

ATTACHMENT 2



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office

Post Office Box 33726

Raleigh, North Carolina 27636-3726

March 12, 2015

Mr. Tyler Crumbley, Project Manager
Wilmington Regulatory Division
U. S. Army Corps of Engineers
69 Darlington Ave.
Wilmington, NC 28403-1343

Subject: Town of Ocean Isle Beach: Terminal Groin
Action ID. No. SAW-2011-01241

Dear Mr. Crumbley:

This is in response to the January 23, 2015 public notice for the Town of Ocean Isle Beach's application for construction of a 750 linear foot (lf) terminal groin, with a 300 lf shore anchorage system and associated beach nourishment on Ocean Isle Beach. The U.S. Fish and Wildlife Service (Service) has reviewed the public notice and the January 2015 draft Environmental Impact Statement (DEIS), and other information concerning the project. This letter is provided in accordance with the National Environmental Policy Act (NEPA), section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Project Description

The project is on the oceanfront of the eastern end of Ocean Isle Beach, adjacent to Shallotte Inlet and the Atlantic Ocean, in Brunswick County, North Carolina. According to the DEIS, the purpose of the proposed project is to mitigate chronic erosion on the eastern portion of the Town's oceanfront shoreline so as to preserve the integrity of its infrastructure, provide protection to existing development, and ensure the continued use of the oceanfront beach along this area.

The applicant's preferred alternative includes construction of a 750 lf terminal groin with a 300 lf anchorage system. The applicant also proposes to dredge portions of Shallotte Inlet every five years and place 264,000 cubic yards (cy) of beach fill along approximately 3,214 lf of shoreline west of the terminal groin. Beach fill, groin construction, and sand fillet maintenance activities are proposed to be conducted between November 16 and April 30. The preferred alternative also

includes the continuation of the Corps of Engineers Coastal Storm Damage Reduction (CSDR) project on Ocean Isle Beach.

Federally-listed species

The following Federally-listed species are found within the project area: West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), seabeach amaranth (*Amaranthus pumilus*), and the Kemp's ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), and green (*Chelonia mydas*) sea turtles. Whales, shortnose sturgeon (*Acipenser brevisrostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and sea turtles in the water are under the jurisdiction of NOAA Fisheries' Protected Species Division.

Of the five sea turtle species, the leatherback, loggerhead, Kemp's ridley, and green sea turtle may nest in the project area. On July 10, 2014, the Service designated Critical Habitat for the Northwest Atlantic Ocean distinct population segment of the loggerhead sea turtle. Critical Habitat Unit LOGG-T-NC-08 is just east of the project area on Holden Beach.

Piping plover critical habitat unit NC-17 is located in Shallotte Inlet and on Holden Beach, east of the proposed project. The entire unit is privately owned. This unit begins just west of Skimmer Court on the western end of Holden Beach. It includes land south of SR 1116, to where densely vegetated habitat, not used by the piping plover, begins and where the constituent elements no longer occur to the MLLW along the Atlantic Ocean. It includes the contiguous shoreline from MLLW to where densely vegetated habitat, not used by the piping plover, begins and where the constituent elements no longer occur along the Atlantic Ocean, Shallotte Inlet, and Intracoastal Waterway stopping north of Skimmer Court Road. The unnamed island and emergent sandbars to MLLW within Shallotte Inlet are also included.

On December 11, 2014, the Service listed the rufa red knot (or red knot) as threatened throughout its range. The rule became effective on January 12, 2015. Please refer to 79 FR 73706 for more information on the listing of the red knot.

The Corps has determined that the proposed project may affect federally listed endangered or threatened species, and has requested initiation of formal consultation. Potential affects to the piping plover, red knot, West Indian manatee, seabeach amaranth, and sea turtles are being addressed through formal consultation. Therefore, this letter primarily addresses comments concerning the project itself and the DEIS.

Service Comments

1. The Service recommends that the proposed project not be authorized. The proposed project has the potential to adversely affect nesting female sea turtles, nests, and hatchlings on the beach, piping plovers, red knots, and seabeach amaranth within the proposed project area.

Potential effects to sea turtles include disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of lighting or presence of the groin, and behavior modification of nesting females during the nesting season resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs due to escarpment formation or presence of the groin within the action area. The presence of the groin could affect the movement of sand by altering the natural coastal processes and could affect the ability of female turtles to nest, the suitability of the nest incubation environment, and the ability of hatchlings to emerge from the nest and crawl to the ocean. The presence of the groin may create a physical obstacle to nesting sea turtles, and the proposed groin is anticipated to result in decreased nesting and loss of nests that do get laid within the project area for all subsequent nesting seasons following the completion of the proposed project.

Potential effects to piping plover and red knots include degradation and loss of habitat, particularly down-drift of the structure. Groins can act as barriers to longshore sand transport and cause downdrift erosion (Hayes and Michel 2008), which prevents optimal habitat creation by limiting sediment deposition and accretion. The proposed action has the potential to adversely affect wintering and migrating red knots, wintering and migrating piping plovers and their habitat from all breeding populations, and breeding piping plovers from the Atlantic Coast breeding population that may use the project area. Potential effects to piping plover and red knot include direct loss of foraging and roosting habitat in the Action Area and in the updrift and downdrift portions of the project area, degradation of foraging habitat and destruction of the prey base from sand disposal, and attraction of predators due to food waste from the construction crew. Plovers and red knots face predation by avian and mammalian predators that are present year-round on the wintering and nesting grounds. Although the piping plover is not currently known to nest in the Action Area, the stabilization of the shoreline may also result in less suitable nesting habitat for all shorebirds, including the piping plover.

Structural development along the shoreline and manipulation of natural inlets upset the naturally dynamic coastal processes and result in loss or degradation of beach habitat (Melvin et al. 1991). As beaches narrow, the reduced habitat can directly lower the diversity and abundance of biota, especially in the upper intertidal zone. Shorebirds may be impacted both by reduced habitat area for roosting and foraging, and by declining intertidal prey resources (Defeo et al. 2009; Dugan and Hubbard 2006). Shorebird habitat has been, and may continue to be, lost where hard structures have been built (Clark in Farrell and Martin 1997). In addition to directly eliminating red knot habitat, hard structures interfere with the creation of new shorebird habitats by

interrupting the natural processes of overwash and inlet formation. Where hard stabilization is installed, the eventual loss of the beach and its associated habitats is virtually assured (Rice 2009), absent beach nourishment, which may also impact piping plover and red knots. Where they are maintained, hard structures are likely to significantly increase the amount of piping plover and red knot habitat lost as sea levels continue to rise.

Potential impacts to seabeach amaranth include burying, trampling, or injuring plants as a result of construction operations and/or sediment disposal activities; burying seeds to a depth that would prevent future germination as a result of construction operations and/or sediment disposal activities; and, destruction of plants by trampling or breaking as a result of increased recreational activities. The Applicant proposes to place sand between November 15 and March 31 of any given year. However, given favorable weather, seabeach amaranth plants may persist until January. Therefore, there is still the potential for sand placement to adversely impact plants in the Action Area. Indirect impacts to seabeach amaranth include degradation of habitat from stabilization of the shoreline.

2. The Service has significant concerns for the estimation of costs of the five alternatives. In Chapters 2 (Purpose and Need), 3 (Alternatives), 5, and 6, and Appendix A, the DEIS discusses 45 dwellings and 238 total parcels which are threatened by erosion for the next 30 years. The predicted loss or protection of these 238 parcels factors heavily in the estimated costs of each alternative. For example, on pages 27 and 28, in the discussion of the 30-year cost of Alternative 1 (No Additional Action) and Alternative 2 (Abandon/Retreat), the loss of the 238 parcels is estimated to cost \$21.39 million. Conversely, the discussion of Alternative 5 (Terminal Groin with Beach Fill), the applicant's preferred alternative, makes no mention of the number of parcels that may be lost or protected by the proposed groin, and does not factor in the costs of parcel losses.

However, there is no figure showing 238 parcels and very little description in the text. Page 25 states that there are "238 parcels east of station 15+00 (located just west of Shallotte Boulevard); 45 of which have homes. All of the parcels and homes are vulnerable to erosion damage over the next 30 years, should the past erosion trends continue." A quick count of the number of parcels shown in the DEIS as affected by erosion up to year 2045 (in Figure 3.1) indicates that there are approximately 88 parcels total (this estimate is high, as some are already below high tide, and some are west of station 15+00). The DEIS does not indicate where the other 150 or so parcels are. A review of the Town's zoning map (accessed at http://www.oibgov.com/userfiles/File/Zoning_Map_Current.pdf on March 4, 2015) and information from the Brunswick County Register of Deeds (accessed March 4, 2015) indicates that most, if not all of the other 150 parcels are likely waterward of the existing shoreline, within the footprint of the proposed project, or east (downdrift) of the proposed terminal groin location. Many of these parcels are already below the high tide line and are currently unbuildable. If this is the case, then the terminal groin will not protect the majority of these parcels from erosion, as

some are already lost to erosion, and the parcels to the east of the groin will receive no protection at all. East of the proposed groin, underwater parcels will remain underwater, and any buildable parcels will be threatened (and perhaps lost) due to increased erosion from the presence of the groin.

The DEIS should be revised to accurately reflect the situation of all of the parcels in the project area and the estimated losses for each alternative. Parcels that are mostly waterward of the current shoreline, within the footprint of the proposed groin, or east of the proposed groin should be considered a loss, and the costs of those losses should be added to the annual and 30-year costs of Alternative 5. The predicted loss of parcels due to Alternatives 3 and 4 should also be calculated and included in the estimated costs, as it is unlikely that many of the parcels east of station 0+00 will be protected or recovered from either of these alternatives. We note that including these costs will significantly increase the overall costs of the three build alternatives.

On Page 4, the Table in Appendix D should be revised to provide a consistent comparison of costs between the five alternatives. Currently, the costs for Alternative 5 are shown as annual and 5-year costs, while the cost of other alternatives is shown for a 30-year period.

3. Table 3.10 on Page 44 lists Long-Term Erosion Damages and Response Costs for Alternatives 1 and 2, but shows these costs as \$0 for Alternatives 3 and 5. However, the Service does not believe that there will be no erosion damages or response costs over 30 years in the project area, regardless of alternative chosen. Large winter storms, hurricanes and other named storms all have the potential to cause significant erosion and response costs. Page 116 in Chapter 5 states that the future impacts on development on the east end of Ocean Isle Beach were evaluated based on the continuation of erosion trends determined from surveys obtained between 1997 and 2010. There is no rationale provided for using this timespan as a baseline. Although there were several named storms that passed in the vicinity of Ocean Isle Beach during this time, only one passed over the island (with sustained winds of 35 mph), none of them had winds over 70 mph, and at least half of them had winds of less than 40 mph (<http://coast.noaa.gov/hurricanes/>, accessed March 6, 2016). If a 30-year timespan had been used (from 1984 to 2014), erosion from a category 4 hurricane (Hurricane Hugo) could have been included in the analysis.

The 13-year baseline also does not provide the same potential level of impacts from sea level rise. The North Carolina Coastal Resources Commission (CRC) Science Panel predicted in December 2014 that the relative sea level rise by 2045 in Southport, North Carolina would be at least 1.9 inches, and as high as 8.5 inches (Draft CRC Science Panel Sea Level Report, December 31, 2014). Considering the historic rates of sea level rise presented on page 132 (8.16 inches per century in Wilmington, and 1.03 feet per century in Charleston), sea level may rise at a minimum of 2.45 inches to 3.71 inches over the next 30 years. The DEIS states that there will be no direct or indirect impacts in the project area from such an increase. However, regardless of

the alternative, it is likely that dwellings, particularly those on the oceanfront will be impacted by increases in sea level rise over the next 30 years. Because sea level rise is not consistent through time and space, the impacts are often most first noticed when a storm-surge or spring tides occur. Over the 30-year proposed project life, it is more likely that named storms would cause erosion despite the precautions taken, and that costs would be incurred for beach bulldozing, additional emergency nourishment, or other response activities. Further, if the presence of the groin encourages development of currently undeveloped parcels that are on the oceanfront or waterward of current dwellings, erosion and response costs (beach bulldozing, emergency sand placement, infrastructure repair, demolition and solid waste costs) could be expected over the life of the project for Alternative 5 that would not be expected for the other 4 alternatives. The DEIS is silent on this issue.

Also in Table 3.10 on Page 44, the Service recommends that the \$21.39 million included for loss of parcels be revised to remove costs for parcels which are currently under water or within the footprint or east of the proposed terminal groin. Since most of these parcels are already unbuildable, and the terminal groin will not provide significant improvement in condition, the loss of them should not be counted for Alternatives 1 and 2 if they are not counted in the other alternatives.

4. On page 63 in Chapter 4, the reference to Figure 4.12 is in error. Please revise.
5. On pages 74-76 in Chapter 4, please update the sea turtle nesting data for all species to include 2013 and 2014 data. A green sea turtle nested in Holden Beach in 2013.
6. On Page 97, Figure 4.14, the Service recommends that the written description of the piping plover critical habitat be used, rather than the old shape file.
7. Please update Chapter 4 to include red knot records.
8. The DEIS does not adequately address accelerated erosion downdrift of the groin or the potential impacts from downdrift erosion and regular dredging (every five years to maintain the groin, every three years for the Corps CSDR project). Chapter 5 (page 175) and Appendix C change the topic from potential impacts of this groin on sand transport and intertidal habitats in Shallotte Inlet to a discussion of the impact of the Oregon Inlet jetties on Pea Island. Oregon Inlet and Shallotte Inlet are very different systems, and the DEIS does not explain how they are comparable. We note that there is no habitat above MLLW (including no intertidal habitat) downdrift of the Oregon Inlet jetty, and the stabilization of the shoreline within the sand fillet of the jetty has resulted in degradation or loss of intertidal habitats. The DEIS (page 176) states that the model shows the loss of approximately 1-2 acres of intertidal habitats in Shallotte Inlet due to the project, but that habitat is expected to persist and recover within 2 years of dredging based on the rate of infill that currently occurs. However, the rate of infill that is referenced is not the rate

that will occur after the groin is constructed, since the model shows that the rate of sediment transport will be reduced. There is no discussion in Chapter 5 or Appendix A of the expected passage rates of sand across the groin, or the expected infill rate after construction, and based on the information provided, it is not possible to determine impacts of the groin on the persistence or formation of intertidal shoals and flats in Shallotte Inlet.

9. On Page 177, please change “nesting habitat for seabeach amaranth...” to “habitat for seabeach amaranth...”

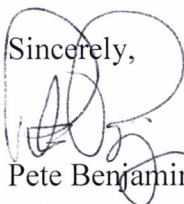
10. On Page 178, the DEIS should address the indirect impacts of stabilization of a dynamic system. The DEIS states that the “increase in stable dry beach as a result of the implementation of Alternative 5 is considered more advantageous to resident and migratory fauna.” However, the resident and migratory fauna, particularly the shorebirds such as piping plover and red knot, rely on the dynamic coastal processes such as overwash, to provide optimal foraging, roosting, and nesting habitat. The presence of the groin and other hard structures prevents such processes. In addition, groins accelerate erosion on the downdrift side, thereby causing direct and indirect impacts to the dry beach and intertidal habitats.

11. In Chapter 5 and Appendix A of the DEIS, the accretion and erosion patterns indicated by the Delft3D model are shown only for three years post-project. Given that this is a 30-year project, and the groin is proposed to be on a 5-year maintenance schedule, the DEIS should clarify why only three years of modeling is shown. In addition, no modeling runs are included to show the expected accretion or erosion patterns for Alternative 4. Information for Alternative 4 should be added to the DEIS.

12. On Page 62 of Appendix A, the DEIS states that the model results for Alternative 1 underestimated the sediment retention rate of the borrow area, and that the modeled rate was approximately 80% of the measured rate. According to page 62 of the DEIS, the modelers assume that all of the other model runs also underestimated the sediment retention rate in the borrow area by the same amount, and adjusted the modeled rates for the terminal groin alternative without further justification. Alternatives 2, 3, and 4 were not considered in this exercise on page 2 or in Table 4.15, and only Alternatives 1 and 5 are used to compare model volume changes in the Shallotte Inlet complex. The Service recommends that information for Alternatives 2-4 be included in Table 4.15 of Appendix A.

Service Recommendations

As stated above, the Service recommends that the project, as currently proposed not be authorized, due to potential impacts to piping plovers, red knot, seabeach amaranth, and sea turtles. We recommend that the Final EIS incorporate our comments listed above. Thank you for the opportunity to comment on this project. If you have any questions concerning these comments, please contact Kathy Matthews at (919) 856-4520, Ext. 27, or by e-mail at <kathryn_matthews@fws.gov>.

Sincerely,


Pete Benjamin
Field Supervisor

cc:

Fritz Rohde, NOAA Fisheries

Daniel Holliman, USEPA

Maria Dunn, NCWRC, Washington, NC

Doug Huggett, NCDCM, Morehead City, NC

Debra Wilson, NCDCM, Wilmington, NC

Jessi Baker, NCDMF, Morehead City, NC

Karen Higgins, NCDWR, Raleigh, NC