



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>

APR 11 2014

F/SER31:JBH

Ms. Leslie Craig
 Supervisor, NOAA Restoration Center-Southeast Region
 NOAA Fisheries-Office of Habitat Conservation
 263 13th Avenue South
 St. Petersburg, Florida 33701

Ref.: Deepwater Horizon-Early Restoration Plan Phase III Living Shoreline Projects

	Applicant	NMFS Number	Location
1	MS Department of Environmental Quality	SER-2014-12925	Hancock County, Mississippi
2	NOAA Restoration Center – SE Office	SER-2014-12926	Baldwin County, Alabama
3	FL Department of Environmental Protection	SER-2014-13016	Escambia County, Florida
4	FL Department of Environmental Protection	SER-2014-13083	Franklin County, Florida

Dear Ms. Craig:

This document responds to 4 letters, received between January 13 and February 4, 2014, from the National Oceanic and Atmospheric Administration (NOAA) Restoration Center, requesting National Marine Fisheries Service (NMFS) concurrence under Section 7 of the Endangered Species Act (ESA) with the project-effects determinations associated with living shoreline construction projects in the Gulf of Mexico. On February 5, 2014, we decided to batch these projects into a single consultation based on the similarity of the proposed activities. You determined that the proposed activities may affect, but are not likely to adversely affect 5 sea turtle species (green, hawksbill, Kemp’s ridley, leatherback, and loggerhead), Gulf sturgeon, smalltooth sawfish, and designated Gulf sturgeon critical habitat in Units 8, 9, and 13. NMFS requested additional information via email on February 19, 2014. We received the response on March 13, 2014. We asked for clarification of that information via email on March 14, 2014. We received clarification on March 19, 2014, and we initiated consultation that day. NMFS’s findings on the projects’ potential effects are based on the project descriptions in this response; thus, any changes to the proposed actions may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

All of the applicants will use floating turbidity curtains around all in-water construction areas and will follow NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006; *Measures for Reducing Entrapment Risk to Protected Species*, revised May 22, 2012; and U.S. Fish and Wildlife Service’s (USFWS) *Standard Manatee Conditions for In-Water Work*, dated 2011. Each project is described in detail below and locations are shown in the figures attached at the end of this consultation (all project location datum are North American Datum 1983).

1. The Hancock County Marsh Living Shoreline projects (3) are located in Hancock County, Mississippi. Action Area Bounding Coordinates (N-S-E-W): 30.184°N, 89.53°W; 30.169°N,



89.462°W; 30.233°N, 89.415°W; 30.184°N, 89.530339°W. The proposed projects consist of 3 components: (1) use of breakwater materials to reduce shoreline erosion, (2) creation of 46 acres of salt marsh, and (3) enhancement of 46 acres of oyster reef habitat that have historically supported oyster habitat (Figure 1). The breakwater at St. Joseph's Point (eastern reach) will be approximately 4 miles long, have a crest width of 15 feet (ft), a total height of 4 ft, and include openings throughout to allow for tidal flow. The breakwater will have a footprint of approximately 14.4 acres and will be placed on substrate of fine-grained sediment. It will be composed of a riprap core covered by a 9-inch-thick layer of bagged oyster shell. The Pearl River to Heron Bay breakwater (western reach) will be constructed identical to the St. Joseph's Point breakwater, but will be 1.9 miles long. The Pearl River to Heron Bay breakwater will have a footprint of approximately 5.5 acres. Temporary flotation access channels will be used to facilitate access for work barges into the work area. One channel will be excavated parallel to the breakwaters and additional channels excavated perpendicular to provide access from the Mississippi Sound (Figure 1). The excavated, dredged material will be cast on the seaward side of the channels so they naturally fill back in after construction. The channels will be dredged to 8 ft below mean lower low water (MLLW) to accommodate barge draft. The channels will be excavated using standard, construction best management practices (BMPs) to minimize environmental impacts. Permanent navigation signs will be installed in accordance with safety requirements.

A total of 46 acres of marsh will be created behind the constructed breakwater at St. Joseph's Point. It will be backfilled with dredged material obtained from the Mississippi Beneficial Sediment Use Program and allowed to re-vegetate by natural colonization of estuarine marsh species. Sediment will be pumped through a floating pipeline from a hydraulic dredge until final marsh target elevations are achieved. Pumps and sediment controls will remain in place throughout the dredging and filling process until initial settling has occurred. Once the entire marsh area is constructed, the area would be monitored for natural re-vegetation.

Oyster cultch will be deployed over 46 acres in Heron Bay in areas that currently support or previously supported oyster production. Oyster cultch deployment will occur in water depths of -3 to -5 ft MLLW and the limits of the cultch deployment areas will be marked with buoys or poles. A barge-mounted crane with a clamshell bucket will deploy the cultch in a 6- to 9-inch-thick layer of oyster shell or limestone. A material barge loaded with cultch will be moored to the crane barge. As a construction alternative, water jetting of loose shell off of the material barge may be used in case of water-depth constraints. Construction is scheduled to take place from May-October to avoid potential impacts to migrating Gulf sturgeon.

2. The Swift Tract Living Shoreline project is located at 30.335832°N, 87.812745°W, along the eastern portion of Bon Secour Bay, approximately 6 miles northwest of Gulf Shores in Baldwin County, Alabama (Figure 2). The Swift Tract breakwater will be 8,500 ft long, have a crest width of 10 ft, and a total height of 3 ft. Calculated volumes of material are 15,800 tons of riprap and 2,200 cubic yards (yd³) of oyster shell. Approximately 2.9 acres of fine-grained sediment or soft bottom will be covered with riprap and topped with bagged, oyster shell. One or more work barges, with a long-reach backhoe, will be positioned along the seaward side of the breakwater construction area. A material barge will be positioned seaward of the work barge. Additionally, 6 warning signs placed on 12-inch-diameter, treated posts will be installed adjacent to the

breakwaters. In an effort to reduce noise and turbidity effects, these posts will be pushed into the sediment rather than using a pile driver or jetting the piles into place. Construction is anticipated to be completed within 6 months.

3. The Pensacola Bay Living Shoreline projects are located in Escambia County, Florida at 30.410278°N, 87.202778°W, Project Green Shores Site II (PGSII); and 30.399722°N, 87.232222°W, Sanders Beach (Figure 3). Construction activities at PGSII will include expansion of an existing breakwater with a crest width of 100 ft and a total height of 3.5 ft. The volume of material needed will be approximately 11,000 tons of riprap and fossilized oyster shell covering a footprint of 1.9 acres of fine-grained sediment. Breakwaters constructed at Sanders Beach will be 2,400 ft long, have a crest width of 30 ft, and a total height of 3.5 ft. The volume of material needed will be approximately 14,000 tons of riprap and fossilized oyster shell, covering a footprint of 3.15 acres of fine-grained sediment. A gap of 100 ft will be left between each breakwater to allow for tidal flow.

Work barges with a long-reach backhoe will be positioned along the seaward side of the breakwaters and the material barge will be positioned seaward of the work barge. Additionally, 14 warning signs, placed on 12-inch-diameter posts, will be installed adjacent to the breakwaters. In an effort to reduce noise and turbidity effects, these posts will be pushed into the sediment rather than using a pile driver or jetting the piles into place.

After the breakwaters have been constructed, selected landward areas will be filled with dredged material obtained from one or more existing dredge disposal sites or navigational channels adjacent to the project sites (Figures 5 and 6). Approximately 16 acres will be required to provide the estimated 102,000 cubic yd³ using the following criteria: (1) borrow source will be free of contaminants as described in the *Inland Testing Manual (Evaluation of Dredged Material Proposed For Discharge in Waters of the United States)*, (U.S. Army Corps of Engineers, 1998); and (2) borrow areas in depths of 6 ft or less will be limited to excavated depths of 4 ft below the sediment line and borrow areas in 6 ft or more of depth will be limited to excavated depths of 6 ft below the sediment line.

The marsh creation areas will be filled beginning at the most landward extent and filled until final marsh elevations are achieved. Marsh elevations will be designed to meet the requirements of native marsh plant species and to withstand normal wave heights for the project area. Based on similar projects, it is estimated that approximately 6,000 yd³ of fill will be needed for PGSII and approximately 96,000 yd³ of fill will be needed for Sanders Beach. To avoid potential impacts to protected species, the proposed project will use a hydraulic cutterhead pipeline dredge rather than a hopper dredge. Floating turbidity screens will be used to control turbidity levels and meet State of Florida requirements (Chapter 62-302.530 F.A.C.). Sediment controls will remain in place throughout the dredging and filling process. Construction is anticipated to take between 6-10 months for all elements, occurring between August-October 2015.

4. The Cat Point Living Shoreline project is located at 29.73093°N, 84.88433°W, along an area just off the Apalachicola National Estuarine Research Reserve Office Complex and Nature Center in Eastpoint, Florida (Figure 4). Proposed activities include expanding an existing breakwater structure by up to 0.3 miles and creating 1 acre of salt marsh habitat. The extensions

to the existing breakwater will be added on the north end (689 ft) and south end (750 ft). The structure is approximately 30 ft from the shoreline, has a crest width of 5 ft, and a total height of 2.5 ft. The extensions will be similar in measurement. Gaps ranging in size from 3-25 ft wide will be built into the breakwater to allow for tidal flow. Expansion of the breakwater will be undertaken during the winter season (November through early March), when low tides in the project area expose the tidal flats. Then materials can be placed from shore with a backhoe or crane (the area is too shallow to use a barge). Materials and equipment will be staged on state-owned lands adjacent to the road right-of-way, and will be accessed by an existing road (Millender Street). Native marsh plant species will be planted behind the breakwater structures, along the shoreline, to create approximately 1 acre of new marsh. Marsh creation will involve planting species on 2- to 3-ft centers. This activity would commence once the constructed breakwater extensions are complete and stabilized so the restored areas will be protected to the fullest extent possible.

We believe that sea turtles (the endangered Kemp's ridley; the threatened loggerhead,¹ and the threatened/ endangered green²) and the threatened Gulf sturgeon may be present in the action areas and may be affected by the projects. We believe leatherback and hawksbill sea turtles will not be present, thus, they will not be affected, because their very-specific foraging and life history requirements are not met in or near the action areas: leatherbacks are deepwater, pelagic species and hawksbills are associated with coral reefs. Smalltooth sawfish also are not likely to be encountered at any of the project sites and therefore will not be affected. Their current distribution has contracted to peninsular Florida and, within that area, they can only be found with regularity off the extreme southern portion of Florida. Of the proposed projects, 3 fall within ESA-designated Gulf sturgeon critical habitat (Units 8, 9, and 13); Swift Tract is not located in designated critical habitat.

NMFS has identified the following potential effects to sea turtles and Gulf sturgeon and has concluded that the species are not likely to be adversely affected by the proposed actions for several reasons. Effects include the risks of being struck by transiting vessels, cutterhead and mechanical dredge-related activities, and deployment of material from the barges. Due to the species' mobility, natural avoidance behaviors, and the slow transit speed of the towed barges (5 knots or less), the risk of injury will be discountable. Compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006 (enclosed), will further reduce the risk as it requires work to stop if a listed species is observed within 50 ft of operating or moving machinery. NMFS believes that the temporary pipeline put in place to pump sediment from the dredged material disposal site to the marsh creation area will not adversely affect or impede the passage or transit of any of these species, as they can simply avoid it, or swim over, under, or around it; thus, any effects of pipeline presence are insignificant.

Sea turtles and Gulf sturgeon may be temporarily unable to use the sites for foraging or shelter habitat due to avoidance of construction activities, related noise, and physical exclusion from areas blocked by turbidity curtains. These effects will be temporary and insignificant, given the projects' small footprints, short construction durations, and turbidity controls that will only

¹ Northwest Atlantic Ocean distinct population segment (DPS)

² Green turtles are listed as threatened except for the Florida and Pacific coast of Mexico breeding populations, which are listed as endangered.

enclose a small portion of the project sites and will be removed after construction. In addition, the Hancock County, Swift Tract, and Pensacola Bay project activities will occur between May and October when Gulf sturgeon are found primarily in freshwater rivers. Activities at Cat Point will occur during the winter months when the tide is at its lowest so cranes can work from shore. Due to the shallow water depths, that particular project area provides poor foraging and refuge habitat for sturgeon. Gulf sturgeon are suction feeders, using their relatively narrow mouths to funnel water and prey items. Because of their feeding morphology, they are usually found at slightly deeper depths (greater than 6 ft) where there is lower wave energy. There is ample available foraging and refuge habitat for Gulf sturgeon outside of, but adjacent to, the Cat Point site just offshore where the depths provide more suitable habitat to Gulf sturgeon.

The essential features for the conservation of Gulf sturgeon present in Units 8, 9, and 13 are: (1) abundant prey items; (2) water quality and sediment quality necessary for normal behavior, growth, and viability of all life stages; and (3) safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats. Of these essential features, NMFS believes prey abundance, water quality, and sediment quality may be affected.

The prey abundance essential feature may be affected by burial or excavation of Gulf sturgeon foraging sites during marsh creation, flotation channel dredging, and oyster reef creation. The temporary loss of prey species within the project area will not appreciably decrease the prey available to Gulf sturgeon as there are abundant, similar, nearby foraging habitats. Any decrease in numbers of these prey species would be minimal in relation to their numbers across the entire critical habitat units or nearby areas. Prey species can quickly recolonize the project areas after construction; thus, effects to the prey abundance essential feature of critical habitat will be insignificant. Furthermore, effects to the ecological functions and values of the critical habitat units for Gulf sturgeon will be insignificant.

The marsh creation projects will likely have a beneficial impact on Gulf sturgeon by increasing prey abundance in adjacent areas. Partyka and Peterson (2008) found even the smallest patches of marsh habitat supported a larger diversity of fauna than nearby areas.³ Therefore, it is likely that Gulf sturgeon prey species (e.g., amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and crustaceans) will benefit from the restoration of a marsh area with native vegetation. While some of this enhanced prey abundance will remain in the marsh and not be available to Gulf sturgeon for foraging, we believe that directly (through spillover) or indirectly (through trophic movement) prey abundance will be increased in areas accessible to foraging Gulf sturgeon. This spillover effect is supported by Whaley and Minello's (2002) findings of the strong trophic link between infauna and nekton near the marsh edge and the high fishery productivity derived from Gulf coast marshes.⁴

Water quality will be temporarily affected by disturbance to the bottom sediments during dredging activities. The effects are expected to be insignificant, given that increases in turbidity

³ Partyka, M.L. and M.S. Peterson. 2008. Habitat quality and salt-marsh assemblages along an anthropogenic estuarine shoreline. *Journal of Coastal Research* 24(6):1570-1581.

⁴ Minello, T.J., K.W. Able, M.P. Weinstein, and C.G. Hays. 2003. Salt marshes as nurseries for nekton: testing hypotheses on density, growth, and survival through meta-analysis. *Marine Ecology Progress Series* 246:39-59.

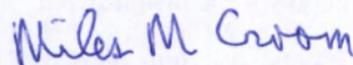
will be temporary and minimized by the use of turbidity curtains. In addition, sediments will settle out of the water column quickly, and/or tidal currents will disperse the disturbed sediments to baseline conditions. We do not expect any adverse changes to the sediment quality from the proposed dredging, as the composition of the dredged materials to be replaced (put back into the flotation channels, post project construction) in critical habitat are from the same approximate area in critical habitat, and therefore are expected to be similar or identical to those that are currently present.

Finally, we concur with your project-effect determinations that the projects for which you requested ESA consultations are not likely to adversely affect Kemp's ridley, loggerhead, or green sea turtles, Gulf sturgeon, or Gulf sturgeon critical habitat in Units 8, 9, and 13.

This concludes the NOAA Restoration Center's consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat is designated that may be affected by the identified action.

We've enclosed additional relevant information for your review. We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions about this consultation, please contact Joyce Barkley-Hahn, Consultation Biologist, at (727) 551-5741, or by email at joyce.barkley-hahn@noaa.gov.

Sincerely,





Roy E. Crabtree, Ph.D.
Regional Administrator

- Enc.: 1. *Sea Turtle and Smalltooth Sawfish Construction Conditions* (Revised March 23, 2006)
2. *Measures for Reducing Entrapment Risk to Protected Species* (Revised May 22, 2012)
3. *Standard Manatee Conditions for In-Water Work* (Dated 2011).

File: 1514-22C.



Figure 1. Image showing Hancock County Marsh project locations (©2012 Google, TerraMetrics)



Figure 2. Image showing Swift Tract project location (©2012 Google, TerraMetrics)

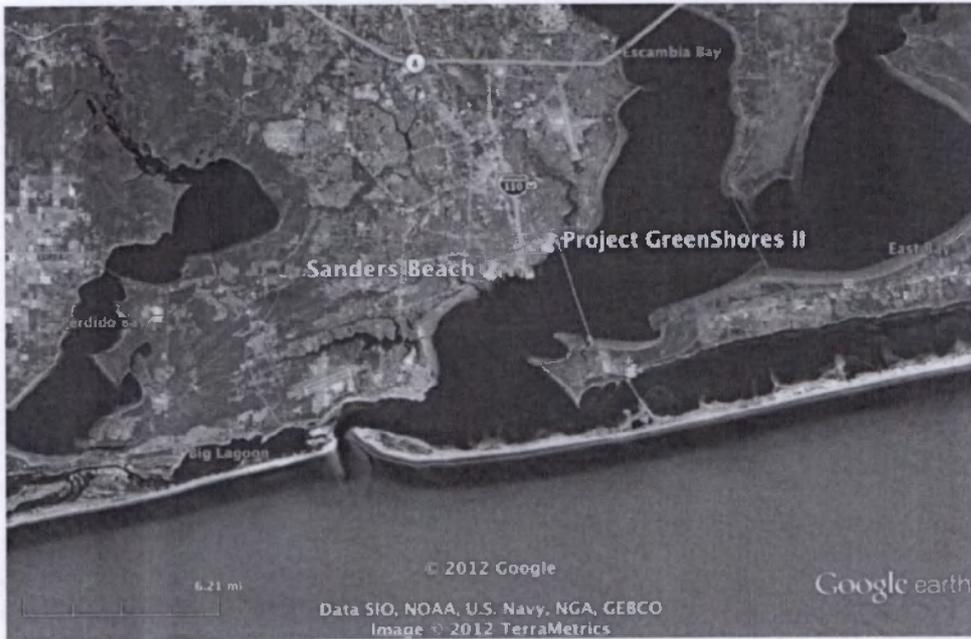


Figure 3. Image showing Pensacola Bay project locations (©2012 Google, TerraMetrics, data SIO, NOAA, U.S. Navy, NGA, GEBCO)

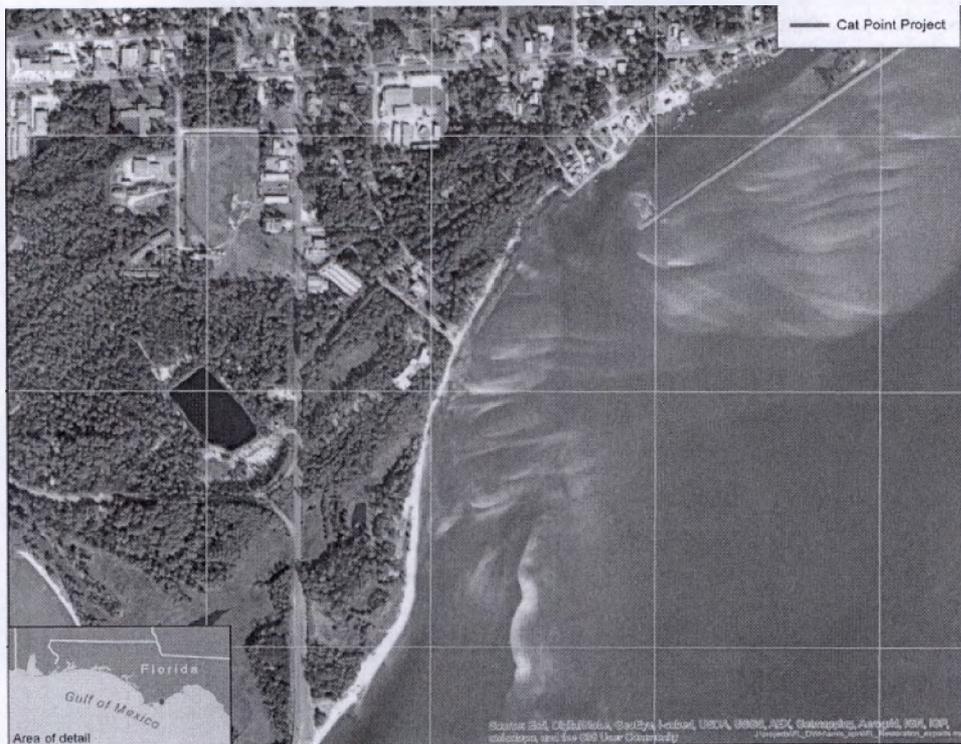


Figure 4. Image showing Cat Point project locations (©ESRI, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, IGN, IGP, Swisstopo, GIS User Community)

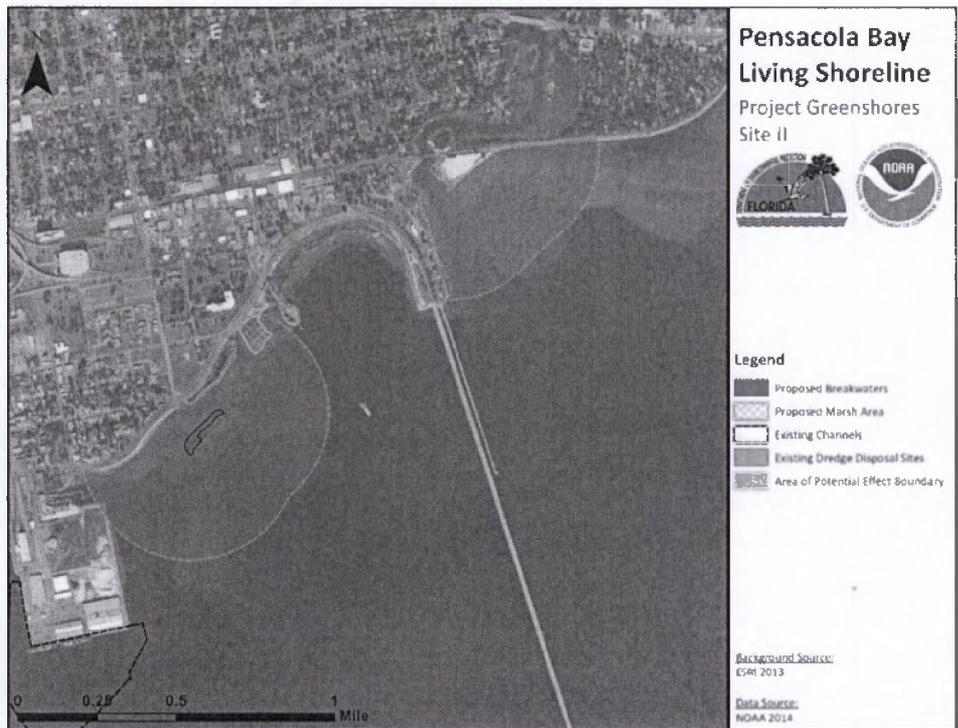


Figure 5. Image showing existing dredge disposal sites at PGSII

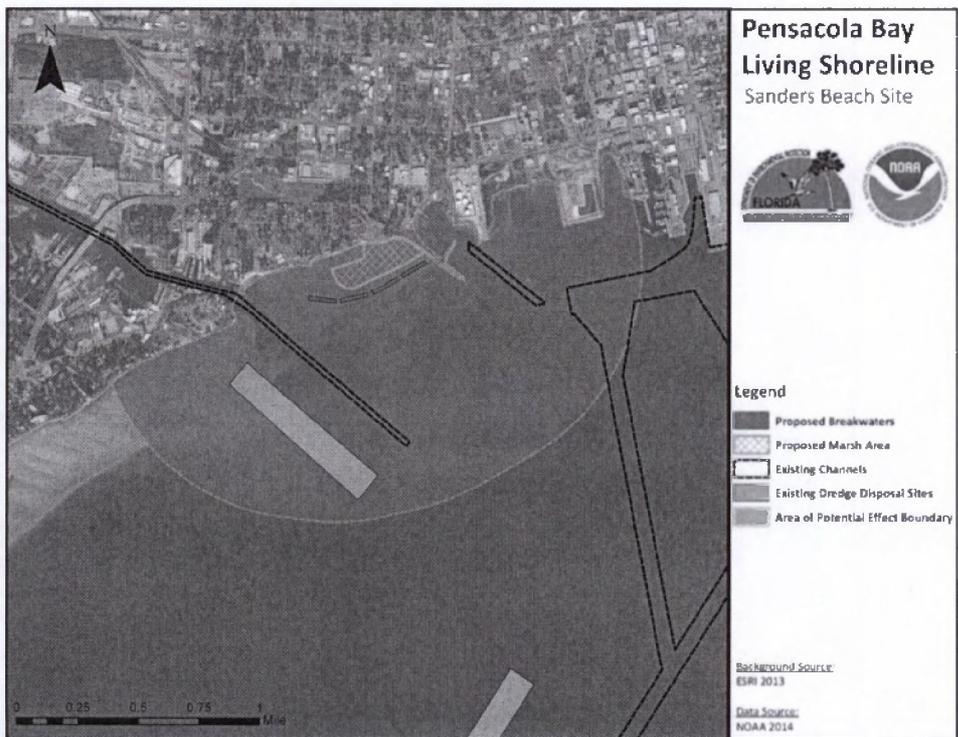


Figure 6. Image showing existing dredge disposal sites at Sanders Beach

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006



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Measures for Reducing Entrapment Risk to Protected Species

Bottlenose dolphins, sea turtles, and Gulf sturgeon (protected species) are known to inhabit coastal waters of the northern Gulf of Mexico. Bottlenose dolphins are protected under the Marine Mammal Protection Act (MMPA) and sea turtles and Gulf sturgeon are protected under the Endangered Species Act (ESA). Because of the potential for these protected species to become entrapped within coastal waters of construction sites along the northern Gulf coast, projects that enclose shallow open water areas for wetland creation or nourishment will use the following measures to minimize the potential for entrapment:

- 1. Pre-construction planning.** During project design, the Federal Action Agency or project proponents must incorporate at least one escape route into the proposed retention structure(s) to allow any protected species to exit the area(s) to be enclosed. Escape routes must lead directly to open water outside the construction site and must have a minimum width of 100 feet. Escape routes should also have a depth as deep as the deepest natural entrance into the enclosure site and must remain open until a thorough survey of the area, conducted immediately prior to complete enclosure, determines no Protected Species are present within the confines of the structure (see item 5 below for details).
- 2. Pre-construction compliance meeting.** Prior to construction, the Federal Action Agency, project proponents, the contracting officer representative, and construction personnel should conduct a site visit and meeting to develop a project-specific approach to implementing these preventative measures.
- 3. Responsible parties.** The Federal Action Agency will instruct all personnel associated with the project of the potential presence of protected species in the area and the need to prevent entrapment of these animals. All construction personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing protected species. Construction personnel will be held responsible for any protected species harassed or killed as a result of construction activities. All costs associated with monitoring and final clearance surveys are the responsibility of project proponents and must be incorporated in the construction plan.
- 4. Monitoring during retention structure construction.** It is the responsibility of construction personnel to monitor the area for protected species during dike or levee construction. If protected species are regularly sighted over a 2 or 3 day period within the enclosure area during retention structure assembly, construction personnel must notify the Federal Action Agency. It is the responsibility of the Federal Action Agency



to then coordinate with the National Marine Fisheries Service (NMFS) Marine Mammal Health and Stranding Response team (1-877-WHALE HELP [1-877-942-5343]) or the appropriate State Coordinator for the Sea Turtle Stranding and Salvage Network (see http://www.sefsc.noaa.gov/species/turtles/stranding_coordinators.htm) to determine what further actions may be required. Construction personnel may not attempt to scare, herd, disturb, or harass the protected species to encourage them to leave the area.

5. **Pre-closure final clearance.** Prior to completing any retention structure by closing the escape route, the Federal Action Agency will insure that the area to be enclosed is observed for protected species. Surveys must be conducted by experienced marine observers during daylight hours beginning the day prior to closure and continuing during closure. This is best accomplished by small vessel or aerial surveys with 2-3 experienced marine observers per vehicle (vessel/helicopter) scanning for protected species. Large areas (e.g. >300 acres) will likely require the use of more than one vessel or aerial survey to insure full coverage of the area. These surveys will occur in a Beaufort sea state (BSS) of 3 feet or less, as protected species are difficult to sight in choppy water. Escape routes may not be closed until the final clearance determines the absence of protected species within the enclosure sight.
6. **Post closure sightings.** If protected species become entrapped in an enclosed area, the Federal Action Agency and NMFS must be immediately notified. If observers note entrapped animals are visually disturbed, stressed, or their health is compromised then the Action Agency may require any pumping activity to cease and the breaching of retention structures so that the animals can either leave on their own or be moved under the direction of NMFS.
 - a. In coordination with the local stranding networks and other experts, NMFS will conduct an initial assessment to determine the number of animals, their size, age (in the case of dolphins), body condition, behavior, habitat, environmental parameters, prey availability and overall risk.
 - b. If the animal(s) is/are not in imminent danger they will need to be monitored by the Stranding Network for any significant changes in the above variables.
 - c. Construction personnel may not attempt to scare, herd, disturb, or harass the protected species to encourage them to leave the area. Coordination by the Federal Action Agency with the NMFS SER Stranding Coordinator may result in authorization for these actions.
 - d. NMFS may intervene (catch and release and/or rehabilitate) if the protected species are in a situation that is life threatening and evidence suggests the animal is unlikely to survive in its immediate surroundings.
 - e. Surveys will be conducted throughout the area at least twice or more in calm surface conditions (BSS 3 feet or less), with experienced marine observers, to determine whether protected species are no longer present in the area.

Revised: May 22, 2012

While NMFS recommends these best management practices to prevent the future takes of marine mammals by entrapment, use of these measures cannot guarantee a take will not occur. Following these measures does not constitute compliance with the MMPA's Incidental Take requirements and take is not authorized.

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or in Vero Beach (1-772-562-3909) for south Florida, and emailed to FWC at ImperiledSpecies@myFWC.com.
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at http://www.myfwc.com/WILDLIFEHABITATS/manatee_sign_vendors.htm. Questions concerning these signs can be forwarded to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:



Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC