



**Wilmington Harbor, North Carolina
Navigation Improvement Project**

**Integrated
Section 203 Study
&
Environmental Report**

**APPENDIX O
USFWS COORDINATION ACT REPORT**

February 2020



United States Department of the Interior

FISH AND WILDLIFE SERVICE

February 10, 2020

Ms. Jenny Owens
Chief of Environmental Resources
U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, N.C. 28403

Dear Ms. Owens:

This letter serves as the U.S. Fish and Wildlife Service (Service) Draft Fish and Wildlife Coordination Act Report of the Department of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. as amended; 16 U.S.C 661-667d) for the Wilmington Harbor Navigation Improvements Project, Preliminary Summary of Effects Table that you transmitted by e-mail attachment to the Service on February 6, 2020. This letter also contains our comments in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 USC 1531 et seq.). For your convenience and to avoid future confusion the table is presented before the closing paragraph of this letter. **Service comments that follow are dependent on actions outlined in the table being implemented.**

Diadromous species present in the Cape Fear River and tributaries include Alewife (*Alosa pseudoharengus*), American Eel (*Anguilla rostrata*), American Shad (*Alosa sapidissima*), Atlantic Sturgeon (*Acipenser oxyrinchus*), Blueback Herring (*Alosa aestivalis*), Hickory Shad (*Alosa mediocris*), Sea Lamprey (*Petromyzon marinus*), Shortnose Sturgeon (*Acipenser brevirostrum*) and Striped Bass (*Morone saxatilis*). All of these species except Sea Lamprey, when unlisted, are under the management jurisdiction of the Atlantic States Marine Fisheries Commission (ASMFC) and its member states (includes NC; see www.asmfc.org). Both sturgeon species are currently federally-listed endangered and are under the jurisdiction of the National Marine Fisheries Service (NMFS). Restoration of these species, as noted in the Cape Fear River Basin Action Plan for Migratory Fish, will significantly benefit North Carolina and the residents of the Cape Fear River Basin from ecological, economic and cultural perspectives (Cape Fear River Partnership, 2013; online at: https://capefearriverpartnership.com/wp-content/uploads/2017/03/FINAL_CapeFearRiverActionPlanforMigratoryFish_13Feb13.pdf). Restoration of the migratory diadromous species will also benefit stakeholders throughout the United States East Coast and beyond, in all of the areas to which they migrate.

Restoration of diadromous species within the Cape Fear River is a priority for the Service and many other partners (including, but not limited to, ASMFC; the South Atlantic Fishery Management Council; NMFS;

the NC Department of Environmental Quality-Division of Marine Fisheries and the NC Marine Fisheries Commission ; the NC Wildlife Resources Commission (NCWRC) and its Division of Inland Fisheries; the Cape Fear River Partnership; and the Cape Fear River Watch).

In addition to the diadromous species, the Cape Fear River hosts several federally-listed species as mentioned in the enclosed table and multiple additional aquatic state species of concern. The current (2015) edition of the NCWRC North Carolina Wildlife Action Plan (NCWRC, 2015; online at: <https://www.newildlife.org/Plan>) indicates that there are 35 Species of Greatest Conservation Need in the basin: two aquatic snails, two crayfish, 18 freshwater or anadromous fishes, and 13 mussels (see Table 4.48 in NCWRC, 2015, for a list

The Service will likely concur with a determination of may affect not likely to adversely affect for loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*) and Sea Beach Amaranth (*Amaranthus pumilus*) assuming beach disposal of sand avoids the May 1- November 15 nesting season and beach compatible sand is used. Sand may be deposited near shore during this period. If those guidelines are followed no biological opinion for these species will be necessary.

The Service will likely concur with a determination of may affect not likely to adversely affect for piping plover (*Charadrius melodus*) and Red Knot (*Calidris canutus*) if beach disposal avoids the April 1 – July 15 nesting period. Sand may be deposited near shore during the moratorium period. If those guidelines are followed no biological opinion will be necessary for these species.

The Service will likely concur with a determination of may affect not likely to adversely affect for West Indian manatee assuming the Service guidelines for this species are followed as indicated in your report. The Service appreciates your willingness to use our guidelines.

Battery Island is globally significant for white ibis conservation. From 2001-2007, an average of 13,581 pairs of white ibis have nested on it which represents 84% of the state's population. Battery Island is also an important breeding site for herons and egrets with nine species nesting there. Wading birds nest in the shrub thickets and trees primarily on the south end of the island (map attached). In addition there are 15 shore and marsh-affiliated species that nest on the island. American oystercatchers nest on the sand berms and shell rakes on Battery Island and are suffering poor success due to washover from ferry, ship and large boat wakes. Because of the importance of Battery Island the Service requests that sand from future maintenance dredging in the vicinity of Battery Island be used as needed to maintain the island or slowly shift it away from the ship channel by replenishing sand on the side opposite the channel as the side closest the channel erodes.

Wilmington Harbor 203 Study – Preliminary Summary of Effects of the Tentatively Selected Plan (TSP) on Fish and Wildlife Resources

Resource	Effects of the TSP	Conservation Measures
<p>Wetlands</p>	<p>Model-projected upstream shifts in the 0.5 ppt salinity isopleth would affect ~341 acres of tidal freshwater wetlands, including ~242 acres of tidal swamp forest and ~99 acres of tidal freshwater marsh. Projected surface salinity increases of ≤0.3 ppt within the isopleth shift zones would have negligible to minor effects on the composition of freshwater tidal wetlands.</p>	<p>Proposed Measures: Wetland preservation and restoration on the Black River Wetland Mitigation Site.</p> <p>Protection of the ~4,485-acre Black River wetland mitigation site in perpetuity would provide an estimated 3,685 acres of wetland preservation. Approximately 2,350 acres of tidal cypress-gum swamp and ~865 acres of pocosin pond pine woodland wetlands on the river-contiguous tidal floodplain/bottomland area would be acquired through fee simple purchase. An additional ~470 acres of streamhead pocosin wetlands and ~800 acres of associated upland buffers on the northeastern portion of the site would be protected through acquisition of a conservation easement. The conservation easement would allow for hunting, pine straw raking, and limited timber management and harvest activities. Contingent on the confirmation of wetland acreages through the completion of a Section 404 wetland jurisdictional determination, the estimated 3,600 acres of wetland preservation would provide mitigation for the 341 acres of affected tidal wetlands at a ratio of 10.8 to 1.0. The overall 10.8 to 1.0 ratio represents tidal cypress-gum swamp wetland preservation at a ratio of 6.9 to 1.0 and pocosin wetland preservation at a ratio of 3.9 to 1. A total of ~25 acres of wetlands will be restored within three borrow-ditch forest road corridors; including ~14 acres of tidal cypress-gum swamp and ~11 acres of pond pine woodland pocosin. Removal of the roads will provide additional hydrological uplift within the existing adjoining wetlands through the restoration of natural lateral flow across the floodplain.</p>

<p>Softbottom/ PNA</p>	<p>Construction and maintenance of the -47 ft channel would impact 925 acres of previously undisturbed soft bottom habitat in channel widening and extension areas; including 557 acres of estuarine soft bottom and 368 acres of marine softbottom. Direct impacts in the estuary would include 3.5 acres of shallow (<6) PNA habitat and 28.8 acres of deep (>6 ft) PNA habitat. Benthic infaunal communities in the new dredging areas would experience recurring temporary impacts from maintenance dredging every one to four years for the duration of the 50-year project. Impacts on shallow (<6 ft) bottom would result in the permanent loss of nursery habitat functions.</p>	<p>Proposed Measures: Alligator Creek Restoration, Eagle Island</p> <p>Mitigation is proposed for all PNA impacts (32.3 ac) and all <12 ft non-PNA bottom impacts (7.7 ac) in the new dredging areas. The results of a UMAM assessment indicate replacement of lost shallow bottom habitat functions would require ~18 acres of shallow bottom restoration at Alligator Creek. Proposed mitigation includes restoring ~7,000 linear ft of the Alligator Creek channel and enhancing fringing tidal marshes (currently Phragmites) along both sides of the restored reach. Proposed treatments would restore ~18 acres of shallow (<6 ft) soft bottom habitat and provide optimal juvenile access to ~20 acres of enhanced fringing tidal marsh.</p>
<p>Hardbottom</p>	<p>Widening of the Baldhead Shoal entrance channel (as currently designed) would impact small areas of naturalized rubble disposal mounds that occur along the existing channel in the old ODMDS.</p>	<p>The distribution of the naturalized features is such that avoidance could be achieved through a relatively minor shift in channel alignment. During final channel design (PED), efforts will be made to avoid these features.</p>
<p>SAV</p>	<p>No effect.</p>	<p>None proposed</p>
<p>Shell Bottom</p>	<p>Short-term and localized effects from sediment suspension and redeposition during construction and maintenance dredging operations.</p>	<p>None proposed</p>

<p>Fisheries- Water Quality</p>	<p>Hydrodynamic Model Results: Modeling results show negligible decreases in DO concentrations of ≤ 0.3 mg/L at all depths. The decreases are projected to occur during the winter when DO concentrations are at annual peak levels. Under the low SLR typical flow scenario, the modeling results show maximum bottom and surface layer salinity increases of 4.1 and 1.2 ppt, respectively. The maximum projected increases are in the Anchorage Basin and Battleship channel reaches in the vicinity of downtown Wilmington. Projected salinity increases are progressively and rapidly reduced in the reaches above and below Wilmington.</p> <p>HSI Model Results: Salinity change was the principal driver of all significant HSI model-projected changes in habitat suitability. Results for red drum, a highly euryhaline species, show no change in estuarine habitat suitability. Habitat suitability for the white shrimp, a species that is intolerant of very high salinities, was reduced in the lower estuary compartment due to increased salinity. HSI model results for Atlantic menhaden, which is limited by both high and low salinities, show reduced habitat suitability in the lower estuary and increased suitability in the upper CFR/NECFR reaches. Overall, white shrimp and Atlantic menhaden experienced small net reductions in Habitat Unit (HU) availability on the order of one and three percent, respectively. Spawning habitats for anadromous species are well above the uppermost limit of project-related effects; and thus are not anticipated to be affected. HSI model results for non-spawning Atlantic sturgeon show salinity-driven decreases in foraging habitat suitability in the CFR near Navassa and in the NECFR immediately above Smith Creek. For striped bass, the suitability of existing poor quality foraging habitat between the Port of Wilmington and the mouth of NECFR is rendered unsuitable by increased salinity. Suitability of striped bass foraging habitat in the upper Brunswick River is also reduced due to increased salinity. Habitat suitability for striped bass larvae is reduced along the eastern bank of the CFR from Snows Cut up to Masonboro Country Club due to increased salinity.</p>	<p>Mitigation for salinity effects on anadromous species would include construction of fish passage at Lock and Dam 2 and Lock and Dam 3. HSI/HEP analysis indicates that increase in habitat suitability/habitat units would far exceed project impacts.</p>
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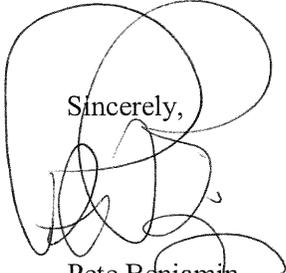
<p>Fisheries-Underwater Blasting</p>	<p>Potential confined blasting areas encompass ~188 acres of rock surface area within the Keg Island, Lower Big Island, Upper Big Island, and Lower Brunswick channel reaches. Blasting would present a risk of direct injury and mortality to fisheries.</p>	<p>Blast risk would be minimized through the development and implementation of a site-specific blast protection mitigation program in coordination with federal and state resource agencies. It is anticipated that the blast protection mitigation program would employ methods similar to those outlined by NMFS in a 2012 BO for blasting that was planned to occur (but never implemented) as part of the 2013 Anchorage Basin deepening project (NMFS 2012b).</p>
<p>Coastal Waterbirds Nesting Islands</p>	<p>Preliminary ship wake modeling results indicate the potential for increased shoreline erosion along Battery Island and other waterbird nesting islands in the lower estuary.</p>	<p>Proposed Measures: Restoration, Enhancement, and Stabilization of Estuarine Waterbird Nesting Islands</p> <p>Conservation measures would include the restoration of South Pelican Island (currently ~7 ac) and Ferry Slip Island (currently ~5 ac) through dredged material placement. Restoration would increase the subaerial area of both islands to ~15 acres. Measures would also include sand placement on the western shoreline of Battery Island to protect waterbird nesting habitat against ongoing and future erosion. Additionally, thin layer disposal of dredged material on subsiding marshes would be used to stabilize Battery, Striking, and Shellbed Islands. All of the proposed measures would be one-time events conducted during project construction.</p>
<p>Coastal Waterbirds Beach and Inlet</p>	<ul style="list-style-type: none"> • Minor relative increase in extent of beach disposal and associated impacts on foraging habitat during the initial construction beach disposal event. • Modeling results for Bald Head Island indicate minor relative increases in erosion rates of ≤ 0.6 ft/yr along central South Beach and minor relative decreases in erosion rates along western South Beach. Negligible relative increases in erosion rates of ≤ 0.2 ft/yr are projected along Caswell Beach and Oak Island. 	<p>Beach disposal operations would adhere to all conservation measures that are applicable to ongoing Corps disposal operations under the existing sand management plan.</p>

<p>North Atlantic Right Whale</p>	<p>Low risk of vessel collisions during dredged material transport to ODMDS. Risk would be minimized through adherence to Seasonal Management Area speed restrictions. No adverse effect on critical habitat.</p> <p>Determination of Effect: May affect, not likely to adversely affect</p>	<p>Dredging operations would adhere to all terms and conditions of the SARBO.</p>
<p>Florida Manatee</p>	<p>Low risk of vessel collisions during dredged material transport to ODMDS. Risk of injury and/or behavioral effects from confined blasting operations.</p> <p>Determination of Effect: May affect, not likely to adversely affect</p>	<ul style="list-style-type: none"> • The vessel collision risk would be minimized through implementation of USFWS guidelines for avoiding impacts to manatees in NC waters. • Blast risk would be minimized through the development and implementation of a site-specific blast protection mitigation program in coordination with federal and state resource agencies. It is anticipated that the blast protection mitigation program would employ methods similar to those outlined by NMFS in a 2012 BO for blasting that was planned to occur (but never implemented) as part of the 2013 Anchorage Basin deepening project (NMFS 2012b).
<p>Sea Turtles - Nesting</p>	<ul style="list-style-type: none"> • Minor relative increase in extent of beach disposal and associated temporary impacts on dry beach nesting habitat during the initial construction beach disposal event. • Modeling results for Bald Head Island indicate minor relative increases in erosion rates of ≤ 0.6 ft/yr along central South Beach and minor relative decreases in erosion rates along western South Beach. Negligible relative increases in erosion rates of ≤ 0.2 ft/yr are projected along Caswell Beach and Oak Island. <p>Determination of Effect: May affect, not likely to adversely affect</p> <p>Terrestrial Critical Habitat Determination of Effect: May affect, not likely to adversely affect</p>	<p>Beach disposal operations would adhere to all conservation measures that are applicable to ongoing Corps disposal operations under the existing sand management plan.</p>

<p>Sea Turtles – In water</p>	<ul style="list-style-type: none"> • Risk of entrainment by hopper dredges during construction and maintenance of outer entrance channel. • Low risk of injury and/or behavioral effects from confined blasting operations. <p>Determination of Effect: May affect, not likely to adversely affect</p> <p>Marine Critical Habitat Determination of Effect: May affect, not likely to adversely affect</p>	<ul style="list-style-type: none"> • Dredging operations would adhere to all terms and conditions of the 1997 SARBO. Hopper dredge entrainment risk would be minimized through adherence to established hopper dredge environmental work window. • Blast risk would be minimized through the development and implementation of a site-specific blast protection mitigation program in coordination with federal and state resource agencies. It is anticipated that the blast protection mitigation program would employ methods similar to those outlined by NMFS in a 2012 BO for blasting that was planned to occur (but never implemented) as part of the 2013 Anchorage Basin deepening project (NMFS 2012b).
<p>Piping Plover and Red Knot</p>	<ul style="list-style-type: none"> • Minor relative increase in extent of beach disposal and associated impacts on intertidal beach foraging habitat during the initial construction beach disposal event. • Modeling results for Bald Head Island indicate minor relative increases in erosion rates of ≤ 0.6 ft/yr along central South Beach and minor relative decreases in erosion rates along western South Beach. Negligible relative increases in erosion rates of ≤ 0.2 ft/yr are projected along Caswell Beach and Oak Island. <p>Determination of Effect: May affect, not likely to adversely affect</p> <p>Critical Habitat Determination of Effect: No Effect</p>	<p>Beach disposal operations would adhere to all conservation measures that are applicable to ongoing Corps disposal operations under the existing sand management plan.</p>
<p>Wood Stork</p>	<p>Determination of Effect: No effect</p>	<p>None proposed</p>

<p>Atlantic/ Shortnose Sturgeon</p>	<ul style="list-style-type: none"> • Risk of injurious and/or behavioral effects from confined blasting operations. • Risk of entrainment by hopper dredges during construction and maintenance of outer entrance channel. • New dredging would impact 925 acres of previously undisturbed soft bottom habitat in channel widening and extension areas; including 557 acres of estuarine soft bottom and 368 acres of marine softbottom. The 557 acres of estuarine soft bottom are designated critical habitat for the Atlantic sturgeon. Benthic infaunal prey communities in the estuarine new dredging areas would experience recurring temporary impacts from maintenance dredging every one to four years for the duration of the 50-year project. • Indirect effects on habitat suitability due to salinity increases/salinity gradient shift. Projected bottom salinity increases of 4 to 5 ppt in vicinity of known concentration areas near downtown Wilmington. <p>Determination of Effect: May affect, likely to adversely affect</p> <p>Critical Habitat Determination of Effect: May affect, likely to adversely affect</p>	<ul style="list-style-type: none"> • Blast risk would be minimized through the development and implementation of a site-specific blast protection mitigation program in coordination with federal and state resource agencies. It is anticipated that the blast protection mitigation program would employ methods similar to those outlined by NMFS in a 2012 BO for blasting that was planned to occur (but never implemented) as part of the 2013 Anchorage Basin deepening project (NMFS 2012b). • Mitigation for salinity and benthic foraging habitat effects would include construction of fish passage at Lock and Dam 2 and Lock and Dam 3.
<p>Seabeach Amaranth</p>	<p>Minor relative increase in extent of beach disposal and associated potential for seed burial and redistribution effects during the initial construction beach disposal event.</p> <p>Determination of Effect: May affect, not likely to adversely affect</p>	<p>Beach disposal operations would adhere to all conservation measures that are applicable to ongoing Corps disposal operations under the existing sand management plan.</p>
<p>MMPA Marine Mammals</p>	<ul style="list-style-type: none"> • Risk of injurious and/or behavioral effects on bottlenose dolphins during confined blasting operations. • Negligible risk of humpback whale vessel collisions during offshore dredged material transport to ODMDS. 	<ul style="list-style-type: none"> • Blast risk would be minimized through the development and implementation of a site-specific blast protection mitigation program in coordination with federal and state resource agencies. It is anticipated that the blast protection mitigation program would employ methods similar to those outlined by NMFS in a 2012 BO for blasting that was planned to occur (but never implemented) as part of the 2013 Anchorage Basin deepening project (NMFS 2012b). • Measures described above for the right whale would also minimize the risk of humpback vessel collisions.

Focusing on collaborative problem solving using a technical approach that facilitates communication between professional disciplines and broad public interest endpoints such as both navigation and the environment can eliminate much debate, and save time. The use of a technical collaborative approach where environmental and construction agencies work as partners in project development will better serve the public interests of North Carolina and the nation. Thank you for being willing to consult with the Service early in the process. The Service looks forward to future collaboration which will be necessary to finalize our report. Please contact Mike Wicker at 919-856-4520 ext 22 or by e-mail at mike_wicker@fws.gov with any questions or with any requests for technical information.

Sincerely,

Pete Benjamin
Field Supervisor