore Protection Manager

cc: Colonel Steven A. Baker, Wilmington District, USACE
Pamela Castens, Project Manager

d:../shore protect/2013/feas comments.docaug



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 24, 2013

Mr. Eric Gasch
Planning and Environmental Branch
U.S. Army Corps of Engineers
Wilmington District
69 Darlington Avenue
Wilmington, North Carolina 28403

Subject: EPA NEPA Review Comments on Wilmington District's DEIS "Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS) Bogue Banks Coastal Storm Damage Reduction Project"; CEQ #20130238

Dear Mr. Gasch:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject U.S. Army Corps of Engineers' (Corps) Draft Environmental Impact Statement (DEIS) in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. It is our understanding that the Corps initiated this study and subsequent DEIS to evaluate coastal storm damage reduction at Bogue Banks, a 25.4-mile long barrier island located on North Carolina's central coast in Carteret County.

The Corps indicates that this Feasibility study and DEIS identifies a National Economic Development (NED) plan, which is the plan that maximizes net benefits to the nation through reduction of future storm damages. The NED plan consists of an 119,670 ft (22.7 miles) long main beach fill, with a consistent berm profile across the entire area, and dune expansion in certain portions (approximately 5.9 miles of the project).¹

The EPA was invited to and participated in multiple project delivery team (PDT) meetings associated with this project over the past several years. We appreciate the Corps efforts to coordinate with the Region on this project. We also appreciate the Corps granting additional time to provide comments and allow for discussion with the District on the proposed project.

Based on our analysis of the above referenced proposed action, EPA rates this DEIS as "EC-2" i.e., EPA has "Environmental Concerns and Request Additional Information" in the Final EIS (FEIS). The EPA's rating system criteria can be found online at:
<http://www.epa.gov/oecaerth/nepa/comments/ratings.html>.

¹ p. i of Executive Summary of DEIS

Our primary concerns associated with the proposed action are consideration of impacts on federally listed species, prediction of future beach renourishment needs, disclosure of current water quality conditions, potential impacts to hard bottom areas in the borrow areas, disclosure of causes of erosion along the island, timeline of the proposed action, and the need for an environmental justice analysis in the DEIS. Detailed comments are enclosed with this letter which more clearly identifies our concerns and comments. We request that a dedicated section of the FEIS include specific responses to our comments.

EPA appreciates the opportunity to review the DEIS. Should the Corps have questions regarding our comments, please feel free to contact Dan Holliman of my staff at 404/562-9531 or holliman.daniel@epa.gov.

Sincerely,



Heinz J. Mueller
Chief, NEPA Program Office
Office of Environmental Accountability

Attached: EPA Detailed Comments

cc: Kathy Matthews, USFWS, Raleigh Field Office

**U.S. EPA DETAILED COMMENTS
ON THE INTEGRATED FEASIBILITY REPORT AND DRAFT ENVIRONMENTAL
IMPACT STATEMENT COASTAL STORM DAMAGE REDUCTION BOGUE BANKS,
CARTERET COUNTY NORTH CAROLINA
FOR THE U.S. ARMY CORPS OF ENGINEERS WILMINGTON DISTRICT**

BACKGROUND:

The Draft Environmental Impact Statement (DEIS) and Feasibility Report was prepared by the U.S. Army Corps of Engineers (Corps) for a proposed coastal storm damage reduction project for Bogue Banks. Bogue Banks extends from Beaufort Inlet in the East to Bogue Inlet in the West. Bogue Banks includes the communities of Fort Macon, Atlantic Beach, Pine Knoll Shores, Indian Beach/Salter Path, and Emerald Isle. EPA understands that the Corps initiated this study and subsequent DEIS to evaluate coastal storm damage reduction at Bogue Banks, a 25.4-mile long barrier island located on North Carolina's central coast in Carteret County. It is also our understanding that the Corps' ultimate goal of the project is to formulate the beach maintenance plan for Bogue Banks over the next 50 years that maximizes net economic benefits and is feasible from both an environmental and constructability standpoint.

ALTERNATIVES PROPOSED:

Multiple alternatives were considered in the DEIS, including structural measures like beach fill measures, groins, seawalls and revetments, breakwaters, vegetation, sand fencing. Nonstructural measures considered in the DEIS included regulatory measures and removal of threatened beachfront properties.

The Corps indicates in the DEIS that only the no action, regulatory measures, demolition non-structural measure and beach fill structural measures were forwarded in the plan formulation process and considered for more detailed evaluation. In addition, the Corps indicates in the DEIS that the structural (beach fill) and non-structural measures can be applied independently and in combinations with each other to develop alternative plans.

THE TENTATIVELY SELECTED PLAN (TSP):

The Corps indicates that this Feasibility study and DEIS identifies a National Economic Development (NED) plan, which is the plan that maximizes net benefits to the nation through reduction of future storm damages. The NED plan consists of 119,670 ft (22.7 miles) long main beach fill, with a consistent berm profile across the entire area, and dune expansion in certain portions (approximately 5.9 miles of the project).¹

This plan provides an estimated average annual \$11,511,000 in coastal storm damage reduction benefits and \$3,432,000 in recreation benefits, at an average annual cost of \$6,583,500 a year, and has a Benefit Cost Ratio of 2.3 to 1. In addition, if implemented the project would also

¹ p. i of Executive Summary of DEIS

enhance the beach area available for recreation use and provide and maintain habitat for a variety of plants and animals.²

The estimated first cost of the plan is \$37,469,000, which would be cost-shared 65% Federal and 35% non-Federal. The project includes a 3-year nourishment cycle (16 total nourishments) with an estimated cost of \$14,370,000 per nourishment. Total cost for nourishments over the 50 year life cycle of the project is \$229,920,000. Nourishments would be cost shared at 50% Federal and 50% non-Federal. Beach fill monitoring is estimated at \$187,500 per year and \$9,375,000 over the 50 year life cycle of the project and would be cost shared at 50% Federal and 50% non-Federal. The total cost per year for the general repair, maintenance, and inspection of the project is estimated at \$75,000 per year and \$3,750,000 with 100% paid by non-Federal project sponsor³. The Corps states that the total project cost for the 50 year life cycle is \$267,395,000 in current dollars.⁴

EPA COMMENTS:

Project Need and Causes of Erosion

Causes of erosion and project need should be more clearly identified and discussed in the FEIS. EPA recommends adding additional information in the FEIS related to property damage and beach erosion issues due to actual past storms events. Providing such information would better support the project need statement. EPA is unclear from the DEIS if storms are the sole cause of erosion on the island or if other causes of erosion exist. EPA recommends that the causes of erosion on Bogue Banks be fully discussed in the FEIS.

Economics

Appendix B provides tables describing the average annual remaining damages, cost and benefits by reach for all alternatives including the TSP, Alternative 9. Based on this table the total average annual net benefit from the TSP will be \$7,916,625. This estimate includes potential positive benefits from protection of structures, prevention of loss of property, minimizing loss of recreation, etc.

The Corps states in Appendix B that “The average annual present value of coastal storm damages over the 50-year period of analysis without a damage reduction project totals \$17,304,000 (\$14,556,000 in structure and content damage and \$2,748,000 in land loss) in October 2011 price levels.”⁵

EPA Recommendation: EPA recommends providing additional details from actual storm events in the economic report for the FEIS that support these average annual damage estimates.

² p. i of Executive Summary of DEIS

³ Project cost estimates derived from Table 8.3 of DEIS

⁴ p. 173 of DEIS – see comments below regarding total project cost discrepancies

⁵ p. Appendix B-14

Examples of information that would help the reader better understand historical impacts from storms could be; 1) property and infrastructure damage estimates 2) days of recreation lost, and 3) areas of the island that were inundated by previous storm events.

Project Cost and Benefits

The Corps estimates total project cost for the 50 year life cycle is \$267,395,000 in current dollars.⁶ EPA notes that the average annual cost estimate for the TSP (Alternative 9) is significantly less than the cost estimate for Alternative 9 in Table 6.3. We note that these cost estimates appear to be based on different price level years, but the difference is significant. EPA also notes that if the average annual cost of the project presented in Table 6.3 is multiplied over the life of the project the total cost is significantly different from the total cost estimate provided on p. 173 of the DEIS. EPA notes that this may be due to interest and amortization, but this is unclear in the document.

EPA Recommendation: The DEIS appears to provide for multiple average annual project costs and total project cost for the TSP (Alternative 9). EPA recommends the Corps clarify the total project cost and average annual project cost in the FEIS. We also recommend that the Corps clearly state which total project cost and/or average annual cost the benefit cost ratio is based on in the FEIS.

Water Quality

EPA notes that the proposed project has the potential to impact water quality, however, the Corps suggest that the Bogue Banks project would have minimal impact on water quality. EPA concurs that the potential for significant water quality impacts for the proposed action are low, however we are concerned about the level of baseline data and information that is conveyed in the DEIS regarding water quality. Section 2.02 – Water Resources – appears to summarize surface water classifications in North Carolina and the CWA 303(d) programs. Minimal information is provided regarding the current water quality condition of Bogue Sound, Bogue Inlet, White Oak River, Newport River, and Beaufort Inlet. In addition, no information is provided in the DEIS relating to currently permitted NPDES discharges and there is no discussion regarding wastewater effluent, treatment facilities (septic/municipal, types, locations, etc.) from homes and businesses. EPA believes this information is very important and should be provided in this document.

EPA Recommendation: EPA recommends the Corps provide significantly more information in the FEIS regarding existing water quality for Bogue Sound, Bogue Inlet, White Oak River, Newport River, and Beaufort Inlet. This additional information should include but not be limited to recent water quality assessments of these areas, maps of sampling locations, and existing water quality classifications of potentially impacted waters. Furthermore, we recommend that additional information be provided in the FEIS regarding existing permitted NPDES discharges and wastewater treatment facilities and infrastructure in the project area. Significant storms have

⁶ Total project cost estimates from p. 173 of DEIS

the potential of damaging this infrastructure which can cause runoff to marine and sound waters of bacteria and other pollutants that can cause public health issues following storm events. If the proposed project provides protection for this infrastructure then it should be disclosed in the FEIS.

Selection of Least Environmentally Damaging Practicable Alternative (LEDPA)

EPA understands that the proposed project must comply with the requirements of our regulations pursuant to the Clean Water Act (CWA) Section 404(b)(1) Guidelines (“Guidelines”; 40 C.F.R. 230). The Corps provides a 404(b) Analysis in Appendix K of the DEIS. Based on our assessment of Appendix K and the main document of the DEIS it is unclear on how the Corps came to the conclusion that the proposed project is the LEDPA. The LEDPA is not identified in the main document of the DEIS in the context of the multiple alternatives presented.

EPA Recommendation: EPA recommends the Corps provide significantly more information in the FEIS on how the TSP meets the CWA Section 404(b)(1) Guidelines (“Guidelines”; 40 C.F.R. 230). The rationale of how the LEDPA was determined in the context of the other alternatives presented in the DEIS should be provided in the FEIS. Actions to avoid and minimize adverse impacts to the environment should be included in this additional information in the FEIS. In addition, it is also unclear from the DEIS if the Corps considers the TSP, Alternative 9, as the “environmentally preferable alternative”⁷, therefore EPA also encourages the Corps to identify the environmentally preferable alternative in the FEIS.

Length of Project

EPA is concerned with the length of the project (50-year project period) because so much could change environmentally and economically over such a long period of time. After a number of years of borrow site use, monitoring of the sediments and trends in offshore borrow site topography could indicate substantial changes occurring to the island and the near-shore environment. If unexpected erosion loss of borrow site sediment is detected, it could necessitate major revisions to the long term shoreline maintenance plan. From a biological perspective, increased knowledge and trends of fish migrations, turtle nesting, and shore bird nesting behavior could also require modification of the proposed maintenance plan. The plan, therefore, should have required periodic adaptive management. The only reference in the DEIS to adaptive management can be found on p. 58, “Adaptive management plans formulated to address project uncertainties also have to be considered.”

EPA Recommendation: EPA recommends the Corps provide a clear adaptive management strategy in the FEIS that includes performance and/or success criteria that will adequately capture the dynamic nature of the proposed project and help direct any future changes to the project that may be needed to avoid and minimize impacts to the environment.

⁷ NEPA Section 101

Estimated Material for Project

Figure 1.2 provides a clear visual of historical placement of material on Bogue Banks shoreline between (1978-2010). Based on our calculations the following amount of material has been deposited along the shoreline during the following time periods:

1978-1984	1985-1991	1992-1998	1999-2005	2006-2010 (5 yrs.)
1,194,600 cy	4,254,600 cy	4,824,400 cy	8,380,533 cy	2,238,560 cy

The total amount of material deposited over the 33 year period depicted in Figure 1.2 is 20,892,693 cy.

The TSP consists of 119,670 ft (22.7 miles) long main beach fill, with a consistent berm profile across the entire area, and dune expansion in certain portions (approximately 5.9 miles of the project).⁸ The Corps states that the TSP will require 2.45 million cubic yards of material during initial construction and approximately 1.07 million cubic yards of material for each renourishment cycle (16 total renourishments planned). The total amount of material needed for this project is estimated at 19.55 million cubic yards for the initial construction all subsequent renourishments.⁹ EPA notes that the amount of material proposed for this project over the 50 year life is less than the amount of material that has historically been placed on the Bogue Banks shoreline over a 33 year period. However, after additional discussion with the Corps we understand that there is a significant difference between material disposal activities presented in Figure 1.2. Historically, material used in beach nourishment activities at Bogue Banks has originated from multiple sources (Bogue Inlet AIWW Crossing Disposal, MHC Inner Harbor Maintenance Dredge Disposal, etc.), and these disposal activities may or may not function as storm damage reduction similar to the currently proposed project.

EPA Recommendation: We recommend the Corps provide additional discussion in the FEIS about the difference in historical material placement presented in Figure 1.2. Specifically, we recommend the Corps make clear distinctions between storm damage reduction activities and disposal of navigational dredge material that may not provide storm damage reduction benefits. In addition, if historical nourishment activities associate with Bogue Inlet AIWW Crossing Disposal, MHC Inner Harbor Maintenance Dredge Disposal, etc. are to continue through the life of the currently proposed project, we recommend providing additional discussion in the FEIS on how these activities are interrelated with the currently proposed project.

Federally Listed Species

EPA notes that Table 2.4 provides a list of Federal Threatened and Endangered Species potentially present in Carteret County, North Carolina. This table appears to be significantly different from information provided on USFWS's website for the current list of Endangered

⁸ p. i of Executive Summary of DEIS

⁹ Fill estimates based on p. 77 of DEIS

Species, Threatened Species, Federal Species of Concern, and Candidate Species, Carteret County, North Carolina. USFWS Website:

<http://www.fws.gov/raleigh/species/cntylist/carteret.html>

EPA notes that the Atlantic Sturgeon, *Acipenser oxyrinchus oxyrinchus*, is listed as a Federal Species of Concern. However, EPA notes that the USFWS's website provided above list the Atlantic Sturgeon as Endangered. EPA also notes several species listed on the USFWS website are not listed in Table 2.4.

EPA also notes that the discussion about Piping Plover Critical Habitat is not described fully in text. Figure 2.3 identifies general locations including NC Units 7, 8, 9 and 10. The extent of these areas is not fully described (e.g. linear feet of beach; acreage, etc.). Lastly, discussion concerning a rare butterfly, *Atrytonopsis* sp. 1, was not fully evaluated in the context of the current survey being conducted for the USFWS.

EPA Recommendation: EPA recommends continued coordination with the USFWS. EPA recommends the Corps revise and update Table 2.4 in the FEIS to reflect the current status of federally listed species. EPA also recommends that the linear feet of beach and acreages be provided in the FEIS with respect to piping plover critical habitat. EPA also recommends that the Corps provide additional details about the on-going study of *Atrytonopsis* sp. 1. Including details in the FEIS about the study such as when the study started, projected completion date, and any interim results would be helpful for reviewers.

Hard Bottom Areas

EPA continues to be concerned with potential impacts to hard bottom areas from off-shore dredging and beach nourishment activities. We continue to recommend rigorous delineation of all hard bottom resources within the proposed borrow areas and fill placement areas to avoid impacts to hard bottom resources. EPA notes that the Corps determined in the DEIS that there are no hardbottom resources in the nearshore zone for the project. However, the Corps indicates that there are hardbottom resources located within Borrow Areas U and Y.¹⁰ The Corps proposes to protect these resources by providing for a 500 meter buffer, but does not provide a citation for scientific study that supports the 500 meter buffer as protective for the hardbottom areas.

EPA Recommendation: EPA recommends the Corps revise the FEIS by adding additional data and citations to support the proposed 500 meter buffer for hardbottom areas. Any loss of the existing hard bottom features offshore should be investigated promptly to determine causal factors and appropriate action.

¹⁰ p. 20 of DEIS

Sand Compatibility

According to a study cited in the DEIS,¹¹ management strategies recommended to protect surf zone fishes and invertebrates include: (1) project timing, (2) sediment compatibility, (3) nourishment duration, and (4) innovative ways to minimize effects (i.e., staging nourishment events). EPA considers using borrow material that is comparable to the natural beach material is paramount in protecting surf zone fishes and invertebrates and federally listed species. Based on our review of the DEIS, it appears that the Corps has not committed to using the North Carolina Sediment Criteria Rule (15A NCAC 07H.0312: Technical Standards for Beach Fill Projects). EPA continues to support the use of the North Carolina Sediment Criteria Rule. Ensuring the grain size of the dredged material is compatible with existing beach sands will not inhibit turtle and seabird nesting activities and will minimize future beach erosion. Based on discussions with the Corps we understand that the Corps believes the sediment criteria proposed in the DEIS will be protective federally listed species.

EPA Recommendation: EPA recommends the Corps provide addition clarification in the FEIS regarding historical beach renourishment activities in North Carolina as they relate to the sand compatibility criteria proposed in this DEIS and impacts on federally listed species. Specifically, if the Corps has conducted species surveys and /or other studies of historical beach nourishment activities using the proposed sand criteria for this project and impacts to species, we recommend the Corps include these in the FEIS.

Nourishment Schedule

Due to the potential impacts of beach nourishment activities on federally listed species, EPA supports a longer period of time between renourishment intervals (currently 3 years is the proposed interval). The Corps provides an analysis in the DEIS that provides a comparison of benefits and cost for the different renourishment intervals.¹² Based on Table 5.10, the difference or delta for the average annual benefits for the 3 year interval vs. the 5 year interval is only \$79,000.

EPA Recommendation: EPA recommends the Corps provide additional support in the FEIS for selection of the 3 year interval versus a longer renourishment interval which EPA believes would be more protective of federally-listed species.

Consideration of Environmental Justice Impacts

Pursuant to the Executive Order 12898 entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations” and the accompanying Presidential Memorandum, EPA is unable to locate an EJ analysis in the DEIS with the exception of a no effect determination provided in table 5.9.

¹¹ Hackney, C.T., M.H. Posey, S.W. Ross, and A.R. Norris. 1996. *A Review and Synthesis of Data on Surf Zone Fishes and Invertebrates in the South Atlantic Bight and the Potential Impacts from Beach Nourishment*. Prepared for the U.S. Army Corps of Engineers, Wilmington, NC.

¹² Section 5.08.2 of DEIS – p. 75

EPA Recommendation: EPA recommends that the FEIS include an EJ analysis that includes descriptions of the local demographics and identifies low-income and minority populations that have the potential to be impacted by the proposed action. Should the demographic analysis identify minority and low-income populations, the FEIS should describe efforts made to meaningfully engage these populations in the decision-making process. In addition, EPA recommends the FEIS identify communities with EJ concerns that may engage in subsistence activities within the project area (i.e., subsistence fishing). A summary of EJ comments or concerns identified during the public involvement process along with agency responses to those concerns and efforts to avoid, minimize or mitigate potential impacts should also be included in the FEIS.

Environmental Commitments and Record of Decision (ROD)

EPA recommends that general repair, maintenance, inspection, monitoring requirements, and environmental commitments being made by the project sponsor and the Corps be documented in the ROD. The ROD should also clearly outline adaptive management plan commitments for the 50 year life of the project.

Editorial Comments

- List of acronyms and abbreviations should be provided for main document and all appendices.
- Several tables and graphs in the appendices have no table or figure numbers and are not clearly relatable back to text. (example p. 60-77 of Appendix B)
- Page 12: Lobate sand. Not defined.
- Page 13: ppt not defined.
- Page 13: EPA recommends addition clarification in the FEIS as to which areas or parts of Bogue Sound are SB, SC & SA HQW
- Page 14: EPA recommends additional details regarding drinking water source for residents on Bogue Banks be added to this section.
- Page 15. Last check on attainment status was 11/26/2010.
- Several Reports cited in DEIS are dated:
 - Page 15: Marine environment draft report from 2002 (USFWS)
 - Page 16: benthic sampling in 2000
 - Page 22: EFH reports from 2001
 - Pages 28 and 29: Discussions regarding Maritime forest, Beach and Dune areas, and other vegetation discussions referenced to 2002 USFWS report
 - Pages 30 and 31: Discussions regarding birds are from 1985 and 2002
 - EPA is concerned that these
- Page 40: Table 2.6 Pine Knoll Shores lost population between 2000 and 2010 (i.e., 1,524 to 1,337). EPA recommends providing explanation for this decrease is provided (all other populations trends showed a substantial increase during the same period).
- Page 49: Key general assumptions: “near full development” for the purposes of economic modeling. No additional shorefront development will be occurring. EPA recommends

providing the actual land use data (required in 5-year CAMA plans) supporting this assumption.

- Page 50: Historic trends of FEMA emergency beach renourishment actions are not provided in DEIS. The assumption that this trend would/would not continue into the future or be part of the alternatives and decision-making process is an important missing element in this discussion of 'key general assumptions'. EPA recommends providing this information in the FEIS.
- Page 51: '*Monte Carlo simulation*' not explained. EPA recommends providing a description of *Monte Carlo simulation* in the FEIS.
- Pages 52 and 53: Within economic reach 21-41, the Corps does not provide information as to why this area is not showing significant erosion or accretion rates. EPA recommends clarifying this in the FEIS.
- Page 53: '*300 Life-cycles*' not defined or explained. EPA recommends clarifying this in the FEIS.
- Page 56: Section 4.07: Pine Knoll Shores lost population between 2000 and 2010 (i.e., 1,524 to 1,337). No explanation for this decrease is provided in the context of the Carteret County population increase projection. EPA recommends clarifying this in the FEIS.

From: [Lauren Shaffer](#)
To: [Gasch, Eric K SAW](#)
Subject: [EXTERNAL] Bogue Banks Coastal Storm Damage Reduction Draft EIS Comment
Date: Saturday, September 21, 2013 8:31:44 AM

Mr. Gasch,

In studying the Integrated Feasibility Report and Draft Environmental Impact Statement for the Coastal Storm Damage Reduction Project for Bogue Banks, Carteret County North Carolina, I felt that the described economic and constraints of the alternatives of the proposed shoreline stabilization project were well developed. The draft report succinctly outlines the current state of shoreline erosion and vulnerability to storms on Bogue Banks, providing a valid argument for the necessity of decisive action to enhance the shoreline. The EIS outlines the potential detrimental effects of several project alternatives, including the alternative of no action.

My one concern is the restoration of benthic resources along the beach and surf zones. This document describes the short term and localized impact to the surf zone benthic macroinvertebrate community from direct burial and the turbidity associated with the placement of dredged materials and sediment. As this community is utilized by shorebirds and other fauna, the detrimental effects apply not only to the benthic macroinvertebrate community, but to the larger fauna as well. Since the topmost layer of sediment, which provides the habitat for this community, will be buried under the dredged sediment that will be used to reconstruct the beach, I was interested to see if there could be any action taken to prevent this adverse effect from the proposed project. Similar to the retention of topsoil in terrestrial projects, I was curious about the feasibility of removing the topmost layer of sand prior to the addition of dredged material to the beach. Could the topmost layer be retained and held in a state that could protect the viability of the existing benthic community as well as other organisms, with the intention of returning this layer to the top of the dredged material after a section of the shoreline stabilization project has been finished? This alternative may have the potential to reduce the lag time between the finalization of the project and the restoration of the community that originally existed in this segment of the beach and shoreline. This could also provide a benefit to shorebirds as well as other organisms that are dependent on the shoreline habitat.

In all likelihood, this action may not be feasible and may be cost prohibitive, but as the EIS has outlined the proposed detrimental and beneficial effects of the addition of dredged materials to the beach and shoreline, I was curious if a proposal had been made to mitigate this impact.

Sincerely,

Lauren

Lauren Shaffer

Graduate Student

Virginia Tech

Department of Natural Resources

lauris7@vt.edu



North Carolina Department of Administration

Pat McCrory, Governor

Bill Daughtridge, Jr., Secretary

September 12, 2013

Mr. Eric Gasch
Department of the Army
Wilmington District
Corps of Engineers
Post Office Box 1890
Wilmington, North Carolina 28402

Re: SCH File # 14-E-0000-0060; DEIS to evaluate the impacts of the proposed alternative to reduce coastal storm damages from beach erosion on Bogue Banks.

Dear Mr. Gasch:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink that reads "Crystal Best".

Crystal Best
State Environmental Review Clearinghouse

Attachments

cc: Region P

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

MEMORANDUM

TO: Crystal Best
State Clearinghouse

FROM: Lyn Hardison *Lyn*
Division of Environmental Assistance and Customer Service
Permit Assistance & Project Review Coordinator

RE: 14-0060
Draft Environmental Impact Statement
DEIS to evaluate the impacts of the proposed alternative to reduce coastal storm
damages from beach erosion on Bogue Banks
Carteret

Date: September 11, 2013

The Department of Environment and Natural Resources has reviewed the proposal for the referenced project. The comments are attached for the applicant's consideration.

The Department encourages the applicant to continue communicating with the agencies as they move forward with the project.

Thank you for the opportunity to respond.

Attachment

**Department of Environment and Natural Resources
Project Review Form**

Project Number: 14-0060

County: Carteret

Date Received: 08/09/2013

Due Date: 9/4/2013

Project Description: Draft Environmental Impact Statement - DEIS to evaluate the impacts of the proposed alternative to reduce coastal storm damages from beach erosion on Bogue Banks.

This Project is being reviewed as indicated below:

Comments sent to Jack & Paddy

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input checked="" type="checkbox"/> Coastal Management (DCM)
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR-Surface Water <i>JHS 08-30-12</i>	<input checked="" type="checkbox"/> DCM- Marine Fisheries <i>J.Baker</i>	<input type="checkbox"/> Military Affairs
<input type="checkbox"/> Mooresville	<input type="checkbox"/> DWR-Aquifer	<input checked="" type="checkbox"/> Parks & Recreation	<input checked="" type="checkbox"/> DWR-Water Quality Program
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR <i>8/20/13</i>	<input type="checkbox"/> Waste Mgmt	<input type="checkbox"/> DWR-Water Quality - DOT
<input type="checkbox"/> Washington	<input type="checkbox"/> UST <i>SW 8/4/13 JHS no comment</i>	<input type="checkbox"/> Water Resources Mgmt (DWR)	<input checked="" type="checkbox"/> Wildlife <i>Maria Dunn</i>
<input checked="" type="checkbox"/> Wilmington		<input type="checkbox"/> DWR-Water Supply Section	<input type="checkbox"/> Wildlife - DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region:	Date:	In-House Reviewer/Agency:
--------------------------	-------	---------------------------

Response (check all applicable)

No objection to project as proposed.
 No Comment

Insufficient information to complete review
 Other (specify or attach comments) *JHS 8/30/13*

If you have any questions, please contact:

Lyn Hardison at lyn.hardison@ncdenr.gov or (252) 948-3842
 943 Washington Square Mall Washington NC 27889
 Courier 16-04-01



North Carolina Department of Environment and Natural Resources
Division of Water Resources
Water Quality Programs
Thomas A. Reeder
Director

Pat McCrory
Governor

John E. Skvarla, III
Secretary

September 3, 2013

MEMORANDUM

TO: Lyn Hardison, Environmental Assistance Coordinator
Department of Environment and Natural Resources

THROUGH: Evan Kane *EK 9/3*

FROM: Hannah Headrick *HH*

SUBJECT: DEIS – Coastal Storm Damage Reduction, Bogue Banks
DWQ#14493; DENR#14-0060

The Division of Water Resources Water Quality Program section has the following comments on the subject project:

- 1) The use of berms to reduce the turbidity needs to be described in better detail as to the exact location of the berm for each section of beach and if it is located within the surf zone. Please specify the location of the discharge pipe in relation to the berm and the water. Also, an alternative plan of how the turbidity may be reduced could be necessary if the turbidity exceeds the turbidity limits outside the 1000' mixing zone.
- 2) The project will require a 401 permit application.
- 3) A plan for measuring the turbidity at the 1000' and 1500' limits of the project during daily operation needs to be included with the 401 application.

If you have any questions about these comments, please contact me at (919) 807-6434 or hannah.headrick@ncdenr.gov. Thank you.

Ecc: Jim Gregson – WIRO
Jackie Roddy – WPS

1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ Fax: 919-807-6492
Internet: www.ncwaterquality.org

An Equal Opportunity/Affirmative Action Employer

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 14-0060 Due Date: 9/4/13

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filing may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input type="checkbox"/>	Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
<input type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.	N/A	60 days (90 days)
<input type="checkbox"/>	Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/>	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
<input type="checkbox"/>	Tar Pamico or Neuse Riparian Buffer Rules required.		
* Other comments (attach additional pages as necessary, being certain to cite comment authority)			

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

- | | | |
|--|---|--|
| <input type="checkbox"/> Asheville Regional Office
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500 | <input type="checkbox"/> Mooreville Regional Office
610 East Center Avenue, Suite 301
Mooreville, NC 28115
(704) 663-1699 | <input type="checkbox"/> Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215 |
| <input type="checkbox"/> Fayetteville Regional Office
225 North Green Street, Suite 714
Fayetteville, NC 28301-5043
(910) 433-3300 | <input type="checkbox"/> Raleigh Regional Office
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200 | <input type="checkbox"/> Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107
(336) 771-5000 |
| | <input type="checkbox"/> Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481 | |

Department of Environment and Natural Resources Project Review Form

Project Number: 14-0060

County: Carteret

Date Received: 08/09/2013

REC'D CIVIL

Due Date: 9/4/2013

AUG 16 2013

Project Description: Draft Environmental Impact Statement - DEIS to evaluate the impacts of the proposed alternative to reduce coastal storm damages from beach erosion on Bogue Banks.

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input checked="" type="checkbox"/> Coastal Management (DCM)
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR-Surface Water	<input checked="" type="checkbox"/> DCM- Marine Fisheries <u>J. Baker</u>	<input type="checkbox"/> Military Affairs
<input type="checkbox"/> Mooresville	<input type="checkbox"/> DWR-Aquifer	<input checked="" type="checkbox"/> Parks & Recreation	<input checked="" type="checkbox"/> DWR-Water Quality Program
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR	<input type="checkbox"/> Waste Mgmt	<input type="checkbox"/> DWR-Water Quality - DOT
<input type="checkbox"/> Washington	<input type="checkbox"/> UST	<input type="checkbox"/> Water Resources Mgmt (DWR)	<input checked="" type="checkbox"/> Wildlife <u>Maria Dunn</u>
<input checked="" type="checkbox"/> Wilmington		<input type="checkbox"/> DWR-Water Supply Section	<input type="checkbox"/> Wildlife - DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region: 	Date: 8/16/2013	In-House Reviewer/Agency: Coastal Management
---	--------------------	---

Response (check all applicable)

No objection to project as proposed.

No Comment

Insufficient information to complete review

Other (specify or attach comments)

Project was submitted for consistency review and will be evaluated under that review

If you have any questions, please contact:
 Lyn Hardison at lyn.hardison@ncdenr.gov or (252) 948-3842
 943 Washington Square Mall Washington NC 27889
 Courier 16-04-01

Return to Lyn →

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

Saeed Mohamed

COUNTY: CARTERET

H05: IRRIGATION/DRAINAGE/FLOOD
CONTROL

STATE NUMBER: 14-E-0000-0060
DATE RECEIVED: 08/09/2013
AGENCY RESPONSE: 09/04/2013
REVIEW CLOSED: 09/09/2013

MS CARRIE ATKINSON
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
DENR - COASTAL MGT
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
EASTERN CAROLINA COUNCIL

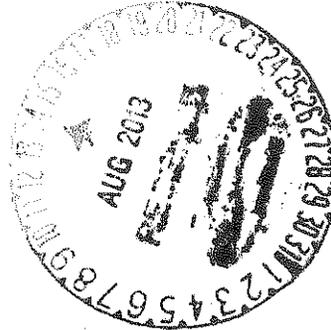
PROJECT INFORMATION

APPLICANT: Department of the Army
TYPE: National Environmental Policy Act
Draft Environmental Impact Statement

DESC: DEIS to evaluate the impacts of the proposed alternative to reduce coastal storm damages from beach erosion on Bogue Banks.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.



AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

Saeed Mohamed

DATE: 8/23/2013



NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H05: IRRIGATION/DRAINAGE/FLOOD
CONTROL

STATE NUMBER: 14-E-0000-0060
DATE RECEIVED: 08/09/2013
AGENCY RESPONSE: 09/04/2013
REVIEW CLOSED: 09/09/2013

MS ELIZABETH HEATH
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MSC - AGRICULTURE BLDG
RALEIGH NC

REVIEW DISTRIBUTION

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DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
EASTERN CAROLINA COUNCIL

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AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

Elizabeth G. Heath

DATE:

8/27/13



NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H05: IRRIGATION/DRAINAGE/FLOOD
CONTROL

STATE NUMBER: 14-E-0000-0060
DATE RECEIVED: 08/09/2013
AGENCY RESPONSE: 09/04/2013
REVIEW CLOSED: 09/09/2013

MS CAROLYN PENNY
CLEARINGHOUSE COORDINATOR
CC&PS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

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AUG 12 2013

~~DEPT. OF ENVIRONMENTAL & NATURAL RESOURCES~~

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
DENR - COASTAL MGT
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

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TYPE: National Environmental Policy Act
Draft Environmental Impact Statement

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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

John D. Bumbalk

DATE: 21 AUG 2013

11988 Addressed.





North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

November 26, 2007

Richard H. Kimmel, Archaeologist
Wilmington District Corps of Engineers
P.O. Box 1890
Wilmington, NC 28402-1890

Re: Remote Sensing Survey of Bogue Banks Offshore Borrow Areas, Carteret County, ER 03-3634

Dear Mr. Kimmel:

Thank you for your letter of September 14, 2007, transmitting the archaeological survey report by Mid-Atlantic Technology and Environmental Research, Inc. (MATER) for the above project. During the course of the project, MATER surveyed four areas designated as Borrow Area U, Borrow Area Y, Borrow Area Q1, and Borrow Area Q2. We have reviewed the results of the remote sensing survey of these areas and MATER's analysis and recommendations and provide the following comments, regarding the need for additional archaeological investigation and/or avoidance of those areas.

Borrow Area U: No unidentified remote sensing targets were located in this borrow area, and MATER recommends no further archeological investigation. We concur.

Borrow Area Y: One potentially significant target was located in this borrow area. MATER recommended additional investigation of that target or avoidance by the creation of a no-impact buffer zone. We concur.

Borrow Area Q1: No unidentified remote sensing targets were located in this borrow area, and MATER recommends no further archeological investigation. We concur.

Borrow Area Q2: MATER identified thirty-three magnetic and/or acoustic targets or target clusters in this area. In reviewing the distribution of those targets, there appears to be two concentrations of anomalies. One concentration encompasses the northeastern quadrant of the borrow area and includes targets Q2-1 to Q2-17 and Q2-19 and Q2-22. MATER recommended additional investigation or avoidance of fourteen of those targets.

Our recommendation is that this entire area be excluded from sand borrowing activities. We base our recommendation on two factors.

1. This area incorporates a portion of Beaufort Inlet's historic shoal, an area likely to contain shipwreck remains. In fact, two of MATER's targets have previously been located and identified. Q2-3 is an 18th century anchor associated with the *Queen Anne's Revenge* shipwreck site and Q2-9 coincides with a shipwreck investigated by Intersal, Inc. in 1997. It is likely that most of the other targets identified by MATER in this area also represent shipwreck remains.

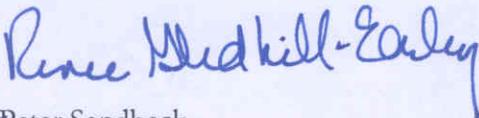
2. Even if all of these sites could be avoided, sand mining from this portion of the inlet's ebb tide delta would have an adverse effect on nearby shipwrecks, including the *Queen Anne's Revenge* — a property listed in the National Register of Historic Places. Our May 6, 2005, letter to Col. Charles Alexander provides a detailed discussion of our concerns regarding dredging, related sand loss of the ebb tide delta, and its impact on the *Queen Anne's Revenge* site. Our Underwater Archaeology Branch staff is available to work with you in developing a reasonable boundary to incorporate the targets located in the northeastern quadrant of Borrow Area Q2.

The second concentration of targets in Borrow Area Q2 is located adjacent to and north of the Offshore Dredge Material Disposal Site (ODMDS) and includes targets Q2-18, Q2-20, Q2-21, and Q2-23 to Q2-33. MATER has recommended that nine of those targets be investigated or avoided. We concur.

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

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

Sincerely,



Peter Sandbeck

cc: Wes Hall, MATER



North Carolina Department of Environment and Natural Resources

Division of Coastal Management

Braxton C. Davis

Director

John E. Skvarla, III

Secretary

Pat McCrory
Governor

September 10, 2013

Philip M. Payonk, Chief
Environmental Resources Section
Wilmington District, US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403-1343

SUBJECT: CD13-060 – Consistency Concurrence Concerning the Construction of a Berm to Reduce Storm Damage, Bogue Banks, Carteret County, North Carolina (DCM#20130086)

Dear Mr. Payonk:

We received your consistency submission on August 7, 2013 concerning the establishment of a berm as a means of reducing storm damage on Bogue Banks, Carteret County, North Carolina. The planned berm is expected to span a distance of 22.7 miles. The berm would be eligible for maintenance re-nourishment on a three year cycle. Material for the project would be dredged from three offshore borrow locations. Initial project construction is scheduled to occur between December 2019 and March 2020.

North Carolina's coastal zone management program consists of, but is not limited to, the Coastal Area Management Act, the State's Dredge and Fill Law, Chapter 7 of Title 15A of North Carolina's Administrative Code, and the land use plan of the County and/or local municipality in which the proposed project is located. It is the objective of the Division of Coastal Management (DCM) to manage the State's coastal resources to ensure that proposed Federal activities would be compatible with safeguarding and perpetuating the biological, social, economic, and aesthetic values of the State's coastal waters.

To solicit public comments, DCM circulated a description of the proposed project to State agencies that would have a regulatory interest. No comments asserting that the proposed activity would be inconsistent with the State's coastal management program were received. However, DCM staff submitted two comments regarding the proposed project. In the first comment, it was recommended that the final project plans be submitted to DCM prior to implementation. In the

second comment, it was noted that the US Army Corps of Engineers (Corps) would be using the Wilmington District Corps sediment criteria rather than DCM's sediment criteria. At this time, DCM's sediment criteria has not yet been certified by the NOAA Office of Ocean and Coastal Resource Management (OCRM) as being a certified enforceable policy of North Carolina's coastal management program (NCCMP). Furthermore, in this case, DCM accepts the Corps sediment criteria as adequately complying with the NCCMP in protecting coastal resources.

DCM has reviewed the submitted information pursuant to the management objectives and enforceable policies of Subchapters 7H and 7M of Chapter 7 in Title 15A of the North Carolina Administrative Code and concurs, as conditioned below, that the proposed Federal activity by the Corps (Applicant) is consistent, to the maximum extent practicable, with North Carolina's certified coastal management program.

- The Applicant, prior to initiating berm construction activities shall submit to DCM final project plans to ensure that the proposed project remains consistent with North Carolina's coastal management program.

This letter of concurrence is contingent on the Federal agency agreeing with the condition stated above. In the event that the Federal agency does not agree with the condition of concurrence, this letter effectively becomes a letter of State "*Objection*". Should the Federal agency not agree with the condition stated above, a letter of non-agreement should be sent to DCM. The procedures of 15 CFR 930.43 would then need to be followed.

Should the proposed action be modified, a revised consistency determination could be necessary. This might take the form of either a supplemental consistency determination pursuant to 15 CFR 930.46, or a new consistency determination pursuant to 15 CFR 930.36. Likewise, if further project assessments reveal environmental effects not previously considered by the proposed development, a supplemental consistency certification may be required. If you have any questions, please contact Stephen Rynas at 252-808-2808 x209. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,



Doug Huggett
Manager, Major Permits and Consistency Unit

Cc: Roy Brownlow, Division of Coastal Management
Eric Gasch, US Army Corps of Engineers



North Carolina Department of Environment and Natural Resources

Division of Coastal Management

Braxton C. Davis

Director

John E. Skvarla, III

Secretary

Pat McCrory
Governor

September 25, 2013

Philip M. Payonk, Chief
Environmental Resources Section
Wilmington District, US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403-1343

SUBJECT: NC Division of Water Resources Comments Concerning the Proposed Berm to
Reduce Storm Damage, Bogue Banks, Carteret County, North Carolina
(DCM#20130086)

Dear Mr. Payonk:

Since the issuance of the consistency concurrence we received the attached comments from the North Carolina Division of Water Resources (NCDWR), Water Quality Program. The North Carolina Division of Coastal Management, to the extent practical, encourages the US Army Corps of Engineers to incorporate the suggestions provided by the NCDWR into the proposed project. Please feel free to contact me at 252-808-2808 x209 should you have any questions. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

Stephen Rynas, AICP
Federal Consistency Coordinator

Cc: Doug Huggett, Division of Coastal Management
Roy Brownlow, Division of Coastal Management
Joanne Steenhouse, Division of Water Resources
Eric Gasch, US Army Corps of Engineers

400 Commerce Ave., Morehead City, NC 28557-3421
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

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North Carolina Department of Environment and Natural Resources
Division of Water Resources
Water Quality Programs

Pat McCrory
Governor

Thomas A. Reeder
Director

John E. Skvarla, III
Secretary

TO: Stephen Rynas, Division of Coastal Management Federal Consistency Coordinator
FROM: Joanne Steenhuis, Senior Environmental Specialist *JAS*
THROUGH: James H. Gregson, Surface Water Protection Regional Supervisor *JHG*
DATE: September 3, 2013
SUBJECT: Bogue Banks Coastal Storm Damage Reduction
Project: Beach fill affecting 22.7 miles of coastline to provide storm protect through the creation of a berm

DCM Project No. 20130086

COUNTY: Carteret County

The Wilmington Regional Office has reviewed the document for the coastal storm damage reduction for Bogue Banks proposing the beach fill for the area as a means to reduce potential storm damage. The Division of Water Resources (DWR) Water Quality Program section has the following comments:

- 1) The project will require a 401 permit application
- 2) The use of berms to reduce the turbidity needs to be described in better detail as to the exact location of the berm for each section of beach and if it is located within the surf zone. The location of the discharge pipe in relation to the berm and the water. An alternative plan of how the turbidity may be reduced, if the turbidity exceeds the turbidity limits outside the 1000' mixing zone.
- 3) A plan for measuring the turbidity at the 1000' and 1500' limits of the project during daily operation needs to be included with the 401 application.

Thank you for the opportunity to comment.

WIRO

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SEP 23 2013

DCM-MID CITY

Wilmington Regional Office
127 Cardinal Drive Extension, Wilmington, North Carolina 28405
Phone: 910-796-7215 \ FAX: 910-350-2004 \ DENR Assistance: 1-877-623-6748
Internet: www.ncwaterquality.org

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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 28, 2013

F/SER47:FR/pw

(Sent via Electronic Mail)

Colonel Steven A. Baker, Commander
US Army Corps of Engineers Wilmington District
69 Darlington Avenue
Wilmington, North Carolina 28403-1398

Attention: Eric Gasch

Dear Colonel Baker:

NOAA's National Marine Fisheries Service (NMFS) reviewed the *Integrated Feasibility Report and Draft Environmental Impact Statement, Coastal Storm Damage Reduction, Bogue Banks, Carteret County, North Carolina, Draft Report* (DEDIS), dated August 2013, prepared by the U.S. Army Corps of Engineers Wilmington District. The DEIS evaluates alternatives for reducing coastal storm damages from beach erosion on Bogue Banks, a 25.4-mile-long barrier island on North Carolina's central coast. The recommended plan (which is Alternative 9 and the National Economic Development plan) calls for a 22.7-mile-long main beach fill and dune expansion in approximately 5.9 miles of the project. The main beach fill would be bordered on either side by a 1,000-foot tapered transition zone. Sand for the beach fill would be delivered by dredge from three offshore borrow areas. After the initial construction, the projected nourishment interval is three years. Impact minimization measures, such as environmental windows and judicious borrow site selection, are integrated into the project design. The DEIS includes an Essential Fish Habitat (EFH) Assessment. The Wilmington District concludes the proposed action is not expected to cause significant adverse impacts to EFH or Habitat Areas of Particular Concern (HAPC) for species managed by the South Atlantic Fishery Management Council, Mid-Atlantic Fishery Management Council, or NMFS. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the following comments and recommendations are provided pursuant to the authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Sections 2.04 and 7.02 of the DEIS list EFH by fishery management plan in the Bogue Banks project area and describe measures to minimize impacts to these habitats. These measures include:

- Not allowing dredging within 500 meters of low-relief hardbottom habitat within or near borrow areas "U" and "Y" and a state-managed artificial reef near borrow area "Y."
- Limiting dredging and beach placement to the maximum extent practicable to the period between December 1 and March 31. While the sea turtles and shorebirds are the primary impetus behind this environmental window, an additional benefit of the window is work would occur when fishery species are less common in the project area.

Unavoidable impacts from the project include temporary elevations in turbidity and suspended solids in both borrow and beach areas that could smother benthic communities or abrade the gills and skin of fishes. By limiting the dredging to winter months and by selecting borrow areas with less than 10 percent fine material, this impact should be reduced. The project would likely bury ripple scour depressions (RSDs) the features within the nearshore area. While RSDs are not well studied, fish and shrimp likely concentrate in RSDs due to the relief and sharp contrasts in sediment texture. Based on a literature



review and discussions with geomorphologists, the District believes RSDs along Bogue Banks are persistent features resulting from the local current and wave regime, which would not be altered by the project and indicates buried RSDs will likely reform within a reasonable time period.

In summary, the EFH assessment adequately describes EFH and federally managed fishery species in the area of Bogue Banks and the EFH conservation recommendations typically issued for a project of this nature are already included in the project design. While no EFH conservation recommendations are provided at this time, NMFS has two general requests:

- To facilitate rapid recovery of the benthic community, NMFS recommends that shallow dredge furrows (up to 5 feet deep) and oriented in a longitudinal pattern be employed. The undisturbed space between the dredge cuts would allow the relatively intact benthic communities between the furrows to be a source of colonists to adjacent disturbed areas, thereby hastening recovery of the infaunal community.
- The Wilmington District meet with NMFS during development of the pipeline corridor to ensure no additional impacts to EFH are proposed.

Thank you for the opportunity to provide these comments. NMFS especially appreciates the extensive interagency discussions the District fostered throughout the planning of the Bogue Banks project. These discussions and timely inclusion of data to inform the discussions were instrumental in the EFH consultation. Related questions or comments should be directed to the attention of Mr. Fritz Rohde at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 838-0828.

Sincerely,

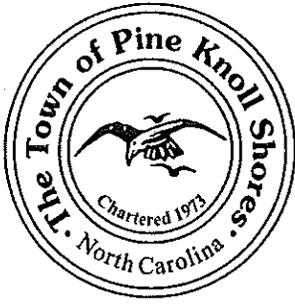


/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Eric.K.Gasch@usace.army.mil
USFWS, Pete_Benjamin@fws.gov
NCDCM, Doug.Huggett@ncdenr.gov
EPA, Bowers.Todd@epa.gov
SAFMC, Roger.Pugliese@safmc.net
NOAA PPI, PPI.Nepa@noaa.gov
F/SER4, David.Dale@noaa.gov
F/SER47, Fritz.Rohde@noaa.gov



The Town of Pine Knoll Shores

September 16, 2013

Eric Gasch
Environmental Resources Section (CEWSA-TS-PE)
U.S. Army Corps of Engineers, Wilmington District
69 Darlington Avenue
Wilmington, NC 28403

Re: Comments
Integrated Feasibility Report and Draft Environmental Impact Statement
Coastal Storm Damage Reduction
Bogue Banks, Carteret County, North Carolina

Dear Mr. Gasch,

Thank you for the opportunity to provide feedback to the Integrated Feasibility Report and Draft Environmental Impact Statement for Bogue Banks. As a member of the Carteret County Beach Commission, Pine Knoll Shores is a partner with Carteret County, Atlantic Beach, Indian Beach, and Emerald Isle in ensuring that we all have healthy and well-maintained beaches. Your report is a positive step in helping ensure that this is a reality for many decades.

This correspondence is intended to complement the letter from the Carteret County Shore Protection Office dated 5 September 2013. In this letter Greg Rudolph updated you on the status of public beach access (PBA) locations here in Pine Knoll Shores. As Mr Rudolph pointed out, Pine Knoll Shores has opened six new PBA's in the past 36 months. These accesses are depicted by Mr. Rudolph in the attachment to his letter. We now have a total of eleven PBA's along our approximately 4.5 miles of beachfront. There are two points related to these PBA's that I would like to discuss.

First, the location of these accesses, and more specifically their compliance with ER 1105-2-100 and ER 1165-2-130, was finalized and approved by the ACE's Wilmington Office in November of 2010. At that time we installed the eleventh and final access in order to meet the

100 Municipal Circle ♦ Pine Knoll Shores, North Carolina 28512 ♦ tele: 252-247-4353
fax: 252-247-4355 ♦ e-mail: admin@townofpks.com ♦ website: www.townofpks.com

requirements mandated in the Morehead Harbor Section 933 Project agreement. As I am sure the Wilmington office's records will show, the access locations were approved by the ACE's Project Officer, a final reimbursement was made to Carteret County and Pine Knoll Shores, and the project was closed out.

Next, the number of assigned parking spaces was ruled acceptable to the Corps in 2010. Additionally, we have records of the usage of the parking spaces we have installed, and they are in fact underutilized.

PBA Locations- Pine Knoll Shores installed five PBA's along its beachfront 12 years ago. These were the first PBA's in our town, and were required by the North Carolina Division of Coastal Management (NCDCM) as a prerequisite to receiving a CAMA permit for a locally funded beach renourishment project. These five "original" PBA's were not tied directly to ER 1105-2-100 and ER 1165-2-130. The Town selected these locations, and sought and achieved NCDCM approval for them, based on the best available locations allowing for the most public access.

In 2004 Pine Knoll Shores agreed to participate in the Morehead Harbor Section 933 Project. This project required the Town to comply with ER 1105-2-100 and ER 1165-2-130. Specifically, we were required to add six additional PBA's to the original five, for a total of eleven. Due to a number of reasons unrelated to public access, the 933 Renourishment Project did not take place until 2007, and PKS did not initiate action to comply with the two regulations until 2008. As per the regulations, we sought to locate an access each half-mile along the Town's beachfront. The number of parking spaces mandated by the ACE for these new "933 PBA's" was ten per access.

When searching for access locations that complied with the two regulations the Town was required to synchronize the locations of the six new PBA's with the locations of the five original NCDCM-mandated locations. This proved difficult. Pine Knoll Shores is somewhat unique amongst beach towns, as we have no public roads that run perpendicular to the shoreline. Said another way, we have no north-south public roads that terminate at the dunes. Our four oceanfront public roads account for less than .8 miles of our 4.5 miles of beachfront. It took two years of expensive and serious negotiation with private entity's to get accesses through their property. This was finally achieved in November 2010, and as previously stated, was approved by the ACE's Morehead Harbor Section 933 Project Officer.

The point here is that the accesses are very close to meeting the specific requirements of ER 1105-2-100 and ER 1165-2-130. In fact, the half-mile spacing requirement, as depicted in Mr Rudolph's letter, is fully met. The quarter mile distance from each access to its associated parking lot is nearly compliant. There is one access which is marginally outside your tolerance of +/- 500 feet. In 2010 we demonstrated to the ACE that we took all reasonable measures to

meet the requirement, and eventually received approval for the location of the access and the associated parking.

Total Parking Spaces needed- Appendix I to the report requires Pine Knoll Shores to have 210 parking spaces within the town. Both the report and the County’s letter of 5 September reflect that we currently have 155 spaces available. That number is in error. The number of spaces currently available, after our eleventh and final 933 PBA was installed is 180.

While the Tobit regression model used to measure peak demand for parking spaces on our beaches is interesting from an academic standpoint, it does not reflect reality. It does not account for the fact that, as previously mentioned, 3.7 miles our 4.5 beach front is privately owned property that holds a finite amount of people, and has no public roadway network approaching the beach. Relative to other beach towns, we have no commercial areas that attract tourists. Instead, we have condominium and hotel units that have a finite amount of *overnight* visitors. Widening the beach in the future via renourishment projects will not bring additional people to our beaches.

Starting in 2011 we began collecting data on the usage of our 180 spaces. We collected this data in 2011 and 2012. While our data collection methods were simple, they accurately reflect the usage of our 180 parking spots at key heavy usage periods. The data below reflects usage of our parking spaces at noon and 4pm on Saturdays during the 2011 and 2012 summer seasons.

Parking usage for Pine Knoll Shores 180 parking spots- Noon on Saturdays, 2011 & 2012

<u>2012 Counts</u>			<u>2011 Counts</u>		
Date	Gross	% of Total	Date	Gross	% of Total
24-May	101	56%	--		
2-Jun	60	33%	--		
9-Jun	N/A	N/A	--		
16-Jun	70	39%	--		
23-Jun	62	34%	25-Jun	51	28%
30-Jun	N/A	N/A	2-Jul	67	37%
7-Jul	71	39%	9-Jul	35	19%
14-Jul	54	30%	16-Jul	68	38%
21-Jul	25	14%	23-Jul	71	39%
28-Jul	82	45%	30-Jul	65	36%
4-Aug	60	33%	6-Aug	73	40%
11-Aug	2	1%	13-Aug	63	35%
18-Aug	54	30%	--		
25-Aug	25	14%	--		
1-Sep	60	33%	--		

Parking usage for Pine Knoll Shores 180 parking spots- 4PM on Saturdays, 2011 & 2012

<u>2012</u>			<u>2011 Counts</u>		
<u>Counts</u>					
Date	Gross	Percent	Date	Gross	% of Total
24-May	75	41%	--		
2-Jun	112	62%	--		
9-Jun	N/A	N/A	--		
16-Jun	77	43%	--		
23-Jun	69	38%	--		
30-Jun	N/A	N/A	--		
7-Jul	109	60%	9-Jul	33	18%
14-Jul	96	53%	16-Jul	109	60%
21-Jul	23	13%	23-Jul	78	43%
28-Jul	71	39%	30-Jul	33	18%
4-Aug	96	53%	6-Aug	25	14%
11-Aug	23	13%	13-Aug	58	32%
18-Aug	71	39%	--		
25-Aug	44	24%	--		
1-Sep	84	46%	--		

Without question our peak parking requirement is on the weekends, and noon and 4pm are good times to gauge the use of the spaces. As the numbers above demonstrate, we do not come close to using all of our 180 spaces, even at the busiest time of our summer. I am also attaching our raw data from 2011 and 2012. I must apologize in advance that formats were not the same during these two summers, nor was our counting scheme the same. If I may would direct you to the highlighted section of each page. I believe this demonstrates what the actual usage of our spaces really is.

Pine Knoll Shores requests that the Integrated Feasibility Report and Draft Environmental Impact Statement for Bogue Banks be adjusted in Appendix I to require PKS to have 180 public parking spaces in support of our 11 PBA's. We have been managing these accesses and maintaining the associated parking spaces. They are not close to being fully utilized, and we do not feel there is any rationale for requiring additional spaces.

Thank you for the opportunity to submit comments to your study.


 Brian Kramer
 Town Manager, Pine Knoll Shores



**DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS**

P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

December 9, 2003

IN REPLY REFER TO

Environmental Resources Section

Dear Sir or Madam:

The U.S. Army Corps of Engineers, Wilmington District, has initiated the Bogue Banks Shore Protection Feasibility Study in Carteret County, North Carolina (see enclosed figure). The feasibility study is being carried out under the Corps of Engineers General Investigation Program and was authorized by a resolution (Docket 2578) of the Committee on Transportation and Infrastructure of the U. S. House of Representatives, dated July 23, 1998.

The purpose of the feasibility study is to develop and evaluate alternatives for implementing solutions to shore protection and related problems for Bogue Banks, in Carteret County, North Carolina. Opportunities for shore protection for Bogue Banks include the no-action alternative, the restoration of berms and/or dunes, as well as other non-structural and structural alternatives. The final outcome of the study will be a feasibility report, and an environmental impact statement (EIS), which will likely recommend a project for construction authorization. We are now requesting comments from agencies, interest groups, and the public to identify and discuss significant resources and issues related to selection of a preferred alternative.

Bogue Banks, located in Carteret County, North Carolina is a barrier island located between Beaufort Inlet to the east and Bogue Inlet to the west. The barrier island is approximately 24 miles in length, with the Atlantic Ocean to the south and Bogue Sound to the north. From east to west, the communities of Atlantic Beach, Pine Knoll Shores, Salter Path, Indian Beach, and Emerald Isle are located on Bogue Banks. Fort Macon State Park is located at the east end adjacent to Beaufort Inlet, and the Theodore Roosevelt Natural Area is located adjacent to Pine Knoll Shores. The communities are rapidly growing and visitation to Bogue Banks is high due to the unique character of the island and the presence of one of the last remaining maritime forests on a barrier island in North Carolina. The study area is located in the eastern portion of North Carolina in the 3rd Congressional District.

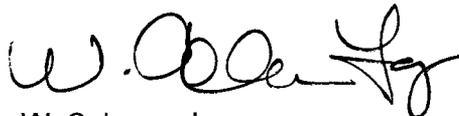
Increased storm activity in the last years, including Hurricanes Bertha (1996), Fran (1996), Bonnie (1998), Dennis (1999), Floyd (1999), and Irene (1999) have eroded the berm and dunes, and have damaged structures and their contents at Bogue Banks. Erosion of the protective berm and dune has left the upland areas extremely vulnerable to future hurricane storm damage. Potential advantages of a proposed shore protection plan include the potential alteration of wave and current effects on shoreline erosion at nearby beaches.

All private interests and federal, state, and local agencies that have an interest in the project are invited to comment at this time and to identify any concerns and issues that should be addressed or considered by the U.S. Army Corps of Engineers during project planning and engineering. An EIS will be prepared in accordance with the requirements of the National Environmental Policy Act of 1969, as amended, and will address the project's relationship to all applicable federal and state laws and Executive Orders. The EIS would describe the environmental effects of the proposed action on socioeconomic resources; hazardous, toxic, and radiological wastes; natural resources; endangered and threatened species; wetlands; floodplains; air quality resources; marine, estuarine, and beach habitat; cultural resources, including important historic shipwrecks; recreational and commercial fisheries; water quality, and cumulative impacts. The EIS is currently scheduled for distribution to the public in the winter of 2004.

No formal scoping meetings are planned at this time. However, based on the responses to this scoping letter, meetings may be held with specific agencies as required.

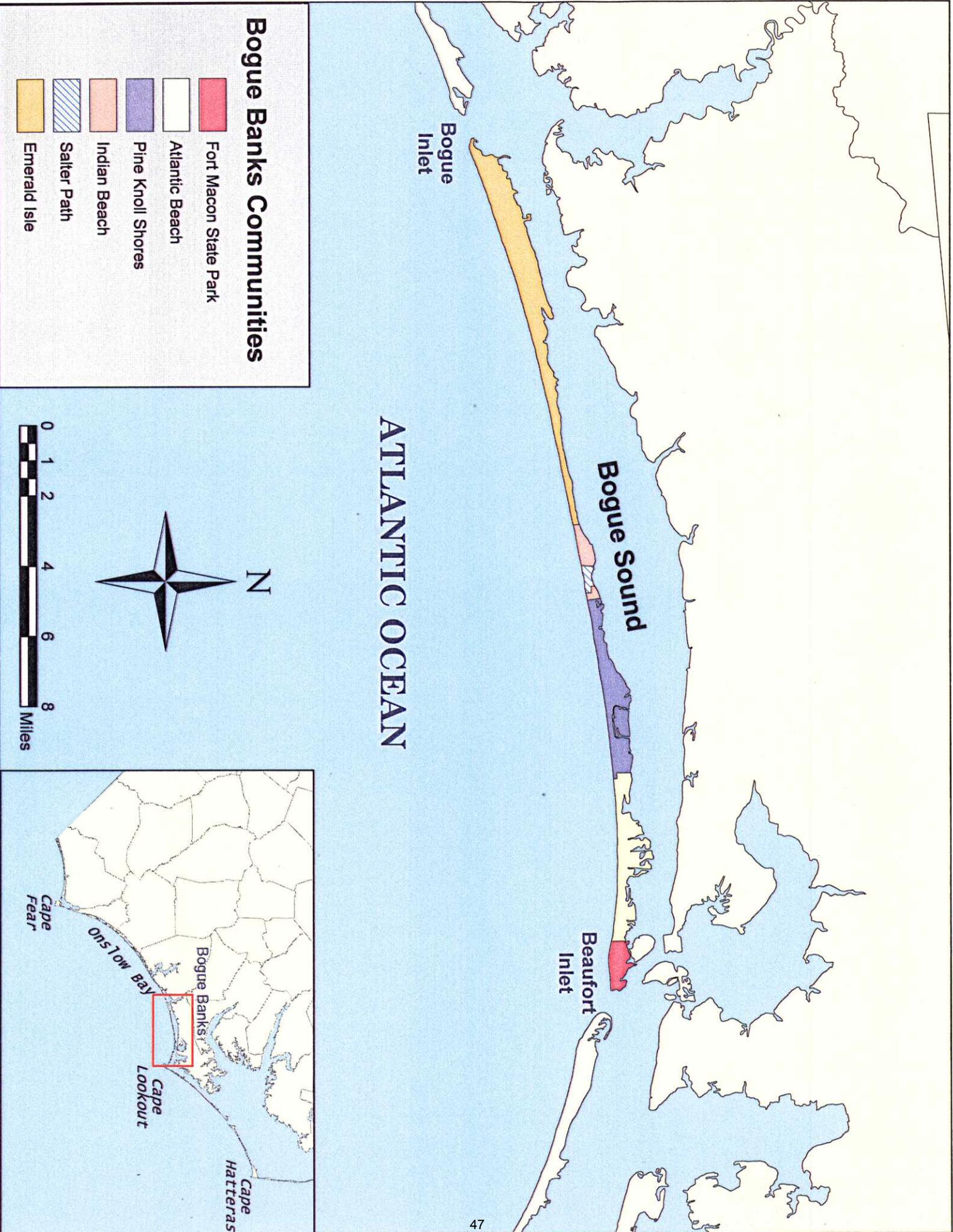
Written comments are requested on any of these matters. Responses to this letter will be considered during our selection of a preferred alternative and our assessment of potential impacts on the environment. Significant issues will be addressed, as appropriate, in an EIS. Please send your written comments to arrive within 30 days from the date of this letter in order that they may be considered during our evaluations and decision process. Questions about the feasibility study or the EIS should be addressed to Mr. Hugh Heine, Environmental Resources Section, e-mail address hugh.heine@usace.army.mil or telephone (910) 251-4070.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Coleman Long', with a stylized flourish at the end.

W. Coleman Long
Chief, Planning and Environmental Branch

Enclosure





**US Army Corps
of Engineers®**

Wilmington District

CESAW-TS-PE

August 2, 2013

PUBLIC NOTICE
AND
NOTICE OF AVAILABILITY

Integrated Feasibility Report and Draft Environmental Impact Statement
Coastal Storm Damage Reduction
Bogue Banks, Carteret County, North Carolina

The U.S. Army Corps of Engineers (USACE), Wilmington District (Corps) has prepared a Draft Environmental Impact Statement (DEIS) to evaluate the impacts of the proposed alternative to reduce coastal storm damages from beach erosion on Bogue Banks North Carolina. The Bogue Banks study area is located on the coast of North Carolina, about 80 miles north of Wilmington, North Carolina. The project area is up to 24 miles in length, from Beaufort to Bogue Inlets. Benefits from the proposed project, include the protection of structures and their related infrastructure (i.e., roads, utility lines, etc.), improved aesthetic and recreation opportunities, and improved habitat conditions for endangered species.

The DEIS has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended, and addresses the relationship of the proposed action to other applicable Federal and State Laws and Executive Orders. The DEIS addresses the proposed project's impacts on environmental resources including: federally listed threatened and endangered species, archaeological and historical resources, wetlands, fish and wildlife habitat, soils, and water and air quality. We are requesting written comments related to the proposed project from agencies, interest groups, and the public. Comments received will be considered in preparation of the Final EIS. The DEIS is available on the internet at: <http://www.saw.usace.army.mil/Missions/CoastalStormDamageReduction/BogueBanks.aspx>

Written comments should be addressed to the U.S. Army Corps of Engineers, Wilmington District, Attention: Mr. Eric Gasch, (CESAW-TS-PE) Environmental Resources Section, Post Office Box, 1890, Wilmington, North Carolina, 28402. Please send your comments within 45 days from the date of this letter so they may be considered during our evaluation and decision process. If you have any questions or need further information, please contact Mr. Gasch at telephone (910) 251-4553.

Elden Gatwood
Chief, Planning and
Environmental Branch



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

February 14, 2014

Planning and Environmental Branch

Mr. Pete Benjamin, Field Supervisor
U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Dear Mr. Benjamin:

A Draft Environmental Impact Statement (DEIS) with Biological Assessment (BA) for the Bogue Banks Coastal Storm Damage Reduction (CSDR) project was prepared and transmitted for a 45-day public review period on August 2, 2013. On August 20, 2013, the Corps sent a letter requesting concurrence under continuing informal consultation that began over 10 years ago.

On September 12, 2013, the U.S. Fish and Wildlife Service (Service) provided comments in accordance with Section 7 of the Endangered Species Act of 1973, as amended. The Service concluded they did not concur with the Corps' determination of May Affect, Not Likely to Adversely Affect (MA-NLTAA) for the piping plover, and loggerhead, leatherback, and green sea turtles because more information was needed on the compatibility of the sediment to be dredged and placed on the beach. The Service also had seven other recommendations to be addressed.

Within the framework of continued informal consultation, a meeting was conducted between the Service and the Corps on October 30, 2013, to discuss the Service's recommendations and concerns regarding the Corps' use of the "Wilmington District Compatibility Practice" versus the "NC Sediment Criteria" as documented in the DEIS. The purpose of this letter is to transmit the enclosed Corps' responses to the Service's non-concurrence to the Corps' affects determination and to request the Service's concurrence that Section 7 consultation has been satisfied for this project.

If you have any questions regarding this matter, please contact Mr. Eric Gasch of the Environmental Resources Section either at (910) 251-4553, Eric.K.Gasch@usace.army.mil; or at the mailing address at the top of this letter.

Sincerely,

Elden Gatwood
Chief, Planning and Environmental Branch

Enclosure

ENCLOSURE

Corps Responses to USFWS Comments (Letter Dated September 12, 2013)

1. USFWS COMMENT: At this time, the Service cannot concur with the Corps' determination of May Affect, Not Likely to Adversely Affect (MA-NLTAA) for the piping plover, and loggerhead, leatherback, and green sea turtles. More information is needed on the compatibility of the sediment to be dredged and placed on the beach, including sand grain size (percent fines and percent granular and gravel), density, shear resistance, and color. In addition, no monitoring is proposed to be conducted during construction or maintenance events for piping plover, and the length of monitoring for sea turtle nests is not clear in the draft BA.

USACE RESPONSE: Sufficient data regarding compatibility of sediment to be dredged and placed on the beach are provided in Section 5.06.1 in the DEIS and in the Geotech Appendix C. For clarity, that information was not repeated in the BA. Also, further information regarding sediment compatibility is addressed in USFWS Comment #3. Color of the sediment was not investigated and historically has not in previous projects.

Monitoring, specifically daily visual surveys for piping plover, is not proposed because placement is timed to minimize impacts. A visual survey will be performed before placing or removing pipe along the beach to avoid piping plover impacts. Piping plover impact minimization measures are also addressed in USFWS Comment #7.

Beach renourishment is proposed during the time period when sea turtle nesting is not occurring. The Corps will not and historically has not monitored for sea turtle nests when placement is within the environmental window. However, the local communities, through the NC Sea Turtle Project, monitor sea turtle activity along the entire coast of North Carolina and the data is collected by Dr. Matthew Godfrey of NCWRC. Further information regarding sea turtle monitoring is addressed in USFWS Comment #4 below. Section 5.00 of the BA was updated to remove commitment of post nourishment nest activity for clarification.

2. USFWS COMMENT: The Service recommends that the proposed Critical Habitat for the loggerhead sea turtle and the candidate species red knot be added to the list of considerations under Section 7 of the Endangered Species Act. Consideration of proposed critical habitat and candidate species in project planning is prudent and should not delay or impede decision-making.

USACE ACTION: The Corps agrees with USFWS Comment #2.

Section 4.02.3 and 6.0 of the BA was updated with proposed loggerhead Critical Habitat information and the Corps determined the proposed project will not result in an adverse modification of critical habitat for the threatened loggerhead sea turtle.

Section 4.02.10 and 6.0 of the BA was updated with a Red Knot evaluation and includes the Corps determination that the disposal of sediment on the Bogue Banks beaches may affect not likely adversely affect the Red Knot because construction activities will (1) avoid large scale disturbance within the limits of Red Knot foraging distribution and allow for areas of un-impacted or recovered foraging habitat within a given year, (2) avoid roosting timeframes or provide appropriate buffers around existing roosting habitat during construction operations, and (3) beach placement on Bogue Banks will only take place from in appropriate environmental windows approximately once every 3-5 years.

Consideration and analysis was added to the DEIS in section 2.07.3 and 2.07.4 for loggerhead critical habitat and red knots. Table 2.4(Threatened and Endangered Species Potentially Present in Carteret County, North Carolina) was updated and Figure 2.4 (Proposed Loggerhead Critical Habitat) was also added to the DEIS.

3. USFWS COMMENT: The Service recommends that the Corps commit to using only sediment that complies with the NC Sediment Criteria Rule, and also has a wet Munsell color of 5 or greater.

Specifically, the Service recommends that the Corps commit to meet the following criteria:

1. The average % by weight of fine grained sediment (less than 0.0625 mm) in each borrow site shall not exceed the average % by weight of fine grained sediment of the recipient beach characterization plus 5%.
2. The average % by weight of granular sediment (Greater than or = to 2 mm and less than 4.76mm) in a borrow site shall not exceed the average % by weight of coarse sand sediment of the recipient beach plus 5%.
3. The average % by weight of gravel (greater than or = to 4.76 mm) in a borrow site shall not exceed the average % by weight of gravel sized sediment for the recipient beach characterization plus 5%.
4. The average % by weight of calcium carbonate in a borrow site shall not exceed the average % by weight of calcium carbonate on the recipient beach characterization plus 15%.

Use of material that meets the above criteria and is similar in color to the native beach would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize

potential impacts to piping plover, red knot, and sea turtles, as well as beach invertebrates, surf fishes, and other shorebirds.

The service recommends that Section 5.00 of the BA include a commitment to monitoring sediment each day as it is being placed on the beach to ensure that it is similar to the existing sediment on the beach.

USACE RESPONSE: *The Corps disagrees with USFWS Comment #3.*

The Corps believes the sand compatibility methods used are adequate to evaluate the placement of sand on Bogue Banks. The Wilmington District has met the intent of the State sediment compatibility standards through detailed sediment compatibility analyses, which evaluate the grain size characteristics of the material within the potential borrow area. In order to assure that beach placement material consists predominately of sand, the Wilmington District compatibility practice requires that the borrow area contains sediment with an average weighted fine-grained material content of less than (<) 10% passing the #200 sieve. These guidelines have historically been utilized by the Wilmington District to assure compatibility for CSDR projects (i.e. Wrightsville, Carolina, Kure, and Ocean Isle beaches) with much success and additionally continue to be used for beach placement of dredged material from navigation channels. As discussed above, previously constructed CSDR projects which utilized the Wilmington District compatibility practice did not result in resource impacts that were outside of what the literature base documents for recovery.

The State Criteria were intended to serve as a guideline to support material placed on the beach that is “compatible” with the native beach. They were not developed to define thresholds of environmental recovery realizing that the current science does not discern small incremental differences when evaluating recovery time. The incremental difference in the sediment characteristics proposed to be being placed on the Bogue Banks and the “State Criteria” is not discernible with respect potential benthic impacts and recovery and the interrelated impact to foraging plovers as well as the impacts to sea turtle nesting habitat does not discern between increments of silt. Therefore, the existing science does not support use of the State Criteria as a required minimization method.

The results of the geotechnical investigation for the Feasibility Report for the Bogue Banks Coastal Storm Damage Reduction Project are presented in Appendix C of that report. A number of sites were investigated for the determination of quality and an adequate quantity of material appropriate for borrow and placement of sand for storm damage reduction. The sites investigated in this study include the Beaufort Inlet Ebb Tide Delta, Bogue Inlet, and various sites offshore of Bogue Banks.

Geophysical data was collected in the area between 1.0 nautical miles (30 foot isobath) to 6.0 nautical miles offshore of Bogue Banks. The geophysical surveys were used to recommend boring locations for detailed analyses. These locations were concentrated in areas that showed

promise for use as borrow sources for sand. A total of 200 borings were performed in Bogue Inlet, offshore of Bogue Banks, Beaufort Inlet and the Bogue Sound area. The borings offshore of Bogue Banks were located between 1 and 6 miles from the beach and in water depths greater than 30 feet. The recovered vibracore tubes were visually classified by Wilmington District personnel in accordance with the Unified Soils Classification System (USCS). Representative samples were taken at a minimum of every two feet or at each change of material. A total of 1400 samples were collected in the Bogue Banks area, of which 1369 samples were tested for this project. The grain size tests were performed in accordance with ASTM D-422 using a fifteen-sieve test and visual classifications were performed in accordance with ASTM D-2488. The sieves used in these tests were the 3/4, 3/8, #4, #7, #10, #14, #18, #25, #35, #45, #60, #80, #120, #170, and #200.

Once the lab grain size testing of the vibracore samples was completed, the borrow areas were reassessed to determine the quality of the material in the proposed borrow areas. The borrow sites for this project were selected through an iterative process to find the most economic and best quality material for use as borrow. Some areas contained too high a shell content and were eliminated. Other areas with higher silt content were also eliminated from consideration. Also, some other areas which no longer had a large enough quantity of suitable material to use for a full renourishment cycle were eliminated. An assessment of environmental and archeological features of the remaining areas was performed. One area greatly reduced due to the presence of features such as artificial reefs, the ebb tide delta, and archeological areas such as the Queen Anne's Revenge.

In addition, the beach material on Bogue Banks was characterized. Beach material sampling consisted of a total of 25 transects, with 2 transects in Fort Macon, 5 transects in Atlantic Beach, 6 transects in Pine Knoll Shores, 2 transects in Indian Beach, 7 transects in Emerald Isle, and 3 transects in the Bogue Inlet area west of Emerald Isle. The sample locations are the toe of the dune, crest of the berm, mean high water (MHW) at an approximate elevation of +2.5 feet above mean sea level, mean low water (MLW) at an approximate elevation of -2.5 feet below MSL, and at 2-foot elevation increments from -2.0 feet below MSL to -24.0 feet below MSL.

Based on the analysis of the overfill ratio and the grain size analysis borrow areas Q2 (ODMDS), U, and Y were selected as the source of borrow material. The geotechnical data are summarized in the following tables from the Geotechnical Appendix C.

Table C-1. Bogue Banks Grain Size Comparison (Taken from Geotech Appendix C).

Location	# of Samples	Mean (mm)	Std Dev (mm)	% Passing # 4	% Passing # 10	% Passing # 200*	% Visual Shell
Native Beach							
Ft. Macon	34	0.21	0.57	99.8	99.0	1.6	10.9
Atlantic Beach	82	0.18	0.58	99.6	98.7	3.4	7.1
Pine Knoll Shores	102	0.19	0.57	99.4	98.4	3.6	8.9
Indian Beach	34	0.21	0.52	99.5	98.2	3.2	10.9
East Emerald Isle	47	0.20	0.60	99.6	98.8	2.6	6.3
West Emerald Isle	67	0.19	0.62	99.4	98.7	2.4	4.9
Bogue Inlet Area	51	0.19	0.70	99.6	99.6	1.9	4.0
Borrow Areas							
Area Y	8	0.28	0.54	92.1	87.7	4.2	8.2
Area U	13	0.23	0.58	98.6	96.2	4.8	11.9
Area ODMDS	14	0.20	0.68	98.5	97.0	3.9	7.1

* % Passing #200 is comparable to % silt

The suitability of the borrow material for placement on the beach was also assessed using the overfill ratio. The overfill ratio is computed by numerically comparing the size distribution characteristics of the native beach sand with that in the borrow area and includes an adjustment for the percent of fines in the borrow area. The overfill ratio is primarily based on the assumption that the borrow material will undergo sorting and winnowing once exposed to waves and currents in the littoral zone, with the resulting sorted distribution approaching that of the native sand. Since borrow material will rarely match the native material exactly, the amount of borrow material needed to result in a net cubic yard of beach fill material will generally be greater than one cubic yard. The excess material needed to yield one net cubic yard of material in place on the beach profile is the overfill ratio. The overfill ratio is defined as the ratio of the volume of borrow material needed to yield one net cubic yard of fill material. For example, if 1.5 cubic yards of fill material is needed to yield one net yard in place, the overfill factor would equal 1.5.

The overfill criteria developed by James (1975) is the method used in the Automated Coastal Engineering System (ACES). The procedure is also described in the U.S. Army Coastal Engineering Manual EM-1110-2-1100 Part V (July 2003). The overfill ratio for the Bogue Banks Beach was compared to the borrow area material was calculated by the Aces Method. Based on the Aces Method, the overfill ratio for is varied between 1.05 and 1.41. Any overfill ratio value of less than 1.5 with a fine content of less than 10% is considered acceptable for use as beach renourishment. See Table C-3.

Table C-3. Bogue Banks Overfill Ratios. (Taken from Geotech Appendix C).

LOCATION	OVERFILL RATIO
Bogue Inlet - Ocean	1.10
Emerald Isle - West	1.05
Emerald Isle - Central	1.05
Emerald Isle - East	1.05
Indian Beach/Salter Path	1.05
Pine Knoll Shores - West	1.05
Pine Knoll Shores - East	1.11
Atlantic Beach	1.07
Fort Macon	1.41

NOTE: The overfill ratio is calculated using the James Method.

With regard to monitoring of sediment as it is discharged, the project plans and specifications will require that the contractor be present and monitor the dredge discharge location and work zone continuously while the discharge is occurring. Additionally, frequent inspections of the beach placement by a government inspector and Wilmington District technical staff including environmental and geotechnical staff will occur. These inspections will be visually based. Visual classifications of these materials rely primarily on sight and feel of the material. The color and in some circumstances smell can be factors considered. Should the material being placed on the beach contain amounts of silt and clay or other materials not considered suitable for placement on the beach (as defined previously), the contractor will be required to promptly notify the Contracting Officer.

In addition to monitoring the beach location, the plans and specifications require monitoring of dredge position and dredge status (i.e., depth of cut) at the borrow area.

Section 5.0 of the BA was updated to include this monitoring information.

4. USFWS COMMENT: The Service recommends that Section 5.00, Item 6 of the Draft BA be modified to reflect that sea turtle nesting activities will be monitored annually for the life of the project.

USACE RESPONSE: *As discussed below, monitoring of sea turtle nesting activities is expected to continue as it has historically. However, this monitoring will not be a federal project action. The local communities, through the NC Sea Turtle Project, monitor sea turtle activity along the entire coast of North Carolina and the data is collected by Dr. Matthew Godfrey of the North Carolina Wildlife Resources Commission (NCWRC). The data is in turn provided to the USFWS.*

Also, placement of material is timed through environmental windows to minimize impacts. Throughout the duration of each nourishment contract, during initial construction and each periodic nourishment event, the Contractor will be responsible for the protection of threatened and endangered species. The Contractor is responsible will take such measures as may be required to assure that any activities conducted do not kill, injure, capture, pursue, or otherwise harm any species. The Contractor will be aware of the protected species that frequently occur in the project area and work will be planned accordingly.

Section 5.00 of the BA was updated to remove commitment of post nourishment nest activity for clarification.

5. USFWS COMMENT: The Service recommends that Section 5.00 of the BA include a commitment to conduct visual surveys each morning in the area of work for that day, to determine if piping plovers are present and allow those individuals to move out of the area.

USACE RESPONSE: *The Corps disagrees with USFWS Comment #5.*

The Corps will coordinate with the Service and NCWRC prior to mobilization and demobilization of the pipeline to avoid piping plover impacts. Placement of material is timed to minimize impacts to piping plovers and therefore daily visual surveys are not necessary.

Piping plover impact minimization measures are also addressed in USFWS Comment #7.

6. USFWS COMMENT: The Service recommends that Section 5.00 of the BA include a commitment to conduct surveys for seabeach amaranth both before and for three years after sediment placement in order to avoid direct burial and to monitor recovery of the plant, for the life of the project.

USACE RESPONSE: *The Corps agrees with USFWS Comment #6.*

The USACE has surveyed Bogue Banks for seabeach amaranth since 1991. Since 2001, the amount of Amaranth surveyed has sharply reduced from over 1,900 to approximately 30 in the study area.

The seabeach amaranth monitoring will be conducted for 5 years following the initial sediment placement. The commitment is intended to survey and document presence/absence of plants following Bogue Banks Project nourishment events utilizing offshore borrow sources in order to quantify the number of plants before/after nourishment. Subsequent monitoring will be dependent on results of the initial monitoring.

Though beach nourishment will offer additional habitat for seabeach amaranth, because of seed burial there is risk of slow germination and population recovery in the short term following burial. Previous literature has suggested that following disposal efforts, seabeach amaranth populations have rebounded suggesting that beach nourishment is beneficial for seabeach amaranth populations. However, seabeach amaranth recovery associated with nourishment is often tied to nearshore borrow sources associated with inlet complexes. It has been suggested that the sediment from these inlet complexes contains a seabeach amaranth seed source which germinates when disposed on the beach. However, the sediment utilized for this project is from deep offshore borrow areas that does not contain a seed source. Therefore, during nourishment operations the placement of sediment on the beach may bury existing seed sources and prevent germination over the short term.

7. USFWS COMMENT: Each construction or maintenance event should start at the southern project limit and move northward in order to avoid potential impacts to nesting piping plovers. All construction for shaping the beach within the southern mile of the project area should be completed by March 1 and all construction equipment removed from this area. Equipment access points should be within the day's work area or as close as possible, to minimize impacts from movement of heavy equipment along other stretches of beach. Also, the Corps should coordinate with the Service and North Carolina Wildlife Resources Commission prior to mobilization and demobilization of the pipeline on the beach, to determine the best location for the pipeline route.

USACE RESPONSE: *The Corps disagrees with the USFWS Comment #7 recommendation that all construction for shaping the beach be completed by March 1 and each construction or maintenance event should start at the southern project limit and move northward.*

First, it is assumed that the Service meant to say the construction and maintenance (renourishment) events should start at the westernmost project limits and move east instead of the southernmost project limits and move north due to Bogue Banks running in a west to east direction (Bogue Inlet to Beaufort Inlet).

Placement as well as mob and de-mob of equipment will be timed (December 15-March 31) to avoid piping plover impacts. Piping plover Critical Habitat Unit NC-10 is located west, but not in, the project area. Therefore a west to east construction plan is not practical or necessary to protect piping plovers.

The Corps agrees with the USFWS Comment #7 recommendation that the Corps should coordinate with the Service and North Carolina Wildlife Resources Commission prior to

mobilization and demobilization of the pipeline on the beach, to determine the best practical location for the pipeline route which minimizes potential risk to plovers.

8. USFWS COMMENT: The Service recommends that the Corps investigate the necessary minimum maintenance interval for storm damage reduction, which may be greater than 3 years. A longer interval between maintenance events would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize potential impacts to piping plover, red knot, and sea turtles, as well as beach macro invertebrates, surf fishes, and other shorebirds. A longer maintenance interval would also require a smaller amount of compatible borrow material for the life of the project. We recommend that the final EIS consider the non-economic benefits of longer maintenance intervals.

USACE RESPONSE: *The Corps disagrees with USFWS Comment #8.*

Non-economic benefits were considered in the planning process. Longer renourishment intervals may increase the environmental risks between renourishment events by allowing accumulated erosion to create escarpments, narrow the non-dune portion of the beachfill, erode the toe of the dune, and damage dune vegetation. Longer renourishment intervals may result in an eroded beach that is not suitable to sea turtles as compared to a beach renourished on a shorter interval. As the renourishment interval increases, the large volumes needed would require additional hopper dredges and/or expansion of the dredging window. This presents a greater risk for impacts to benthic invertebrates and surf zone fishes by extending construction into more biologically productive periods. The present analysis allows for evolution of the design template between renourishment events. It should be noted that as the design template erodes, the character of the beach can change unacceptably if the nourishment interval is too long. Also renourishment would not occur in areas of the Bogue Banks project that remain at or above the design template or were only minimally eroded. It is highly likely that the full project length will actually require renourishment every three years. Therefore, the estimated beach replacement cycle of between 3-5 years was selected as the recommended plan.



United States Department of the Interior



OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W., Suite 1144
Atlanta, Georgia 30303

ER 13/0548
9043.1

September 26, 2013

Mr. Eric Gasch
U.S. Army Corps of Engineers
Wilmington District
Environmental Resources Section
69 Darlington Avenue
Wilmington, NC 28403

Re: Comments and Recommendations on the Review of the Draft Environmental Impact Statement (DEIS) for the Bogue Banks Coastal Storm Damage Reduction Project located in Carteret County, North Carolina

Dear Mr. Gasch:

The Department of the Interior (Department) has reviewed the DEIS for the Bogue Banks Coastal Storm Damage Reduction Project and our comments are as follows. This is in response to the request for review of the U.S. Army Corps of Engineers' (Corps) Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS) for Bogue Banks Coastal Storm Damage Reduction Project (CSDR) (August 2013), and the draft Biological Assessment (BA) (Appendix F of the DEIS). The Corps provided the DEIS for the Bogue Banks project by letter dated August 2, 2013. The letter also requested initiation of formal consultation on the project. In a letter dated August 20, 2013, the Corps rescinded their August 2 letter, and instead requested concurrence under continuing informal consultation that began over ten years ago.

We have worked with the Corps on the review of this Civil Works project since approximately 2000. The Department provided scoping comments to this project on February 14, 2000 and drafted a Fish and Wildlife Coordination Act (FWCA) Report in November 2002. A final FWCA report has not yet been produced. However, many of the recommendations of the 2002 draft FWCA report remain valid. The Corps has indicated that a Final FWCA report will be contracted with a final delivery date in January, 2014. We will provide additional comments directly to the Corps in regards to the DEIS and Section 7 consultation.

Project Area, Proposed Activities, and Anticipated Impacts

The project area is Bogue Banks Beach and the adjacent Atlantic Ocean. Waters of the Atlantic Ocean, Beaufort Inlet and parts of Bogue Inlet and Bogue Sound are classified as SB, a water quality classification designated by the state. According to the DEIS, the purpose of this study is to evaluate coastal storm damage reduction at Bogue Banks, a 25.4-mile long barrier island located on North Carolina's central coast in Carteret County. The preferred alternative consists of an 119,670-foot (22.7 miles) long main beach fill, with a consistent berm profile across the entire area, and dune expansion in certain portions (approximately 5.9 miles of the project). Material for the project is proposed to be dredged from three offshore borrows locations (Y, U, and Q2). The project is proposed to be renourished as often as every three years following initial construction, in order to build the project back up to the authorized dimensions.

Federally Protected Species

The Corps has made a determination of May Affect, Not Likely to Adversely Affect the piping plover, seabeach amaranth, and loggerhead, leatherback, and green sea turtle. The Corps also determined that the proposed project is Not Likely to Adversely Modify critical habitat for the piping plover. For the West Indian manatee and the roseate tern, the Corps has made a No Effect determination in the BA. At this time, the Department cannot concur with the Corps determinations for piping plover and the sea turtle species, for the following reasons:

- (1) A lack of information on the compatibility of the sand to be used for nourishment, particularly regarding the percentage of material of a large grain size (greater than 2.00mm) and Munsell color.
- (2) The Corps' decision to forego compliance with the North Carolina Sediment Criteria Rule (15A NCAC 07H .0312: Technical Standards for Beach Fill Projects). Instead, the Corps proposes to "continue to use its best engineering judgment, accompanied by appropriate sampling and monitoring, to determine sediment compatibility." We recommend that the Corps commit to meet the NC Sediment Criteria Rule, and also to commit to using material which is compatible in color (a wet Munsell color of 5 or greater). Since the DEIS currently estimates that the overall 50-year project would utilize only about 47% of the total volume available at the three borrow sites, we are asking the Corps to determine if there would be enough sand for the overall project if the NC Sediment Criteria Rule is met. This commitment would be a minimization measure under Section 404(b)(1) of the Clean Water Act. Finally, the Department is concerned with a lack of consistency in the applicability of the NC Sediment Criteria Rule. It is unclear how the Corps may hold itself to one standard of sediment compatibility, and expect private permittees to meet a higher standard. We are concerned that allowing the Corps to utilize a different level of compliance will make it more difficult to uphold the NC Sediment Criteria Rule for private permittees.

- (3) A failure to minimize impacts to listed species by basing the proposed maintenance intervals on the estimated erosion rate and need for renourishment. Section 5.08.02 on page 75 of the DEIS states that a 3-year maintenance interval was chosen because of the net costs and benefits of the nourishment activities. However, a longer maintenance interval of 4 or 5 years would allow the benthic infauna longer time to recover both on the beach and in the borrow areas. A longer interval between maintenance events would be a minimization measure under Section 404(b)(1) of the Clean Water Act. A longer maintenance interval would also require a smaller amount of compatible borrow material for the life of the project. We recommend that the final EIS consider the non-economic benefits of longer maintenance intervals.
4. A lack of monitoring plans for piping plovers during construction and maintenance activities. Proposed monitoring includes post-nourishment monitoring of the project area for turtle nests, and to monitor sediment compaction and escarpment formation. In addition, we recommend the following minimum monitoring requirements:
 - Monitoring of sediment color and compatibility prior to placement on the beach during any construction and maintenance activities
 - Monitoring of bird presence and abundance by species during construction and maintenance operations and for the first year after sediment placement

In addition, the Department recommends that the proposed Critical Habitat for the Loggerhead Sea Turtle and the candidate species red knot (*Calidris canutus rufa*) be added to the list of considerations under Section 7 of the Endangered Species Act. Consideration of proposed critical habitat and candidate species in project planning is prudent and should not delay or impede decision-making.

Table 2.4 on page 33 of the DEIS lists red knot (*Calidris canutus rufa*) as endangered. A determination to list the red knot has not yet been made by the Department, although it is a candidate species. The Department recommends that potential impacts to the red knot be included in the final BA. Similarly, the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) is listed in the DEIS as a Federal Species of Concern (FSC), when in fact, the Carolina Distinct Population Segment has been listed by the National Marine Fisheries Service (NMFS) as endangered. These corrections should be made in the Final EIS. The Corps should consult with NMFS regarding potential impacts to the Atlantic Sturgeon.

If you have questions or concerns, please contact Kathy Matthews at (856) 4520, ext. 27 or via email at kathryn_matthews@fws.gov. I can be reached on (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Bogue Banks Coastal Storm Damage Reduction Project – ER 13-0548

Sincerely,

A handwritten signature in black ink, appearing to read "J. Stanley", with a long horizontal flourish extending to the right.

Joyce Stanley, MPA
Regional Environmental Protection Specialist

cc: Jerry Ziewitz – FWS
Gary Lecain - USGS
Anita Barnett – NPS
Tommy Broussard – BOEM
Harry J. Payne – OSMRE
OEPC – WASH

Wickler



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 93726

Raleigh, North Carolina 27636-9726

January 8, 2004

Colonel Charles R. Alexander
District Engineer, Wilmington District
U. S. Army Corps of Engineers
P. O. Box 1890
Wilmington, NC 28402-1890

Attention: Mr. Hugh Heine, Environmental Resources Section

Dear Colonel Alexander:

In response to your letter dated December 9, 2003 regarding initiation of the Bogue Banks Shore Protection Study Feasibility Study in Carteret County, the U. S. Fish and Wildlife Service (Service) is pleased to provide these comments. Bogue Banks is located in Carteret County between Beaufort Inlet and Bogue Inlet and contains the communities of Atlantic Beach, Pine Knoll Shores, Salter Path, Indian Beach, and Emerald Isle.

As you are aware, the Corps has already received the **draft** report for this project of the Department of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d). The draft report, dated November 2002, contains an exhaustive description of habitat types and this information should be used in the preparation of the feasibility report and the environmental impact statement. Feel free to use content directly from this report for that purpose. It is a federal report prepared for your agency and the narrative can be used verbatim in instances that you find it helpful to do so.

Since November 2002, the Service has been working with your agency to address concerns relating to this project, and the Service would like to focus on the existing key elements for your response in the upcoming study. Many of our concerns are being addressed at the regularly scheduled meetings of the Project Delivery Team. Because of the new information that has been made available to the Service since the draft report was issued, it is no longer necessary for you to respond to all the Conservation Measures and Recommendations in Section 10 of the draft report. Instead, the Service requests you focus on the following measures that are taken from that same report. The Service believes that each of the following are very important and is hopeful that substantial attention can be given to them in your study and in the preparation of the environmental impact statement. The background material for these recommendations can be found in the draft report and will not be repeated in this letter.

- The construction, or renourishment interval, should be greater than three years. A six year interval would allow for a three year recovery period for benthic invertebrates and three years of relatively normal production before another event.
- The ODMDS and near shore disposal sites should be targeted for dredging before undisturbed marine areas, provided that the material is compatible and free of toxicants.
- Opportunities to improve bird habitat on dredge spoil islands should be investigated. We request that you schedule an informal meeting with yourself, Walker Golder with the Audubon Society, David Allen with the North Carolina Wildlife Resources Commission, and Mike Wicker of this office to discuss potential actions that could be taken to benefit the area's bird populations.
- Can benthic intertidal invertebrates be successfully collected ahead of the dredge pipeline and placed on new fill material behind the dredge pipeline? If so, does this result in quicker recovery of the invertebrate population density to pre-project levels?
- At what water depth and burial depth do coquina clams and mole crabs overwinter in offshore areas and what is the timing of the migration?

Construction activities may adversely affect sea turtles by placing obstacles on the beach that interfere with nesting and by altering natural beach physical characteristics (through compaction and potential escarpment formation) conducive to normal nesting and incubation. The project area provides important habitat for a diversity of fish and wildlife resources. The intertidal and near shore environments support a variety of fishery resources. Area beaches provide feeding, roosting, and nesting sites for shorebirds as well as important feeding and resting areas for other migrating birds.

Below are five negative environmental impacts resulting from beach nourishment and possible solutions. Solutions will likely gradually be reached by maintaining an open dialog and having our agencies work in collaboration toward mutually agreed goals. It is possible to partner with other projects on solutions. Solutions should be applied where they make the most sense. If one project does not have a solution opportunity in one area, it may work cooperatively with another project. It is our hope that as this process continues, solutions can be developed for all the impacts, so that by the time a final report is needed all potential problems have been resolved. We consider this identification of impacts and suggested solutions as a first step toward reaching that goal.

Impact #1: Reduction in density of benthic invertebrates such as mole crabs that reduce the forage base for surf zone fish and birds such as oystercatcher and piping plover on the nourished beach

Solution: Avoid impact by using reef ball or other environmentally benign breakwaters far

enough from the beach to provide new habitat. In some instances a benign breakwater may allow for beach accretion without the need for nourishment. In other instances nourishment may be necessary, but the breakwater may reduce erosion to a very low rate so that nourishment would only become necessary after many years.

Impact #2: Potential to impact sea turtle nesting success

Solution: Avoid impact by using compatible sand, not creating escarpments or compaction problems and observing nesting moratorium from May 1 - Nov 15.

Impact #3: Potential to impact seabeach amaranth

Solution: Observe a moratorium during the growing season from June through October. Support studies of the plant especially in regards to seeds and soil requirements. In some instances seabeach amaranth responds positively to nourishment. It appears that by learning more about the plant it may be possible to avoid negative impact and even enhance this plant. For example funding may be provided to conduct applied research on this topic.

Impact #4: Reduction in density of benthic invertebrates that provide forage for fish at the borrow site

Solutions: Avoid impact by using reef ball or other environmentally benign breakwaters far enough from the beach to provide new habitat thereby avoiding the need for borrow sites. In some instances a benign breakwater may allow for beach accretion without the need for nourishment. In other instances nourishment may be necessary, but the breakwater may reduce erosion to a very low rate so that nourishment would only become necessary after many years.

Impact #5: Potential to impact shorebird and colonial waterbird nesting success

Solution: Observe nesting moratorium for piping plover from April 1 - July 30. Create, enhance or protect nesting habitat elsewhere.

The Service appreciates the opportunity to provide these comments. Please advise us of any action taken by the Wilmington Corps District. If you have questions regarding this letter, please contact Mike Wicker at 919-856-4520, ext. 22 or by e-mail at mike_wicker@fws.gov.

Sincerely,

Tom Augburger x21
For
Garland B. Pardue, Ph.D.
Ecological Services Supervisor



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

September 12, 2013

Mr. Eric Gasch
Planning and Environmental Branch
Wilmington District, U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403

Subject: Request for Informal Consultation
Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS)
Bogue Banks Coastal Storm Damage Reduction Project

This is in response to your letter requesting informal consultation concerning the U.S. Army Corps of Engineers' (Corps) Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS) for Bogue Banks Coastal Storm Damage Reduction Project (CSDR) (August 2013), and the draft Biological Assessment (BA) (Appendix F of the DEIS). The Corps provided the DEIS for the Bogue Banks project by letter dated August 2, 2013. The letter also requested initiation of formal consultation on the project. In a letter dated August 20, 2013, the Corps rescinded their August 2 letter, and instead requested concurrence under continuing informal consultation that began over ten years ago. The U.S. Fish and Wildlife Service (Service) has reviewed the DEIS and draft BA, and has several comments for your consideration. These comments are submitted in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). We look forward to working with you on a final Fish and Wildlife Coordination Act (FWCA) Report.

Project Area, Proposed Activities, and Anticipated Impacts

The project area is Bogue Banks Beach and the adjacent Atlantic Ocean. Waters of the Atlantic Ocean, Beaufort Inlet and parts of Bogue Inlet and Bogue Sound are classified as SB. According to the DEIS, the purpose of this study is to evaluate coastal storm damage reduction at Bogue Banks, a 25.4-mile long barrier island located on North Carolina's central coast in Carteret County. The study team integrated representatives of Federal, State, and local governments, in the effort to identify cost-effective, publicly acceptable, and environmentally and technically sound alternatives to reduce damages within the towns and to the adjacent shoreline. The DEIS does not identify a Least Environmentally Damaging Practicable Alternative (LEDPA), which is required by the Clean Water Act.

Instead, the DEIS identifies a National Economic Development (NED) plan, that maximizes net benefits to the nation through reduction of future storm damages. The NED plan (preferred alternative #9) consists of an 119,670-foot (22.7 miles) long main beach fill, with a consistent berm profile across the entire area, and dune expansion in certain portions (approximately 5.9 miles of the project). The main beach fill is bordered on either side by a 1,000-foot tapered transition zone berm. Material for the project is proposed to be dredged from three offshore borrow locations (Y, U, and Q2). The project is proposed to be renourished as often as every three years following initial construction, in order to build the project back up to the authorized dimensions.

The Service provided scoping comments to this project on February 14, 2000, provided a Planning Aid Report (PAR) on February 14, 2002, and drafted a FWCA Report in November 2002. A final FWCA report has not yet been produced. However, many of the recommendations of the 2002 draft FWCA report remain valid. The Service transmitted comments to the Corps by letter on January 8, 2004, and indicated that the Corps did not need to respond to all of the Conservation Measures and Recommendations in Section 10 of the Draft FWCA report. Instead, the 2004 letter recommended that the Corps focus on a subset of measures from that report. Among others, this subset of measures included:

- A recommendation that the construction or renourishment interval be greater than three years. A six year interval was proposed in the January 8, 2004 letter, although we currently recognize that such a long interval may not be feasible.
- The investigation of the potential to collect intertidal invertebrates such as *Donax* and *Emerita* immediately prior to beach nourishment activities, holding them, and then restoring those collected individuals in the new fill material behind the dredge pipeline. The January 8, 2004 letter recommends that the Corps investigate whether this action would result in a quicker recovery of the invertebrate population densities.
- A recommendation that beach compatible sand be used to avoid impacts to sea turtle nesting success.

Federally Protected Species

The Service has reviewed available information on federally-threatened or endangered species known to occur in Carteret County. Our review indicates that several species may occur in the project area, including the West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), roseate tern (*Sterna dougallii dougallii*), seabeach amaranth (*Amaranthus pumilus*), and the loggerhead (*Caretta caretta*), leatherback

(*Dermochelys coriacea*), Kemp's Ridley (*Lepidochelys kempii*), Hawksbill (*Eretmochelys imbricata*), and green (*Chelonia mydas*) sea turtle. Of the five sea turtle species, the loggerhead, leatherback, and green sea turtle may nest in the project area. The ESA Section 7 evaluation can be limited to these three turtle species. The project area includes portions of Critical Habitat Unit NC-10 for wintering piping plovers, as described on page 35 of the DEIS, in Section 4.02.7 of the Draft BA, and in 50 CFR Part 17 (66 FR 36038).

The Corps has made a determination of May Affect, Not Likely to Adversely Affect the piping plover, seabeach amaranth, and loggerhead, leatherback, and green sea turtle. The Corps also determined that the proposed project is Not Likely to Adversely Modify critical habitat for the piping plover. For the West Indian manatee and the roseate tern, the Corps has made a No Effect determination in the draft BA. At this time, the Service cannot concur with the Corps' determination, particularly for sea turtles and the piping plover.

Table 2.4 on page 33 of the DEIS incorrectly lists red knot (*Calidris canutus rufa*) as endangered. A determination to list the red knot has not yet been made by the Service, although it is a candidate species. As discussed further below, the Service recommends that potential impacts to the red knot be included in the final BA. Similarly, the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) is listed in the DEIS as a Federal Species of Concern (FSC), when in fact, the Carolina Distinct Population Segment has been listed by the National Marine Fisheries Service as endangered. These corrections should be made in the Final EIS.

West Indian Manatee

Manatees move along the Atlantic Coast during summer months and are seasonal transients in North Carolina, primarily from June through October. Manatees may be found in water over one meter (3.3 feet) deep. The species moves extensively when in North Carolina waters and past occurrence records cannot be used to precisely determine the likelihood that it will be present at a particular construction site. Manatees may migrate through the project area during the warmer months of the year, primarily from June through October.

The Corps has committed to implementing precautionary measures for avoiding impacts to manatees from vessels during construction activities, by following the Service's "Guidelines for Avoiding Impacts to the West Indian Manatee." The Service concurs with the Corps' No Effect determination in the draft BA for the West Indian manatee.

Roseate Tern

The roseate tern (*Sterna dougalii dougalii*) is a medium-sized, colonial-nesting, marine waterbird with a deeply-forked tail. The roseate tern is a specialized plunge-diver, feeding on small marine fish. It is adapted for fast flight and relatively deep diving and often submerges completely when diving for fish. This species is distributed worldwide in a variety of coastal habitats. The North American subspecies is divided into two separate breeding populations, one in the northeastern U.S. and Nova Scotia, and one in the southeastern U.S. and Caribbean. Wintering areas are concentrated along the north and northeastern coasts of South America. It is not known if these two populations winter in proximity to each other. The roseate tern was listed as endangered in northeastern North America and threatened in the Caribbean and Florida in 1987 in response to nesting habitat loss, competition from expanding gull populations, and increased predation. Although both populations experienced severe population declines, it is believed that the northeastern breeding population is under greater threat. Roseate terns breed in colonies almost exclusively on small offshore islands, rarely on large islands. The northeastern colonies are on rocky offshore islands, barrier beaches, or salt marsh islands. The Caribbean birds nest in relatively open areas, often with no cover nearby. There is little information on the habitat of the wintering range. Some birds have been found roosting on sandbars or beaches at river mouths, estuaries, or ocean front.

Because the species' presence in the project area is quite limited, the Service concurs with the Corps' No Effect determination in the draft BA for the roseate tern.

Seabeach Amaranth

Seabeach amaranth, an annual plant, exists adjacent to inlets, along beaches between dunes and the high tide line, and in areas of extreme overwash. The plant helps to trap sand and build dunes. The species is listed as threatened by both the federal government and the State of North Carolina. Suitable habitat for this plant occurs in the project area. Seabeach amaranth begins to flower as soon as plants have reached sufficient size, sometimes as early as June, but more typically commencing in July and continuing until the death of the plant in late fall. Seed production begins in July or August and peaks in September during most years, but continues until the death of the plant. The proposed work period would place sand on the beach when only seeds are present. Sediment placement may bury seeds on the beach and delay germination the following year, but the seeds are likely to remain viable and may germinate when the imported sand washes away. The main long-term threat to this plant on Bogue Banks would be an increased frequency of large-scale sediment placements. As sea level continues to rise, major portions of the beach may need additional sand on an annual basis. If buried seeds are not given an opportunity to germinate and produce seeds, the population of the threatened plant on Bogue Banks could be reduced in the future.

The Service recommends that the Corps commit to conducting surveys for seabeach amaranth both before and for three years after sediment placement in order to avoid direct burial and to monitor recovery of the plant (initial construction and all maintenance events). If this commitment is added to Section 5.00 of the draft BA, then the Service will be able to concur with the Corps determination that the proposed project May Affect, but is Not Likely to Adversely Affect seabeach amaranth.

Piping Plover

Piping plovers, designated as federally threatened, are known to occur in the project area. Designated Critical Habitat Unit NC-10 for the piping plover (as described in 50 CFR Part 17) is located on the west end of Bogue Banks. North Carolina is the only state where the piping plover's breeding and wintering ranges overlap and the birds are present year-round. Plovers may nest in the project area during the summer months, and overwinter in the project area during the winter months. Piping plovers from the federally endangered Great Lakes population as well birds from the threatened populations of the Atlantic Coast and Northern Great Plains overwinter on North Carolina beaches. Overwintering plovers may arrive as early as July, although most individuals arrive in early to mid-fall. Studies of wintering piping plovers indicate that they spend most of their time foraging on worms, fly larvae, beetles, crustaceans, molluscs, and other invertebrates (Bent 1929, Nicholls and Baldassarre 1990). In late February, piping plovers begin leaving the wintering grounds to migrate back to breeding sites. Northward migration peaks in late March, and by late May most birds have left the wintering grounds. Typically, piping plovers arrive on their breeding grounds in late March or early April. They nest above the high tide line on coastal beaches; on sand flats at the ends of sand spits and barrier islands; on gently sloping foredunes; in blowout areas behind primary dunes (overwashes); in sparsely vegetated dunes; and in overwash areas cut into or between dunes. The species requires broad, open, sand flats for feeding, and undisturbed flats with low dunes and sparse dune grasses for nesting. Following establishment of nesting territories and courtship rituals, the pair forms a depression in the sand, where the female lays her eggs. By early September both adults and young depart for their wintering areas.

As proposed in the DEIS, the initial construction of the preferred alternative is proposed to take place during the winter months (November 15 to March 31), which may adversely affect overwintering piping plovers. The Service does not agree with the statements in Section 4.02.7 d.(1) and (2) (no page numbers) that since only a portion of the beach on Bogue Banks will be nourished at any given time during pump-out, adjacent habitat is still available, and that recovering foraging habitat is available in the project area for the duration of construction. Studies show that recently nourished areas will not provide adequate forage for months, if not years after the nourishment project. In addition, the proposal by the Corps is to nourish the entire beach in one work season, and once an area

has been nourished, it will likely not provide suitable foraging habitat for the remainder of the winter and spring.

The Service is also concerned about the effect of sediment compatibility on the foraging habitat of the piping plover and other shorebirds. Too much large or fine-grained material or too much carbonate may make the beach substrate inhospitable for their prey species. Beach invertebrates live in the spaces between sand grains. The swash zone is dominated by mole crab (*Emerita talpoida*) and coquina clam (*Donax sp.*) which serve as the primary prey base for piping plover and other shorebirds, surf zone fish, and crabs. The health of the *Emerita* and *Donax* populations is closely linked with the sediment characteristics of the beach, and the availability of natural seawaters surging up and down the beach-face. The use of sediment matching the native beach would facilitate the recovery of these organisms. The Service recommends that Corps ensure that all sediment placed on the beach is similar to the historic, native beach in sand grain size, density, calcium carbonate content, shear resistance, and color. The most effective way to ensure compatibility would be for the Corps to commit to meet the NC Sediment Criteria (in Section 5.00 of the draft BA).

Each construction or maintenance event should start at the southern project limit and move northward in order to avoid potential impacts to nesting piping plovers. All construction for shaping the beach within the southern mile of the project area should be completed by March 1 and all construction equipment removed from this area. Equipment access to the beach should be within the day's work area or as close as possible, in order to minimize impacts from movement of heavy equipment along other stretches of beach. The placement of dredge pipelines and beach construction may disrupt wintering shorebirds, including the piping plover. To address this concern, the Corps should coordinate with the Service and North Carolina Wildlife Resources Commission (NCWRC) prior to mobilization and demobilization of the pipeline to determine the best location for the pipeline route.

Finally, we recommend that the Corps' commitments include a visual survey to be conducted each morning in the area of work for each day, to determine if piping plovers are present. If plovers are present in the work area, careful movement of equipment in the cold, early morning hours should allow those individuals to move out of the area. With these measures, potential impacts to wintering piping plovers are likely to be avoided, to the maximum extent practicable.

With the conservation measures proposed in the draft BA and those requested by the Service in the above paragraph, the Service would concur that the proposed project may affect, but is not likely to adversely affect the piping plover. The proposed project may modify, but is not likely to adversely modify, designated wintering critical habitat of the piping plover in the project area.

Sea Turtles

Sea turtle nesting habitat is present within the proposed project area. While all five Atlantic sea turtles are protected by the ESA and may occur in the coastal waters of North Carolina, we believe that Section 7 consultation can be limited to a consideration of the leatherback, loggerhead, and green sea turtles. The leatherback sea turtle is listed as endangered, while the loggerhead and green sea turtle are listed as threatened. Sediment placement on the beach may have both direct and indirect impacts on sea turtle reproduction. The most important aspects of any beach construction effort are the construction schedule and the compatibility of the material imported for beach fill. Disposal operations and subsequent grading during the sea turtle nesting and incubation season (May 1 through November 15) may result in the burial or crushing of nests or hatchlings or loss of sea turtles through disruption of nesting activity.

The Corps should ensure that all sediment placed on the beach is similar to the historic, native beach in sand grain size, density, calcium carbonate content, shear resistance, and color. The most effective way to ensure compatibility would be for the Corps to commit (in Section 5.00 of the BA) to meet the NC Sediment Criteria Rule, and also commit to using material which is compatible in color. Since the DEIS (page 89) currently estimates that the overall project (initial construction and all maintenance events) would utilize only about 47% of the total volume available at the three borrow sites, we recommend that the Corps determine whether there would be enough sand for the overall project if the NC Sediment Criteria Rule is met.

In order to ensure quality sea turtle nesting habitat over the entire duration of the project, the sediment monitoring program should have objective criteria for rejecting fill material based on color. Wet sand with a value of less than 5 is darker than what the Service considers acceptable for normal sea turtle incubation, because the darker color may cause higher incubation temperatures and greatly skew the sex ratio towards female (Mrosovsky et al. 1984, Mrosovsky & Provanha 1992). The Service recommends that material with a Munsell color value of less than 5 (for wet sand) not be considered compatible. A remediation plan should be developed to correct any placement of incompatibly-colored sand on the beaches.

In Item 6, Section 5.00 of the draft BA, the Corps commits to monitoring of sea turtle nesting activities in beach nourishment areas. However, the length of monitoring has not been provided. The Service recommends that Item 6 be modified to reflect that sea turtle nesting activities will be monitored annually for the life of the project.

Finally, the BA should also consider potential impacts to critical habitat for the loggerhead turtle. The Service is proposing to designate portions North Carolina beaches

as critical habitat for the Northwest Atlantic (NWA) population of loggerhead sea turtles. North Topsail Beach is located within Critical Habitat Unit LOGG-T-NC-03 (Topsail Island, Onslow and Pender Counties). From the Federal Register Notice (see <http://www.regulations.gov/#!documentDetail;D=FWS-R4-ES-2012-0103-0001>), this unit consists of 35.0 km (21.8 miles) of island shoreline along the Atlantic Ocean. The island is separated from the mainland by the Atlantic Intracoastal Waterway, Chadwick Bay, Alligator Bay, Goose Bay, Rogers Bay, Everett Bay, Spicer Bay, Waters Bay, Stump Sound, Banks Channel, and salt marsh. The unit extends from New River Inlet to New Topsail Inlet. The unit includes lands from the MHW line to the toe of the secondary dune or developed structures.

With the conservation measures proposed in the draft BA and those requested by the Service in the above paragraph, the Service would concur that the proposed project may affect, but is not likely to adversely affect the loggerhead, leatherback, and green sea turtle. The proposed project may modify, but is not likely to adversely modify, proposed critical habitat of the loggerhead in the project area.

Red Knot

The Service encourages consideration of the red knot (*Calidris canutus rufa*), a candidate species, in project planning. Candidate species are species that the Service has determined warrant listing under the Endangered Species Act and await formal listing. These species receive no substantive or procedural protection under the Endangered Species Act until formal listing. The red knot was designated as a candidate species in 2006. At nine to ten inches long, the red knot is a large, bulky sandpiper with a short, straight, black bill. During the breeding season, the legs are dark brown to black, and the breast and belly are a characteristic russet color that ranges from salmon-red to brick-red. Males are generally brighter shades of red, with a more distinct line through the eye. When not breeding, both sexes look alike—plain gray above and dirty white below with faint, dark streaking. As with most shorebirds, the long-winged, strong-flying knots fly in groups, sometimes with other species. Red knots feed on invertebrates, especially bivalves, small snails, crustaceans, and, on breeding grounds, terrestrial invertebrates.

Coastal Barrier Resources Act

Section 2.14 on pages 42 and 43 of the DEIS discuss the Coastal Barrier Resource System and Coastal Barrier Resource Areas (CBRA) protected under the Coastal Barrier Improvement Act of 1990. The Fort Macon Unit (NC-04P) and the Roosevelt Natural Area (NC-05P) are both designated “P” (otherwise protected area or OPA). OPAs are generally comprised of lands held by a qualified organization primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes. The boundaries of these units are generally intended to coincide with the boundaries of

conservation or recreation areas such as state parks and national wildlife refuges. The only Federal spending prohibition within OPAs is the prohibition on Federal flood insurance. Since both units are owned by the State of North Carolina, and both hold the designation of “P,” the Service agrees that no further actions or information regarding CBRA is required for this project.

Other Service Concerns and Recommendations

Determination of LEDPA: The DEIS identifies a “Tentatively Selected Plan” (TSP) based upon the determination of the NED plan, which is the plan that “maximizes net benefits to the nation through reduction of future storm damages.” There is no mention of the identification of a LEDPA for the project. Appendix L of the DEIS does check “yes” next to the box stating “The discharge represents the least environmentally damaging practicable alternative...,” however, there is no information or data to support this supposition. As recommended in our February 14, 2000 scoping comments, the Service recommends that the Corps determine a LEDPA for the project and present that alternative for consideration in the FEIS and BA. The LEDPA may be the same alternative as the NED; however the information used to make this determination was not provided in the DEIS. Along with determining the LEDPA amongst the 10 proposed alternatives, compliance with Section 404(b) of the CWA requires avoidance and minimization of impacts. Increasing the proposed interval between maintenance events and using sediment that meets the NC Sediment Criteria are minimization measures that would also benefit fish and wildlife resources in the project area.

As stated on Page 6 of the November 2002 Draft FWCA, the Service’s Mitigation Policy (January 23, 1981, Federal Register v. 46, n. 15, pp. 7644-7663) allows for the Service to support a proposed project if the following criteria are met:

- 1) The project is ecologically sound;
- 2) The **least environmentally damaging alternative** is selected;
- 3) Every reasonable effort has been made to avoid or minimize damage or loss of fish and wildlife resources and uses;
- 4) All important recommended means and measures have been adopted with guaranteed implementation to satisfactorily compensate for unavoidable damage or loss consistent with the appropriate mitigation goal; and
- 5) For wetlands and shallow water habitats, the proposed activity is clearly water dependent and there is a demonstrated public need.

In addition, we note that the Service recommended in the February 14, 2002 cover letter to the PAR that the Corps “give fish and wildlife resources equal consideration with other aspects of this project in the development and evaluation of possible alternatives.” We

continue to recommend that factors other than economic be given equal weight in consideration of alternatives.

Sediment compatibility: The draft BA states in Section 4.02.3 (no page numbers) that only beach compatible sediment will be placed on the beach, but does not state how compatibility will be determined. Section 5.06.1.1 of the DEIS states that although the sediment in the borrow areas appears to comply for the most part with the North Carolina Sediment Criteria Rule (15A NCAC 07H .0312: Technical Standards for Beach Fill Projects), the Corps will “continue to use its best engineering judgment, accompanied by appropriate sampling and monitoring, to determine sediment compatibility.”

Appendix C (the Geotechnical Engineering Section) of the DEIS provides sediment compatibility data and analysis for the three borrow areas (Y, U, and Q2). Although the number of sediment samples collected from the three borrow areas are rather small, and color data was not provided, the available data indicates that both borrow area U and Q2 appear to have sediment compatible with the native beaches, when applying the NC Sediment Criteria Rule. We note that it is difficult to determine the compatibility with respect to the amount of calcium carbonate, since a visual measurement of shell was used rather than a measurement of calcium carbonate. Carbonate material breaks down faster than quartz and other inorganic sediments, making it more susceptible to chemical dissolution (King et al. 2002). Carbonate material that is sand-sized or finer will be intermixed with the quartz sediments and not sort out with wave reworking of the fill. Over time, this material may break down and/or dissolve, forming a carbonate cement that hardens the beach. Cementation of the beach can significantly impair a sea turtle’s ability to dig a nest, and the sea turtle hatchling’s ability to emerge from the nest chamber. A higher than background coarse-grained or carbonate fraction also inhibits the burrowing of beach infauna and the foraging of shorebirds (Peterson et al. 2000).

Aside from carbonate and color, material in borrow area Y appears to be compatible with the exception of the percentage of gravel-sized material (≥ 4.76 mm), which is close to 8%, and approximately 7.4 to 7.5% higher than the average native beach percentage. Because the Corps is not currently following the NC sediment criteria, the percent gravel is not being considered in determining compatibility. However, a high percentage of large material may cause significant impacts to the native beach fauna and sea turtle nesting, and may also be expensive to remediate. Since 2000, there have been significant incidents with the placement of large materials on North Carolina beaches. Examples include the placement of rocky, muddy and shell-strewn sand onto Bogue Banks, placement of rocky material on Oak Island's beach, and placement of sand strewn with rocks and road building material on Holden Beach. Those incidents and others prompted the state to develop the NC Sediment Criteria Rule.

Finally, the Service is concerned with a lack of consistency in the applicability of the NC Sediment Criteria Rule. It is unclear how the Corps may hold itself to one standard of sediment compatibility, and expect private permittees to meet a higher standard. The Service is aware of several privately-funded beach nourishment projects currently being conducted or proposed along the coast of North Carolina, some of them in the same project area. It is difficult to afford the Corps Civil Works program one level of compliance for sediment compatibility, when we expect a greater level of compliance from private applicants. The Service is concerned that allowing the Corps to utilize a different level of compliance will make it more difficult to uphold the NC Sediment Criteria for private permittees. For all of the reasons stated above and in the sections dealing with sea turtles and piping plover, the Service recommends that the Corps commit to meet the NC Sediment Criteria Rule, and also commit to using material which is compatible in color.

Non-Structural Alternative: On Pages 72 and 73 of the DEIS, Table 5.8 provides a comparison of alternatives, and the potential impacts to the marine and terrestrial environment and to threatened and endangered species. The table indicates that the no action alternative and a non-structural alternative (Alternative 10) would have similar environmental consequences for threatened and endangered species. The non-structural alternative entails the buyout and demolition of vulnerable properties, which would allow natural processes to occur along large portions of the beach. The no action alternative assumes that the Federal project would not be conducted, but other actions may be taken. The DEIS does not provide enough information to support the statement that the non-structural alternative would result in a “long-term decrease in sea turtle nesting habitat and nest success due to beach erosion, scarping, and scouring of the dune.” The DEIS also does not provide any information to support the statement that the non-structural alternative would cause a “risk of increased beach lighting impacts to sea turtles as the dune erodes,” or the supposition that both seabeach amaranth and piping plover habitat would suffer long-term losses due to beach erosion. The resumption of natural beach processes may allow the movement of dunes and beach shoreward, which, in the long-term, could provide ample habitat for sea turtle nests, piping plovers, and seabeach amaranth. We recognize that this alternative is not preferred because of the failure to provide storm damage protection for structures on the beach, and because it is currently not economically feasible. However, we recommend that the language of the table be revised to reflect the more likely long-term benefits of allowing natural processes to resume on Bogue Banks.

Maintenance Intervals: Section 5.08.02 on page 75 of the DEIS states that a 3-year maintenance interval was chosen because of the net costs and benefits of the nourishment activities. However, a longer maintenance interval of 4 or 5 years would be less-damaging, and allow the benthic infauna longer time to recover both on the beach and in the borrow areas. A longer interval between maintenance events would be a

minimization measure under Section 404(b)(1) of the Clean Water Act. A longer maintenance interval would also require a smaller amount of compatible borrow material for the life of the project. We recommend that the final EIS consider the non-economic benefits of longer maintenance intervals.

Lack of Monitoring: The Service is concerned with a lack of monitoring for this project, particularly for seabeach amaranth and piping plover. The Service recommends that the additional commitments be added to Section 5.00 of the BA:

1. Conducting surveys for seabeach amaranth both before and for three years after sediment placement in order to avoid direct burial and to monitor recovery of the plant (initial construction and all maintenance events);
2. Conducting visual surveys each morning in the area of work for that day, to determine if piping plovers are present and allow those individuals to move out of the area.
3. Monitoring of sediment each day as it is being placed on the beach to ensure that it is similar to the existing sediments on the beach.

Sea Level Rise: The Service would be concerned with the acceleration of nourishment schedules based upon increased storm surge or sea level rise, or other factors. The Service recommends that beach nourishment for this project be conducted no more often than once every five years.

Summary

1. At this time, the Service cannot concur with the Corps' determination of May Affect, Not Likely to Adversely Affect (MA-NLTAA) for the piping plover, and loggerhead, leatherback, and green sea turtles. More information is needed on the compatibility of the sediment to be dredged and placed on the beach, including sand grain size (percent fines and percent granular and gravel), density, shear resistance, and color. In addition, no monitoring is proposed to be conducted during construction or maintenance events for piping plover, and the length of monitoring for sea turtle nests is not clear in the draft BA.
2. The Service recommends that the proposed Critical Habitat for the Loggerhead Sea Turtle and the candidate species red knot (*Calidris canutus rufa*) be added to the list of considerations under Section 7 of the Endangered Species Act. Consideration of proposed critical habitat and candidate species in project planning is prudent and should not delay or impede decision-making.

3. The Service recommends that the Corps commit to using only sediment that complies with the NC Sediment Criteria Rule, and also has a wet Munsell color of 5 or greater.

Specifically, the Service recommends that the Corps commit to meet the following criteria:

- The average percentage by weight of fine-grained sediment (less than 0.0625 millimeters) in each borrow site shall not exceed the average percentage by weight of fine-grained sediment of the recipient beach characterization plus five (5) percent.
- The average percentage by weight of granular sediment (greater than or equal to 2 millimeters and less than 4.76 millimeters) in a borrow site shall not exceed the average percentage by weight of coarse-sand sediment of the recipient beach characterization plus five (5) percent.
- The average percentage by weight of gravel (greater than or equal to 4.76 millimeters) in a borrow site shall not exceed the average percentage by weight of gravel-sized sediment for the recipient beach characterization plus five (5) percent.
- 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.

Use of material that meets the above criteria and is similar in color to the native beach would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize potential impacts to piping plover, red knot, and sea turtles, as well as beach invertebrates, surf fishes, and other shorebirds. The Service recommends that Section 5.00 of the BA include a commitment to monitoring sediment each day as it is being placed on the beach to ensure that it is similar to the existing sediment on the beach.

4. The Service recommends that Section 5.00, Item 6 of the draft BA be modified to reflect that sea turtle nesting activities will be monitored annually for the life of the project.

5. The Service recommends that Section 5.00 of the BA include a commitment to conduct visual surveys each morning in the area of work for that day, to determine if piping plovers are present and allow those individuals to move out of the area.

6. The Service recommends that Section 5.00 of the BA include a commitment to conduct surveys for seabeach amaranth both before and for three years after sediment

placement in order to avoid direct burial and to monitor recovery of the plant, for the life of the project.

7. Each construction or maintenance event should start at the southern project limit and move northward in order to avoid potential impacts to nesting piping plovers. All construction for shaping the beach within the southern mile of the project area should be completed by March 1 and all construction equipment removed from this area. Equipment access points should be within the day's work area or as close as possible, to minimize impacts from movement of heavy equipment along other stretches of beach. Also, the Corps should coordinate with the Service and North Carolina Wildlife Resources Commission (NCWRC) prior to mobilization and demobilization of the pipeline on the beach, to determine the best location for the pipeline route.

8. The Service recommends that the Corps investigate the necessary minimum maintenance interval for storm damage reduction, which may be greater than 3 years. A longer interval between maintenance events would be a minimization measure under Section 404(b)(1) of the Clean Water Act, and would minimize potential impacts to piping plover, red knot, and sea turtles, as well as beach macroinvertebrates, surf fishes, and other shorebirds. A longer maintenance interval would also require a smaller amount of compatible borrow material for the life of the project. We recommend that the final EIS consider the non-economic benefits of longer maintenance intervals.

The Service appreciates this opportunity to comment. We look forward to working with you on a final FWCA report and final EIS and BA for this project. 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,



Pete Benjamin
Field Supervisor

cc:

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Maria Dunn, NC Wildlife Resources Commission, Wilmington

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March 10, 2014

Mr. Eric Gasch
Planning and Environmental Branch
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Subject: Request for Concurrence
Bogue Banks Coastal Storm Damage Reduction Project

This is in response to your February 14, 2014 letter, concerning the U.S. Army Corps of Engineers' (Corps) Bogue Banks Coastal Storm Damage Reduction Project (CSDR), and the February 2014 revised draft Biological Assessment (BA) (Appendix F of the DEIS). The Corps requested concurrence under section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543) with its determination of May Affect, Not Likely to Adversely Affect the piping plover, seabeach amaranth, and loggerhead, leatherback, and green sea turtles, and is Not Likely to Adversely Modify critical habitat for the piping plover, and proposed critical habitat for loggerhead sea turtles. The letter also provided responses to the Service's September 12, 2013 comments on the Integrated Feasibility Report and Draft Environmental Impact Statement (DEIS) for Bogue Banks CSDR, and the August 2013 draft BA.

For the West Indian manatee and the roseate tern, the Corps previously made a No Effect determination in the draft BA. The Service concurred with the effect determination for these two species in our September 12, 2013 letter.

Comments and Recommendations

1. In our September 12, 2013 letter, the Service recommended that the Corps use sediment that complies with the NC Sediment Criteria Rule, and has a wet Munsell color of 5 or greater. The Corps has disagreed with our recommendation, and believes that its criteria will result in compatible material. The Service continues to have concerns for applying one set of criteria to private beach nourishment projects and a different set of criteria to the Corps projects. However, we recognize that the Corps currently is not required to comply with the NC Sediment Criteria Rule.

The Corps has also stated that it will require the contractor be present and monitor the dredge discharge location and work zone continuously while the discharge is occurring, and that frequent visual inspections of the beach placement will be conducted by a government inspector and Wilmington District technical staff.

2. The Service recommended that the BA be modified to reflect that sea turtle nesting activities will be monitored annually for the life of the project. The Corps responded that it doesn't conduct sea turtle nest monitoring, but pointed out that the local communities monitor sea turtle nesting activities on annual basis in the project area. The Service recognizes the extensive local and regional monitoring efforts, and agrees that the Corps does not need to duplicate them.

3. The Service recommended that the BA include a commitment to conduct visual surveys each morning in the area of work for that day, to determine if piping plovers are present and allow those individuals to move out of the area. In response, the Corps has added language stating that personnel involved in the construction process along the beach will be trained in recognizing the presence of piping plovers and red knots prior to the initiation of the work on the beach. A contractor representative authorized to stop or redirect work shall be responsible for conducting a shorebird survey prior to 9 am each day of sand placement activities.

4. The Service recommended that the BA include a commitment to conduct surveys for seabeach amaranth both before and for three years after sediment placement in order to avoid direct burial and to monitor recovery of the plant, for the life of the project. In response, the Corps has proposed to conduct seabeach amaranth surveys for five years following the initial placement of sediment. Subsequent monitoring will depend on the results of the initial monitoring. The Corps made this commitment in the letter to the Service; however, this commitment has not been incorporated into the EIS or BA. The Service recommends that this commitment be included in the environmental commitments for the project.

5. The proposed construction window for the project is December 1 to March 31, to avoid impacts to manatees, nesting sea turtles, and nesting piping plovers. However, the revised BA includes a discussion of potential direct impacts to sea turtles, and actions that will be taken by the Corps, if construction extends into the nesting season. We acknowledge the discussions in the BA, but please be aware that our concurrence on the determinations made by the Corps for this project do not include consideration of work within the sea turtle nesting or piping plover nesting seasons. Extension of the construction window into the nesting season is likely to require formal consultation.

Service Position

With the commitments made by the Corps in the BA, as stated above, and the addition of a commitment to the BA to monitor seabeach amaranth for at least 5 years after the initial placement of sediment, the Service can concur with the Corps determination of May Affect, Not Likely to Adversely Affect (MA-NLTAA) for the piping plover, seabeach amaranth, and loggerhead, leatherback, and green sea turtle. We also concur that the project May Affect, but is Not Likely To Adversely Affect the red knot, and that the project is Not Likely to Aversely Modify critical habitat for piping plovers and proposed nesting critical habitat for loggerhead sea turtles.

The Service appreciates the continued opportunity to provide input on this project. 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,



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