APPENDIX E

DRAFT EIS COMMENTS AND RESPONSES

Bogue Banks Master Beach Nourishment Plan Final Environmental Impact Statement Appendix E

Comments Received on Draft Environmental Impact Statement (DEIS) and Summary Table of Comments and Responses

I. Summary Table of Contents on DEIS and EIS Updates

II. Federal Agency Comments

- A. U.S. Department of Interior (DOI Stanley)
- B. U.S. Environmental Protection Agency (EPA Farmer)
- C. National Marine Fisheries Service (NMFS Fay)

III. State Agency Comments

- A. NC Department of Administration State Environmental Review Clearinghouse (NCDOA Best)
 - a. NC Department of Environmental Quality (DEQ Hardison)
 - b. Shellfish Sanitation & Recreational Water Quality (Jenkins)
 - c. Division of Waste Management (Tatum)
 - d. Solid Waste Section (Hammonds)
 - e. Natural Heritage Program (Butler)
- B. NC Division of Coastal Management (NCDCM Slagel)
- C. NC Department of Cultural Resources State Historic Preservation Office (SHPO Gledhill-Early) (No Comment)

Numb er	Nature of Comment (Summary)	Commenting Agency/Entity	Comment Type	FEIS Revised to Address Comment (Y/N)	FEIS Section	FEIS Page	Response to Comment
1	Pages 2-4 to 2-7 of the Draft EIS define "at risk" properties as those with seaward parcel boundaries within 25 feet of 2012 Mean High Water (MHW) line. However, page 20 of the Master Beach Nourishment Plan (MBNP) Summary Report indicates that SBEACH was run for the Level of Protection analysis using the most seaward line of development as digitized from 2011 aerial photography instead of the seaward parcel boundary. For consistency, the "at risk" properties as defined in the alternatives analysis could also use the most seaward line of development instead of the seaward parcel boundary.	NCDCM	At-Risk Properties	Y	2	2-4 to 2-7	Noted. See response to Item #2 below. The SBEACH analysis was completed to give the Towns/County a sense of what level storm the existing beach profile provides protection for currently (as well as what would have to be constructed to increase the storm level of protection) and to help select an economically viable storm level of protection to maintain as part of the Master Plan. More accurate analysis (documented in Item #2 below) were completed for the remainder of the engineering and EIS documentation. The text on Pages 2-4 thru 2-7 was clarified.
2	Page A-11 of Appendix J (Environmental Impact Summary Table) states that 226 oceanfront structures on Bogue Banks are projected to be at risk over the next 50 years without implementing the preferred alternative, but it is unclear whether this number of "at risk" structures is based on the seaward parcel boundaries or the seaward line of development. DCM believes the location of the actual development on a parcel is a better measure of risk than the seaward parcel boundary.	NCDCM	At-Risk Properties	Y	Appendix J	A-11	Noted. A presentation of the procedures to estimate properties and infrastructure at risk were discussed with NCDCM, NMFS, and USACE staff on July 24, 2017. The main reasons for utilizing various methods (analytical vs. modeling) to evaluate alternatives analyses is based on the fact that recent shoreline data/erosion rates have been extensively affected by the extent of nourishment activities completed since the early 2000s. Historical analytical shoreline rates (prior to 2004) were used for the No Action and Relocation/Abandonment alternatives while a combination of modeling/analytical techniques were used for the most accurate shoreline recession rates for each alternative considered for the entirety of the Bogue Banks shoreline. As for the use of the seaward boundary of the parcel to determine that a property was trisk, that decision was based on a couple of factors including: 1) it was used as a measurement as to when oceanfront parcels and infrastructure may be vulnerable and, 2) it was simpler to identify and quantify in a GIS analysis. Based on other work completed using SBEACH to evaluate storm shoreline recession during storm events, it was determined that planning for shoreline recession of 75-100' during storm events is fairly consistent. Applying this result to the seaward boundary of the parcels (assuming the shoreline is at the parcel boundary), gives a line that approximates or goes landward the first row of infrastructure. Therefore, it is believed that the current analysis of tracking when the shoreline reaches the parcel boundary is valid and if anything likely underestimates potential infrastructure at risk. After the discussion with NCDCM, NMFS, and USACE staff at the July 24, 2017 meeting, it was agreed the existing analytical and modeled analysis was appropriate.
3	Page 3-24; Table 3.5 of the Draft EIS: The NC Technical Standards for Beach Fill Rules (Sediment Criteria) were recently revised to allow the granular fraction of the fill material to exceed the granular fraction of the native beach by 10%. Previously, the rules limited the granular fraction to 5% above the native beach. This needs to be corrected throughout the Final Geotechnical Report and other draft EIS appendices as well	NCDCM	NC Sediment Criteria	Y	3	3-24	Noted. The corrections were not completed as the change of within 10% of native material was less restrictive than the previous criteria of within 5%. Many of the documents were created by others a number of years ago and original non-pdf files are not available and many of these people and companies are no longer in business. Discussions with NCDCM, NMFS, and USACE staff on July 24, 2017 confirmed that revision within the EIS itself would be adequate given these constraints.
4	Page 3-24; Table 3.5 of the Draft EIS: At the current Morehead City Harbor Ocean Dredged Material Disposal Site (ODMDS), Mound ID 0-48 is very close to exceeding the NC Sediment Criteria for fine material. This small mound is also surrounded by vibracores to be obtained and analyzed before using material from this mound.	NCDCM	Sediment Quality	Y	3	3-24	Noted. While close to the criteria for fines, the results do meet the criteria for that O-48. A review of the vibracores, pictures and sieve analyses were conducted with NCDCM, NMFS, and USACE staff on July 24, 2017. At the end of this meeting it was agreed the 0-48 mound was compatible and that additional testing would not be mandatory. Additional testing may be completed at the owner's discretion if timing works out to combined with other testing for "lower confidence" and "continence" mounds.
5	Page 3-24; Table 3.5 of the Draft EIS: At Area Y, Mound ID Y-120 exceeds the NC Sediment Criteria for gravel. Page 38 of the MBNP Summary Report also states that "Vibracores Y-120 and Y-90 are 1,000 feet apart and are located along a ridge; however, the sediment color is dark in color. This potential borrow area also exceeds the requirement set by NCAC for Gravel as shown in Table 3-20; therefore, would not be considered beach compatible." Page 25 of the Final Geotechnical Report also states that "an inspection of the samples shows that the gravel-sized material is smooth river rock, rather than shell, which is not desirable in placement on the beach." Due to incompatibility with native beach sediments, Mound ID Y-120 should be excluded from the proposed borrow areas.	NCDCM	Sediment Quality	Y	3	3-24	Noted. A review of some of the vibracores, pictures and sieve analyses were completed with NCDCM, NMFS, and USACE staff on July 24, 2017. At the end of this meeting it was agreed the Y-120/Y-90 borrow area was beach compatible and the gravel % had been extremely overestimated based on a sample from a 4 inch section of the Y-120 vibracore. Color was also agreed as compatible based on a review of the pictures. The subcontractor that completed the work was based in Florida which has much tighter color and compatibility requirements than NC and it was agreed that the subcontractor was overstating potential issues due to this fact.
6	For Vibracores Y-80/Y-75, Page 22 of the Final Geotechnical Report states that "Although the characteristics of the upper layer in cores Y- 80/Y-75 are defined herein, this area should be considered a low priority borrow area with a "C" ranking because there are insufficient vibracores to designate a reliable borrow area and most of the material appears to be of relatively poor quality." It is recommended for additional vibracores to be obtained and analyzed before using material from this mound.	NCDCM	Sediment Quality	N	Appendix A - Geotechnical Report	N/A	Noted. A review of the vibracores, pictures and sieve analyses were conducted with NCDCM, NMFS, and USACE staff on July 24, 2017. At the end of this meeting it was agreed the Y-70/80 borrow was beach compatible and met NC Sediment Criteria requirements. Color was also agreed to be compatible based on a review of the pictures. The subcontractor that completed the work was based in Florida which has much tighter color and compatibility requirements than NC and it was agreed that the subcontractor was overstating potential issues due to this fact. However, it was agreed the boundary of the borrow area would be revised to account for the 500 meter hardbottom buffer and that 1 to 2 additional vibracores would be collected and analyzed for compatibility before use for beach renourishment due to localized variability.
7	Page 3-27; Figure 3-8 of the Draft EIS: Within the proposed current ODMDS offshore borrow area, the small areas marked with a "c" to identify them as contingency borrow mounds do not have vibracore data. These small mounds should not be used without first obtaining vibracores and performing sediment analysis for each mound.	NCDCM	Sediment Quality	Y	3	3-27	Noted. At the July 24, 2017 meeting with NCDCM, NMFS, and USACE staff, it was agreed that additional vibracores would be collected at these mounds and verified for compatibility before use for beach renourishment.
8	Pages 19-21 of the Final Geotechnical Report note that Mound O-35 and Mound O-46 are considered "lower Confidence Mounds." Additional vibracores should be obtained and analyzed before using material from these mounds.	NCDCM	Sediment Quality	N	Appendix A - Geotechnical Report	N/A	Noted. At the July 24, 2017 meeting with NCDCM, NMFS, and USACE staff, it was agreed that additional vibracores would be collected at these mounds and verified for compatibility before use for beach renourishment.

9	Page 33; Table 5.1 of the Final Geotechnical Report shows Mound O-15 with a "B" ranking, indicating that additional vibracores should be obtained and analyzed before using material from this mound as well.	NCDCM	Sediment Quality	N	Appendix A - Geotechnical Report	N/A	Noted. A review of certain vibracores, pictures and sieve analyses were conducted with NCDCM, NMFS, and USACE staff on July 24, 2017. At the end of this meeting it was agreed the O-15 mound was compatible and that additional testing would not be mandatory. Additional testing may be completed at the owner's discretion if timing works out to combined with other testing for "lower confidence" and "continnency" mounds.
10	Page 33; Table 5.1 of the Final Geotechnical Report (Appendix A) shows O-48 the contingency mounds, and all of Area Y with a "C" ranking to indicate that these mounds are not recommended for use as a sand source for beach nourishment. Page 33 of the Cumulative Effects Statement (Appendix H) states that "Borrow Area Y and the ODMDS are the identified borrow sources for this project" Generally, the draft EIS and appendices need to be updated to clarify exactly which mounds and areas are being proposed for beach nourishment and where additional vibracores will be collected.	NCDCM	Sediment Quality	Y	5	33	Noted. All mounds and areas denoted as beach compatible will ultimately be utilized for the project. As stated in comment responses above, for areas denoted at "lower confidence" or "confingency" mounds, additional vibracoring and testing will be completed to verify compatibility before use for beach renourishment projects as agreed to at the July 24, 2017 meeting with NCDCM, NMFS, and USACE staff.
11	For some portions of Bogue Banks, the return interval between nourishment events will be greater than 3 years, but in anticipation of storm events, the project impact will likely occur every 2-3 years. The Draft EIS cites previous studies which have shown that avoiding peak recruitment periods and placing highly-compatible sediment on the beach allows recovery of benthic invertebrates and beach infauna within a couple of years. Page A-1 of the Environmental Impact Summary Table (Appendix J) also notes that "Although some overlap between the dredging footprint of successive events may occur, repeated dredging in the same footprint is not anticipated due to the relatively shallow and non-renewable nature of the deposits." Provided that peak recruitment periods are avoided, beach-compatible sand is placed on the beach, and dredging is performed as described in the Draft EIS, DCM Believes that impacts to benthic invertebrates and beach infauna will be minimized. However, given the 50-year timeframe and scope of the proposed Bogue Banks Master Beach Nourishment Plan, DCM is interested in discussing with State and Federal resource agencies ways to monitor these relatively frequent impacts.	NCDCM	Environmental Monitoring	Ν	N/A	N/A	As described in the Final EIS, all sand placement, dredging, and associated construction activities will adhere to a 16 November to 30 April environmental dredging window. Sand placement operations would avoid peak spring benthic invertebrate recruitment periods in NC [May through September (Hackney et al. 1996, Diaz 1980, Reilly and Bellis 1978)]; thereby reducing the duratior of direct impacts on intertidal beach benthic infaunal communities that constitute the prey-base for demersal surf zone fishes. The use of only sand that is compatible with the native beach would reduce the extent and duration of direct impacts on intertidal beach benthic infaunal communities, thereby reducing the extent and duration of indirect prey-base effects on surf zone fishes. The 50- year project would employ a recurring cycle of nourishment events to continuously maintain beach profile sand volumes along the managed reaches at a 25-year Level of Protection (LOP). The three management reaches are projected to require recurring maintenance nourishment to offset background erosion at approximate intervals of three (Emeraid Isle East) and six (Pine Knoll Shores and Indian Beach/Salter Path) years. Additional sand placement would be conducted to address storm-related losses, resulting in some accelerated nourishment cycles for the managed reaches over the 50-year project.
12	Page 4-42; Table 4.8 of the Draft EIS: Since a portion of the project area is Piping Plover Wintering Critical Habitat (Unit ID NC-10 Bogue Inlet) and all of Bogue Banks is designated Loggerhead Sea Turtle Terrestrial Critical Habitat (Unit ID LOGG-T-NC-01 Bogue Banks), formal consultation with the U.S. Fish and Wildlife Service (USFWS) will need to occur. It is our understanding that this consultation has commenced and is ongoing.	NCDCM	Section 7 Consultation	Y	1	1-12	Informal consultation with the USFWS has been ongoing through the PRT meetings and other channels of communication. To facilitate the consultation process, the USACE and BOEM, responsible for preparing a Biological Assessment (BA), described the status of listed species within the action area and presented their determinations as to whether or not the proposed action is likely to adversely affect each listed species. The USACE and BOEM consolidated their efforts into a single BA submitted to both the USFWS and NMFS on September 12, 2017. Submittal of the BA initiated formal Section 7 consultation, and both agencies are currently reviewing the BA under their purview to determine compliance pursuant to the Endangered Species Act. The USFWS has provided initial comments dated October 5, 2017 and indicated the placement of sand may be covered by the August 2017 Statewide Programmatic Biological Opinion. Further consultation is ongoing and will continue as needed.
13	Page 4-42: Table 4.8 of the Draft EIS: Since the nearshore ocean waters of the project area are designated as Loggerhead Sea Turtle Marine Nearshore Reproductive Critical Habitat (Unit ID LOGG-N-03 Bogue Banks and Bear Island), formal consultation with NOAA's National Marine Fisheries Service (NOAA-NMFS) will need to occur. It is our understanding that this consultation has commenced and is ongoing.	NCDCM	Section 7 Consultation	Y	1	1-12	See above response to comment #12.
14	DCM has also reviewed the letter submitted by NOAA-NMFS, dated June 21, 2017, and agrees with their concerns about hardbottom habitat, particularly with regard to Borrow Area Y: "The draft EIS suggests hardbottom habitats exist near the project area, especially the offshore borrow area located along Emerald Isle. It is likely these nearshore hardbottom habitats are ephemeral, meaning they are periodically covered and uncovered by natural sediment transport, and mapping across multiple seasons/years would be required to determine the exact location. The extent and complexity of these structural forms and their contributions to EFH within the project area should be more thoroughly described with mapping of hardbottom habitat neighboring the borrow area. Similarly, there are a number of artificial reef sites within the project area. The extent and complexity of these structural forms and their contributions to EFH within the project area should also be described. The NMFS believes dredging could significantly impact valuable hardbottom habitat and artificial reefs." Additionally, 15A NCAC 07H.0208(b)(12)(A)(N) requires 500 meter separation between high relief hardbottom communities and areas of dredging.	NCDCM	Hardbottom Habitat Impacts	Y	4, 5	4-11; 5-20	EFH consultation was formally initiated with NMFS on January 18, 2018, that included the submittal of an EFH Assessment also addressing hardbottom resources in Borrow Area Y. The proposed Area Y 90/120 borrow site is separated from the nearest identified hardbottom feature by a distance of ~1000 meters, thus indicating that dredging operations at the Y-90/120 site would not have any direct, indirect, or crumlative effects on hardbottom habitats or associated federally managed species. In the case of the Y-75/80 borrow site, the Y-80 vibracore point is exactly 500 m from the nearest identified hardbottom feature, thus indicating that a portion of the borrow site could potentially fall just inside the 500 m buffer. Use of the Area Y-75/80 borrow sites would require additional geotechnical investigations to verify that no hardbottom features are present in the proposed dredging footprint or within 500-m of the proposed dredging footprint. These investigations would also be used to determine specific pipeline placement corridors for the conveyance of dredge material onto the beach and would be conducted prior to any dredging and beach nourishment involving the use of the two borrow sites in Area Y.
15	The EPA recommends adding language to the Executive Summary of the Final Environmental Impact Statement (FEIS) that identifies the Bureau of Ocean Energy Management (BOEM) as a cooperating agency on this proposed action	EPA	Cooperating Agency	Y	Executive Summary	N/A	Text has been revised to include BOEM as a cooperating agency in the Executive Summary.

16	The proposed project has the potential to impact multiple species that are federally-listed as threatened or endangered pursuant to Section 7 of the Endangered Species Act. The EPA notes that Carteret County ('Applicant') and/or USACE plan to consult with both the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife (USFWS) on the proposed project's impact on listed species. The EPA recommends that consultations be completed by the release of the FEIS, and that all project impacts to federally-listed species and any required mitigation be fully disclosed in the FEIS	EPA	Threatened and Endangered Species	N	N/A	N/A	As indicated in responses above, Section 7 consultations are ongoing with the FWS and NMFS, but were unable to be completed prior to the release of the FEIS. However, consultation will be finalized prior to any permit decision. The USACE and BOEM will continue to consult with the FWS and NMFS throughout the project permitting process.
17	The Applicant is seeking a 50-year authorization pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (CWA); including additional State/Federal authorizations and permits. The EPA is concerned that such a long duration can involve a substantial risk for increases in environmental impacts during this extended period of time. Due to the potential uncertainty, the EPA recommends consideration of a more typical permit duration (e.g., 30-year) and inclusion of permit conditions that require periodic interagency reviews of projected impacts, construction activities, and mitigation activities at least every 5 years. The EPA also recommends consideration of an adaptive management Joan that addresses future project impacts and potential	EPA	Permit Duration and Adaptive Management	Ν	N/A	N/A	Noted. The USACE and BOEM have discussed the need for periodic interagency reviews of project impacts, construction activities, placement volumes and thresholds. Pending any issuance of a permit, an adaptive management plan will be built into the process for future project requests. Prior to implementing any single construction event, a notification request will be required and such notification would be coordinated with appropriate Federal and State resource and Regulatory agencies. During these notification reviews, past unforeseen impacts and circumstances will be reviewed and considered prior to authorizing the construction event. Special permit conditions and requirements will be included as needed and determined.
18	The engineering report presented in the DEIS predicts annual background erosional losses of sand at roughly 452,200 cubic yards per year and 22.6 million cubic yards (MCY) for the 50-year life of the project. Storm losses are not included in the background erosional losses and are identified contributing to another 1.4-1.7 MCY loss per storm. Accounting for background losses, storm events, and projected sea-level rise, the applicant predicts Bogue Banks will require 46.8-51.6 MCY over the 50-year planning horizon. Those settimates are paramount to describing the project's purpose and need. The EPA recommends that references to specific erosion rates and calculations derived from the engineering report be appropriately tied in the main text of the FEIS.	EPA	Erosion/Sand Loss Rates	Y	2	2-7	Noted. The FEIS has been revised to provide more discussion from the Engineering Report of how the estimates were developed.
19	The EPA notes that several of the alternatives contemplate the use of material from two offshore ODMDS sites (current and historic ODMDS sites). It is our understanding that material to be mined at the ODMDS has been evaluated for appropriateness for use as beach fill. However, the EPA has environmental concerns regarding the potential impact of mining at historic sites. ODMDS sites that have not been active for several years can become biologically significant. The EPA recommends additional discussion be included in the FEIS on potential environmental impacts associated with mining dredged materials from the ODMDS sites. Proposed mining activities should also be coordinated with the Ocean, Wetlands and Streams Protection Branch at the EPA Region 4 Office and with the Wilmington District Corps officials recompeting for the ODMDS site designation.	EPA	Use of Material from ODMDS	Ν	N/A	N/A	Potential environmental impacts associated with dredging the ODMDS are described within Chapter 5 - Environmental Consequences under each Alternative, specifically Marine Benthic Communities - Soft Bottom. Within the target borrow areas of the ODMDS, it is anticipated that the benthic community, and fish species that utilize these areas, are similar to the adjacent undisturbed surrounding areas, and potential impacts to the ODMDS sites have been evaluated as such. The evaluation of potential direct, indirect, and cumulative impacts follow similar assessments for previous projects using these sites as a sand source. These project include the 2013 Post-Hurricane Irene Renourishment Project, which dredged approximately 992,000 cy of material from the ODMDS, the 2004 Post-Hurricane Isabel Project and the 2007 Post-Hurricane Ophelia sand replenishment project where all these projects placed sand on adjacent beaches along Bogue Banks.
20	In the areas proposed for mining, the EPA understands that no hardbottom areas were identified in the current or the former ODMDS sites. However, hardbottom areas were identified within the eastern boundary of Area Y which could also be considered for future mining (Section 4.4.2 of the DEIS). The EPA understands that the Applicant plans to avoid these areas per the State of North Carolina regulation (i.e., 15A NCAC 07H.0208) that restricts borrow sites within 500 meters of any identified hardbottom areas. The EPA recommends that similar language regarding avoidance of hardbottom areas be clearly outlined in	EPA	Hardbottom Areas	Ν	N/A	N/A	See previous response to comment #14.
21	The EPA notes the extensive discussion provided in Section 4.8 of the DEIS on cultural, historic, and archaeological resources in the project area. Most of this information comes from previous studies and environmental documents for projects in the study area. The EPA recommends that updated consultation efforts with the State Historic Preservation Office and any required mitigation for the project be included and addressed in the FEIS, and in the final permit, as	EPA	Cultural, Historic, and Archaeological Resources	Y	1	1-14	The State Historic Preservation Office (SHPO) provided a letter in response to the DEIS on June 8, 2017. The SHPO indicated they are not aware of any historic resources that would be affected by the project. Therefore, the SHPO had no comment on the project as proposed. Consultation with SHPO would be reinitiated if new information is submitted by their office or there are findings of any unknown resources identified or discovered prior to or during construction.
22	The NMFS has been actively involved throughout formulation of this project and participated in interagency scoping meetings on September 30, 2010 and March 8, 2011. The NMFS commented on impacts of dredging offshore borrow sites, monitoring recovery of borrow sites and segments of nourished beaches, environmental windows or seasonal restrictions for construction, and cumulative impacts to EFH. The NMFS recommended the Wilmington District and BOEM prepare a formal EFH Assessment for the project separate from the EIS.	NMFS	Consultation History	Y	1	1-13	Informal consultation has been ongoing through the PRT meetings and other channels of communication. The USACE and BOEM are responsible for assessing the effects of their actions and prepared an EFH Assessment report that describes the affected resources, anticipated impacts, and any measures that were incorporated to mitigate EFH impacts. The USACE and BOEM consolidated their efforts into a single EFH report submitted to the NMFS on January 18, 2017. Submittal of the EFH Assessment initiated formal consultation, and the process will conclude with the issuance of an EFH concurrence or non-concurrence statement by the NMFS.

r						1	INVIRA THE FEETOCODORIES CONSIVATION MEASURE IN TRAFFE INDUCTS INCLUDING TO ALL SADO
23	Similarly, the NMFS provided consultation by letter dated October 28, 2013, on a related project, Integrated Feasibility Report and Draft Environmental Impact Statement, Coastal Storm Damage Reduction, Bogue Banks, Carteret County, North Carolina, Draft Report, dated August 2013, prepared by the Wilmington District. While the NMFS generally agreed with the environmental commitments proposed for the project and did not provide EFH conservation recommendations, the NMFS made several requests. The NMFS requested the Wilmington District (1) adhere to seasonal restrictions for dredging to reduce impacts to EFH and vulnerable life stages of federally managed fishere porcies, and (2) develop best management practices for dredging to fishere borrow areas to facilitate rapid recovery of the benthic community.	NMFS	Consultation History	N	N/A	N/A	Placement, dredging, and associated construction activities would adhere to a 16 November to 30 April environmental window. Adherence to the environmental window would minimize potential impacts by avoiding periods of critical biological activity; 2) A hydrographic survey covering the entire area where the dredge is expected to operate will be conducted before and after each dredging event to verify the depth and width of the dredging footprint. All borrow site dredging operations would maintain a minimum 500-m hardbottom buffer in accordance with NC Coastal Area Management Act regulations. Prior to the initiation of each dredging project, proposed pump- out station anchor point locations and sand delivery pipeline routes would be evaluated for the presence of hardbottom habitats. Prior to offshore dredging within Y-75/80 of Borrow Area Y geotechnical investigations will be conducted to verify that no hardbottom features are present in the proposed dredging footprint or within 500-m of the proposed dredging footprint. All investigation results will be conducted to with NMFS and other Federal and State agencies to verify site conditions. Prior to Bogue Inlet channel relocation events, surveys of the dredge pipeline corridor(s) will be conducted to ensure avoidance of impacts to Submerged Aquatic Vegetation (SAV), shellfish, and tidal marsh habitats.
24	Pursuant to the Magnuson-Stevens Act, the South Atlantic Fishery Management Council (SAFMC) and NMFS designate EFH within the project area to encompass the surf zone, estuarine emergent wetlands, oyster reefs, shell banks, intertidal flats, submerged aquatic vegetation (SAV), nearshore live/hardbottom, and shallow sand and mud bottoms. These intertidal and subtidal communities provide feeding, resting, and staging habitat for a variety of commercially, recreationally, and ecologically important fish species. The SAFMC also designates tidal inlets, nearshore live/hardbottom, SAV, and oysters as Habitat Areas of Particular Concern under the fishery management plans for shrimp, snapper/grouper complex, and coastal migratory pelagic species because these areas are important to ecosystem function and sensitive to stress and disturbance. The SAMFC provides additional information on the species it manages and their EFH in Fishery Ecosystem Plan of the South Atlantic Region (available at www.safmc.net), and the NMFS provides additional information on the EFH of highly migratory species in Amendment 10 to the 2006 Consolidated HMS Fishery Management Plan: Essential Fish Habitat (available at www.nmfs.noaa.gov/sfa/hms/).	NMFS	Essential Fish Habitat within the Project Area	Ν	N/A	N/A	Noted. The FEIS acknowledges these resources, any location within the permit area, and the potential effects that each alternative will have on these resources. Additionally, specific to the applicant's proposal, a separate FEH Assessment was prepared and submitted to NMFS on January 18, 2018 for further evaluation pursuant to the Magnuson-Stevenson Act.
25	The EIS reviews anticipated environmental impacts within the proposed 41,957-acre project area. The authors describe with depth, detail, and scientific support direct and indirect effects expected to occur within the diverse estuarine and coastal habitats of the project area. The NMFS believes the EIS would benefit from a detailed review of scientific journal articles, scientific review articles, other environmental documents and agency reports, and views of recognized experts on the habitat or species affected. Much of the discussion on the affected environment (Section 4) is based on summary documents prepared for purposes other than the Applicant's project. For example, the North Carolina Coastal Habitat Protection Plan is a policy guidance document that addresses habitat and water quality issues in North Carolina. While it is an excellent document used for management of coastal water quality and fish habitat, the NMFS strongly recommends use of primary research articles and treview articles in place of summary guidance documents and strategic planning documents such as the N.C. Coastal Habitat Protection Plan. Similarly, the EIS frequently cites the USACE 2014 report Final Integrated Feasibility Report and Environmental Impact Statement, Coastal Storm Damage Reduction, Bogue Banks, Carteret County, North Carolina.	NMFS	Literature Review	Ν	N/A	N/A	Noted. It should be acknowledged that the compilation of the EIS included input from various Federal and State resource agencies throughout the past years of project review. Science based data and information from those agencies were appropriately used throughout the document. For the use of the CHP Plan and the USACE 2014 Final EIS, information within these documents included scientific literature in order to assist in providing and/or making conclusions or statements. Pursuant to NEPA, it is permissible and encouraged to use existing documents, when properly referenced; and the used reference points to these (2) documents were determined to be appropriate.

26	In Carteret County, the nearshore hardbottom habitats, such as coquina and marl, occurring offshore along Bogue Banks provide a unique natural habitat and serve a variety of ecosystems functions. The draft EIS suggests hardbottom habitats exist near the project area, especially the offshore borrow area located along Emerald Isle. It is likely these nearshore hardbottom habitats are ephemeral, meaning they are periodically covered and uncovered by natural sediment transport, and mapping across multiple seasons/years would be required to determine the exact location. The extent and complexity of these structural forms and their contributions to EFH within the project area should be more thoroughly described with mapping of hardbottom habitat neighboring the porous area. Similarly, there are a number of artificial reef sites within the project area. Similarly, there are an number of artificial reef sites within the project area. The extent and complexity of these structural forms and their contributions to EFH within the project area should also be described. The NMFS believes dredging could significantly impact valuable hardbottom habitat and artificial reefs.	NMFS	Hardbottom Impacts	Y	4, 5	4-11; 5-20	FEIS has been updated to provide additional description of hardbottoms and describes measures to reduce potential impacts to hardbottom habitats. See also previous comment #14.
27	Entire document. Many of the maps are difficult to read and interpret. The NMFS recommends revisions focus on producing high-resolution figures and maps.	NMFS	EIS Formatting	Y	ALL	ALL	Noted. The USACE website publication standards require a reduction in resolution to reduce file size. The USACE will evaluate this process to ensure resolution of figures are maintained.
28	Chapter 1, Introduction. The use of "Study Area", "Project Area", and "Permit Area" is confusing for the reader as it is not consistent through the draft EIS. Perhaps the delineations and definitions should receive dedicated discussion in the Introduction.	NMFS	Study Area Definition	Y	1	1-3	Definitions of Study Area and Permit Area has been included. A review of the entire EIS will be conducted to ensure language is consistent.
29	Chapter 2-7, paragraph four. Sea level rise may accelerate coastal erosion rates and increase impacts resulting from erosion. Sea level rise is considered as a risk with impacts to the project scope, schedule, and success for many shoreline protection projects. The EIS should include a more extensive consideration of the planning horizon and analysis for sea level rise since this has considerable impact on the cumulative sand volumes required for nourishment and maintenance events. Additionally, the EIS includes a citation for sea level rise modeling and reference to Engineer Circular 1165-2-212 USACE [U.S. Army Corps of Engineers] guidance for incorporating effects of projected future sea level change in the engineering, planning, design, and management of USACE projects. The referenced circular expired September 30, 2013. To incorporate the direct and indirect physical effects of projected future sea level change on design, construction, operation, and maintenance of coastal projects, USACE provided guidance in the form of Engineer Regulation, ER 1100- 2-8162, and Engineer Technical Letter 1100-2-1. Accordingly, three estimates are required by the updated guidance; a baseline (or 10wr) estimate, which is based on historic sea level rise and represents the minimum expected sea level change, an intermediate estimate, and a high estimate representing the maximum expected sea level rise and add the additional volumes to the total for each alternative, as appropriate.	NMFS	Sea Level Rise	Y	2	2-7	Noted. The EIS has been revised to incorporate and explain the methodology followed in the Engineering Report more completely. The EIS will be revised to include language that the current projections are based on the mid or intermediate sea level rise projection as recommended by the USACE. If future sea level measurements depart from the recommended projection, revised estimates can and will be developed at a later data as the Master Plan is updated. A check was made using the new guidance and the SLR curves were identical. Therefore, the previous projections are still valid. Additionally, it should be acknowledged that the ER guidance is intended for federally designed projects, which are contingent on a cost to benefit ratio analysis, and not specifically for use in the Regulatory Program for evaluating permits. However, aspects of the guidance have been utilized when appropriate.
30	Chapter 3. The NMFS is pleased that the preferred alternative does not include construction of a terminal groin	NMFS	Terminal Groin	N	N/A	N/A	Noted.
31	Chapter 4, Table 4.1. Many of the biotic communities in the permit area are categories of EFH. Oyster reefs and hardbottom communities could be included with Table 4.1.	NMFS	Essential Fish Habitat	Y	4	4-3	Table 4.1 has been revised to include the recommended additional EFH habitats.
32	Chapter 4-11, paragraph two. The NMFS believes dredging could significantly impact hardbottom within the borrow area and artificial reefs neighboring the borrow area. These sites are known to support flounder, black sea bass, and other species among the snapper-grouper complex.	NMFS	Hardbottom Impacts	Y	6	6-5	Noted. As described earlier, all Conservation Measures to avoid and minimize hardbottom habitats will be employed prior to any proposed dredging activities within Borrow Area Y. Additionally, further investigations will take place within Area Y-75/80 of Borrow Area Y to ensure hardbottoms are avoided and proper buffer zones are incorporated.
33	Chapter 4, Figure 4.2. Recommend including insets of maps to increase resolution in specific areas (e.g., Bogue Inlet, Emerald Isle).	NMFS	EIS Formatting	Y	4	4-4	Figure 4.2 has been revised accordingly.
34	Chapter 4, Figure 4.4. Recommend using higher resolution maps or insets of maps to increase resolution in specific areas (e.g., borrow area). Recommend including site of borrow area on map.	NMFS	EIS Formatting	Y	4	4-13	The data contained within Figure 4.4 is the property of NCDMF and cannot be revised. Best available data has been used to depict regional hardbottom data.
35	Chapter 4, Figure 4.5. To assess possible far-field and cumulative of dredging effects on hardbottom, the NMFS recommends that hardbottom maps be produced to indicate hardbottom within 1,000 meters of the borrow area.	NMFS	Hardbottom Areas	Y	4	4-14	Figure 4.5 depicts hardbottom within 1,000 m of Borrow Area Y and is included in Section 4 - Affected Environment.

36	Chapter 4, Figure 4.6: Label artificial reef sites accordingly.	NMFS	EIS Formatting	Y	4	4-15	Figure 4.6 has been revised accordingly.
37	Chapter 4-38, paragraph two. Define EFH or revise sentence. Atlantic Red Drum is not managed under the Magnuson-Stevens Act and, accordingly, lacks EFH designations under the Act.	NMFS	Essential Fish Habitat	Y	4	38	Text has been revised accordingly.
38	Chapter 5. The NMFS appreciates the project including a work moratorium from 1 May through 15 November to minimize environmental impacts and provide protections for seasonal migrations of fish and protected species (i.e., sturgeon, sea turtles).	NMFS	Environmental Dredging Window	Ν	N/A	N/A	Noted.
39	Chapter 2, page 2-7: The first two paragraphs appear to need re- formatting.	DOI	EIS Formatting	Y	2	2-7	Noted. All formatting corrected.
40	Chapter 3, general comment: The February 7, 2014 draft Engineering Report (Appendix G) states "For purposes of this report, to account for both background erosion and future storm impacts, sand losses over the future 50 year planning horizon are conservatively estimated to be between 45.0 and 49.8 Mcy. Including USACE guidelines accounting for potential sea level changes, these future losses over 50 years increase to 46.8 to 51.6 Mcy the additional need to account for potential sea level change would be 1,825,000 cv. equating to 46.8 to 51.6 Mcy." It does not appear that the additional sand volumes needed over to account for potential sea level rise have been incorporated into the tables in this Chapter. We recommend that the EIS clarify this point, and add the additional volumes to the total for each alternative, as appropriate.	DOI	Sea Level Rise	Y	3	3-22	Noted. The EIS has been revised to incorporate and explain the methodology followed in the Engineering Report more completely. The EIS includes language that the current projections are based on the mid or intermediate sea level rise projection as recommended by the USACE. If future sea level measurements depart from the recommended projection, revised estimates can and will be developed at a later date as the Master Plan is updated.
41	Chapter 3, throughout: The figures, particularly in this section, are very difficult to read. We recommend that larger scale maps be provided, and that the text and figures be made less fuzzy.	DOI	Figure Resolution	Y	3	ALL	Noted. The USACE website publication standards require a reduction in resolution to reduce file size. The USACE will evaluate this process to ensure resolution of figures are maintained.
42	Chapter 3, page 3-13: At the bottom of the page, an extra word ("maintained"). It appears that this word should be deleted.	DOI	Language	Y	3	3-13	The text and formatting has been revised accordingly.
43	Chapter 3, page 3-34: The Service is pleased that a terminal groin is not being pursued at this time. In addition, we are pleased that the proposals include relocating Bogue Inlet only when needed to protect structures on the west end of Emerald Isle. The inlet is important to wintering piping plovers and other shorebirds, and we appreciate efforts to minimize impacts to inlet habitats.	DOI	Inlet Habitat Impacts	N	N/A	N/A	Noted.
44	Chapter 4, throughout: Again, the figures and accompanying text in this section are difficult to read, and in some cases illegible. The Department recommends that larger-scale maps be provided and that the text and figures be made less fuzzy.	DOI	Figure Resolution	Y	4	All	Noted. The USACE website publication standards require a reduction in resolution to reduce file size. The USACE will evaluate this process to ensure resolution of figures are maintained.
45	Chapter 4: The Department recommends that the Corps and applicant investigate whether the soon-to-be-final Statewide Programmatic Biological Opinion (SPBO) for Sand Placement projects can expedite Section 7 ESA consultation for the proposed project. We note that the draft SPBO does not consider or cover effects to species from dredging. Therefore, additional consultation may be required for impacts to intertial habitats from inlet dredging due to potential impacts to the piping plover and red knot.	DOI	Section 7 Consultation	N	N/A	N/A	The SPBO was finalized on August 2017. During consultation with the USFWS, the Service concurred with the use of the SPBO during single nourishment events, provided all the terms and conditions are followed. For the dredging within Bogue Inlet, the Service will be preparing separate conservation measures. If inlet conditions arise at the time of dredging where the measures are not practicable for the applicant, consultation will be reinitiated.
46	Chapter 4, Page 4-5 7: Please correct the language on this page to note the two Dare County records for hawksbill sea turtle nests in 2015.	DOI	Endangered Species	Y	4	57	Text has been revised accordingly.

47	Chapter 5, Pages 5-46 and 5-48. The last paragraph on each of these pages states "Sea level rise predictions for the Bogue Banks area over the next 30 years range from approximately three feet when the observed 20th century trend is extrapolated through 2045 to approximately eight feet under a high greenhouse gas emissions scenario (NC Science Panel 2015)." The Department suggests revising "feet" in these two sentences to "inches."	DOI	Sea Level Rise	Y	5	5-46, 5-48	Text has been revised accordingly.
48	The body of the DEIS (and Chapter 5 specifically) does not include significant discussion about the potential for sea level rise over the next 50 years, and the need for or implications of additional shoreline management actions in response to the rise. The North Carolina Coastal Resources Commission's (NC CRC) Science Panel issued the North Carolina Sea Level Rise Assessment Report (2015 Update to the 2010 Report and 2012 Addendum) on March 31, 2015. This report predicts a sea level rise in Beaufort, North Carolina over the next 30 years (by 2045) of 3, 2 to 7.5 inches. We acknowledge that the February 7, 2014 Draft Engineering Report provides information on the historic level of sea level rise in the area, and also predicts relative sea level rise are also provided in the February 7, 2014 draft Engineering Report. Chapter 2, page 2-7 includes two sentences on the subject. However, updated information should be included in the body of the EIS. Since this is a fifty year project, the Department recommends that the body of the EIS include a summary discussing how sea level rise was considered in the planning, modeling, or calculations. The EIS should also discuss the potential need for or anvironmental consequences of additional shoreline management actions in response to accelerations in sea level rise.	DOI	Sea Level Rise	Y	5	5-46, 5-48	Noted. The EIS has been revised to incorporate and explain the methodology followed in the Engineering Report more completely. The EIS includes language that the current projections are based on the mid or intermediate sea level rise projection as recommended by the USACE. If future sea level measurements depart from the recommended projection, revised estimates can and will be developed at a later date as the Master Plan is updated. Additionally, reference response to comment #17 as it relates to the notification process and adaptive management plan.
49	If any sand placement is to occur prior to November 1st or after March 31st, it is requested that our office be notified immediately by the applicant and/or the dredging contractor so that appropriate public notification can occur.	NCDMF	Environmental Dredging Window	N	N/A	N/A	Noted. The Master Plan, as described in the FEIS, is requesting that all dredging/nourishment activities be allowed from November 16 - April 30 for each calendar year. Notification prior to any single event will be given to the USACE and NCDCM, whom will coordinate with the appropriate Federal and State resource agencies, such as NCDMF.
50	Fifteen sites were identified within one mile of the project. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater.	NCDWM	Construction Management	N	N/A	N/A	Noted. After review of the list provided by NCDWM, none of the proposed sediment sources are expected to be affected. However, if an upland borrow pit is used in the future, additional testing for sediment compatibility will already be completed. As part of this additional testing, a check of its location versus the Waste Management website will be completed and sediment/water quality testing will be completed at this time as needed.
51	The USACE and/or its contractors should recycle all materials possible and use recycled products where suitable. Any waste which cannot be recycled or reused must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the USACE require all contractors to provide proof of proper disposal for all generated waste to permitted facilities	NCDWM Solid Waste Section	Construction Management	n	N/A	N/A	Noted. These requirements will be included in the specifications of all actions completed as part of implementation of the Master Plan.
52	A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, or conservation/managed areas within the proposed project boundary.	NCNHP	Affected Environment	N	N/A	N/A	Noted. A comprehensive review of the potentially affected species and biotic communities within the Study Area was conducted in Chapter 4 - Affected Environment of the FEIS. These species and biotic communities were described in detail based on feedback through the PRT scoping process.



United States Department of the Interior



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

ER 17/0185 9043.1

June 12, 2017

Mr. Mickey T. Sugg U.S. Army Corps of Engineers Wilmington District Regulatory Division 69 Darlington Avenue Wilmington, NC 28403

ATTN: File Number SAW-2009-00293

Re: Comments and Recommendations on the Draft Environmental Impact Statement (DEIS) for the Bogue Banks Master Beach Nourishment Plan in Carteret County, North Carolina

Dear Mr. Sugg:

The Department of the Interior (Department) has reviewed the DEIS for the Bogue Banks Master Beach Nourishment Plan in Carteret County, North Carolina. Our comments and recommendations are as follows. The preferred alternative in the DEIS is Nourishment Plus Nonstructural Bogue Inlet Management, which currently proposes various beach nourishment activities on a 3- or 6-year interval, along with relocation of Bogue Inlet as needed, typically every 10-15 years. The project may affect the following species under the authority of the U.S. Fish and Wildlife Service: West Indian Manatee (*Trichechus manatus*), red knot (*Catidris canutus rufa*), piping plover (*Charadrius melodus*), seabeach amaranth (*Amaranthus pumilus*), and the loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*) sea turtles. In addition, designated wintering critical habitat for the piping plover and terrestrial critical habitat for the loggerhead sea turtle may be affected. The Department has not made a Section 7 determination for this proposed project and has not requested initiation of formal consultation.

- 1. Chapter 2, page 2-7: The first two paragraphs appear to need re-formatting.
- 2. Chapter 3, general comment: The Febuary 7, 2014 draft Engineering Report

Bogue Banks Master Beach Nourishment Plan - ER 17-0185

(Appendix G) states "For purposes of this report, to account for both background erosion and future storm impacts, sand losses over the future 50 year planning horizon are conservatively estimated to be between 45.0 and 49.8 Mcy. Including USACE guidelines accounting for potential sea level changes, these future losses over 50 years increase to 46.8 to 51.6 Mcy.... the additional need to account for potential sea level change would be 1,825,000 cv. equating to 46.8 to 51.6 Mcy." It does not appear that the additional sand volumes needed over to account for potential sea level rise have been incorporated into the tables in this Chapter. We recommend that the EIS clarify this point, and add the additional volumes to the total for each alternative, as appropriate.

- 3. Chapter 3, throughout: The figures, particularly in this section, are very difficult to read. We recommend that larger scale maps be provided, and that the text and figures be made less fuzzy.
- 4. Chapter 3, page 3-13: At the bottom of the page, an extra word ("maintained"). It appears that this word should be deleted.
- 5. Chapter 3, page 3-34: The Service is pleased that a terminal groin is not being pursued at this time. In addition, we are pleased that the proposals include relocating Bogue Inlet only when needed to protect structures on the west end of Emerald Isle. The inlet is important to wintering piping plovers and other shorebirds, and we appreciate efforts to minimize impacts to inlet habitats.
- 6. Chapter 4, throughout: Again, the figures and accompanying text in this section are difficult to read, and in some cases illegible. The Department recommends that larger-scale maps be provided and that the text and figures be made less fuzzy.
- 7. Chapter 4: The Department recommends that the Corps and applicant investigate whether the soon-to-be-final Statewide Programmatic Biological Opinion (SPBO) for Sand Placement projects can expedite Section 7 ESA consultation for the proposed project. We note that the draft SPBO does not consider or cover effects to species from dredging. Therefore, additional consultation may be required for impacts to intertidal habitats from inlet dredging due to potential impacts to the piping plover and red knot.
- 8. Chapter 4, Page 4-5 7: Please correct the language on this page to note the two Dare County records for hawksbill sea turtle nests in 2015.
- 9. Chapter 5, Pages 5-46 and 5-48. The last paragraph on each of these pages states "Sea level rise predictions for the Bogue Banks area over the next 30 years range from approximately three feet when the observed 20th century trend is extrapolated through 2045 to approximately eight feet under a high greenhouse gas emissions scenario (NC Science Panel 2015)." The Department suggests revising "feet" in these two sentences to "inches."

Bogue Banks Master Beach Nourishment Plan - ER 17-0185

10. The body of the DEIS (and Chapter 5 specifically) does not include significant discussion about the potential for sea level rise over the next 50 years, and the need for or implications of additional shoreline management actions in response to the rise. The North Carolina Coastal Resources Commission's (NC CRC) Science Panel issued the North Carolina Sea Level Rise Assessment Report (2015 Update to the 2010 Report and 2012 Addendum) on March 31, 2015. This report predicts a sea level rise in Beaufort, North Carolina over the next 30 years (by 2045) of 3.2 to 7.5 inches. We acknowledge that the February 7, 2014 Draft Engineering Report provides information on the historic level of sea level rise in the area, and also predicts relative sea level rise using the Corps' Guidance on Sea Level Change (EC 1165-2-212). Additional volumes of sand needed to address potential sea level rise are also provided in the February 7, 2014 draft Engineering Report. Chapter 2, page 2-7 includes two sentences on the subject. However, updated information should be included in the body of the EIS. Since this is a fifty year project, the Department recommends that the body of the EIS include a summary discussing how sea level rise was considered in the planning, modeling, or calculations. The EI\$ should also discuss the potential need for or environmental consequences of additional shoreline management actions in response to accelerations in sea level rise.

We look forward to continued coordination with the Corps on this project. If you have questions or concerns, please contact Kathy Matthews at (919) 856-4520, ext. 27, or via email at <u>kathyrn_matthews@fws.gov</u>. I can be reached on (404) 331-4524 or via email at <u>joyce_stanley@ios.doi.gov</u>.

Sincerely.

Joyce Stanley, MPA Regional Environmental Officer

cc: Christine Willis – FWS Michael Norris - USGS Anita Barnett – NPS Chester McGhee – BIA William Brown – BOEM Tommy Broussard – BSEE OEPC – WASH



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4 ATLANTA FEDERAL CENTER 61 FORSYTH STREET ATLANTA, GEORGIA 30303-8960

JUL 0 5 2017

JUN 26 2017

Mr. Mickey Sugg U.S. Army Corps of Engineers Regulatory Division 68 Darlington Avenue Wilmington, North Carolina 28403

> Re: EPA Review Comments on Bogue Banks Master Beach Nourishment Plan Draft Environmental Impact Statement, North Carolina; CEQ No.: 20170073

Dear Mr. Sugg:

The U.S. Environmental Protection Agency has reviewed the subject Draft Environmental Impact Statement (DEIS) consistent with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The United States Army Corps of Engineers (USACE) is evaluating a request from Carteret County ('Applicant') for the Department of the Army's authorization pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act to implement a comprehensive, long-term beach and inlet management plan for the protection of approximately 25 miles of shoreline on Bogue Banks, North Carolina. Concurrently, the Bureau of Ocean Energy Management (BOEM) is evaluating a request from the Applicant for lease authorization pursuant to the Outer Continental Shelf (OCS) Lands Act [43 U.S.C. 1337(k)(2)] to use OCS sand resources as a component of the proposed action."¹ The EPA understands that the USACE and the BOEM have determined that the proposed federal action requires an environmental impact statement to determine the potential impacts on environmental resources and a number of federally-listed threatened and endangered species. The Applicant's proposal was also coordinated with the towns of Atlantic Beach, Pine Knoll Shores, Indian Beach, and Emerald Isle.

The EPA understands that there have been 35 years of past shoreline management projects at Bogue Banks which has been a mix of federal and non-federal projects administered either by the USACE's civil works program or by local municipalities. The proposed master plan is intended to address ongoing shoreline erosion issues in a more effective and comprehensive manner while taking into consideration the trend of "declining federal shore protection funding."² Implementation of Bogue Banks Master Beach Nourishment Plan has been identified in the DEIS as the Applicant's preferred alternative. The preferred alternative includes beach nourishment and non-structural Bogue Inlet management activities. The EPA has provided detailed technical comments on the DEIS and recommendations for consideration by the USACE in developing the Final Environmental Impact Statement (FEIS) in an enclosure (See enclosure). Based upon our detailed technical review of the DEIS, the EPA has rated this DEIS as "EC-2" (Environmental Concerns and Request for Additional Information). Our environmental concerns are primarily based on the proposed permit duration and the

¹ P. iii of ES

² P. iii of ES

use of materials from the Ocean Dredged Material Disposal sites. We request that a dedicated section of the FEIS include specific responses to our technical recommendations, as appropriate.

The EPA appreciates the opportunity to review this DEIS and the overall efforts by the Applicant and the USACE to develop a comprehensive, long-term beach and inlet management master plan. Should you have questions regarding these comments, please feel free to contact Mr. Christopher Militscher, Chief of the NEPA Program Office at (404) 562¹9512 or by email at <u>Militscher.chris@epa.gov</u> or Mr. Dan Holliman at (404) 562-9531 or by email at <u>holliman.daniel@epa.gov</u>.

Sincerely,

G. Alan Farmer Director Resource Conservation and Restoration Division

Enclosure

Enclosure

Technical Comments and Recommendations Bogue Banks Master Beach Nourishment Plan Draft Environmental Impact Statement (DEIS) North Carolina; CEQ No.: 20170073

Based on the EPA's review of the DEIS we offer the following technical comments and recommendations for the U.S. Army Corps of Engineers' (USACE's) consideration:

Cooperating Agency

The EPA recommends adding language to the Executive Summary of the Final Environmental Impact Statement (FEIS) that identifies the Bureau of Ocean Energy Management (BOEM) as a cooperating agency on this proposed action.

Threatened and Endangered Species

The proposed project has the potential to impact multiple species that are federally-listed as threatened or endangered pursuant to Section 7 of the Endangered Species Act. The EPA notes that Carteret County ('Applicant') and/or USACE plan to consult with both the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife (USFWS) on the proposed project's impact on listed species. The EPA recommends that consultations be completed by the release of the FEIS, and that all project impacts to federally-listed species and any required mitigation be fully disclosed in the FEIS.

Permit Duration and Adaptive Management

The Applicant is seeking a 50-year authorization pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (CWA), including additional State/Federal authorizations and permits. The EPA is concerned that such a long duration can involve substantial risk for increases in environmental impacts during this extended period of time. Due to the potential uncertainty, the EPA recommends consideration of a more typical permit duration (e.g., 30-year) and inclusion of permit conditions that require periodic interagency reviews of project impacts, construction activities, and mitigation activities at least every 5 years. The EPA also recommends consideration of an adaptive management plan that addresses future project impacts and potential mitigation failures.

Erosion/Sand Loss Rates

The engineering report presented in the DEIS predicts annual background erosional losses of sand at roughly 452,200 cubic yards per year and 22.6 million cubic yards (MCY) for the 50-year life of the project. Storm losses are not included in the background erosional losses and are identified contributing to another 1.4-1.7 MCY loss per storm. Accounting for background losses, storm events, and projected sea-level rise, the applicant predicts Bogues Banks will require 46.8 to 51.6 MCY over the 50-year planning horizon. These estimates are paramount to describing the project's purpose and need. The EPA recommends that references to specific erosion rates and calculations derived from the engineering report be appropriately cited in the main text of the FEIS.

Use of Material from Ocean Dredged Material Disposal Site (ODMDS)

The EPA notes that several of the alternatives contemplate the use of material from two offshore ODMDS sites (current and historic ODMDS sites). It is our understanding that material to be mined at the ODMDS has been evaluated for appropriateness for use as beach fill. However, the EPA has environmental concerns regarding the potential impact of mining at historic sites. ODMDS sites that have not been active for several years can become biologically significant. The EPA recommends additional discussion be included in the FEIS on potential environmental impacts associated with mining dredged materials from the ODMDS sites. Proposed mining activities should also be coordinated with the Ocean, Wetlands and Streams Protection Branch at the EPA Region 4 Office and with the Wilmington District Corps officials responsible for the ODMDS site designation.

Hardbottom Areas

In the areas proposed for mining, the EPA understands that no hardbottom areas were identified in the current or the former ODMDS sites. However, hardbottom areas were identified within the eastern boundary of Area Y which could also be considered for future mining (Section 4.4.2 of the DEIS). The EPA understands that the Applicant plans to avoid these areas per the State of North Carolina regulation (i.e., 15A NCAC 07H.0208) that restricts borrow sites within 500 meters of any identified hardbottom areas. The EPA recommends that similar language regarding avoidance of hardbottom areas be clearly outlined in the final permit.

Cultural, Historic, and Archaeological Resources

The EPA notes the extensive discussion provided in Section 4.8 of the DEIS on cultural, historic, and archaeological resources in the project area. Most of this information comes from previous studies and environmental documents for projects in the study area. The EPA recommends that updated consultation efforts with the State Historic Preservation Office and any required mitigation for the project be included and addressed in the FEIS, and in the final permit, as appropriate.



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

June 21, 2017

F/SER47:KR/pw

(Sent via Electronic Mail)

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

Attention: Mickey Sugg

Dear Colonel Landers:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the *Draft Environmental Impact Statement* (EIS) for the project known as *Bogue Banks Master Beach Nourishment Plan*, dated March 2017, and the corresponding public notice for Action ID No. SAW-2009-00293, dated April 14, 2017. The EIS was prepared in response to a proposed plan for long-term, nonfederal beach and inlet shoreline management. Carteret County developed the plan to increase beach and shoreline protection in the interest of storm damage reduction, beach erosion control, protection of a tourism-based coastal economy, and conservation of public-trust natural resources along oceanfront and inlet shorelines of the Bogue Banks. The Wilmington District prepared an EIS for the project because the scale of the proposed actions and the ecological significance and sensitive nature of the affected coastal resources.

The Bogue Banks shoreline has been managed in some capacity for over 35 years by federal projects administered by the Wilmington District and by non-federal projects implemented by the County or local municipalities. Historically, shoreline protection projects and beach nourishment along Bogue Banks have largely consisted of individual projects undertaken to address site-specific erosional problems. The County and local municipalities developed the plan to provide a coordinated and combined effort to protect the oceanfront and inlet shoreline. The EIS uses a 50-year planning horizon for projections of shoreline erosion and estimates of the availability of borrow area sand. Carteret County and participating local municipalities seek authorization to use a combination of sand sources including offshore borrow sites, Atlantic Intracoastal Waterway disposal areas, upland sand mines, and dredging of Bogue Inlet for periodic beach and dune replacement along approximately 23 miles of oceanfront shoreline within the Towns of Atlantic Beach, Pine Knoll Shores, Salter Path, Indian Beach, and Emerald Isle. The project also includes dredging and maintenance within the Bogue Inlet ebb tide channel to reduce erosional processes along the inlet shoreline of Emerald Isle. The EIS identifies five alternatives, including two no action alternatives, warranting consideration as the least environmentally damaging practicable alternative.

The Wilmington District's initial determination is the environmental effects associated with the proposed project would likely have a significant effect on the environment. Because the broad



spatial and temporal scale of effects associated with the proposed project occur in both state and federal waters, the Wilmington District and the Bureau of Ocean Energy Management (BOEM) will consolidate efforts to prepare an essential fish habitat (EFH) assessment. The NMFS has yet to receive the EFH Assessment from either the Wilmington District or BOEM. Accordingly, the NMFS provides the following comments on the draft EIS pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Consultation History

The NMFS has been actively involved throughout formulation of this project and participated in interagency scoping meetings on September 30, 2010 and March 8, 2011. The NMFS commented on impacts of dredging offshore borrow sites, monitoring recovery of borrow sites and segments of nourished beaches, environmental windows or seasonal restrictions for construction, and cumulative impacts to EFH. The NMFS recommended the Wilmington District and BOEM prepare a formal EFH Assessment for the project separate from the EIS.

Similarly, the NMFS provided consultation by letter dated October 28, 2013, on a related project, *Integrated Feasibility Report and Draft Environmental Impact Statement, Coastal Storm Damage Reduction, Bogue Banks, Carteret County, North Carolina, Draft Report*, dated August 2013, prepared by the Wilmington District. While the NMFS generally agreed with the environmental commitments proposed for the project and did not provide EFH conservation recommendations, the NMFS made several requests. The NMFS requested the Wilmington District (1) adhere to seasonal restrictions for dredging to reduce impacts to EFH and vulnerable life stages of federally managed fishery species, and (2) develop best management practices for dredging offshore borrow areas to facilitate rapid recovery of the benthic community.

Essential Fish Habitat within the Project Area

Pursuant to the Magnuson-Stevens Act, the South Atlantic Fishery Management Council (SAFMC) and NMFS designate EFH within the project area to encompass the surf zone, estuarine emergent wetlands, oyster reefs, shell banks, intertidal flats, submerged aquatic vegetation (SAV), nearshore live/hardbottom, and shallow sand and mud bottoms. These intertidal and subtidal communities provide feeding, resting, and staging habitat for a variety of commercially, recreationally, and ecologically important fish species. The SAFMC also designates tidal inlets, nearshore live/hardbottom, SAV, and oysters as Habitat Areas of Particular Concern under the fishery management plans for shrimp, snapper/grouper complex, and coastal migratory pelagic species because these areas are important to ecosystem function and sensitive to stress and disturbance. The SAMFC provides additional information on the species it manages and their EFH in *Fishery Ecosystem Plan of the South Atlantic Region* (available at www.safmc.net), and the NMFS provides additional information on the EFH of highly migratory species in *Amendment 10 to the 2006 Consolidated HMS Fishery Management Plan: Essential Fish Habitat* (available at www.nmfs.noaa.gov/sfa/hms/).

General Comments

The EIS reviews anticipated environmental impacts within the proposed 41,957-acre project area. The authors describe with depth, detail, and scientific support direct and indirect effects expected to occur within the diverse estuarine and coastal habitats of the project area. While

beachfront shorelines are subject to erosion caused by storms and natural shoreline processes, the beachfront, intertidal, and surf zone are nonetheless established seascape features providing valuable habitat for fishery resources migrating between nearshore and offshore habitats as part of their life cycle. Generalized environmental impacts are expected to be temporary in nature and of short duration (days) following construction and maintenance activities. Impacts from dredging and nourishment activities include an increase in the turbidity and total suspended solids from sediments, silt, and organic materials. High concentrations of suspended solids for extended durations can impair biological productivity and ecological function by clogging fish gills, affecting recruitment of fish and invertebrates (crustaceans and invertebrates), and suppressing growth of SAV and shellfish (e.g., oysters, clams, scallops). Activities such as beach nourishment typically have more severe impacts that take longer periods of time (months and years) for ecological recovery. Ocean beach and estuarine shorelines can be extraordinarily dynamic and resilient ecosystems. These ecosystems are often able to recover quickly despite experiencing extreme disturbance events from storms and hurricanes. Nourishment activities that bury infaunal communities result in direct mortality of many forage species. These infaunal species provide important trophic linkages coupling benthic-pelagic ecosystems. Many of the organisms that utilize these habitats also provide trophic linkages between inshore and offshore populations.

The NMFS believes the EIS would benefit from a detailed review of scientific journal articles, scientific review articles, other environmental documents and agency reports, and views of recognized experts on the habitat or species affected. Much of the discussion on the affected environment (Section 4) is based on summary documents prepared for purposes other than the Applicant's project. For example, the *North Carolina Coastal Habitat Protection Plan* is a policy guidance document that addresses habitat and water quality issues in North Carolina. While it is an excellent document used for management of coastal water quality and fish habitat, the NMFS strongly recommends use of primary research articles and review articles in place of summary guidance documents and strategic planning documents such as the *N.C. Coastal Habitat Protection Plan*. Similarly, the EIS frequently cites the USACE 2014 report *Final Integrated Feasibility Report and Environmental Impact Statement, Coastal Storm Damage Reduction, Bogue Banks, Carteret County, North Carolina.*

In Carteret County, the nearshore hardbottom habitats, such as coquina and marle, occurring offshore along Bogue Banks provide a unique natural habitat and serve a variety of ecosystems functions. The draft EIS suggests hardbottom habitats exist near the project area, especially the offshore borrow area located along Emerald Isle. It is likely these nearshore hardbottom habitats are ephemeral, meaning they are periodically covered and uncovered by natural sediment transport, and mapping across multiple seasons/years would be required to determine the exact location. The extent and complexity of these structural forms and their contributions to EFH within the project area should be more thoroughly described with mapping of hardbottom habitat neighboring the borrow area. Similarly, there are a number of artificial reef sites within the project area should also be described. The NMFS believes dredging could significantly impact valuable hardbottom habitat and artificial reefs.

Specific Comments

Entire document. Many of the maps are difficult to read and interpret. The NMFS recommends revisions focus on producing high-resolution figures and maps.

Chapter 1, Introduction. The use of "Study Area", "Project Area", and "Permit Area" is confusing for the reader as it is not consistent through the draft EIS. Perhaps the delineations and definitions should receive dedicated discussion in the Introduction.

Chapter 2-7, paragraph four. Sea level rise may accelerate coastal erosion rates and increase impacts resulting from erosion. Sea level rise is considered as a risk with impacts to the project scope, schedule, and success for many shoreline protection projects. The EIS should include a more extensive consideration of the planning horizon and analysis for sea level rise since this has considerable impact on the cumulative sand volumes required for nourishment and maintenance events. Additionally, the EIS includes a citation for sea level rise modeling and reference to Engineer Circular 1165-2-212 USACE [U.S. Army Corps of Engineers] guidance for incorporating effects of projected future sea level change in the engineering, planning, design, and management of USACE projects. The referenced circular expired September 30, 2013. To incorporate the direct and indirect physical effects of projected future sea level change on design, construction, operation, and maintenance of coastal projects, USACE provided guidance in the form of Engineer Regulation, ER 1100-2-8162, and Engineer Technical Letter 1100-2-1. Accordingly, three estimates are required by the updated guidance; a baseline (or "low") estimate, which is based on historic sea level rise and represents the minimum expected sea level change, an intermediate estimate, and a high estimate representing the maximum expected sea level change. The NMFS recommends that the ElS clarify models of sea level rise and add the additional volumes to the total for each alternative, as appropriate.

Chapter 3. The NMFS is pleased that the preferred alternative does not include construction of a terminal groin.

Chapter 4, Table 4.1. Many of the biotic communities in the permit area are categories of EFH. Oyster reefs and hardbottom communities could be included with Table 4.1.

Chapter 4-11, paragraph two. The NMFS believes dredging could significantly impact hardbottom within the borrow area and artificial reefs neighboring the borrow area. These sites are known to support flounder, black sea bass, and other species among the snapper-grouper complex.

Chapter 4, Figure 4.2. Recommend including insets of maps to increase resolution in specific areas (*e.g.*, Bogue Inlet, Emerald Isle).

Chapter 4, Figure 4.4. Recommend using higher resolution maps or insets of maps to increase resolution in specific areas (e.g., borrow area). Recommend including site of borrow area on map.

Chapter 4, Figure 4.5. To assess possible far-field and cumulative of dredging effects on hardbottom, the NMFS recommends that hardbottom maps be produced to indicate hardbottom within 1,000 meters of the borrow area.

Chapter 4, Figure 4.6: Label artificial reef sites accordingly.

Chapter 4-38, paragraph two. Define EFH or revise sentence. Atlantic Red Drum is not managed under the Magnuson-Stevens Act and, accordingly, lacks EFH designations under the Act.

Chapter 5. The NMFS appreciates the project including a work moratorium from 1 May through 15 November to minimize environmental impacts and provide protections for seasonal migrations of fish and protected species (i.e., sturgeon, sea turtles).

Closing

Thank you for the opportunity to provide these comments. Based on the information provided, the NMFS has no EFH conservation recommendations for the project. The NMFS may provide EFH conservation recommendations in the future based on new information or changes in the project design that show adverse impacts would occur to EFH or federally-managed fishery species. The NMFS looks forward to further cooperation with this project that is so important for North Carolina. Please direct related questions or comments to the attention of Dr. Ken Riley at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 728-8750.

Sincerely,

Pace Willer

/ for

Virginia M. Fay Assistant Regional Administrator Habitat Conservation Division

 cc: COE, Mickey.Sugg@usace.army.mil USFWS, Pete_Benjamin@usfws.gov NCDCM, Doug.Huggett@ncdenr.net NCDCM, Gregg.Bodnar@ncdenr.gov EPA, Bowers.Todd@epa.gov SAFMC, Roger.Pugliese@safmc.net F/SER4, David.Dale@noaa.gov; Ken.Riley@noaa.gov



STATE OF NORTH CAROLINA DEPARTMENT OF ADMINISTRATION

ROY COOPER GOVERNOR MACHELLE SANDERS Secretary

May 24, 2017

Mr. Mickey Sugg U. S. Army Corps of Engineers Wilmington District 69 Darlington Avenue Wilmington, North Carolina 28403

Re: SCH File # 17-E-0000-0433; DEIS for the Bogue Banks Master Beach Nourishment Project with plans to implement a long term management plan to provide shoreline protection along the approx. 25 mile Bogue Banks barrier island.

Dear Mr. Sugg:

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 comments made by the 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, uptal Best

Crystal Best State Environmental Review Clearinghouse

Attachments cc: Region P

Telephone: (919) 807-2425 Fax: (919) 733-9571 COURIER #51-01-00 Email: state.clearinghouse@doa.nc.gov Location: 116 WEST JONES STREET RALEIGH, NORTH CAROLINA

Website: www.ncadmin.nc.gov



ROY COOPER Gavernor MICHAEL S. REGAN Secretary

MEMORANDUM

To:	Crystal Best
	State Clearinghouse Coordinator
	Department of Administration
FROM:	Lyn Hardison LBH Division of Environmental Assistance and Customer Service Permit Assistance & Project Review Coordinator Washington Regional Office

RE: 17-0433 Draft Environmental Impact Statement – DEIS for the Bogue Banks Master Beach Nourishment Project with plans to implement a long-term management plan to provide shoreline protection along 25-miles Bogue Banks Barrier Island. Carteret County

Date: May 22, 2017

The Department of Environmental Quality has reviewed the proposal for the referenced project. Based on the information provided, several of our agencies have identified permits that may be required and offered some guidance. The comments are attached for the applicant's review.

The Department's agencies will continue to be available to assist the applicant through the environmental review processes.

Thank you for the opportunity to respond.

Attachment

State of North Carolina | Environmental Quality 217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601 Washington Regional Office | 943 Washington Square Mall , Washington, North Carolina 27889



ROY COOPER Governor

MICHAEL S. REGAN

BRAXTON C. DAVIS

May 17, 2017

MEMORANDUM

TO: Lyn Hardison Environmental Assistance and SEPA Coordinator

- FROM: Andrew Haines Environmental Program Supervisor
- THROUGH: Shannon Jenkins Shellfish Sanitation & Recreational Water Quality Section Chief
- SUBJECT: Draft EIS- Bogue Banks Master Beach Nourishment Project US Army Corps #17-0433

According to the plan presented within this draft EIS, placement of dredged materials along the beaches of Bogue Banks may occur within a window extending from November 16th to April 30th. The placement of dredged materials along a swimming beach has the potential to cause a localized increase in bacteria concentrations within the waters surrounding the project. Thus, the placement of these dredged materials along the beach any time after March 31st may necessitate that a swimming advisory be issued, notifying the public of the risks associated with swimming in the area. In conjunction with this swimming advisory, notification signs will be placed throughout the project area. Swimming advisories can be avoided by scheduling these types of projects between November 1st and March 31st of a given year, which falls outside of the swimming season. If any sand placement is to occur prior to November 1st or after March 31st, it is requested that our office be notified immediately by the applicant and/or the dredging contractor so that appropriate public notification can occur.

Nothing Compares

State of North Carolina | Division of Marine Fisheries 3441 Arendell Street | P.O. Box 769 | Morehead City, North Carolina 28557 252-726-7021

ROY COOPER

MICHAEL S. REGAN

MICHAEL SCOTT



Waste Manaetten. Prisonek 4. . . .

Date:	April 27, 2017
То:	Michael Scott, Director Division of Waste Management
Through:	Qu Qi, LG Inactive Hazardous Sites Branch – Central Unit
From:	Katie Tatum Inactive Hazardous Sites Branch
Subject:	NEPA Project #17-0433 US Army Corps of Engineers, Carteret County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the US Army Corps of Engineers project. The purpose of the project is to implement a long-term management plan to provide

Fifteen sites were identified within one mile of the project as shown on the attached maps and table. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: http://deg.nc.gov/waste-management-laserfiche

Please contact Qu Qi at 919.707.8213 if you have any questions.

shoreline protection along approx. 25-mile Bogue Banks barrier island.

ID #	Site Name	Status*
17005-13-16	Morehead City Main	BFA
DC160001	COASTAL DRY CLEANERS	DSCA
NONCD0001466	BEACHVIEW EXXON	IHSB
NONCD0000205	Morehead City Refuse Dump	PRLF
DC160002	SUNSHINE CLEANERS	DSCA
NONCD0002091	MOREHEAD MARINE (FORMER)	IHSB
NC5210022906	USA RESERVE XVIII AIRBORNE CORPS	IHSB
NONCD0002269	PARKER HONDA/MITSUBISHI	IHSB
NCSFN0407074	NC MARITIME MUSEUM	IHSB
NONCD0001820	HANKISON INTERNATIONAL	IHSB
NONCD0000200	Beaufort Refuse Dump	PRLF
14011-10-16	Pace Conservation Center	BFA
NONCD0001233	LOFTIN PROPERTY	IHSB
NONCD0000212	Emerald Isle Dump	PRLF
NC7170090008	USMC/CRASH CREW BURN PIT	IHSB

*Status

- BFA Recorded Brownfields Agreement
- DSCA Site on the Dry-Cleaning Solvent Cleanup Act Inventory
- IHSB Active site on the Inactive Hazardous Sites Branch Inventory
- PRLF Site on the Pre-Regulatory Landfill Unit Inventory



Overview of Sites



- 名 Brownfields Sites
- 文 Pre-Regulatory Landfill Sites
- 营 Dry-Cleaning Solvent Cleanup Act Sites
- -22 Inactive Hazardous Sites

1:144,448 2.5 **F** -----1 25

0	1.29	2.0		D III
		- 6-		<u></u> +
Ó	2.75		5.5	11 km

0

Sources, Esri, HERE, DeLorme, intermap increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadasler NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), westops, Monmyladin, @ OpenStragtMsp contribution, and the GIS

WebAppBuilder for ArcGIS Carterel County, State of North Carolina DOT, Esri, HERE, Garmin, Internap, USGS, NGA, EPA, USDA, NPS |

Superfund Section SEPA Review





April 27, 2017

- Brownfields Sites ģ
- Pre-Regulatory Landfill Sites ☆
- Ø Dry-Cleaning Solvent Cleanup Act Siles
- 60 Inactive Hazardous Sites
- SEPA_AGOL All Sites ø

0.35 0.7 1.4 mi ······ 0.5 1 $2 \, \mathrm{km}$

Sources Esri, HERE, DeLorme, Informap, increment P. Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstops, Mapmylodia, @ OpenStreetMap contributors, and the GIS

Web AppBipRier for ArcGIS

Carletet County, State of North Carolina DOT, Esri, HERE, Garmin, INCREMENT P, Interment, USGS, METI/NASA, EPA, USDA (

0

E

0

Superfund Section SEPA Review





April 27, 2017

- ÷. Pre-Regulatory Landfill Sites
- Inactive Hazardous Sites
- 0 SEPA_AGOL - All Sites

Sources Esri, HERE, DeLorme, Interman, increment P. Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esn Japan, METI, Esri China (Hong Kong), nwisether, Mapmylodia @ OpenStreatMap contributors, and the GIS

1.4 mi

2 km

Web AppRuikter for AirGIS Carteret County, State of North Carolina DOT. Esri, HERE, Garmin, INCREMENT P. Informac, USGS, METI/NASA, EPA, USDA [

0.35

0.5

0.7

man and the second s

1

0

0

Map 3



- 肻 Pre-Regulatory Landfill Sites
- 藏 Inactive Hazardous Sites
- SEPA_AGOL All Sites ø

Sources: Esri, HERE, DeLorme, Internant P. Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordeance Survey, Esri Japan, METI, Esri China (Hong Kong), eventope, Mapmylisdia, © OpenStreetMap contributors, and the GIS

2 km

Web AppBreider for ArcGIS Carteret County, State of North Cerolina DOT, Esri, HERE, Garmin, INCREMENT P. Internan, USGS, METI/NASA, EPA, USDA |

0.5

1

0



ROY COOPER

MICHAEL S. REGAN

MICHAEL SCOTT

MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Drew Hammonds, Eastern District Supervisor - Solid Waste Section Drew Hammonda

DATE: May 16, 2017

SUBJECT: Review: Project #17-0433 – Carteret County (Draft Environmental Impact Statement – is for the Bogue Banks Master Beach Nourishment Project)

The Division of Waste Management, Solid Waste Section (Section) has reviewed the Draft Environmental Impact Statement submitted by the ACOE for the Bogue Banks Master Beach Nourishment Project, Carteret County, NC. Based on the information provided, the Section does not see an adverse impact on the surrounding community and likewise knows of no situations in the community, which would affect this project.

During the construction of this project, the US Army Corps of Engineers and/or its contractors should make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. Any waste generated by this project that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the US Army Corps of Engineers require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <u>https://deq.nc.gov/about/divisions/waste-management/waste-management-annual-reports/solid-waste-permitted-facility-list</u>

Questions regarding solid waste management for this project should be directed to Mr. Ray Williams, Environmental Senior Specialist, Solid Waste Section, at (252) 948-3955.

cc: Ray Williams, Environmental Senior Specialist

Reviewing Regional Office: <u>WIRO</u> Project Number: <u>17-0433</u> Due Date: <u>5/17/2017</u> County: Carteret

After review of this project it has been determined that the DEQ 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)				
Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post- application technical conference usual.	30 days (90 days)				
Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)				
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 begins 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)				
Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)				
Well Construction Permit	Complete application must be received and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)				
Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)				
Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (20.0100 thru 20.0300)	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 (20.0113).	90 days				
Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)				
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	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)				
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 are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$65 for the first are ready part of an acre. An express review option is available with additional fees						
Sedimentation and erosion control must be addre attention should be given to design and installation Stormwater conveyances and outlets.	essed in accordance with NCDOT's approved program. Particular on of appropriate perimeter sediment trapping devices as well as stable	(30 days)				
Sedimentation and erosion control must be addre Particular attention should be given to design and as stable Stormwater conveyances and outlets.	essed in accordance with Local Government's approved program. I installation of appropriate perimeter sediment trapping devices as well	Based on Local Program				
Compliance with 15A NCAC 2H .0126 - NPDES Sto Municipal Separate Storm Sewer System & Const	rmwater Program which regulates three types of activities: industrial, ruction activities that disturb \geq 1 acre.	30-60 days (90 days)				
Compliance with 15A NCAC 2H 1000 -State Storm construction stormwater runoff control. Areas su various other counties and watersheds throughout	water Permitting Programs regulate site development and post- ibject to these permit programs include all 20 coastal counties, and if the state.	45 days (90 days)				

Reviewing Regional Office: <u>WIRO</u> Project Number: <u>17-0433</u> Due Date: <u>5/17/2017</u>

County: Carteret

 	· · · · · · · · · · · · · · · · · · ·	Normal Process		
PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Time (statutory time limit)		
Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)		
Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a 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 or the total project cost will be required upon completion.	30 days (60 days)		
Oil Refining Facilities	N/A	90-120 days (N/A)		
Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A		
Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A		
State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 daγs N/A		
401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)		
Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: http://deg.nc.gov/about/divisions/water_resources/water_resources_permits/wastewater_ brancn/403-wetlands-buffer-permits/401-riparian-buffer-protection-program				
Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Fails Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: http://deo.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information				
CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)		
CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)		
Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.				
Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.				
Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C.0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, 30 days North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring 30 days requirements. For more information, contact the Public Water Supply Section, (919) 707-9100. 100				
If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699- 1634. For more information, contact the Public Water Supply Section, (919) 707-9100.				
Plans and specifications for the construction, expansion, or alteration of the water system must be approved through the delegated plan approval authority. Please contact them at for further information.				

State of North Carolina Department of Environmental Quality INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: <u>WIRO</u> Project Number: <u>17-0433</u> Due Date: <u>5/17/2017</u> County: <u>Carteret</u>

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No	Comments	Date
		comment		Review
DAQ	DAC	\square		5/1/17
DWR-WQROS			&	11
(Aquifer & Surface)	&			11
DWR-PWS	HLC	\square		5/1/17
DEMLR (LQ & SW)	DES		Any land disturbance landward of the CAMA designated line of first line of stable vegetation affecting one acre or more requires erosion and sediment control and stormwater application and approval.	4/28/17
DWM – UST	WER	\square		5/1/17
Other Comments				11



NORTH CAROLINA STATE CLEARINGHOUSE DEPARTMENT OF ADMINISTRATION INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H12: OTHER

STATE NUMBER:	27-5-0000-0433
DATE RECEIVED:	94 121 /2017
AGENCY RESPONSE:	0571772017
REVIEW CLOSED:	08/22/2017

MR RODNEY BUTLER CLEARINGHOUSE COORDINATOR DNCR - NATURAL HERITAGE PROGRAM 1651 MAIL SERVICE CENTER RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG DEPT OF ENVIRONMENTAL QUALITY DEPT OF NATURAL & CULTURAL RESOURCE DEPT OF TRANSPORTATION DNCR - NATURAL HERITAGE PROGRAM DPS - DIV OF EMERGENCY MANAGEMENT EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: U. S. Army Corps of Engineers TYPE: National Environmental Policy Act Draft Environmental Impact Statement

DESC: DEIS for the Bogue Banks Master Beach Nourishment Project with plans to implement a long term management plan to provide shoreline protection along the approx. 25 mile Bogue Banks barrier island. - view documents at: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Major-Projects

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.

Jan	
AS A RESULT OF THIS REVEEW THE POLLOWING IS SUBMITTED:	COMMENT X COMMENTS ATTACHED
SIGNED BY: COMUN RES	DATE: May 17,2017
l'	

ROY COOPER

SUSI H. HAMILTON



ังคม เจามาขอ การเฉลาหลังมนุกที่ป

NCNHDE-3412

May 2, 2017

Rodney Butler Natural Heritage Foundation North Carolina Department of Natural and Cultural Resources Raleigh, NC 27699 RE: Bogue Banks Master Beach Nourishment Project

Dear Rodney Butler:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists and is included for reference. Tables of natural areas and conservation/managed area within a one-mile radius of the project area, if any, are also included in this report.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve (DNP), Registered Heritage Area (RHA), Clean Water Management Trust Fund (CWMTF) easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butier at <u>rodney.butler@nccor.gov</u> or 919.707.8603.

Sincerely, NC Natural Heritage Program

·. ·

* Nothing Comparisi-

ూరియు మార్పెన్నారు. 24 రెజిస్లకు సర్వస్తున్ని కార్స్ సినిమాలు సినిమాలు
Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area Bogue Banks Master Beach Nourishment Project May 2, 2017 3-3412

NCNHDE	÷

Element Occu	mences D	ocumented Within Projec	t Area							
Taxonomic Group	EO ID	Ścientific Name	Common Name	· Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Ánimal Assemblade	32713	Onslow Bay Marine Rock Outcrop	E boarne	2005?	F	3-Medium	30.000 alt		G37	S3?
Animal Assemblade	18105	Waterbird Colony		1995-05-15	Η	3-Merlium	_~~~		GNR	53
Animal Assemblage	7770	Waterbird Colony	77 M W	2004	D	3-Medium	ag 76.78	Portant	GNR	\$3
Animal Assemblace	17110	Waterbird Colony		2014-07-04	C	3-Modium			GNR	S3
Animal Assemblage	15525	Waterbird Colony	Nome a	2014-06-04	D	3-Medhim		- Kyala	GNR	\$3
Animal	13919	Waterbird Colony		2014-06-26	D	3 Medium	Alter minute	****	GNR	\$3
Animal	17114	Waterbird Colony		2011	AB	3-Medium	vi (~ 196	~y*/2	GNR	S3
Animal	32556	Waterbird Colony	at the second	2014-06-17	ß	3 Medium	√ e 3erder	~ = ~	GNR	S3
Animal Animal	140	Waterbird Colony	anda ang	1993	D	3-Medium	weed.		GNR	S3
Animal Assemblace	16208	Waterbird Colony		2014-06-26	С	3 Morlium		• any	GNR	\$3
Animal	17796	Waterbird Colony	(ginatus	1988 05-30	Н	2-High	10100 m	Mongan war	GNR	\$3
Animal	18872	Waterbird Colony		2014-06-05	В	2-High			GNR	S3
Bird	5705	Charadrius melodus melodus	Piping Ployer - Atlantic Coast subspecies	1970-Summer	H7	3-Medium	Threatoned	Threatened	G313	S1B.S1
Bird	24220	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	2009	D	3-Madium	Threatened	Threatoned	G3T3	\$18,51 N
Bird	4167	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	2014-06-09	E	3-Medium	Threatened	Threatened	G3T3	S1B.S1
Bim	6217	Charadrius wilsonia	Wilson's Plover	2007	Β?	3-Medium		Special Concern	G5	S2B

Element Occu	irrences D	ocumented Within Proje	ct Area		,					
Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	27206	Charadríus wilsonia	Wilson's Plover	2007	C?	3 Medium	an an an	Special Concern	G5	S2B
Rird	3795	Gelochelidon nilotica	Gull-bitled Terra	1993-06-02	ann.	3-Medium		Threatened	G5	S1S2B
Bird	2416	Gelochelidon nilotica	Guil-billed Tern	1988	H	3-Medium	14 W. w.	Threatoned	G5	\$1\$2B
Bird	3243	Gelochelidon nilotica	Gull billed Tern	1988	Н	2-High		Threatened	G5	S1S26
Bird	26017	Haematopus palliatus	American Oystercalr her	2007	С	3 Mędium	AA NOL SE	Special Connem	G5	S2S3B, S3N
Bird	27267	Haematopus palliatus	American Oystercateber	2007	Ð	3-Modium	~~~	Special Corrom	G5	S2S36. S3N
Bird	27374	Haematopus palliatus	American Oystercatcher	2007	D	3 Medium	2//2	Special Concern	G5	S2S3B, S3N
Bird	26024	Haemalopus palliatus	American Oystercatcher	2007	D	2-Hligh		Special Concern	G5	S2S3B. S3N
Bird	16257	Passerina ciris	Painted Bunting	2005	8	3-Merlium	Species of Concern	Special Concern	G5	S3B
Bird	17588	Rynchops niger	Plack Skimmer	1995-05-15	F	3-Monium		Special Concern	G5	\$28,83 N
Bird	16216	Rynchops niger	Black Skimmer	1988	Н	3-Medium	44	Special Concern	G5	S2E.S3
Bird	716	Rynchops niger	Blank Skimmer	2014-07-04	D	3 Merilum		Special	G5	S2B.S3
Bird	24014	Rynchops niger	Black Skimmer	2007	a	3-Medium		Special	G5	S2B.S3
Bìrd	15894	Rypchotis niger	Black Skiminor	2001	D	3-Medium	V 8 1000 - 000	Special	G5	\$29,63 M
Bird	14295	Rynchops niger	Black Skimmer	1988	H	2-High		Special	G5	S2B,S3
Bird	36378	Stema hirundo	Common Tem	1995-05-15	F	3 Medium		Spocial	G5	S2B
Bird	16253	Stema hirundo	Common Tem	2014-07-04	D	3-Medium		Special	G5	S2B
Bird	24016	Stema hirundo	Common Tern	2007	Q	3 Medium	ta stran	Special	G5	S2B
Bird	17997	Sterna hirundo	Common Tern	2004	D	3-Modium	W ==	Special Concern	G5	S2B

Taxonomic Group	EOID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	28805	Stema hirundo	Common Tern		Н	2 High	11 W 16	Special Concern	G S	S2B
Bird	35776	Sternula antillarum	Least Tem	1993-06-02	ļ.	3-Medium	- ~~	Special Concern	G4	S3B
Bird	3860	Stemula antillarum	l east Tern	2014-06-26	D	3-Mອດັບກາ		Special Concern	G4	S3B
Bird	35729	Sternula antiliarum	Least Tem	2014	$\int_{-\pi^{\prime\prime}}^{+\infty}$	3-Meriium	~	Special Concern	G4	S3B
Bird	14189	Stomula antiBarum	Least Tein	2011	AB	3-Modium	aa. W AF	Sp e cial Concern	G4	S3B
Bird	35640	Sternula anfillarum	Least Tern	2014	D	3-Medium		Special Concern	G4	S3B
Bird	10284	Stornula antillarum	Least Tem	2014	D	3 Medium		Special Concern	G4	S3B
Bird	35727	Stemula antillarum	Leost Tern .	1991		3-Medium	~~~	Special Concern	G4	S3B
Bird	35728	Stemula antillarum	Least Tem	2014	C.	3-Medlum	90, VM =10.	Sporial Concern	G4	S3B
Bird	35732	Stemula antillarum	Least Tem	1993	Н	3-Medium	يدو عاد عان	Special Concern	G4	S3B
Bird	17566	Stemula antillarum	Least Tem	1995-06-08	C	3 Medium	a. W 20	Special Concern	G4	S3B
Bird	7781	Sternula antillarum	l east Tem	2014-(16-26	С	3 Medium	70 W 70	Special Concern	G4	S3B
Bird	16695	Stemula antiliarum	Least Tern	2014-06=-5	AB	2-High	21. al - A	Special Concern	G4	S3B
Butterfly	11496	Atrytonopsis quinteri	Crystal Skipper	2016-07-28	A	3 Medium	Species of Concern	Significanily Ram	G1Q	S1
Butterfly	3211	Atrytonopsis quinteri	Crystal Skipper	2002-07-23	C7	3-Medium	Species of Concern	Significantly Rare	G1Q	St
Butterfly	585	Atrytonopsis quinteri	Crystal Skipper	2002-07-24	G	3-Modium	Species of Concern	Significantly Rate	G10	S1
Butterfly	6880	Atrytonopsis quinteri	Crystal Skipper	2004-08-11	AB	3-Medium	Species of Concern	Significantly Rate	G1Q	S1
Butterfly	11310	Atrytonopsis quinteri	Crystał Skipper	2002-07-23	Ċ,	3 Medium	Species of Concern	Significantly Rare	G1Q	S1

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rapk	Accuracy	Federal Status	State Status	Giobal Rank	State Rank
Butterfly	10143	Papilio cresphontes	Giant Swallowfail	2016-07-28	E	3-Medium	ર્શ પ્રધાન્ય,	Significantly Rate	G5	\$2S3
Butterfly	22137	Papilio crosphontes	Giant Swallowtail	2006-07-23	C?	3 Merlium		Significantly Rare	G5	S2S3
Grasshoppor or Katydid	34588	Mermiría bivillata	Two-striped Mermiria	2004-09 10	6-	2 High	10 W 1 W1	Significantly Rare	G5	S2S3
Lichen	10199	Teloschistes flavicans	Sunriso Lichen	1992-02-28	С	3 Modium	19.15.MB	Significantly Rare Peripheral	G4G5	S1
Lichen	7310	Teloschistos flavirans	Sunrise Lichen	1970-06	∳~-ą́	3 Madium	an de _{Pr}	Significantly Rare Peripheral	G4G5	S1
Lichen	26534	Teloschistes flavicans	Sunrise Lichon	2007-01-31	AB	2 High		Significantly Rare Peripheral	G4G5	S1
Moth	34584	Dargida alcada	an Armyworm Moth	1996-07-21		2-High		Significantly Rare	GNR	S162
Moth	34585	Dargida rubripennis	Pink Streak	2006-09-10	er i a Barr Barr	2 High		Signific antly Rare	G3G4	S2S3
Moth	34590	Datana ranaocops	Post-burn Datana Moth	2012-04-17	Ani Live	2-High		Significanlly Rare	G3G4	\$2\$3
Moth	3084	Franclemontia interrogans	Franclemont's Cane Moth	1980-04-12	н	3-Medlum	- (******	Significantly Rare	G3G4	52\$3
Moth	34588	Zale declarans	Dixie Zale	2010-04-02	E.	2 High	يەربەر ب	Significantly Raie	G5	S2S3
Moth	34592	Zale declarans	Dixie Zale	2012-04-18	form Land	2 High	ung tel	Significantly Raro	G5	\$2S3
Natural Community	10429	Dune Grass (Bhuestern Subtype)		2014-04-18	A	2-High	20 M C		G3	S1
Natural Community	1542	Dune Grass (Bluestem Subtype)	****	1993-10-05	В	3-Merlium	nit 100		G3	S 1
Natural Community	14023	Dune Grass (Bluestem Suhtype)	1 84	2006	C	3-Medium	in, 49	Picana, g	G3	S1
Natural Community	20085	Dune Grass (Southern Subtype)		2007-07-17	A	3-Modium		30 M.Aj	G3	S 2
Natural Community	28274	Interdune Pond	77.8	2010-01-31	G?	3 Medium	standy tot	in a sacrae	G1	\$1

Element Occu	urrences D	ocumented Within Projec	t Area							
Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Føderal Status	. State Status	Global Rank	State Rank
Natural	13557	Marilinte Evergreen		2012	A	2-High		~~ 61	G2	S2
Community		Enrest (Mid Atlantic Subtype)								
Natural	2035	Maritime Evergreen		1990-05-20	C	2 High		00 AV 44	G2	S2
Community		Forest (Mid Atlantic Subtype)				. Mu				
Natural	28272	Maritime Evergreen	with w	2012	В	2-High	wa 5/1 = 0		G2	S2
Community		Forest (Mid Atlantic Subtyne)				2				
Natural	14117	Maritime Everareon	V6 100.015	2014-04-18	в	2 High	an 15 m		G2	S2
Community	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Forest (Mid Atlantic Sublype)				0				
Natural	17357	Maritime Evergreen	P(r _ alls = 44	1998	С	2 High	3-4 == v/v	nd secon	G2	S2
Community		Forest (Mid Atlantic Subtype)								
Natural	7765	Maritime Evergreen	vv	1988-02-09	C	3-Modium	~	-100 Mail	G2	S2
Community		Forest (Mid Aflanfic Subtype)								
Natural Community	17859	Maritime Shrub (Stunted Tree Subtype)	fuque 64	2014-04-18	А	3-Medium		-14 m	G3	S2
Natural Community	16511	Marilime Shrub (Stuntod Tree Subtype)	ngan ng	2010	B?	2-High			G3	S2
Natural	19087	Maritime Shrub (Stunted	50, mp. 49.	2006	CD	2-Hiah		0 ±-	G3	S2
Community		Tree Subtype)				N ²				
Natural	2088	Maritime Shrub (Wax-	je koji dan	2007-07-19	B7	2-High		÷	G3G5	S47
Community		Myrile Subtype)				~				
Natural	30395	Matitime Shrub (Wax-	يعلم هنو المه	2014-04-18	A.	3-Medium	per sus rei	-	G3G5	S4?
Community		Myrtle Subtype)								
Natural	14119	Maritime Shrub Swamp		2010	BC	2-Fliph			G1	S1
Community		(Degwood Subtype)				64°				
Natural	19722	Madilime Swamp Forest	van mir ladi	1987-10-31	A	2-High		17 M	G2	S2
Community		(Typic Subtype)								
Natural	9142	Maritime Wet Grassland	Nor Bio. Reg	2014-04-18	В	2-High			G2	52
Community		(Southern Hairgrass Subtype)				54.V				

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural Community	16547	Sall Flat		1986-06-29	Α?	2 High	w (N 10)	a t touch	G5	S4
Naturat Community	16845	Salt Marsh (Carolinian Subtype)	n 394	2014-04-18	A	2-High		742	G5	S4
Matural Community	18492	Satt Marsh (Catolinian Subtype)		2013-04-16	A?	3-Merlium			G5	S4
Natural Community	18915	Salt Marsh (Carolinian Subtype)	\$7 W	2008	A,	2 Migh	star des star	≈ f aith ins	G5	S4
Natural Community	10076	Salt Marsh (Carolinian Subtype)		1987-10-31	В	2 High		awan nge	G5	S4
Ropfile	13110	Alligator mississippiensis	American Alligator	1978-12	H?	2-High	Threatened Similar Appearabce	Threatoned	G5	S3
Reptile	19197	Caretta caretta	Loggerhead Snaturtle	2014	B?	3 Modium	Theatenad	Threatoned	G3	\$3B,\$3 N
Reptile	2326	Carella carella	Logaethead Scaturile	2012	BC	3-Madium	Threatenad	Threatened	G3	S3B,S3 N
Reptile	4805	Caretta caretta	Loggerhead Seaturtic	2012	CD	3-Medium	Threatened	Threatoped	G3	S3B,S3 N
Reptile	31877	Chelonia myrlas	Green Seaturfie	2014	Ę,	3-Medium	Threatened	Threatened	G3	S1B,SU N
Reptile	35140	Crotalus horridus	Timber Ratilosnake	2008-10-24	jana Jana Jana	2-High		Special Concern	G4	83
Reptile	34583	Grotalus horridus	Timbor Ralllesnake	2011-07-17	and bree	2 High		Special Concern	G4	S3
Replie	31883	Lepidochelys kampil	Komp's Ridley Seaturtle	2014	D	3-Medium	Endangered	Endanjerod	G1	S1B,SU N
Reptile	16801	Malorlemys terrapin	Diamondback Terrapin	2008-04-13	E	3-Merlium	Species of Concern	Spaciat Concern	G4	S3
Reptile	13517	Malarlemys tenapin	Diamondback Terrapin	2013-04-11		3-Medium	Species of Continue	Special Concern	G4	S3
Roptile	3232	Malaclemys terrapin	Diemondback Torrapia	1964 08	투여	3-Medium	Species of Concern	Special Concera	G4	S3
Vascular Plant	15306	Amaranthus pumilus	Seabeach Amaranth	2015-09-21	С	3-Medium	Threatened	Threatened	G2	S1S2
Vascular Plant	278	Amaranthus pumitus	Seabeach Amaranth	2012-08-24	0	2-High	Threatmod	Threatened	G2	S1S2
Vascular Plant	17109	Amaranthus pumilius	Seabeach Amaranth	2013-07-25	\Box	2-High	Threatoned	Threataned	G2	S1S2

Element Occurrences Documented Within Project Area

Element Occur	rences D	ocumented Within Projec	ot Area							
Taxonomic Group	EO ID	Scientific Name	Ćommon Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federaí Status	State Status	Global Rank	State Rank
Vascular Plant	28342	Carex calcifugens	Calchim-fleeing Sedge	1994 07-01	E	2-High		Significantly Rare Throughout	G3	S2?
Vasculai Plani	23008	Carex calcifugens	Calcium-fleeing Sedge	1990-05-20	E	t.Verv High	~~~	Significantly Rars Throughout	G3	S2?
Vascular Plant	33168	Carex oligonaupa	Rich-woods Sedae	1990-05-20	E	2-High		Threatoned	G4G5	S1
Vascular Plani	26311	Clematis catesbyana	Coestal Virgin's bower	2005-09-05	Ŀ	2 High		Significantly Gara Perinhecal	G4G5	52
Vascular Plant	34582	Corvialis micrapiba	Slender Corvialis	2005-04-27	5	2 High	- 78	Threatened	G5T4	S1
Vascular Plant	396	Crocanthemum	Georgia Sunrose	2015-06-04	A	2 High	ing the sty	Endangered	G4	S1
Vascular Plant	17467	Cyperus letragonus	Four-angled Flatsedge	1970-08-13	Н	3-Medium		Special Concern Vulnerable	G4?	Sí
Vascular Plant	22824	Cyporus letragonus	Four-angled Flatsodge	2005-10-18	С	2 High		Special Concern Vulnerable	G4?	S1
Vascular Plant	9059	Dichantholium caerulescens	Blue Witch Grass	2002-09-26	e	3 Medium	Species of Concern	Endangered	G2G3	8182
Vascular Plant	32686	Elencharis rostellata	Beaked Spikenish	2011-06-14	E.	2 High		Significantly Rare Other	G5	S2
Vascular Flant	21185	Hibiscus aculeatus	Comfortroot	1978		3 Medium	~~ [_]	Threatoned	G4G5	S 1
Vascular Plant	32602	lpomoea imporati	Beach Morning-glory	2013-09-24	D	3-Modium	-14 M	Threatened	G5	St
Vascular Plant	7689	Inomoea imperati	Beach Morning glory	2003	В	3-Medium	-19-16- ¹⁰	Threatened	G5	S1
Vascular Plant	33995	Ipomoea imperati	Seach Morning glory	2014-10-28	С	2-1 ligh		Threatened	G5	S1
Vascular Plant	19122	Malaxis spicata	Florida Arlder's-mouth	1989-05-24	B?	3 Medium		Spociał Concern Vulnerable	G4?	S1
Vascular Plant	28270	Oplismenus setarius	Shortleaf Basket Grass	2009-11-03	Α	2 High		Significantly Paro Porioheral	G5T5	S1
Vascular Plant	12708	Polygonium glaucum	Seabeach Knotword	2015-06-04	A	3-Modium	Market was	Endangeted	G3	S1
Vəscular Plant	1995	Polygonum glaucum	Seabcach Knotweed	2007-09-15	D	3-Medium	~~~	Endangered	G3	S1
Vascular Plant	19882	Rhynchospora odorata	Fragrant Bnaksedge	2002-09-26	E	3-Medium		Special Concern Vulnerable	G4	S1

Element Occur	rences Do	ocumented Within Projec	t Area							
Taxonomic	EO ID	Scientific Name	Common Name	Last	Element	Accuracy	Federal	State	Global	State
Group				Observation Date	Occurrence Rank		Status	Status	Rank	Rank
Vascular Plant	7750	Sageretia minutiflora	Small-flowered Buckthorn	2013-10-04	С	2-High	~	Threatened	G4	S1
Vascular Plant	26576	Sesuvium portulacastrum	Shoroline Sea purslane	2006-10-07	E	3-Modium		Significantly	G5	S1
								Rare Poriphoral		
Vascular Plant	34587	Solanum pseudogracile	Graceful Nightshade	2003-07-09	E	2 High		Significantly	GNR	\$1
								Rare		
								Throughout		
Vascular Plant	1109	Trichosloma sp. 1	Dune Bluccurts	2005-10-18	с	3-Medium	Species of	Significantly	G2	S2
							Concern	Rare Limited		
Vescular Plant	23972	Trichostema sp. 1	Dune Bluecuris	2004-05-06	Ē	3 Medium	Species of	Significantly	G2	S2
							Concern	Rare [imited		
Vascular Plant	19449	Yucca gloriosa	Moundlily Yucca	1968-05-24	Н	3 Medium	~~~	Significantly	G4?	S27
					-			Pare Poriphore		
Vascular Plant	12649	Yuqca gloriosa	Moundlily Yucca	1990	Ē	3 Medium		Significantly	Ģ4?	S27
					-	~ · · · ·		Rare l'onphoral	A 1 A	
Vascular Plant	14308	Yucca gloriosa	Moundlily Yucca	2006-10-07	C	2-High		Sign#c.ant'/	G47	S2?
					-	a 14 X		Kare Pompheral	~ 10	
Vascular Plant	13032	Yucca gloriosa	Moundhly Yueca	1992-02-28	D	3-Môunnu		Significantly	647	527
								uchre Meripheral		

Natural Areas Documented Within Project Area		
Site Name	Representational Rating	Collective Rating
Bogue Intel Outcrop	R3 (High)	C5 (General)
Shackleford Banks	R2 (Very High)	C1 (Exceptional)
Hoop Hole Creek Maritime Forest	R2 (Very High)	C4 (Moderate)
Salter Path Maritime Forest	R1 (Exceptional)	C4 (Moderale)
Salter Path Dunes Natural Area	R2 (Very High)	C4 (Moderate)
Huggins/Dudley Island	R2 (Vory High)	C2 (Very High)
Fort Macon State Park/Brandt Island	R1 (Exceptional)	C1 (Exceptional)
Bogue Inlet/Bogue Sound Bird Nesting Islands	R4 (Moderate)	C4 (Moderate)
Bear Island and Marshes	R1 (Exceptional)	C1 (Exceptional)
Theodore Roosevelt State Natural Area	R1 (Exceptional)	C3 (High)
Emerald Isle Woods	R3 (High)	C4 (Moderate)
Emerald Isle/West End Beach	R3 (High)	C3 (High)

Managed Areas Documented Within Project Area		O
Managed Area Name	Uwner	Owner Type
NC Clean Water Management Trust Fund Easement	NC DNCR, Clean Water Management Trust Fund	State
NC Department of Transportation Mitigation Site	NC Department of Transportation	State
Cape Lookout National Seashore	US National Park Service	Federal
NC Submerged Lands	NC Department of Administration	State
Cape Lookout National Seashore/Shackleford Banks RH/	A US National Park Service	Federal
Cape Lookout National Seashore - Shackleford Banks Wilderness	US National Park Service	Federal
North Carolina Coastal Federation Preserve	North Carolina Coastal Federation	Private
Hammocks Beach State Park	NC DNCR, Division of Parks and Recreation	State
Carteret County Open Space	Carteret County; multiple local government	Local Government
Hammocks Beach State Park DNP	NC DNCR, Division of Parks and Recreation	State
Port of Morehead City	NC State Ports Authority	State
Fort Macon State Park	NC DNCR, Division of Parks and Recreation	State
Fort Macon State Park DNP	NC DNCR, Division of Parks and Recreation	State
Theodore Roosevelt State Natural Area	NC DNCR, Division of Parks and Recreation	State
Theodore Roosevelt State Natural Area DNP	NC DNCR, Division of Parks and Recreation	State
Brant Island RHA	NC Wildlife Resources Commission	State
Theodore Roosevelt Maritime Swamp Forest Unique	NC NCDR-Theodore Roosevelt State Natural	State
Wetland	Area	
Bogue Inlet Outcrop RHA	NC DEQ, Division of Marine Fisheries	State
Salter Path Dunes RHA	NC DNCR, Aquariums	State
NC Aquarium at Pine Knoll Shores	NC DNCR, Aquariums	State
Salter Path Dunes Natural Area	NC DNCR, Aquariums	State
Coast Guard Station Fort Macon	US Department of Homeland Security	Federal
Coastal Hunting Land Conservation Group Conservation	Coastal Hunting Land Conservation Group	Private
Easement		

NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHÅ), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at bit construction of status contraction of explanation of status designations and codes can be found at bit construction of the Color at the Color

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Wilhin a One-mile Radius of the Project Area Bogue Banks Master Beach Nourishment Project May 2, 2017 NCNHDE-3412

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Føderal Status	State Status	Globai Rank	State Rank
Amphibian	35947	Anaxyms quercicus	Oak Toad	1971-09-25	H	4-Low		Signific antly Rare	G2	S3
Anima!	32713	Onslow Bay Marine Roc	h	2005?	E	3 Madium			G3?	S37
Assemblage		Ουίστορ								
Animal Assemblade	18105	Waterbird Colony		1995-05-15	Η	3 Modium		W P 0.00	GNR	\$3.
Animal Assemblanc	7770	Waterbird Colony		2004	D	3-Medium	-10.00 mg	ar 49 cc	GNR	\$3
Animal	17110	Waterbird Colony		2014-07-04	С	3 Medium	*		GNR	S3
Animal	6586	Waterbird Colony		1983-05-22	F	3-Madium	مد م ر مر م		GNR	S3
Assemblage Animat	15525	Waterbird Colony	-	2014-06-04	D	3-M∩dium			GNR	S3
Animal	7771	Waterhird Colony		1988-05-30	x	3-Medium	***		GNR	\$3
Assemblage Animal	13919	Waterbird Colony		2014-06-26	D	3 Medium	40 th 50		GNR	S3
Animal Animal	36414	Waterbird Colony		2001-06-21	P ^	3 Medium	~~-	4° 1 9 ang	GNR	\$3
Animal	17114	Waterbird Colony	arine de	2011	AB	3-Medium		- Mag. 197 (L.).	GNR	S3
Anima!	979	Waterbird Colony		1983-06	Н	3-Modium	161. (197. AS)	10.00 M	GMR	53
Animal Anombiage	28844	Waterhird Colony		1983	H	3 Medium	~~~		GNR	83
Animal	541	Waterbird Colony	¥-14	1991-05-30	F	3 Medium	ANT HAS ANY	4. NR JUL	GNR	S3
Animal	32556	Waterbird Colony	nie Felan	2014-06-17	E	3 Medium			GNR	S3
Animal Assemblage	140	Waterbird Colony	×	1993	D	3-Medium		****	GNR	53

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Animal Assemblage	26655	Waterbird Golony	, 	2007	D	3-Medium	any 199 (199	AM 20 AA	GNR	S3
Animal Assemblace	23990	Waterbird Colony	#~*	2014-06-26	С	3-Medium			GNR	\$3
Animal Assemblage	6889	Waterbird Colony	2019-00 	1983	Н	3 Modium	~-#	pratice)	GNR	S3
Animal Assemblado	5453	Waterhird Colony	1999 - 199 199	2014-05-09	B	3-Merlium		din tau	GNR	S3
Animal Assemblage	13855	Waterbird Colony		1977	₽ţ	3-Medium	~~~~~		GNR	S3
Animal Assemblage	15192	Waterbird Colony	(ar 47 m)	1988-05-30	Η	3 Medium	PT 1 - 44	1000.00	GMR	S3
Animal Assemblage	13704	Waterbird Colony		1993	D	3-Medium			GNR	83
Animal Assemblace	16208	Waterbird Colony	An Income	2014-06-26	С	3-Medium		, yes	GNR	83
Animal Assemblage	15584	Waterbird Colony		2007-05-09	С	3-Medium		\$17.00°00	ONR	S3
Animal Assemblage	17796	Waterbird Golony	de Roma	1988-05-30	ŀ	2-High	-dav a	- 195 40	GNR	S3
Animal Assemblage	35649	Waterbird Colony	ar 4-16.	2014-06-04	D	2-High		a1 adda	GNR	S3
Anima! Assemblage	8585	Waterbird Colony	407	2014-06-17	В	2-High	tan kara.	10 UT 11	GNR	S3
Animal Assembiage	18872	Waterbird Colony	A 17 T	2014-06-05	В	2-High			GMR	\$3
Animal Assemblage	29634	Waterblid Colony		2014-06-18	С	2 High	***	Alg. Land Vice.	GNR	S3
Bird	5705	Charadrius melorius melorius	Piping Plover - Atlantic Coast subspecies	1970-Summor	H?	3-Medium	Threathnod	Threatened	G3T3	S1B,S1 N
Bird	16486	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	2009	free.	4-Low	Threatoned	Threatened	G3T3	\$18,\$1 N
Bird	2 4220	Charadrius melodos melodus	Piping Plover - Atlantic Coast subspecies	2009	D	3-Modium	Threatoned	Threatoned	G3T3	S1B,S1 N
Bird	4167	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	2014-06-09	ann Meir Anna	3-Merlium	Threatoned	Threatrined	G3T3	S1B,S1 N

Element Occu Taxonomic Group	EO ID	ocumenteo Within a Of Ścientific Name	Common Name	oject Area Last Observation	Element Occurrence Pank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	27192	Charadrius wilsonia	Wilson's Plover	2007	BC	4-Low	18 W. at	Special Concorn	G5	S2B
Bird	12064	Charactrius wilsonia	Wilson's Plover	2007	A	4-Low	*	Special Concorn	G5	S2B
Bird	8008	Charadrius wilsonia	Wilson's Ployer	2007	8	4-Low	the prices	Special Concern	G5	S2B
Bird	27197	Charadrius wilsonia	Wilson's Plover	2007	CD	4-Low		Special Contern	G5	S2B
Bird	6218	Charadrius wilsonia	Wilson's Plover	2007	А	3 Madium	1979 a.	Special Concern	G5	S2B
Bird	6217	Charadrius wilsonia	Wilson's Plover	2007	B?	3-Medium	ang alite spe	Special Concern	G5	S2B
Bird	27206	Charadrius wilsonia	Wilson's Plover	2007	C?	3-Medium	viji va poj	Special Concern	G5	S2B
Bird	27203	Charadrius wilsonla	Wilson's Plover	2007	C?	3-Medium	100 100 100	Special Concern	G5	S2B
Bird	8291	Egrolfa caeruloa	Little Blue Heron	2011	С	3-Merlium		Sperial Concern	G5	\$3B.S3 N
Gird	14955	Egretta caerulea	Little Blue Haron	1988 05-30	H	3-Medium	a	Special Concern	G5	S3B,S3 N
Bird	11420	Egretta caerulea	Little Blue Heron	1983-06	H	3-Medium		Special Concern	G5	S3B,S3 N
Birđ	861	Egretta caerulea	Little Blue Horon	1988-05-31	Х	2-High	100.04 a.c.	Special Concern	G5	\$3B.\$3 N
Bird	29673	Egrotta cacrulea	Little Blue Horon		H	2-High		Special Concern	Gō	S3B,S3 N
Bird	18484	Egrella thuia	Snowy Egret	2011	C.	3 Medium	and you we	Special Concern	G5	S2S3B, S3N
Bird	4512	Egretta thula	Snowy Egrel	1988-05-30	}−	3-Medium	new and has	Special Concern	G5	S2S3B, S3N
Bird	7821	Egrotta thuta	Showy Egrel	1983-06	H	3-Medium	** = **	Special Concern	G5	S2S3B S3N
Bird	15950	Egretta thula	Snowy Egret	1999-06-08	Х	2-High	- Ayun	Special Concern	G5	S2S3B, S3N
Bird	29632	Egretta thula	Snowy Egrel	1993	ŀ-ļ	2 High		Special Concern	G5	S2S3B, S3N

. ~ ... -

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	l State Rank
Rird	8341	Egretta tricolor	Tricolared Heron	2014-05-09	D	3 Medium	14.00 M	Special Concern	G5	S3B.S3 N
Bird	1681	Egretta fricolor	Tricolored Heran	1988-05-30	Н	3 Mertium	~~~	Special Concern	G5	S3B,S3 N
Bird	6052	Egralla tricolor	Tricolored Heron	1983-06	Н	3 Medium		Special Concern	G5	\$3B.\$3 N
Bird	16722	Egretta tricolor	Tricelored Heron	1993-05-21	Х	2-High	4	Special Concern	G5	S3B,S3 N
Bird	29635	Egretta tricolor	Tricolored Heron	1993	H	2-Hligh	****	Special Concern	G5	S3B,S3 N
Bird	3795	Gelochelidon nilotica	Gull-billed Tern	1993-06-02	F	3 Medium		Threatened	G5	S1S28
Bird	2416	Gelochelidon nilotica	Gull billed Terri	1988		3 Medium		Threatened	G5	S1S2B
Rírd	13662	Gelochelidon nilotica	Gull-billed Tern	1988-05-30	Х	3-Modium		Threatened	G5	S1S2B
Bird	36411	Gelochelidon nilotica	Gull-billed Tem	1991-05-30	F	3-Medium	****	Threatened	G5	S1S2B
Bird	35615	Gelochelidon nilotica	Gull-billed Tern	2014-06-26	D	3-Medium		Thmatened	G5	S1S2B
Bird	3243	Gelochelidon nilofica	Gull-billed Tern	1988	Н	2-High		Throatennel	G5	S1S2B
Bird	27240	Haemalopus pallatus	American Oystercatcher	2007	AB	4-Low	~~~	Special Concern	G5	S2S3B. S3N
Birđ	27218	Haemalopus palliatus	American Oystercatchor	2007	D	4-Low		Special Concern	G5	S2S3B, S3N
Rind	26021	Haematopus palliatus	Amorican Oystercatcher	2007	AB	4-1.0W		Sponial Concern	G5	S2S3B, S3N
Bird	27256	Haematopus palliatus	American Oystercatcher	2007	D	4-Low	200	Special Concern	G5	S2S3B, S3N
Rind	27380	Haematopus pallielus	American Oystercatcher	2007	AB	4-Low		Special Concern	G5	S2S3B, S3N
Bird	27228	Haematopus palliatus	American Oystercalcher	2007	BC	4-Low	****	Special Concern	G5	S2S3B, S3N
Bird	26023	Haematopus palliatus	American Oystercatcher	2007	D	3 Medium		Special Concern	G5	S2S3B. S3N
Dird	26017	Haematopus palliatus	American Oystercatcher	2007	С	3 Modium	***	Special Concern	G5	S2S3B, 53N
Bird	27274	Haematopus palliatus	American Oystercatcher	2007	D	3-Medium		Special Consom	G5	S2S3B. S3N
Bìrd	27267	Haemalopus palliatus	American Oystercatcher	2007	D	3 Morlium	- ₁₅ - 1,	Special Concert	G5	S2S3B. S3N

Element Occur Taxonomic Group	EO ID	Scientific Name	-mile Radius of the Projec Common Name	t Arca Last Observation	Element Occurrence Pank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	27374	Hanmatopus patilotus	American Oystercatcher	2007	D	3-Medium		Special	G5	S2S3B,
								Concern		S3N
Bird	27377	Haematopus palifatus	American Oystercatcher	2007	D	3-Modium		Special	G5	S2S3B,
					_			Gancorn	<u> </u>	S3N
Rird	26020	Haemalopus palliatus	Amorican Oysterratcher	2007	9	3 Medium	an en 19.	Sherial	G_{5}	S2S38,
	00004			\$0.0 1	-	Dillimb		Concern	05	S3N
Bird	26024	Haemalopus palliatus	Amorican Oystercalche	2007		∠-Mgn	۵۰۹۰ مر	opena	Go	87.930. 52M
T 2:1	7110	Limentonus mentessus	Dlock pocked CIM	1002.07	E	4100		Significanti	G5	2314 24B
Biru	7119	Linner of the magnetic starts	()(9)16-099(8)203 O (8)	1900-01	ţ	-4 - C C 45		Rare	00	0,0
Rive	25234	Ivohowhus wills	Loost Bittem	1990-09	C2	4-1 GW	an 200,000	Special	G5	S253B
CH N	20204	to the Levilla Brook	Const Dation	1000 00	9.	1		Cencom		
Bird	522	Passerino ciris	Painted Bunting	1994-Pre	E	4-Low	Species of	Special	G5	S3B
			- L				Concorn	Concern		
Bird	10402	Passorina cirís	Painted Bunfing	1994-Pre	E	4-Low	Species of	Special	G5	S3B
			~				Concern	Concern		
Bird	19136	Passerina ciris	Painted Bunting	1994 Pre	Ê	4-Low	Species of	Special	G5	S3B
							Concoth	Concern		
Bird	13423	Passerina ciris	Painled Bunling	1994 Pre	£	4-Low	Spories of	Special	G5	S3B
					_		Concern	Concern	0.5	6 a 6
Rird	19135	Passerina ciris	Painted Bunfing	1994 Pre	E	4-Low	Species of	Special	65	S3B
	10000			2000 05 42	17	4 1	Concern	Concern	05	000
Bird	10588	Passenea cins	Laintea Rhunuð	2009-05-13	E.	4-LOW	Species of	Special	65	238
Direl	16057	Decoring circs	Daintad Dunting	2005	Ð	2 Madirina	Species of	Special	Ċ5	C 2D
DEG	19701	r assurea uns	Fanders Danierå	2000	D	0-040310304	Concern	Сереот	-00	000
Bird	18566	Pienadis folcinellus	Glossy this	1993-05-21	8	2.Hiah		Special	G5	S1S28
60.4	1123010	Lie Georgiananana	Curraby mae	(100,00,1	U	£ 1.69 .		Concein	00	0,020
Piní	17588	Rynchops place	Black Skimmer	1995-05-15	alar Ban	3-Modium	*-~	Special	G5	S28,S3
								Concern		Ν
Rird	16216	Rynchops niger	Black Skimuer	1988	ŀ − ₿	3-Medium		Special	G5	S2B,S3
								Concern		N
Bird	716	Rynchops niger	Black Skimmer	2014-07-04	D	3-Medium	100 AM AM	Special	G5	S2B,S3
					_			Concern		N
Bird	36408	Rynchops niger	Black Skimmer	2005-05-20	Р Ч	3-Medium	*	Special	G5	S2B,S3
								Concern		N

atod Million 0 er a ... D He Dark

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	Štate Status	Giobal Rank	State Rank
Bird	5207	Rynchops niger	Black Skimmer	1988 0 5 -30	X	3-Modium		Special	G5	S2B,S3
5% A		— • •		AL 44 44 194	-	~ • • •		Concern	170-187	N.
Bird	24014	Rynchops niger	Black Skimmer	2007	D	3-Medut01	- ~ ~	Special	Gb	SZH,S3 N
Dird	96416	Dunchoop mean	Riask Skimmor	2000 08.21	<u>F-</u>	Allekoow		Geodial	G5	52B 63
1, 2 TS + J	ours ru	17 Mars 10 From Para	The contraction of the second	2000-00-21	Ι	0-0464010		Conceto	<u>م</u>	N N
Rind	1580/	Pynchons pigor	Black Skimmer	2001	n	3-Medium	798 798 1997	Special	GS	S2B S3
L711 (1)	1 1001	Nymanga nga	Corracore Correcteror	2001	U U	Contraction of		Concern	00	N
Sint	36412	Runchons niger	Black Skiminer	1991-05-30	p.	3-Medium	*****	Special	G5	SZB S3
	COFIE	a de concedera con Bra		1001 00 00				Concern		N
Bird	35618	Rynchons niger	Black Skimmer	2014-06-26	D	3-Medium		Special	G5	S28.S3
• > • • •	000010	(Green burne) u	Construction of the second sec					Concern		N
Bird	14295	Ryachops niger	Black Skinner	1988	F	2-Hiah	~~-	Special	G5	S28.S3
		(.)						Concern		N
Bird	36378	Stema hirundo	Common Term	1995-05-15	F	3-Medium	245300 das.	Special	G5	S2B
								Concern		
Bird	16253	Sterna hirundo	Common Tern	2014-07-04	D	3-Medium		Special	G5	S2B
								Concern		
Bird	36409	Sterna hirundo	Common Tern	2007-05-22	F.	3-Medium	*	Special	G5	S2B
								Concern		
Bird	36417	Stema hirundo	Common Tarn	1988 05-30	X	3-Medium	17.07 m	Special	G5	S28
								Concern		
Bird	24016	Sterna hirunde	Common Tern	2007	D	3-Medium	451 • N 6m	Special	G5	S2B
								Concern		
Bird	36416	Stema birundo	Common Tem	2001-06-21	b.,	6-Unknow		Special	G5	S2B
						n		Concern		
Bird	17997	Stema hirundo	Common Tern	2004	D	3-Medium		Spocial	G5	S2B
								Concern		
Bird	28845	Sterna hirundo	Common Tern		H	3 Medium		Special	G5	S2B
								Concern		
Bird	36413	Sterna hirundo	Common Tern	1991-05-30	F	3-Medium	dim vice sale	Special	G5	S2B
								Concern		
Bird	23992	Sterna hirundo	Common Tern	2014-06-26	D	3-Madium		Special	G5	S2B
								Concern		
Bird	28805	Sterna hirundo	Common Tern		H	2 Lligh		Specia ^r	G5	S2B
								Concern		

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	23877	Sterna hirundo	Common Tern	2004-06-24		2-High	48 mi pi	Special Concern	G5	S2B
Birá	29636	Sterna hirundo	Common Tern	2004	H	2 High	arros pp	Special Concorn	G5	S2B
Bird	35776	Stemula antillarum	Least Tem	1993-06-02	. F	3 Medium	~ ~	Special Concern	G4	S3B
Bird	23765	Sternula antillarum	Least Tern	2004-08-22	D	4-Low	ne tar tak	Special Concern	G4	S3B
Bird	35772	Sternula anlillarum	Least Tern	1983-05-22	inn I	3 Medium		Special Concern	G4	\$3B
Bird	35775	Stemula antillarum	Least Tern	2004-06-02	F	3-Medium	19 kil 14	Special Concern	G4	S3B
Bird	23702	Steinula antillarum	Least Tem	1977	X	3-Medium	,e na na	Spocial Concern	G4	S3B
Bird	3860	Stemula antillarum	Least Tern	2014-06-26	D	3 Medium	20(shary	Special Concern	G4	838
Bind	35729	Stemula antilarum	Least Tem	2014	40	3 Medium	si(≈ 11	Special Concern	64	53B
Bild	14189	Sternina antinarum		2011	AB	3-Medium	# 12 W	Concern	64	038 020
Bird	34640	Steroula antillarum	Least Tern	2014	D	3. Modium		Concern	G4	238
Bird	10284	Stemula antilarum	Least Tem	2014	n	3. Modiana	adjuga na	Concern	Gd	S3B
Bird	35727	Stemula antillarum	Least Tern	1991	н	3 Modium	prine sig	Concera	64	538
Bird	35728	Stemula antiliarum	Least Tern	2014	С	3-Medium	r= r-	Concern	G4	S3B
Bird	28846	Stemula antillarum	LeastTern		н	3 Medium	67A	Concern Special	G4	S3B
Bird	35731	Stemula antillarum	Least Tern	2014-06-04	BC	3-Medium		Concera Special	G4	S3B
Bird	35732	Sternida antillarum	Least Tern	1993	Ì	3 Medium	*74	Concern Special	G4	S3B
								CONCEIN		

.

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Bird	35742	Stemula antillarum	Least Tern	1977	H	3 Medium		Special Concern	G4	S3B
Bird	35740	Sternula antillarum	Least Tem	1977	н	3 Medium		Special Concern	G4	S3B
Bird	35774	Sternula antillarum	Least Tern	1991-05-30	Н	3 Madium	8) (rd	Special Concern	G4	S3B
Bird	35733	Stermila antillarum	Least Tern	1977	Н	3-Medium		Special Concern	G4	S3B
Bird	35741	Stemula antillarum	Least Tem	1977	Н	3-Medium		Special Concern	G4	S3B
Bird	35752	Sternula antillarum	Least Tern	1995-06-20	7	3-Medium	7 ~ (*	Special Concern	G4	S3B
Bird	17566	Stemula antillarum	Least Tern	1995-06-08	С	3-Medium		Special Concern	G4	S3B
Bird	7781	Stemula antillarum	Least Tem	2014-06-26	C	3 Modium	10 mg yin	Special Concern	G4	S3B
Bird	15792	Stemula antillarum	Least Tem	2001-07-03	H	3-Medium	1 in 1	Special Concern	G4	S3B
Bird	16695	Sternula antillarum	l east Tern	2014-06=-5	AB	2-High	7 45.0	Special Concern	G4	S3B
Bird	26656	Sternula antillarum	Lenst Tem	2007-06-16	CD	2 High		Special Concom	G4	S3B
Bird	33042	Stemula antillarum	Least Tem	2011-06-08	С	2 High		Special Concern	G4	S3B
Buttorfly	14658	Atrytonopsis quinteri	Crystal Skipper	2015-04-21	B?	2 High	Species of Concern	Significantly Rare	G1Q	S1
Butterfly	9511	Atrytonopsis quinteri	Crystal Skipper	2001-07	AB	4-Low	Species of Concern	Significantly Rate	G1Q	S1
Butterfly	11496	Atrytonopsis quintari	Crystal Skipper	2016-07-28	А	3-Medium	Species of Concern	Significantly Rore	G1Q	S1
Butterfly	3211	Atrytonopsis quinteri	Crystal Skipper	2002-07-23	C?	3-Medium	Species of Concern	Significantly Rare	G1Q	S1
Butterfly	585	Atrytonopsis quinteri	Crystal Skipper	2002-07-24	С	3-Modilim	Spacies of Concern	Significantly Rare	G1Q	S1
Butterfly	6880	Atrytonopsis quinteri	Crystel Skipper	2004 08-11	AB	3 Medium	Species of Concern	Signific antly Raro	G1Q	S1

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Butterfly	11310	Atrytonopsis quinteri	Crystal Skipper	2002-07-23	С	3-Medium	Species of Concern	Significantly Rare	G1Q	S1
Butterfly	3694	Papilio cresphontos	Giant Swallowtail	2004-05-01	LL &	4-Low		Significantly Rare	G5	S2S3
Butterfly	10143	Papillo crosphontes	Giant Swallowfail	2016-07-28	form form	3-Medium	Ad 74 48	Signific antly Rare	G5	S2S3
Butterfly	22137	Papilio cresphontes	Giant Swallowtait	2006-07-23	C?	3 Medium		Significant'y Rare	G5	S2S3
Dragonfly or Damselfly	32036	Coryphaeschua ingens	Regal Damor	2004-Pre	H?	5-Very Low	44 mil 3 t	Significantly Rare	G5	S2?
Dragonfly or Damsel/iv	33787	Triacanthagyna trifida	Phantom Damer	2004-Pre	H?	5-Very Low		Significantly Rare	G5	S1?
Freshwaler Fish	24086	Aripenser brevirostrum	Shortnose Sturgeon	1999-01-28	E	5-Very Low	Endangared	Endangered	G3	S1
Freshwater Fish	32417	Acidenser oxyrinchus	Attantic Sturgeon	2012-04-04	E	4-Low	Endangered	Endangered	G3	S2
Grasshopper or Katydid	34586	Mermiria bivittata	Two-striped Mermidia	2004-09-10	MATT Actual Actual Actual	2-High		Significantly Rare	G5	S2S3
Grasshopper or Katydid	34591	Mermiria intertexta	Intertexta Mermiria	2006-09-20	in the second se	4-Low	- 10	Significantly Raro	G4?	\$2\$3
Lichen .	10199	Teloschieles flavicane	Sunise Lichon	1992-02-28	С	3 Medium	10.01.W	Significantly Rare Peripheral	G4G5	03
Lichen	7310	Teloschistes flavicans	Sunrise Lichen	1970-06	H	3-Medium		Significantly Rare Perpheral	G4G5	S1
Lichen	26634	Toloschistes flavicans	Sunrise Lichon	2007-01-31	AB	2-High		Significantly Rare Peripheral	G4G5	S1
Liverwort	1 0056	Lojeunea dimorphophylla	A Liverwort	1954	Н	4-Low		Significantly Rare Limited	G2G3	S1
Livenwort	14593	Plagiochila miradorensis var. miradorensis	A Livervort	1950-11-19	Н	4-Low	N 1964	Significantly Rare Peripheral	G4T4	SH
Mammat	9806	Trichechus manatus	West Indian Manatce	2007-06-01	E	5-Very Low	Endangerrd	Endangered	G2	S1N
Moss	23678	Tortula plinthobia	A Chain teeth Moss	1980-11-13	E	3-Medium		Significantly Rare Other	G4G5	S1?
Moth	34584	Dargida aleada	an Armyworm Moth	1996-07-21	E	2-High	~~-	Significantly Rare	GNR	S1S2

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Moth	34585	Dargida rubriponnis	Pink Streak	2006-09-10	Ľ.	2 High	ada aya diye	Significantly Rare	G3G4	\$283
Moth	34590	Dalana ranaeceps	Post-burn Datana Moth	2012-01-17	E	2-High		Significantly Rare	G3G4	S2S3
Moth	3084	Franciemontia interrogans	Francismoni's Cane Moth	1980-01 12	Н	3-Medium		Significantly Raro	G3G4	S2S3
Moth	34588	Zale doclarans	Dixie Zale	2010-04-02	nove Enter Konster	2 High	ndran de	Significantly Rare	G5	S2S3
Moih	34592	Zale declarans	Dizie Zale	2012-04-18	E	2-High	www.20	Significantly Raie	G5	S2S3
Natural Community	32942	Brackish Marsh (Sait Meadow Cordgrass Subtype)	1.1.9.1M	2012-05-03	С	3-Medium		49 m 14	G4G5	S4
Natural Community	19541	Brackish Marsh (Selt Meadow Cordgrass Subtype)	<u> </u>	2008	C?	2-High			G4G5	S4
Natural Community	27123	Coastal Fringe Shell Woodland	40 mg ar	1999-05-15	A	3 Medium	ы,		G27	S1
Netural Community	10429	Dune Grass (Bluestem Subtype)	are tool 640	2014-04-18	А	2-High	►(==		G3	S1
Natural Community	1542	Dune Grass (Bluestem Subtype)	An ann a	1993-10-05	B	3-Modium	400 Mail Ind	197 har 100	G3	S1
Natural Community	14023	Dune Grass (Bluestom Suhtype)	denge en	2006	C	3 Medium		200 BWA	G3	S1
Natural Community	20085	Dune Grass (Southern Subtype)	*	2007-07-17	A	3-Modium	Bhata ag	.eer ener a o	G3	S2
Natural Community	32940	Dune Grass (Southern Subtype)	44 mg ga	2012-05-03	С	2-Nigh	***	***	G3	S2
Natural Community	2984	Dune Grass (Southern Subtype)	an ta an	1997-11-09	C	2-High	an ann an	~~~	G3	\$2
Natural Community	2803	Interdune Pond		1978	NR	4-Low	24 hit w	the last site	Gt	S1
Natural Community	11137	Interdune Pond	fan ing san	1987-10-31	C?	4-Low	yaa haa aab		Gt	S1
Natural Community	28274	Interdurie Pond	14 Mary	2010-01 - 31	0?	3-Medlum	0-1		GI	81

Taxonomic Group	EOID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Matural	52B1	Maritime Dry Grassland	the way with	1978	NR	4-Low	~		G2G3	S2
Community		(Typic Subtype)								
Natural Community	13557	Maritimo Evergreen Forest (Mid Alfantic Subtype)	*	2012	A	2 High			G2	S2
Natural Community	17767	Maritime Evergreen Forest (Mid Atlantic Subtype)	a, a 19	2008	C	3 Medium			G2	S2
Natural Community	2035	Maritime Evergreen Forest (Mid Atlantic Subtype)	401 W	1990-05-20	C	2 High	ud 900 %.		G2	S2
Natural Community	28272	Maritime Evergreen Forest (Mid Atlantic Subtyne)	<i>и</i> ми,	2012	В	2-High	=	ilan dikum	G2	S2
Natural Community	14117	Maritime Evergroen Forest (Mid Atlantic Subtype)	ang ana pang	2014-04-18	В	2-High			G2	S2
Natural Community	17357	Maritime Evergreen Forest (Mid Atlantic Subtype)	ран.	1998	C	2 High			G2	S2
Natural Community	7765	Marifime Evergreen Forest (Mid Atlantic Subtype)	= 19 m	1988-02-09	С	3-Madium		an an ai	G2	S2
Natural Community	13563	Maritime Evergreen Forest (Mid Atlantic Subtype)	dow w	2008	С	2-High	nationage for	na nortes	62	S2
Natural Community	16055	Maritime Shrub (Stunted Tree Subtype)	undan met	1993-10-05	С	4-1 ow	s grante e Pa	was den star	G3	S2
Natural Community	17859	Maritime Shrub (Stunted Tree Subtype)	agan ta	2014-04-18	А	3 Medium		- ~ ~	G3	S2
Natural Community	16511	Maritime Shrub (Stunted Tree Subtype)	the server	2010	B?	2-High	and specific	www.wa	G3	S2
Natural Community	11688	Maritime Shrub (Stunted Tree Subtype)		2008	G	3 Medium	Auto and Auto	70 M N	G3	52
Natural Community	19087	Maritime Shrub (Shubtod		2006	CD	2-High			G3	S2

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural	2088	Marítime Skrub (Wax-		2007-07-19	B?	2 Hìgh	14.0000		G3G5	S47
Community	00000	wyrne Subtype)		0014 04 40		O. Marial Series			0005	0.40
Napira	30395	Mamme Snrub (Wax-		2014-04-18	A	3-worunn	10 (B. C.	20 V) W	6365	547
Commissey	4 + 4 + 15	Wyne Storpe)		2040	вC	31) II.a.			<u>~</u> 4	0.4
Natura) Comunati	14119	Manune Smuu Swamp	40 40 300-	20 (U	50	< ពាម្ព			(31
V-Ormmuniy Mahumi	40700	(Dogwood Sunsype)		1097 10 01	6	0 18-h			<u>^</u>	04
Community	10122		40 stand	1801-17-21	<i>2</i> 1	∠ rugu	*		(32	94
Northernal	0404	(Typic Sootype) Marilian Owana Carool		1007 11 00	(n)	O Lliah			<u></u>	00
Community	0104	Turio Subtural	an an an	1201-11-03	~	u این ا	07 07 800		G2	~~ 6
Moturol	1066	Maritime Wet Greedand		2007-07-10	<u>C</u> ?	A.L OW			62	\$2
Community	1000	Couthorn Haircrass	NAP Anton	2007-07-13	1 27 (~*~ 4 ,C23¥	70. 04 E4.		C.F.Z.	01
Community		Subtron								
Maturat	01/12	Maritime Wet Greeland		2014-04-19	R	2-Hlah			62	S2
Commistry	5172	(Southern Haitorass		2011 011.0	∎.,.*	E 1			Tee dian	
Communy		Subbaa)								
Natural	5812	Marsh Hammock		2012-05-03	С	3-Medium		THE PARTY.	G37	S2
Community	0012									
Natural	16844	Salt Flat	N 90 FF		NR	4-Low			G5	S4
Community	• / • •									
Natural	32939	Salt Flat	V3 NB 24	2012-05-03	C	3-Medium	-~-		G5	S4
Community										
Natural	16547	Salt Flat	11.11	1986-06-29	A?	2 High	~~~	+0 ***	G5	S4
Community	•					-23				
Natural	16845	Salt Marsh (Carolinian		2014-04-18	A	2 Hligh	~		G5	S4
Community		Subtype)								
Natural	18492	Salt Marsh (Caro'inian	M1 M1 M4	2013-04-16	A?	3-Medium	not set are	des uns age	G5	S4
Community		Subtype)								
Naturai	4733	Salt Marsh (Carolinian		2012-05-03	G	2 High			G5	S4
Community		Subtype)								
Natural	10811	Salt Marsh (Carolinian	****		NR	4-Low			G5	S4
Community		Subtype)								
Natural	18915	Salt Marsh (Carolinian	78 \ N 29	2008	Α	2-J-ligh	The contract		G5	S4
Community		Subtype)								
Natural	10076	Salt Marsh (Carolinian	10.0 86	1987-10-31	8	2-High		and the same	G5	S4
Community		Subtype)								

Taxonomic Group	EOID	Scientific Name	Common Name	Last Observation Date	Etement Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural Community	16404	Salt Shrub (Low Subtype) m m m	n e var i ve	NR	4-Low			G4	\$47
Natural Community	32943	Salt Shrub (Low Subtype) ~-		NR	3-Merlium			G4	S4?
Natural Community	20144	Upper Beach (Southern Subtype)	an the second	2012-05-13	07	2-High			G3	S3
Reptile	8569	Alligator mississippiensis	American Alligator	2005-07-01	11	4-Low	Threatoned Similar	Threatened	G5	S3
Reptile	13110	Alligator mississippiensis	Amorican Alligator	1978-12	H?	2-High	Appendance Threatened Similar	Thiedoned	G5	S 3
Replile	19197	Caretta caretta	Loggerhead Seaturtle	2014	8?	3-Merilum	Threatened	Threatened	63	S3B,S3 N
Ropfilo	16556	Carella caretta	Loggerhead Scaturile	2012	С	4-Low	Threataned	Threatennd	G3	S3B.S3 N
Reptile	2326	Caretta carella	Loggerhead Seaturile	2012	BC	3-Medium	Threatened	Threatened	G3	\$38,\$3 N
Roptile	4805	Caretta caretta	Loggerhead Seaturtle	2012	CD	3-Medium	Threatoned	Threaloned	G3	S3B,S3 N
Reptile	31877	Chelonia mydas	Green Seaturtle	2014	Ē	3-Medium	Threatened	Threatened	G3	S1B,SU N
Reptile	34144	Chelonia mydas	Greon Scaturile	2012	D	4-Low	Threatened	Threatoned	G3	S1B,SU N
Reptile	18626	Chelonia mydas	Green Seaturtle	2010	D	4-Low	Threatened	Threatened	G3	S1B,SU N
Reptile	35140	Grolatus horridus	Timber Ralflesnake	2008-10-24	For-	2-High	hu er d	Special Concern	G4	S 3
Reptile	34583	Crotalus horridus	Timber Rattlosnake	2011-07-17	para Reso Careto	2-High	Mar aka rang	Special Concom	G4	\$3
Reptile	7284	Hotorodon simus	Southorn Hognose Snake	1961-05-03	H	4-Low	Species of Concern	Special Concern	G2	S2
Reptile	31883	Lepidochelys kempli	Kemp's Rídley Seaturtle	2014	D	3-Medium	Endangered	Endangered	G1	S1B,SU N
Reptile	16801	Malaclomys terrapin	Diamondback Terrapin	2008-04-13	L.	3-Mediam	Species of Concern	Special Concern	G4	\$3

Taxonomic Group	EO ID	Scientific Name	Common Name	Lest Observation Date	Element Occurrence Rank	Accuracy	Federal Status	Stale Status	Global Rank	State Rank
Reptiro	15254	Malaclomys ferrapin	Dismondback Tenapin	2008-05-01	E.	3-Medium	Species of Concern	Special Concern	G4	83
Reptilo	13517	Malaclemys terrapin	Diamondback Terrapin	2013-04-11	Fee Ann.	3-Medium	Species of Concern	Special Concern	G4	S3
Replile	3232	Malaclemys terrapin	Diamondback Terrapin	1964-08	jan se Barti	3-Medium	Species of Concern	Special Concern	G4	S3
Reptile	12705	Malaclomya terrapin	Diamondback Terrapin	1993-10 04	Ë	3-Medium	Species of Concom	Special Concern	G4	S 3
Reptile	36449	Masticophis flagellum	Coachwhip	1971-06-03	H?	4-Low	90 an an	Significantly Rare	G5	S3
Reptile	17411	Neredia sipedon williamengelsi	Carolina Watersnake	1972-07	H?	4-Low		Special Concern	G5T3	83
Vascular Plant	15306	Amaranthus pumilus	Seabeach Amaranth	2015-09-21	C	3-Medium	Threatener	Threatened	G2	S1S2
Vascular Plant	278	Amaranthus pumbus	Seabeach Amaranth	2012-08-24	С	2-High	Threatener	Threatened	G2	S152
Vascular Plant	14167	Amaranthus pumilus	Seabeach Amaranth	2013	C.	4-Low	Threatened	Threatened	G2	S1S2
Vascular Plant	17109	Amaranthus pumilus	Seaboach Amaranth	2013-07-25	Ð	2-High	Threatened	Threatened	G2	S1S2
Vascular Plant	4359	Amaranthus pumilus	Seabeach Amaranth	1991-01-26	۴	3 Medium	Threatened	Threatened	G2	S1S2
Vascular Plant	21491	Arenaria lanuginosa var. Jan uginosa	Spreading Sandwort	1949-08-03	· H	4-Low		Significantly Para Periphetal	G575	S1
Vascular Plant	22786	Arenaria lanuginosa var Ianuginosa	Spreading Sandwort	2002-07-20	ester Eury	2-High		Significantly Rare Peripheral	G5T5	S1
Vascular Plant	31085	Arenaria lanuginesa var. Ianuginesa	Spreading Sandwort	1999-95-15	E	2-High	6(P−(P), A)=	Significantly Rare Peripheral	G5T5	S1
Vascular Plant	33678	Cardamine longii	Long's Bitteraress	2009-08-05	<u></u>	2 Ինցե		Special Concern Vulnorable	G3?	S1
Vascular Plant	28342	Carex raicifugens	Calcium-floring Sodge	1994-07-01	E.	2·High	au no va	Sign ^{ifi} cantly Rare Throughout	G3	S2?
Vascular Plant	23008	Carex calcifugens	Calcium-fleeing Sedge	1990-05-20	Ę	1-Very High		Significantly Rare Throughout	G3	S27
Vascular Plant	33168	Carex oligocarpa	Rich-woods Sedae	1990-05-20	E	2 High		Threatened	G4G5	S1
Vascular Plant	3608	Ceratophyllum australe	Southern Hernwort	1960-05-31	H	4-Low		Significantly Pare Poriphoral	G5TNR	S1

•

Taxonomic Group	di O3	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	26311	Clomatis catesbyana	Coastal Virgin's bower	2005-09-05		2 High	Shi Adrian	Significantly Rare Peripheral	G4G5	S2
Vascular Plant	26315	Clematis catesbyana	Coastal Virgin's bower	2005 08-12	1	2 High		Significantly Pare Peripheral	G4G5	S2
Vascular Plant	26329	Corallerhiza wisteriana	Spring Coral-root	1968-04	H	3-Medium		Significantly Rare Other	G5	S1S2
Vascular Plant	34582	Corydalis micraniha	Slender Corydalis	2005-04-27	E	2-High	100.07 / Pet	Threatened	G5T4	S1
Vascular Mani	6531	Crocanthernum corymbosum	Pinobarren Suprose	1968 05-24	F	4-Low		Threatened	G4G5	S1
Vasçular Plant	26525	Crocanthemum georgianum	Georgia Sunrose	2008 05 15	В	2-High	la com	Endangered	G4	S1
Vasculor Plant	26526	Crocarithemusu gcorgianum	Georgia Sunnose	2008-05-18	D	2-High	within two	Endangared	G4	SI
Vascular Plant	396	Crocanthemum georgianum	Georgia Suprose	2015-06-94	A	2 High		Endangered	G4	S1
Vascular Plaot	4801	Cyperus tetragonus	Four-angled Platsedge	1967-08-15	ŀł	4-Low		Special Concern Vultiorable	G4?	S1
Vascular Plant	7825	Cyperus tetragonus	Four-angled Flatsodge	1952-08-17	Н	4-Low	mg ve too	Special Concern Vulnerable	G4?	S1
Vascular Plant	14342	Cyporus tetragonus	Four-angled ("latsedge	1978-08	E	3 Medium	1 944 194	Special Concern Vulnerable	G4?	S1
Vascular Plant	17467	Cyperus tetragonus	Four-angled Flatsodge	1970-08-13	for 1	3-Medium	a) an 16	Special Concern Vulnerable	G4?	\$1
Vascular Plant	22825	Cyperus tetragonus	Four-angled Flatsedge	2002-07-92	For Know	2-High	28-1999	Special Concern Vulnorable	G4?	S1
Vascular Plant	22824	Cyperus tetragonus	Four-angled Flatsodge	2005-10-18	С	2-High	0.5 w	Special Concern Vulnerable	G4?	S1
Vascular Plant	9059	Oichanthelium caerulescens	Blue Witch Grass	2002-09-26	E,	3-Medium	Spectes of Concern	Endangered	G2G3	S1S2

Page 25 of 31

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	33050	Eleocharis fallax	Creaping Spikerush	1959 06 24	Н	4-Low	em 14 5.0	Significantly Rare	G4O5	S1S2
Vascular Plant	32686	Eleocharis rostellata	Boaked Spikenish	2011-06-14	E	2 High		Throughout Significantly Rare Other	G5	S2
Vascular Plant	14038	Erythrina herbacea	Coralbean	1950-08-07	<u>}</u> 1	3 Modium	و مرادي	Endangered	G5	S2
Vascular Plant	28781	Euphorbia bornheneis	Southern Seaside Spurge	2006-08-15	12	2-High	198 PT 198	Significant'y Pare	G1G5	S2?
								Throughout		
Vascular Plant	21185	, Mihiscus aculeatus	Comfortroot	1978	7	3-Madium		Threatener	G4G5	S1
Vascular Plant	32602	Ipomaea Imperati	Beach Morning-glory	2013-09-24	D	3 Medium		Threatened	G5	S†
Vascular Plant	7689	lpomosa imperati	Beach Morning-glory	2003	B	3-Medium		Threatened	G5	S1
Vascular Plant	33995	Ipomoea imperati	Beach Morning glory	2014-10-28	С	2.High		Thinstened	G5	S1
Vascular Plant	34042	Ipomoea imperati	Beach Morning glory	2014-10-27	E	2 High		Threatened	G5	S1
Vascular Plant	7722	Ludwigia alata	Winged Snedhrik	1992-11-11	F.C.	4-Low	10 10 • A	Significantly	G3G5	S2
			-					Rare Poripheral		
Vescular Plant	44	Ludwigia alata	Winged Seedbox	1967-08-25	H	3 Modium		Significantly	G3G5	S2
								Rare Peripheral		
Vascular Plant	19122	Malaxis spicata	Florida Adder's-mouth	1988-05-24	B?	3-Modium		Special Concern Vulnerable	G4?	S1
Vascular Plant	28271	Optismenus setarius	Shortleaf Basket Grass	1964-09-16	н	4-1 OW		Significantly	G5T5	\$1
						1 2000		Rata Pountieral		<u>,</u>
Vascular Plant	28270	Oblismenus setadus	Shortleaf Rasket Grass	2009-11-03	Δ	2. Hinh		Significantly	GSTS	S 1
	•· •• •		AMERICAN CONTRACTOR CONTRACTOR	~~ 17.00		6. F 11g F		- Rare Perisheral	0010	01
Vascular Plant	5617	Parietaria praetermissa	Large seed Pellitory	1970-08-04	he.	4-Low	~~*	Special	G3G4	SI
								Vulnerable		
Vascular Plant	7348	Parietaria practomissa	ame-seed Pellitony	1962-05-06	ы	4.1.044	16	Special	GBGA	0.1
	,	 Manufactor Science Contraction 	non flor (option in control)	1002 00 00	,.	4.000		Coprora	0004	0)
								Mileonado Adecoalul		
Vascular Plant	11312	Parletaria praetermissa	Large seed Pellilory	2007-07-19		A. LOSA		Spacial	6264	84
- and second second		 The subscript for factor and subscript subscript and subscript for the subscript su	sage ensurements	2001-01-14	here.	- Friday 1990	per ver	Concorr	00.04	01
								Valnorshlo		
								A. 14日 (251/1416)(2		

Taxonomic Group	EOID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Ассигасу	Føderal Status	State Status	Globai Rank	State Rank
Vascular Plant	6466	Parietaria praetermissa	Large-seed Pollitory	1984 05-15	Er a	3-Medium	8.7 May 14	Special Concern Vulnerable	G3G4	S1
Vascular Planţ	9733	Parietaria proetermissa	Large seed Pellitory	1980-08-15	Н	3 Medium	99.80 ^{.47}	Special Concern Vulnerable	G3G4	S1
Vəsculər Plani	16617	Parletaria praetermissa	Large seed Pellitory	1993-09-09	E.	3-Medium	na m. 19	Special Concern Vulnerable	G3G4	S1
Vascular Plant	23155	Parletaria praetermissa	Large-seed Pellitory	2002-08-09	E.	2-High		Special Concern Vulnerable	G3G4	S1
Vascular Plant	27023	Paspalum vegloatum	Seashore Crown Grass	2003-06-23	5. L	2 Hìgh	ang sawa ng	Significant'y Rare Peripheral	G5	S1S2
Vascular Plant	35216	Polygonum glaucum	Seabeach Knotweed	1966-07-05	F	4-Low		Endangered	G3	S1
Vasculai Plant	6446	Polygonum glaucum	Seabcach Knotweed	2014-08-18	A	3-Medium		Endangerod	G3	S1
Vascular Plant	12708	Polygonum glaucum	Seabcach Knotweed	2015-06-04	A	3 Medium		Endangered	G3	SI
Vascular Plant	1995	Polygonum glaucum	Seabeach Knotweed	2007-09-15	D	3 Medium		Endangerod	G3	S1
Vascular Plant	19882	Rhynchospera odorata	Fragrant Boaksedge	2002-09-26	E	3-Medium	19.4-	Special Concern Vulnerable	G4	S1
Vascular Plant	11745	Sabal palmetto	Cabbage Paim	1970-09-06	Н	2.High	17 / 18 Mar	Threatened	G5	S1
Vascular Plant	4085	Sageretia minutiflora	Small-flowered Buckthorn	1984-11-10	Α	3-Modium		Threatened	G4	S1
Vascular Plant	15871	Sageretia minutifiora	Small-flowered Buckthorn	1983-02	A	3-Medium		Threatened	G4	S1
Vascular Plant	7750	Sagoretia minutifiora	Small-flowered Buckthorn	2013-10-04	C	2-Eligh	****	Threatened	G4	S1
Vascular Plant	3880	Scleria vorticillata	Savanna Nutrush	2007-07-16	A	4-Low	= (xi, yi)	Significantly Rare Peripherat	G5	S2
Vascular Plant	35161	Sesuvium portulacastrum) Shoreline Sea-purslane	1993-07-16		4-Low		Significantly Rare Peripheral	G5	S1
Vascular Plant	26576	Sesuvium portulacastrum	1 Shorelino Soa-purslane	2006-10-07	Easy.	3-Medium		Significanlly Rare Periphoral	G5	S1
Vascular Plant	22045	Sesuvium portulacastrum) Shoreline Sea pursiane	2014-08-18	Á?	2-High	m.q	Significantly Rare Peripheral	G5	S1
Vascular Plant	22760	Selanum pseudogracile	Graceful Nightshade	1997-08-15	₹nn \$ctr \$cv	3-Medium		Significantly Rate Throughout	GNR	S1

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federał Stałus	State Status	Global Rank	State Rank
Vasculor Plant	34587	Solanum pseudogracile	Graceful Nightshade	2003-07-09	fine Rese	2 High		Significantly Rare Throughout	GNR	S1
Vascular Plant	22762	Solanum pseudogracile	Graceful Nighlshade	2003-08-12	L.	2 ! អ័ណ្ណា		Significantly Rare Throughout	GNR	S 1
Vascular Plant	22761	Solanum psoudogracile	Graceful Nightsbade	2001-07-30	and the second s	2-High		Significant'y Rare Throughout	GNR	51
Vascular Plant	1109	Trichostema sp. 1	Dune Bluecurls	2005-10-18	С	3-Medium	Species of Concern	Significantly Rare Limited	G2	52
Vascular Plant	23972	Trichostema sp. 1	Dune Bluecurts	2004-05-06	T Ann Brann Taon A	3 Medium	Species of Concern	Significantly Rare Limited	G2	S2
Vascular Plant	37015	Trichestema sp. 1	Dune Bluecurls	2016-9-20	С	3-Modium	Species of Concern	Significantly Rare Limited	G2	S2
Vascular Plant	22299	Tridens chanmanii	Chapman's Redtop	1959-09-15	ا ا	4-LOW	~~~	Threatened	G5T3	S1S2
Vascular Plant	19449	Yucca gloriosa	Moundlily YUGCB	1968-05-24	Н	3-Merlium		Significantly Raro Periphoral	G4?	S2?
Vascular Plant	12649	Yucca gloriosa	Moundlily Yucca	1990		3 Medium	~ · · -	Significantly Rare Peripheral	G4?	S2?
Vascular Plant	14308	Yucca gloriosa	Moundlily Yucca	2006-10-07	С	2-High		Significantly Rare Poripheral	G4?	S2?
Vascular Plant	3973	Yucca gloriosa	Moundlily Yricca	1993-10-04	C	3 Medium		Significantly Rore Peripheral	G4?	52?
Vascular Plant	13032	Yucca gloriosa	Moundlily Yucca	1992-02-28	D	3 Medium		Significantly Rare Periphoral	G4?	S2?
Vascular Plant	23508	Yucca gloriosa	Moundfily Yucca	2005-03-26	E	3-Medium		Significantly Rare Peripheral	G47	S27
Vascular Plant	23319	Yucca gloriosa	Moundilly Yucca	2002-09-22	Ē	2-High	***	Significantly Rare Peripheral	G4?	S2?

Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
Bogue Inlet Outcrop	R3 (High)	C5 (General)
Shackleford Banks	R2 (Very High)	C1 (Exceptional)
Hoop Hole Crook Maritime Forest	R2 (Very High)	C4 (Moderate)

Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
Salter Path Marilimo Forest	R1 (Exceptional)	C4 (Moderate)
Satter Path Dunes Natural Area	R2 (Very High)	C4 (Moderate)
Huggins/Dudley Island	R2 (Very High)	C2 (Very High)
Rachel Carson Estuarine Research Reserve	R2 (Very High)	C1 (Exceptional)
Fort Macon State Park/Brandt Island	R1 (Exceptional)	C1 (Exceptional)
Bogue Inlet/Bogue Sound Bird Nesting Islands	R4 (Moderate)	C4 (Moderate)
Bear Island and Marshes	R1 (Exceptional)	G1 (Exceptional)
Theodore Roosevell State Natural Area	R1 (Exceptional)	C3 (High)
Radio Island	R3 (High)	C4 (Moderate)
Emerald Isle Woods	R3 (High)	C4 (Moderato)
Emerald Isle/West End Beach	R3 (High)	C3 (High)

Managed Areas Documented Within a One-mile Radius of the Project Area

C DNCR, Clean Water Management Trust Ind C Department of Transportation S National Park Service C Department of Administration	Stale Stale Federal
und C Department of Transportation S National Park Service C Department of Administration	State Federal
C Department of Transportation S National Park Service C Department of Administration	Stale Federal
S National Park Service C Department of Administration	Federal
C Department of Administration	
	State
S National Park Service	Federal
S National Park Service	Federal
orth Carolina Coastal Federation	Private
C DEQ, Division of Coastal Management	State
C DEO, Division of Ceastal Management	State
K ₆ 2	
nslow County: multiple local government	Local Government
C DNCR. Division of Parks and Recreation	Stale
arterot County: multiplo local government	Local Government
C DNCR, Division of Parks and Recreation	State
S Department of Defense	Federal
C State Ports Authority	State
C DNCR, Division of Parks and Recreation	Stato
C DNCR, Division of Parks and Recreation	State
C DNCR, Division of Parks and Recreation	State
C DNCR, Division of Parks and Recreation	State
C Wildlife Resources Commission	State
	Vational Park Service Vational Park Service In Carolina Coastal Faderation DEQ, Division of Coastal Management DEQ, Division of Coastal Management DEQ, Division of Coastal Management low County: multiple local government DNCR, Division of Parks and Recreation erat County: multiple local government DNCR, Division of Parks and Recreation Department of Defense State Ports Authority DNCR, Division of Parks and Recreation DNCR, Division of Parks and Recreation

Managed Areas Documented Within a One-mile Radius of the Project Area

•

Managed Area Name	Owner	Owner Type
Theodore Roosevelt Maritime Swamp Forest Unique	NC NCDR-Theodore Roosevelt State Natural	State
Wetland	Агеа	
Bogue Inlet Outcrop RHA	NC DEQ, Division of Marine Fisheries	State
Salter Path Dunes RHA	NC DNCR, Aquariums	Stale
Hunting Island Audubon Sanctuary	National Audubon Society	Private
NC Aquarium at Pine Knoll Shores	NC DNCR, Aquariums	State
Salter Path Dunes Natural Area	NC DNCR, Aquariums	State
Coast Guard Station Fort Macon	US Department of Homeland Security	Federal
US Army Reserve Center	US Department of Defense	Federal
Bear Island Maritime Wet Grassland Unique Wetland	NC NCDR-Hammocks Beach State Park	State
Coastal Hunting Land Conservation Group Conservation	Coastal Hunting Land Conservation Group	Private
Easement		

Definitions and an explanation of status designations and codes can be found at https://www.energiance.com/or/instant//www.information.codes.codes



NCNHDE-3412: Bogue Banks Master Beach Nourishment Project

Email language is pasted below and intersect language is attached.

Thank you for contacting North Carolina's Natural Heritage Program (NCNHP) about the Bogue Banks Master Beach Nourishment project. Attached is a response letter, which contains information on rare species, natural communities, managed areas, and natural areas that are in or within a mile of your project area. This information may assist you with natural resources permitting requirements associated with your projects. Note that NCNHP is a non-regulatory agency and as such, we cannot assess impacts or determine mitigation measures. Please contact me if you have any questions, or if I can be of further assistance.

You may also be interested in our Natural Heritage Data Explorer (NHDE) website (<u>https://ncnhde.natureserve.org/</u>). This website allows you to submit project review requests online and receive a customized report of natural heritage resources within and near project areas in less than 10 minutes. All you need to do is attend training and create a user account and subscription. Please see the NHDE Home page for details training dates.

The above referenced project submitted through the Natural Heritage Data Explorer (NHDE) was flagged for Natural Heritage Program staff review because the project area you provided intersects or is adjacent to one or more Element Occurrences with candidate, threatened, or endangered status under the federal Endangered Species Act (ESA).

The record that triggered the review of this project is for: -Charadrius melodus melodus Piping Plover - AtlanticCoast subspecies -Caretta caretta - Loggerhead Seaturtle -Lepidochelys kempii - Kemp's Ridley Seaturtle -Amaranthus pumilus - Seabeach Amaranth

Which have either a threatened or endangered status under the ESA. You may wish to contact the U.S. Fish and Wildlife Service – Raleigh Ecological Services Field Office at 919-856-4520 for assistance if you have any questions regarding the presence of this species.

Within the next few months, the Natural Heritage Program may implement fees to defray costs associated with online access to natural heritage data, project review, environmental services, and field surveys, as authorized by § 113A-164.12. Fees collected will allow NCNHP to continue to provide these services and operate the Natural Heritage Data Explorer (NHDE). We will post more information to our website as soon as the fees are approved. If you have immediate questions, please contact me.

NORTH CAROLINA STATE CLEARINGHOUSE DEPARTMENT OF ADMINISTRATION INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H12: OTHER

STATE NUMBER: 17-E-0000-0433 DATE RECEIVED: 04/21/2017 AGENCY RESPONSE: 05/17/2017 **REVIEW CLOSED:** 05/22/2017

MS DEIRDRE HAMAN CLEARINGHOUSE COORDINATOR DPS - DIV OF EMERGENCY MANAGEMENT FLOODPLAIN MANAGEMENT PROGRAM 4218 MAIL SERVICE CENTER RALEIGH NC

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG DEPT OF ENVIRONMENTAL QUALITY DEPT OF NATURAL & CULTURAL RESOURCE DEPT OF TRANSPORTATION DNCR - NATURAL HERITAGE PROGRAM DPS - DIV OF EMERGENCY MANAGEMENT EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: U. S. Army Corps of Engineers

- TYPE: National Environmental Policy Act Draft Environmental Impact Statement
- DESC: DEIS for the Bogue Banks Master Beach Nourishment Project with plans to implement a long term management plan to provide shoreline protection along the approx. 25 mile Bogue Banks barrier island. - view documents at: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Major-Projects/

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.

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

SIGNED BY:

DBurbak DATE: 10 May 2017

RECEIVED Secretary's MAY 1 7 2017

> Office DOA

/JH 2 5 2017

NORTH CAROLINA STATE CLEARINGHOUSE DEPARTMENT OF ADMINISTRATION INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H12: OTHER

 STATE NUMBER:
 17-E-0000-0433

 DATE RECEIVED:
 04/21/2017

 AGENCY RESPONSE:
 05/17/2017

 REVIEW CLOSED:
 05/22/2017

Behshad Nerowzi

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

REVIEW DISTRIBUTION

DEPT OF ENVIR. QUALITY - COASTAL MG DEPT OF ENVIRONMENTAL QUALITY DEPT OF NATURAL & CULTURAL RESOURCE DEPT OF TRANSPORTATION DNCR - NATURAL HERITAGE PROGRAM DPS - DIV OF EMERGENCY MANAGEMENT EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: U. S. Army Corps of Engineers TYPE: National Environmental Policy Act Draft Environmental Impact Statement



DESC: DEIS for the Bogue Banks Master Beach Nourishment Project with plans to implement a long term management plan to provide shoreline protection along the approx. 25 mile Bogue Banks barrier island. - view documents at: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Major-Projects/

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 O	F THIS REVIEW THE FOLLOWING I	S SUBMITTED:	no comment 🔽	COMMENTS ATTACHED
	afferick A		75	6/12/2017
SIGNED BY:	aval man		DATE:	JICIWIT
				J

RECEIVED Secretary's MAY 1.5 2017

> Office DOA



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ROY COOPER GOVERNOR

May 12, 2017

MEMORANDUM TO:	North Carolina State Clearinghouse
	Department of Administration
	Intergovernmental Review

FROM: Catherine Bryant CAB NCDOT Transportation Planning Branch

SUBJECT: 17-E-0000-0433 Bogue Banks Master Beach Nourishment Plan

Thank you for allowing the Transportation Planning Branch to review this document. The most current transportation plan covering Carteret County is the 2014 Carteret County Comprehensive Transportation Plan (CTP).

The Carteret County CTP outlines the following within the vicinity of your project: -Highway: Road improvements along NC 58

-Public Transportation: Recommended bus route along NC 58 and the Atlantic Beach Bridge

-Bicycle: Recommended multiuse path along NC 58, Coast Guard Rd, and Old Ferry Rd

-Bicycle: On-road improvements along NC 58, Atlantic Beach Bridge, and E Fort Macon Rd

-Pedestrian: Recommended sidewalks along NC 58 and several roads connected to NC 58, Atlantic Blvd, and Atlantic Beach Bridge

-Pedestrian: Recommended multiuse path along NC 58, Coast Guard Rd, and Old Ferry Rd

In addition, the 2016-2025 State Transportation Improvement Program (STIP) has listed the following projects: -R-5816: NC 58 (WEST FORT MACON) - ATLANTIC BEACH CAUSEWAY. ADD RIGHT TURN LANE. -B-5938: SR 1182 (ATLANTIC BEACH CAUSEWAY) - REHABILITATE BRIDGE 150068 OVER BOGUE SOUND.

-B-5939: NC 58 - REHABILITATE BRIDGE 150006 OVER BOGUE SOUND.

For maps of recommended projects and a full list of State Transportation Improvement Program (STIP) projects in Carteret County, the Carteret County CTP and STIP can be found on the NCDOT website: <u>https://connect.ncdot.gov/projects/planning/Pages/default.aspx</u>

Please coordinate with the Division 2 office for any impacts to the right-of-way or flow of traffic during construction. They can be reached at (252) 439-2800.

If you have any questions please feel free to contact me at (919) 707-0979 or cbryant6@ncdot.gov.

Telephone: (919) 707-0900 Fax: (919) 733-9794 Customer Service: 1-877-368-4968 JAMES H. TROGDON, III

SECRETARY

Website: www.ncdot.gov

cc: John Rouse, PE, Division Engineer Reed Smith, PE, District Engineer Patrick Flanagan, Down East RPO Transportation Planner



ROY COOPER Governor

MICHAEL S. REGAN Secretary

BRAXTON C. DAVIS

July 17, 2017

Colonel Robert Clark, Commander U.S. Army Corps of Engineers Wilmington District 69 Darlington Avenue Wilmington, NC 28403

Attention: Mickey Sugg

Dear Colonel Clark,

The North Carolina Department of Environmental Quality, Division of Coastal Management (DCM) has reviewed the Draft Environmental Impact Statement and supporting documents and appendices for the proposed 50- year Bogue Banks Master Beach Nourishment Plan. As described in the Draft EIS, Carteret County, NC is seeking Department of the Army authorization pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act to implement a comprehensive, long-term beach and inlet management plan for the protection of approximately 25 miles of shoreline on Bogue Banks. Concurrently, the Bureau of Ocean Energy and Management (BOEM) is evaluating a request from Carteret County for lease authorization pursuant to the Outer Continental Shelf Lands Act to use outer continental shelf sand resources as a component of the proposed action. The applicant's request to implement a long-term beach and inlet management Act (CAMA) Major Permit from DCM as well. Five alternatives were considered during the Draft EIS process, and the Preferred Alternative (Alternative #4) consists of beach nourishment and non-structural management of Bogue Inlet.

DCM appreciates the opportunity to continue to participate in the formulation of this project and offers the following comments on the Draft EIS and supporting documents:

1) Pages 2-4 to 2-7 of the Draft EIS define "at risk" properties as those with seaward parcel boundaries within 25 feet of 2012 Mean High Water (MHW) line. However, page 20 of the Master Beach Nourishment Plan (MBNP) Summary Report indicates that SBEACH was run for the Level of Protection analysis using the most seaward line of development as digitized from 2011 aerial photography instead of the seaward parcel boundary. For consistency, the "at risk" properties as defined in the alternatives analysis could also use the most seaward line of development instead of the seaward parcel boundary. Page A-11 of Appendix J (Environmental Impact Summary Table) states that 226 oceanfront
structures on Bogue Banks are projected to be at risk over the next 50 years without implementing the preferred alternative, but it is unclear whether this number of "at risk" structures is based on the seaward parcel boundaries or the seaward line of development. DCM believes the location of the actual development on a parcel is a better measure of risk than the seaward parcel boundary.

- 2) Page 3-24; Table 3.5 of the Draft EIS: The NC Technical Standards for Beach Fill Rules (Sediment Criteria) were recently revised to allow the granular fraction of the fill material to exceed the granular fraction of the native beach by 10%. Previously, the rules limited the granular fraction to 5% above the native beach. This needs to be corrected throughout the Final Geotechnical Report and other draft EIS appendices as well.
- 3) Page 3-24; Table 3.5 of the Draft EIS: At the current Morehead City Harbor Ocean Dredged Material Disposal Site (ODMDS), Mound ID O-48 is very close to exceeding the NC Sediment Criteria for fine material. This small mound is also surrounded by vibracore locations with poor sand quality. It is recommended for additional vibracores to be obtained and analyzed before using material from this mound.
- 4) Page 3-24; Table 3.5 of the Draft EIS: At Area Y, Mound ID Y-120 exceeds the NC Sediment Criteria for gravel. Page 38 of the MBNP Summary Report also states that "Vibracores Y-120 and Y-90 are 1000 feet apart and are located along a ridge; however, the sediment color is dark in color. This potential borrow area also exceeds the requirement set by NCAC for Gravel as shown in Table 3-20; therefore, would not be considered beach compatible." Page 25 of the Final Geotechnical Report also states that "an inspection of the samples shows that the gravel-sized material is smooth river rock, rather than shell, which is not desirable in placement on the beach." Due to incompatibility with native beach sediments, Mound ID Y-120 should be excluded from the proposed borrow areas.
- 5) For Vibracores Y-80/Y-75, Page 22 of the Final Geotechnical Report states that "Although the characteristics of the upper layer in cores Y-80/Y-75 are defined herein, this area should be considered a low priority borrow area with a "C" ranking because there are insufficient vibracores to designate a reliable borrow area and most of the material appears to be of relatively poor quality." It is recommended for additional vibracores to be obtained and analyzed before using material from this mound.
- 6) Page 3-27; Figure 3-8 of the Draft EIS: Within the proposed current ODMDS offshore borrow area, the small areas marked with a "c" to identify them as contingency borrow mounds do not have vibracore data. These small mounds should not be used without first obtaining vibracores and performing sediment analysis for each mound.

State of North Carolina | Environmental Quality | Coastal Management Morehead City Office | 400 Commerce Avenue | Morehead City, NC 28557 252 808 2808

- 7) Pages 19-21 of the Final Geotechnical Report note that Mound O-35 and Mound O-46 are considered "Lower Confidence Mounds." Additional vibracores should be obtained and analyzed before using material from these mounds.
- 8) Page 33; Table 5.1 of the Final Geotechnical Report shows Mound O-15 with a "B" ranking, indicating that additional vibracores should be obtained and analyzed before using material from this mound as well.
- 9) Page 33, Table 5.1 of the Final Geotechnical Report (Appendix A) shows O-48, the contingency mounds, and all of Area Y with a "C" ranking to indicate that these mounds are not recommended for use as a sand source for beach nourishment. Page 33 of the Cumulative Effects Statement (Appendix H) states that "Borrow Area Y and the ODMDS are the identified borrow sources for this project...." Generally, the draft EIS and appendices need to be updated to clarify exactly which mounds and areas are being proposed for beach nourishment and where additional vibracores will be collected.
- 10) For some portions of Bogue Banks, the return interval between nourishment events will be greater than 3 years, but in anticipation of storm events, the project impact will likely occur every 2-3 years. The Draft EIS cites previous studies which have shown that avoiding peak recruitment periods and placing highly-compatible sediment on the beach allows recovery of benthic invertebrates and beach infauna within a couple of years. Page A-1 of the Environmental Impact Summary Table (Appendix J) also notes that "Although some overlap between the dredging footprints of successive events may occur, repeated dredging in the same footprint is not anticipated due to the relatively shallow and non-renewable nature of the deposits." Provided that peak recruitment periods are avoided, beach-compatible sand is placed on the beach, and dredging is performed as described in the Draft EIS, DCM believes that impacts to benthic invertebrates and beach infauna will be minimized. However, given the 50-year timeframe and scope of the proposed Bogue Banks Master Beach Nourishment Plan, DCM is interested in discussing with State and Federal resource agencies ways to monitor these relatively frequent impacts.
- 11) Page 4-42; Table 4.8 of the Draft EIS: Since a portion of the project area is Piping Plover Wintering Critical Habitat (Unit ID NC-10 Bogue Inlet) and all of Bogue Banks is designated Loggerhead Sea Turtle Terrestrial Critical Habitat (Unit ID LOGG-T-NC-01 Bogue Banks), formal consultation with the U.S. Fish and Wildlife Service (USFWS) will need to occur. It is our understanding that this consultation has commenced and is ongoing.
- 12) Page 4-42; Table 4.8 of the Draft EIS: Since the nearshore ocean waters of the project area are designated as Loggerhead Sea Turtle Marine Nearshore Reproductive Critical

- Habitat (Unit ID LOGG-N-03 Bogue Banks and Bear Island), formal consultation with NOAA's National Marine Fisheries Service (NOAA-NMFS) will need to occur. It is our understanding that this consultation has commenced and is ongoing.
- 13) DCM has also reviewed the letter submitted by NOAA-NMFS, dated June 21, 2017, and agrees with their concerns about hardbottom habitat, particularly with regard to Borrow Area Y: "The draft EIS suggests hardbottom habitats exist near the project area, especially the offshore borrow area located along Emerald Isle. It is likely these nearshore hardbottom habitats are ephemeral, meaning they are periodically covered and uncovered by natural sediment transport, and mapping across multiple seasons/years would be required to determine the exact location. The extent and complexity of these structural forms and their contributions to EFH within the project area should be more thoroughly described with mapping of hardbottom habitat neighboring the borrow area. Similarly, there are a number of artificial reef sites within the project area. The extent and complexity of these structural forms and their contributions to EFH within the project area. The extent and complexity of these structural forms and their area should also be described. The NMFS believes dredging could significantly impact valuable hardbottom habitat and artificial reefs." Additionally, 15A NCAC 07H.0208(b)(12)(A)(iv) requires 500 meter separation between high relief hardbottom communities and areas of dredging.

Thank you for the opportunity to review the Draft EIS for the proposed Bogue Banks Master Beach Nourishment Plan. While this long-term plan is somewhat unique from a permitting perspective, DCM is very supportive of this proactive regional approach to shoreline management. As the project comes closer to finalization, DCM would recommend a sit-down meeting between the applicant, the applicant's consultants, and the permit agencies (DCM, USACE, DWR, and BOEM) to map out and formalize the permit processes and timelines for both State and Federal permits. If you have any questions about these comments, please direct them to me at matthew.slagel@ncdenr.gov or (252) 808-2808 ext. 204.

Sincerely,

atthew Hagel

Matthew J. Slagel Beach & Inlet Management Project Coordinator NC Division of Coastal Management

cc: Dial Cordy & Associates, <u>dyork@dialcordy.com</u> NCDEQ, <u>Lyn.Hardison@ncdenr.gov</u> NCDCM, <u>Doug.Huggett@ncdenr.gov</u>

> State of North Carolina | Environmental Quality | Coastal Management Morehead City Office | 400 Commerce Avenue | Morehead City, NC 28557 252 808 2808



North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper Secretary Susi H. Hamilton

June 8, 2017

Mickey Sugg Wilmington Regulatory Field Office 69 Darlington Avenue Wilmington, NC 28403

Re: DEIS for Bogue Banks Master Beach Nourishment Project, SAW 2009-00293, Carteret County, ER 10-0774

Dear Mr. Sugg:

We have received a public notice concerning the above project.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

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 or <u>environmental.review@ncdcr.gov</u>. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Kenee Gledhill-Earley

Ramona M. Bartos

Office of Archives and History Deputy Secretary Kevin Cherry