APPENDIX E: AGENCY COORDINATION

BILLY NUNGESSER
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

RICHARD H. HARTLEY
DEPUTY SECRETARY

KRISTIN P. SANDERS
ASSISTANT SECRETARY

May 15, 2019

Mr. Eric M. Williams
Chief, Cultural & Social Resources Section (CEMVN-PDP-CSR)
U.S. Army Corps of Engineers, New Orleans District
Regional Planning and Environment Division, South

Re: Section106 Review Consultation for the Grand Isle Breakwaters Project, Grand Isle, Jefferson Parish, Louisiana

Dear Mr. Williams:

This letter is in response to your submission received May 14, 2019, concerning the above-referenced project. We have reviewed the enclosed information and concur that the proposed breakwaters and the Barataria Borrow site will not affect historic properties. However, it is the opinion of the State Historic Preservation Office that the Caminada borrow should be surveyed for historic properties.

If you have any questions, please do not hesitate to contact Rachel Watson in the Division of Archaeology at (225) 342-8165 or rwatson@crt.la.gov.

Sincerely,

Kristin P. Sanders

Kristin Sanders
State Historic Preservation Office

P.O. BOX 44247 • BATON ROUGE, LOUISIANA 70804-4247
PHONE (225) 342-8170 • FAX (225) 342-4480 • WWW.CRT.LA.GOV

BILLY NUNGESSER
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

KRISTIN P. SANDERS
ASSISTANT SECRETARY

19 August 2020

Mr. Martin S. Mayer
Chief, Regulatory Branch
Department of the Army
Corps of Engineers, New Orleans District
7400 Leake Avenue
New Orleans, LA 70118-3651

Re: Draft Report
La Division of Archaeology Report No. 22-6564
Cultural Resources Remote-Sensing Survey of a Portion of the Caminada Pass Area, Jefferson Parish, Louisiana

Dear Mr. Mayer,

We acknowledge receipt of your letter dated 17 August 2020 and one copy of the above referenced report. We reviewed the report and offer the following comments.

Please state the line spacing interval used for the project. It also appears that refinement lines were collected at two locations. The reasoning for the refinement survey should be detailed in the field methods section.

A copy of the survey line log and any field notes taken by the surveyors should be included as an appendix.

Please explain why the magnetometer data were contoured to 50-gammas. Magnetic data should be contoured to 5-gammas for cultural resources in order to more accurately define the limits of the anomaly.

The report needs to include a list of all side scan sonar targets along with appropriate attribute data (length, width, height, latitude, longitude, etc.). In addition to the table of all sonar contacts in the APE, please map all contacts on Figure 12 or 13. Please see page 12 of our reporting standards for more information.

There appears to be a visible sonar contact on the mosaic that correlates with magnetic anomaly 24, but it is difficult for us to discern without appropriate tables to relate locational information. The magnetic anomalies table should include a list of any sonar contacts or sub-bottom reflectors associated with an anomaly.

Please include a figure of each anomaly recommended for avoidance including the magnetic contours, buffer, and associated sonar contact or sub-bottom reflector, if applicable.

Although magnetic anomaly 13 does not meet Gearhart's (2011) criteria for magnetic orientation, the size of the anomaly raises concerns. Were any sonar contacts identified near this anomaly, or was there anything visible in the sub-bottom profile data?

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Based on the description of the Area of Potential Effect (APE), the proposed ground-disturbing activities, and the identification of historic properties within the APE, our office concurs with the assessment that magnetic anomalies 5, 6, and 8 be avoided using a 50-meter buffer from the outside edge of the anomaly.

Consultation with the State Historic Preservation Office does not constitute consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public. If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal, and glass objects. The federal agency or the applicant receiving federal assistance should contact our office immediately. If human remains are encountered, the provisions of the Louisiana Unmarked Human Burial Sites Preservation Act (Revised Statute 8:671-681) should be followed.

We look forward to receiving one double-sided, bound copy of the report and a pdf. If you have any questions, please contact Chip McGimsey at cmcgimsey@crt.la.gov or 225-219-4598.

Sincerely,

Kristin P. Sanders

Kristin Sanders
State Historic Preservation Officer

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVE
NEW ORLEANS LA 70118-3651

August 17, 2020

Operations Division
Eastern Evaluation Section

Attn: CEMVN-PDS-N

Kristin Sanders, SHPO
LA State Historic Preservation Officer
P.O. Box 44247
Baton Rouge, LA 70804-4241

RE: Section 106 Review Consultation
Undertaking: 2020-00736 Grand Isle and Vicinity: West End Beach and Dune Renourishment,
Jefferson Parish, Louisiana
(Latitude 29.18785 °, Longitude -90.039025°)
Determination: **No Adverse Effect to Historic Properties**

Dear Ms. Sanders:

The **U.S. Army Corps of Engineers, New Orleans District (CEMVN)** and the **Coastal Protection and Restoration Authority(CPRA)** proposes to conduct beach and dune renourishment at **Latitude: 29.18785 Longitude: -90.039025** in Jefferson Parish, Louisiana.

Description of the Undertaking
In response to the impacts of Tropical Storm Cristobal on the dune on Grand Isle, CEMVN and the applicant, CPRA, is proposing beach renourishment to impacted areas. The project would involve the placement of sediment in front of the geotextile "burrito" core of the dune on Grand Isle which was exposed during Cristobal as seen on the attached photograph (Figure 1).

Beach and dune renourishment would primarily involve placement of sand on top of eroded beach areas and on eroded portions of the existing dune that runs parallel to the shoreline near the northern limits of the beach/dune renourishment areas. For dune areas where the crest (top) of the dune has eroded significantly, placement of fill (sand) would extend over the dune's crest and would continue downward to a point along the landward sideslope (slope on north side of dune), but would not extend to the toe-of-slope. It is noted that a portion of the remnant shoreline in the southern end is presently lined with exposed stone rip-rap with practically no beach remaining. In this area, additional sand fill would be placed on the rip-rap slope such that there would be at least a 3-feet thick layer of sand over the existing rock.

Sediment for the renourishment effort would be obtained through a dredging effort from a new borrow area at Caminada Pass. This new borrow site would be located in the Gulf near the west end of Grand Isle, just off of the Caminada Pass. A 165 foot avoidance buffer area would placed around three anomalies that have been identified within the proposed dredging area (Figure 2).

Area of Potential Effects (APE)
The APE for direct and indirect effects is represented in Figure 2. The proposed beach and dune renourishment would encompass up to a total of approximately 76.0 acres on the gulf side of Grand Isle along its western end. The Caminada Pass borrow site would encompass a maximum of 230 acres. The existing seabed elevation at the borrow site ranges from approximately -6 feet to -12 feet. The depth of dredging to obtain the sand would extend no lower (deeper) than elevation -20.0 feet when dredging.

Identification and Evaluation
Background research and literature review was conducted by CEMVN staff in August 2020. Historic Properties within the APE were identified based on a review of the National Register of Historic Places (NRHP) database, the Louisiana Cultural Resources Map, historic map research, and a review of cultural resources survey reports. The information regarding historic properties identified within the APE was evaluated by CEMVN staff using the National Register of Historic Places (NRHP) Criteria for evaluation as defined at 36 CFR § 60.4.

A remote sensing cultural resources report was prepared for the project by Coastal Environments Inc. dated July 2020 and titled, "*Cultural Resources Remote-Sensing Survey of a Portion of the Caminada Pass Area, Jefferson Parish, Louisiana"* (enclosed).

The remote-sensing survey recorded many anomalies from submerged targets, especially in the magnetometer data. The majority of these, however, were interpreted as modern debris and ruled out as significant cultural resources. Three anomalies of interest were identified as potential cultural resources within the APE. The lack of expression of these anomalies indicates that they are likely buried. It is not possible to determine from the remote sensing data alone if these anomalies are related to cultural resources that meet National Register of Historic Places criteria.

Assessment of Effects
No historic properties exists within the proposed beach and dune renourishment area. Three anomalies that have the potential to be significant cultural resources have been identified within the Caminda Pass borrow area. However, the proposed project would implement a 165 foot (50-meter) avoidance buffer around

each anomaly in order to avoid impacts. Therefore, CEMVN has determined that the proposed undertaking will have **No Adverse Effect to Historic Properties with the proposed buffer placed around the three anomalies located in the Caminada Pass borrow area.**

We look forward to your concurrence with this determination. Should you have any questions or need additional information regarding this undertaking, please contact Noah Fulmer at (504) 862-1983, or by email at noah.j.fulmer@usace.army.mil, or Jason Emery, Archaeologist and Tribal Liaison at (504) 862-2364 or by email at jason.a.emery@usace.army.mil.

Sincerely,

FARABEE.MICHAEL.VERNE.1053559979 Digitally signed by FARABEE.MICHAEL.VERNE.1053559979 Date: 2020.08.17 14:51:23 -05'00'

Martin S. Mayer
Chief, Regulatory Branch

Enclosures

JOHN BEL EDWARDS
GOVERNOR

THOMAS F. HARRIS
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

June 16, 2020

Marshall Harper
Corps of Engineers- New Orleans District
7400 Leake Avenue
New Orleans, LA 70118
Via email: Marshall.K.Harper@usace.army.mil

RE: **C20190056 Mod02,** Coastal Zone Consistency
New Orleans District, Corps of Engineers
Direct Federal Action
Grand Isle and Vicinity, Louisiana, Beach Erosion and Hurricane Protection Project; alternate borrow site, **Jefferson Parish, Louisiana**

Dear Mr. Harper:

The above referenced project has been reviewed for consistency with the Louisiana Coastal Resources Program in accordance with Section 307 (c) of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in this application, is consistent with the LCRP.

If you have any questions concerning this determination please contact Jeff Harris of the Consistency Section at (225) 342-7949 or jeff.harris@la.gov.

Sincerely,

/S/ Charles Reulet
Administrator
Interagency Affairs/Field Services Division

CR/MH/jdh

cc: Mike Morris, COE
Kristen Butcher, COE
Dave Butler, LDWF
Frank Cole, OCM/FI
Jason Smith, Jefferson Parish

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JOHN BEL EDWARDS
GOVERNOR

CHUCK CARR BROWN, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

JUL 2 3 2020

Mr. Michael Morris
US Army Corps of Engineers, New Orleans District
CEMVN-PDS-C
7400 Leake Avenue
New Orleans, Louisiana 70118

AI No.: 121543
Activity No.: CER20200002

RE: Grand Isle and Vicinity, Louisiana Beach Erosion and Hurricane Protection Project
Water Quality Certification WQC 190314-01
MODIFIED - SEA #573A
Jefferson Parish

Dear Mr. Morris:

The Louisiana Department of Environmental Quality, Water Permits Division (LDEQ), has reviewed the application to hydraulically dredge sand fill material from near shore borrow sites located in the Gulf of Mexico to conduct beach and dune renourishment encompassing up to approximately 76.0 acres on the gulf side of Grand Isle along its western end, and Jefferson Parish. This modification is to include both the 230-acre Caminada Pass Shoals (CPS) and the previously used Barataria Bay Waterway (BBWW) borrow sites, or portions of both, the CPS borrow site and the BBWW borrow site to conduct beach and dune renourishment projects.

The information provided in the application received June 25, 2020, has been reviewed in terms of compliance with State Water Quality Standards, the approved Water Quality Management Plan and applicable state water laws, rules and regulations. LDEQ determined that the requirements for a Water Quality Certification have been met. LDEQ concludes that the deposit of spoil will not violate water quality standards as provided for in LAC 33:IX.Chapter 11. Therefore, LDEQ hereby issues US Army Corps of Engineers, New Orleans District - Grand Isle and Vicinity, Louisiana Beach Erosion and Hurricane Protection Project Water Quality Certification, WQC 190314-01.

Should you have any questions concerning any part of this certification, please contact Elizabeth Hill at (225) 219-3225 or by email at elizabeth.hill@la.gov. Please reference Agency Interest (AI) number 121543 and Water Quality Certification 190314-01 on all future correspondence to this Department to ensure all correspondence regarding this project is properly filed into the Department's Electronic Document Management System.

Sincerely,

Scott Guilliams
Administrator
Water Permits Division

c: IO-W

United States Department of the Interior

FISH AND WILDLIFE SERVICE
200 Dulles Drive
Lafayette, Louisiana 70506

May 4, 2020

Colonel Stephen Murphy
District Commander
U.S. Army Corps of Engineers
7400 Leake Avenue
New Orleans, LA 701118-3651

Dear Colonel Murphy:

Please reference the U.S. Army Corps of Engineers' (USACE) proposal to install stone breakwaters, restore adjacent beach, and nourish adjacent dune (Environmental Assessment [EA] #573 and Supplemental Environmental Assessment [SEA] #573A) on the Gulf-side of the western end of Grand Isle, in Jefferson Parish, Louisiana. That project would protect the westernmost portion of the Grand Isle hurricane protection levee that was authorized by resolutions of the United States House of Representatives and Senate dated September 23, 1976, and October 1, 1976, respectively, under Section 201 of the Flood Control Act of 1965 (Public Law 89-298, House Document No. 94-639). The currently proposed action is authorized as part of Section 301 of the Water Resources Development Act of 1996 (WRDA, Public Law 104-303) and is funded by the Bipartisan Budget Act of 2018 (Public Law 115-123) Division B, Subdivision 1, Title IV. This draft report from the Fish and Wildlife Service's (Service) Louisiana Ecological Services Office does not constitute the final report of the Secretary of the Interior on this project, as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). A copy of the draft Fish and Wildlife Coordination Act (FWCA) report was provided to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF); their comments will be incorporated into the final report.

Introduction

The USACE previously prepared the NEPA document entitled "Environmental Assessment, Grand Isle and Vicinity: Beach Erosion and Hurricane Protection Project, Jefferson Parish, LA, EA #573" (EA #573). The proposed project evaluated in this Environmental Assessment (EA) involved the construction of five to ten stone breakwaters in the Gulf of Mexico (gulf) near the west end of Grand Isle to help reduce impacts to the shore from wave action. The proposed project also included beach and dune renourishment activities near the west end of the island behind the proposed breakwaters. The renourishment area was to cover a total of approximately 37 acres.

Subsequent to signing of the cited Finding of No Significant Impact (FONSI), Hurricane Barry made landfall near Intracoastal City, Louisiana, on 13 July 2019. This storm event resulted in significant additional erosion of the Grand Isle shoreline in and near the areas slated for beach/dune renourishment in EA #573. It was therefore determined that the beach/dune renourishment area covered by EA #573 needed to be expanded. This proposed expansion necessitated preparation of a

supplement to EA #573 in order to evaluate the larger beach/dune renourishment area proposed. This is the primary purpose of Supplemental EA #573A (SEA #573A).

The proposed action covered in SEA #573A involves conducting beach and dune renourishment encompassing up to a total of approximately 76.0 acres on the gulf side of Grand Isle along its western end. The overall renourishment limits are divided into two "areas":

- Area 1 would begin at the existing western jetty and extend approximately 4,970 feet eastward (roughly 0.9 mile), ending roughly 565 feet east of Alma Lane. This area's beach/dune renourishment footprint (area within the overall limits of construction) would occupy a total of approximately 51.7 acres, with about 5.9 acres consisting of dune renourishment and the remaining 45.8 acres consisting of beach renourishment.
- Area 2 would begin at the eastern boundary of Area 1 and would, at the most, extend approximately 2,550 feet eastward (roughly 0.5 mile) ending roughly 163 feet east of Shelton Lane. If all of Area 2 is implemented, its beach/dune renourishment limits would occupy a total of approximately 24.3 acres, with about 3.5 acres consisting of dune renourishment and 20.8 acres consisting of beach renourishment. Beach and dune renourishment would primarily involve placement of sand on top of eroded beach areas and on eroded portions of the existing dune that runs parallel to the shoreline near the northern limits of the beach/dune renourishment areas.

Description of the Study Area

The project area is located along the Gulf shoreline of Grand Isle and in offshore waters near the island. Located approximately 54 miles south of New Orleans, Grand Isle is a barrier island separating Caminada Bay and the western end of Barataria Bay from the Gulf of Mexico. The island is approximately 7.5 miles long and 0.75 mile wide at its widest point. The seaward edge of Grand Isle consists of sand beach and a hurricane protection levee vegetated in native grasses, forbs, and shrubs that were planted on the levee and other vegetative species that also spread from nearby residences and camps. The USACE constructed the levee as an artificial dune and berm in 1985 to prevent beach erosion and provide hurricane protection. That levee feature has required periodic maintenance and repair over the years. From 2003 through 2013, various emergency and rehabilitation repairs to the Grand Isle hurricane protection levee resulted in the reconstruction of most of that hurricane protection feature. Reconstruction consisted of installing either a geotube or clay core covered with a 3-foot-thick layer of sand and planted with native dune vegetation. In 2013, approximately 2,430 linear feet of the Gulf-side of the hurricane protection levee was armored with rock in an attempt to prevent further damage and loss of the geotube levee core.

On July 13, 2019, Hurricane Barry made landfall near Intracoastal City, Louisiana. The storm event resulted in significant erosion of the Grand Isle shoreline in and near areas slated for beach/dune renourishment. It was therefore determined that an expansion of the proposed area was needed as well as a reevaluation of impacts.

A substantial portion of Grand Isle's natural habitats on the protected side of the hurricane protection levee has been converted to residential and commercial development. Although the island's year-round resident population is approximately 760 (https://www.louisiana-demographics.com/grand-isle-demographics), the summer population swells to more than 20,000 with seasonal residents and tourists

(https://www.louisiana-destinations.com/grand-isle.htm). The island is a popular birding, fishing, and resort area, with approximately 62 percent of all housing units being seasonally occupied private camps and rental properties (U.S. Census Bureau 2010), which are separated from the beach by the hurricane protection levee. Sport and commercial fisheries, tourism-related service industries, and offshore oil and gas exploration and production constitute the major occupations and industries on the island. The southeastern tip of Grand Isle consists largely of the Louisiana Office of State Parks' Grand Isle State Park, which offers a variety of barrier island habitat and recreational activities for the public (e.g., swimming, fishing, bird watching, camping). An average of 375,000 visitor days per year was recorded at the state park between 1976 and 1986 (Service 1986); it is unknown whether that visitor average is still being maintained.

Fish and Wildlife Resources

The predominant habitat on Grand Isle's southern shoreline is the sand dune and open beach. (Note that most of the existing "sand dune" is the island's hurricane protection levee and consists an earthen-filled geotube core covered by sand and vegetation). The sand dune vegetation in the project area consists of sea oats, wire grass, and annual grasses that have spread from nearby residences. Wildlife in the project area consists of various crustacean and insect species typically associated with a sand dune complex. Amphibians and reptiles are limited within the project area. The eastern narrow-mouthed toad may be present in shrub-scrub habitats on the island and suitable developed areas, and has been reported from salt marsh habitat in other portions of Louisiana; diamond-backed terrapin and Gulf salt marsh snake also use salt marsh habitat (Dundee and Rossman 1989; Vermillion 2004 pers. comm.). The waters adjacent to the project area provide important feeding, spawning, nursery, and migration habitat for a variety of estuarine fishes and shellfishes, some of which are of commercial and/or recreational importance. The study area's waters are also utilized by Atlantic bottle-nosed dolphins.

The shallow waters and/or beaches in proximity to the project area serve as foraging habitat for a number of seabirds, wading birds, and other bird species. Species known to frequent the project area include, but are not limited to, brown pelican, double-crested cormorant, reddish egret, laughing gull, ring-billed gull, black skimmer, dunlin, sanderling, and several species of plovers, sandpipers, and terns. Salt marshes on Grand Isle provide nursery habitat for various fishes, shellfishes, and crustaceans, as well as habitat for snowy and great egrets; tricolored, green, and great blue herons; black-necked stilt; white ibis; clapper rail; and seaside sparrow. Scrub-shrub habitat is used by resident and transient birds, including but not limited to, red-winged blackbird, boat-tailed grackle, yellow-rumped warbler, and palm warbler. Those habitats may also support mammals such as coyote, raccoon, swamp rabbit, and river otter. Limited areas of live oak and hackberry forest occur on the island. The Nature Conservancy (TNC) of Louisiana has preserved several small tracts of maritime forest across the island totaling approximately 41 acres, known as the Lafitte Woods Preserve (TNC 2015). That area is open to the public for non-consumptive use (e.g., bird watching, wildlife photography, education, etc.) and provides particularly important stopover habitat for various species of neotropical migratory birds.

Migratory Birds

At this time, the proposed project area does not contain suitable nesting habitat for wading birds or shorebirds that are known to occur on Grand Isle. The USACE would coordinate with the Service to confirm that there is no nesting activity in the project area prior to construction. If nesting birds are

present, the USACE would work with the Service to develop specific measures to avoid impacts to those species. If a detailed nesting prevention plan is deemed necessary, the USACE would prepare the appropriate documentation in coordination with the Service.

Threatened and Endangered Species

Endangered species that may occur in coastal waters of the study area are Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), sperm whale (*Physeter catodon*), humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), and North Atlantic right whale (*Eubalaena glacialis*). Threatened species that may occur in coastal waters of the project vicinity are West Indian manatee (*Trichechus manatus*), green sea turtle (*Chelonia mydas*), and Atlantic loggerhead sea turtle (*Caretta caretta*). For additional information on the West Indian manatee and guidance on best management practices (BMPs) refer to the appendices for additional information. (See Appendix A for Service Recommendations).
The National Marine Fisheries Service (NMFS) is responsible for all federally listed whales and sea turtles in the marine environment, while the Service is responsible for and sea turtles as they come onshore to nest. Although listed sea turtles are occasionally stranded on Grand Isle, there are no known occurrences of successful sea turtles nesting on this portion of the island; therefore, nesting turtles should not be affected. The USACE should consult with the NMFS regarding listed sea turtles in the marine environment, as well as the threatened Atlantic (Gulf) sturgeon.

Two threatened species that occur within the project area are the piping plover (*Charadrius melodus*) and the red knot (*Calidris canutus rufa*). Designated piping plover critical habitat is located on Grand Isle within that portion of the project area that includes ". . . the Gulf shoreline of Grand Isle from the Gulf side of the hurricane protection levee to MLLW [mean low low water] . . ." (Service 2001). At the time of this document's writing, there is no designated critical habitat for the red knot.

The piping plover (*Charadrius melodus*), federally listed as a threatened species, is a small (7 inches long), pale, sand-colored shorebird that winters in coastal Louisiana and may be present for 8 to 10 months annually. Piping plovers arrive from their northern breeding grounds as early as late July and remain until late March or April. They feed on polychaete marine worms, various crustaceans, insects and their larvae, and bivalve mollusks that they peck from the top of or just beneath the sand. Piping plovers forage on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation. They roost in unvegetated or sparsely vegetated areas, which may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. They also forage and roost in wrack (i.e., seaweed or other marine vegetation) deposited on beaches. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependent on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile area. Major threats to this species include the loss and degradation of habitat due to development, disturbance by humans and pets, and predation.

On July 10, 2001, the Service designated critical habitat for wintering piping plovers (Federal Register Volume 66, No. 132); a map of the seven critical habitat units in Louisiana can be found at http://criticalhabitat.fws.gov/crithab. Their designated critical habitat identifies specific areas that are essential to the conservation of the species. The physical and biological features (PBFs) for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering

and the physical features necessary for maintaining the natural processes that support those habitat components. The PBFs are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. Important components of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers.

The red knot (*Calidris canutus rufa*), federally listed as a threatened species, is a medium-sized shorebird about 9 to 11 inches in length with a proportionately small head, small eyes, short neck, and short legs. The black bill tapers steadily from a relatively thick base to a relatively fine tip; bill length is not much longer than head length. Legs are typically dark gray to black, but sometimes greenish in juveniles or older birds in non-breeding plumage. Non-breeding plumage is dusky gray above and whitish below. The red knot breeds in the central Canadian arctic but is found in Louisiana during spring and fall migrations and the winter months (generally September through May).

During migration and on their wintering grounds, red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks. Observations along the Texas coast indicate that red knots forage on beaches, oyster reefs, and exposed bay bottoms, and they roost on high sand flats, reefs, and other sites protected from high tides. In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Coquina clams (*Donax variabilis*), a frequent and often important food resource for red knots, are common along many gulf beaches. Major threats to this species along the Gulf of Mexico include the loss and degradation of habitat due to erosion, shoreline stabilization, and development; disturbance by humans and pets; and predation.

Endangered Species Act (ESA) Section 7 consultation is ongoing for this project. The Service is coordinating with the USACE to complete that consultation prior to issuance of the final FWCA Report.

Project Description and Impacts

On the westernmost end of Grand Isle, wave action erodes the beach and dune, which repeatedly exposes the geotube core to the elements, decreasing the longevity of the geotube and increasing the need for maintenance events. The ongoing erosion of the beach also creates instability for the hurricane protection levee and increases the cost and frequency of maintenance events, as well as the risk of a levee breach in the project area.

The proposed project involves conducting beach and dune renourishment encompassing up to a total of approximately 76.0 acres on the gulf side of Grand Isle along its western end. The project would restore approximately 66.6 acres of beach and nourish approximately 9.4 acres of existing dune.

The overall renourishment limits are divided into two "areas." Area 1 would occupy a total of approximately 51.7 acres, with about 5.9 acres consisting of dune renourishment and the remaining 45.8 acres consisting of beach renourishment. Area 2 beach/dune renourishment limits would occupy a total of approximately 24.3 acres, with about 3.5 acres consisting of dune renourishment and 20.8 acres consisting of beach renourishment.

Table 1. Approximate lengths and acreages for the proposed beach/dune renourishment.

Area	Length (feet)	Renourishment Acreages		
		Beach	Dune	Total
Area 1	4,970	45.8	5.9	**51.7**
Area 2	2,550	20.8	3.5	**24.3**
Totals	**7,520**	**66.6**	**9.4**	**76.0**

Sand fill material would be obtained from one or two near-shore borrow sources located in the Gulf of Mexico. Caminda Pass Shoal (CPS) is located near the west end of Grand Isle, just beyond the Caminada Pass. It would encompass a maximum of approximately 230 acres. Barataria Bay Waterway (BBW) is the second borrow site, which is located on the east end of Grand Isle along the waterway and is approximately 644 acres in size.

Both of the potential borrow sites are capable of providing all the sand needed for the proposed beach/dune renourishment work. However, there presently is some concern that using the CPS borrow site as the sole source of sand could adversely affect the existing natural near-shore transport of sediments from the Caminada Pass area eastward along the Gulf coast of Grand Isle. Due to the above concern, hydraulic models will be run to examine how extensive dredging of the CPS site may affect the aforementioned sediment transport. .

A hydraulic dredge would be used to dredge the material and pump it to the island. Track hoes and marsh buggies would be used to shape and grade the fill material on the island. Upon completion of nourishment activities, the dune would be planted with bitter panicum (*Panicum amarum*) and sea oats (*Uniola paniculata*). A staging area would be provided directly north of the project area in an existing gravel/sand lot that has access from Louisiana Highway 1. Contractor personnel would be housed in commercial hotels near the project site, and field offices will be located at the staging area.

Wooden sand fencing would also be installed to help windblown, drifting sand accumulate along the fencing, control erosion, and help stabilize the dune. Sand fencing segments 100 feet long with gaps of approximately 80 feet between each segment would be installed along the dune's seaward toe-of-slope in a line parallel to the dune's centerline. Another row of sand fencing segments would be installed approximately 10 feet seaward from the aforementioned row, and would also run parallel to the dune's centerline. These fencing segments would also be 100 feet long with gaps of about 80 feet between each segment. The segments would be situated to span the gaps between the landward row of sand fencing segments, with the segment ends extending 10 feet beyond the ends of the gaps. No sand fencing would be installed within approximately 5 feet of any existing pedestrian or vehicular dune crossovers.

As proposed in EA # 573, five stone segmented breakwaters were installed to fortify the western end of the island and prevent additional erosion. Each breakwater was 300 feet long by 53 feet wide and constructed of geotextile fabric and stone. Two navigational warning light platforms were also constructed near the breakwaters.

The proposed project area would include the footprints of each project feature (Table 1), the construction rights-of-way, and all associated temporary work areas, access routes, and storage areas.

The USACE estimates that implementation of the proposed action would require a maximum of 220 days for implementing the beach restoration and dune nourishment in 2021. The current plan anticipates that all construction would be completed by the end of calendar year 2021.

Table 2. The estimated acreage of footprint impacts for each proposed project feature associated with installing breakwaters and conducting beach and dune nourishment on Grand Isle.

Project Feature	Footprint (acres)	
	Permanent	Temporary
Beach and Dune Nourishment	76.0*	
Barataria Bay Waterway Borrow Site	644	--
Caminada Pass Shoal Borrow Site	230	--

* The vast majority of impacts will be in open water due to the lack of beach within the project area.

Conclusions and Recommendations

Prior to the damage from hurricanes, tropical storms, and natural erosion processes, the dune and beach habitat associated with the hurricane protection levee provided foraging habitat for various resident and migratory birds and other wildlife. The levee or "dune" also serves as hurricane protection for residential and commercial developments, while the beach is used by the public for recreational purposes. Erosional forces have repeatedly exposed the geotube core of the levee in various places within the project area, which decreases the longevity of the geotube, increases the frequency of maintenance and repair actions, and increases risk of a levee breach. The proposed beach and dune nourishment would restore approximately 76 acres of beach habitat that has been lost. Thus, the currently proposed project would both reduce further damage to the levee and improve the availability of beach habitat to wildlife. Construction impacts to fish and wildlife resources would be temporary and minimal, and over the long-term, project implementation would reduce the need for recurring maintenance of the levee.

Due to the history of storm damage and erosion in the project area, few alternatives remain for reducing further damages to the hurricane protection levee and any remaining wildlife habitat. The preferred alternative offers the least environmentally damaging alternative while still maintaining project objectives. Although the proposed action would consist of work along the Gulf shoreline and within a portion of the dune system along Grand Isle, the work as currently described, consists mainly of construction in open water and adding sand to cover the existing rock along the hurricane protection levee. Accordingly, the Service concurs with the Corps' determination that no mitigation would be required for potential impacts to beach and dune habitats. In addition, the proposed action would not impact any vegetated wetlands; therefore, the Service concurs with the Corps' determination that no wetland mitigation would be required for the proposed action.

After reviewing the proposed action, its impacts to fish and wildlife resources, and the need for protection from future storm events, the Service offers the following recommendations for inclusion in the USACE's currently proposed action:

1. The perimeter of the outer work limits should be staked, marked, and maintained throughout construction for the beach and dune nourishment project feature. All workers should remain within the proposed outer work limits for the duration of construction and no activities should

occur beyond those work limits to minimize disturbance to federally listed shorebirds that may occur near the project area.

2. Contract personnel should be educated regarding the potential presence of federally listed shorebirds and the importance of avoiding disturbance to birds (e.g., avoid purposely flushing birds) present near the project area.

3. West Indian manatees occasionally enter Louisiana coastal waters and streams during the summer months (i.e., June through September). During in-water work in areas that potentially support manatees all personnel associated with the project should be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel should be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable. For more detail on avoiding contact with manatee refer to Appendices A and contact this office. Should a proposed action directly or indirectly affect the West Indian manatee, further consultation with this office will be necessary.

4. The Service recommends that the USACE continue to run hydraulic models to examine how dredging of the Caminada Pass site (CPS) may affect the near-shore transport of sediments. If it is determined that dredging of the CPS may adversely impact sediment transport, it is recommended that USACE only use the BBWW as the primary borrow site for the project.

5. The Service recommends a comprehensive examination of the borrow site should be performed to ensure erosion potential is limited.

6. The existing exposed rock should be covered with at least 3 feet of sand to provide sufficient substrate for replanted vegetation to grow and stabilize the dune habitat. Planted vegetation should consist of sea oats, bitter panicum, and other native sand dune species. Those plant species are more likely to survive the harsh dune environment, and would capture wind-blown sand to aid in dune stabilization.

7. Once the beach nourishment is complete and beach access can resume, restoration of the existing boardwalk crossover located within the proposed project area should also be included in the project design. Restoring the existing walkway would encourage the public not to walk on or across the dune, which could reduce the loss of vegetation by preventing damage to the plants and their root systems.

8. Monitoring of the replanted dune should be conducted for a minimum of 3 years to ensure that dune restoration over the rock will not adversely affect the success of revegetation and the stabilizing effect of that vegetation.

9. The Service recommends that the USACE contact the Service for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. Additional consultation as a result of any of the above

conditions or for project feature changes not covered in this consultation should occur before changes are made and or finalized.

We appreciate the opportunity to provide comments on the proposed action, as well as the USACE's continued cooperation during the project planning process. If you have any questions or require additional information, please contact Ms. Hannah Sprinkle (337-291-3121) of this office.

Sincerely,

Joseph A. Ranson
Field Supervisor
Louisiana Ecological Services Office

Attachment

Copies provided via electronic mail:

USACE, New Orleans, LA (Attn: Michael Morris, Everard Baker)
NMFS, Baton Rouge, LA (Attn: Craig Gothreaux)
LDWF, Baton Rouge, LA (Attn: Kyle Balkum)
LDNR, Baton Rouge, LA

Literature Cited

Dundee, H. A., and D. A. Rossman. 1989. The amphibians and reptiles of Louisiana. Louisiana State University Press. Baton Rouge, Louisiana. 300 pp.

The Nature Conservancy (TNC). 2015. Places we protect: Grand Isle, Louisiana. http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/louisiana/placesweprotect/grand-isle.xml. Accessed on February 23, 2015.

U.S. Census Bureau. 2010. 2010 Census Interactive Population Search. Available at http://www.census.gov/2010census/popmap/ipmtext.php. Accessed on February 5, 2015.

U.S. Fish and Wildlife Service (Service). 1986. Fish and Wildlife Draft Coordination Act Report, Grand Isle and Vicinity, Louisiana, Beach Erosion and Hurricane Protection Project. Unpublished report submitted to the U.S. Army Corps of Engineers, New Orleans District, New Orleans, Louisiana.

U.S. Fish and Wildlife Service (Service). 2001. Final determination of critical habitat for wintering piping plovers. Federal Register 66:36037-36086.

Vermillion, B. 2004. Personal communication with Bill Vermillion, U.S. Fish and Wildlife Service.

Appendix A

The threatened West Indian manatee (*Trichechus manatus*) is known to regularly occur in Lakes Pontchartrain and Maurepas and their associated coastal waters and streams. It also can be found less regularly in other Louisiana coastal areas, most likely while the average water temperature is warm. Based on data maintained by the Louisiana Natural Heritage Program (LNHP), over 80 percent of reported manatee sightings (1999-2011) in Louisiana have occurred from the months of June through December. Manatee occurrences in Louisiana appear to be increasing and they have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of southeastern Louisiana. Manatees may also infrequently be observed in the Mississippi River and coastal areas of southwestern Louisiana. Cold weather and outbreaks of red tide may adversely affect these animals. However, human activity is the primary cause for declines in species number due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution.
During in-water work in areas that potentially support manatees all personnel associated with the project should be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel should be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). We recommend the following to minimize potential impacts to manatees in areas of their potential presence:
All work, equipment, and vessel operation should cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).
If a manatee(s) is sighted in or near the project area, all vessels associated with the project should operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels should follow routes of deep water whenever possible.
If used, siltation or turbidity barriers should be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.

Temporary signs concerning manatees should be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities should display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½ " X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN 16

MANATEE IS PRESENT". A second temporary sign measuring 8½ " X 11" should be posted at a location prominently visible to all personnel engaged in water-related activities and should read language similar to the following: "CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".

Collisions with, injury to, or sightings of manatees should be immediately reported to the Service's Louisiana Ecological Services Office (337-291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225-765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

To ensure manatees are not trapped due to construction of containment or water control structures, we recommend that the project area be surveyed prior to commencement of work activities. Should a manatee be observed within those areas, the contractor should immediately contact the Service's Louisiana Ecological Services Office (337-291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225-765-2821).

Should a proposed action directly or indirectly affect the West Indian manatee, further consultation with this office will be necessary.

ESA MEMO

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act.) The project, as proposed,

Is not Likely to adversely effect those resources

Joseph A. Ranson 02 Sep 2020

Supervisor Date
Louisiana Ecological Services Office
U.S. Fish and Wildlife Service

To: Joseph A. Ranson, USFWS
200 Dulles Drive
Lafayette, LA 70506

From: Tammy Gilmore
Date: August 18, 2020

Subject: ESA coordination for Supplemental Environmental Assessment, Grand Isle and Vicinity, Louisiana Beach Erosion and Hurricane Protection Project, Jefferson Parish, LA, SEA #573A

Dear Mr. Ranson:

Attention: Hannah Sprinkle

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), is preparing to SEA #573A and requesting concurrence with our threatened and endangered species determination of "May affect, not likely to adversely affect" piping plover, piping plover critical habitat, the red knot, West Indian manatee, Gulf sturgeon or any of the sea turtles that may be present and a "no effect" determination on sei, humpback, black right and sperm whales.

Project Description

The proposed action (proposed project) involves conducting beach and dune renourishment encompassing up to a total of approximately 76.0 acres on the gulf side of Grand Isle along its western end. The overall renourishment limits are divided into two "areas" (see Figure 1). Area 1 would begin at the existing western jetty and extend approximately 4,970 feet eastward (roughly 0.9 mile), ending roughly 565 feet east of Alma Lane. The width of Area 1 (as measured perpendicular to its northern boundary) would range from roughly 400 feet to 520 feet. This area's beach/dune renourishment footprint (area within the overall limits of construction) would occupy a total of approximately 51.7 acres, with about 5.9 acres consisting of dune renourishment and the remaining 45.8 acres consisting of beach renourishment. Area 2 would begin at the eastern boundary of Area 1 and would, at the most, extend approximately 2,550 feet eastward (roughly 0.5 mile) ending roughly 163 feet east of Shelton Lane. If all of Area 2 is implemented, its beach/dune renourishment limits would occupy a total of approximately 24.3 acres, with about 3.5 acres consisting of dune renourishment and 20.8 acres consisting of beach renourishment.

Table 1. Approximate lengths and acreages for the proposed beach/dune renourishment.

Area	Length (feet)	Renourishment Acreages		
		Beach	Dune	Total
Area 1	4,970	45.8	5.9	**51.7**
Area 2	2,550	20.8	3.5	**24.3**

Totals	**7,520**	**66.6**	**9.4**	**76.0**

Note: The length and acreages indicated for Area 2 represent maximums. The minimum length and acreages would be the data for Area 1.

Beach and dune renourishment would involve placement of sand on top of eroded beach areas and on eroded portions of the existing dune that runs parallel to the shoreline near the northern limits of the beach/dune renourishment areas. Figure 2 provides a fairly typical cross-section view of the proposed renourishment. For dune areas where the crest (top) of the dune has eroded significantly, placement of fill (sand) would extend over the dune's crest and would continue downward to a point along the landward sideslope (slope on north side of dune), but would not extend to the toe-of-slope. It is noted that a portion of the remnant shoreline in the southern end of Area 1 is presently lined with exposed stone rip-rap with practically no beach remaining. The proposed beach-dune renourishment in the area with rip-rap would differ somewhat from the typical cross-section shown in Figure 2. In this area, additional sand fill would be placed on the rip-rap slope such that there would be at least a 3-feet thick layer of sand over the existing rock.

Sand fill necessary for the beach/dune renourishment would be obtained from one or two borrow sources. These sources consist of the Barataria Bay Waterway (BBWW) borrow site and the Caminada Pass Shoal (CPS) borrow site. The BBWW borrow site, shown in Figure 3, would encompass a maximum of approximately 644 acres. This previously used borrow site is located in the Gulf of Mexico (Gulf) near the east end of Grand Isle. The CPS borrow site, shown in Figure 3, would encompass a maximum of approximately 230 acres. This borrow site would be located in the Gulf near the west end of Grand Isle, just off of the Caminada Pass. Both of the potential borrow sites are capable of providing all the sand needed for the proposed beach/dune renourishment work. Of the two sites, it would be more economical to dredge only the CPS site since it is much closer to the renourishment areas compared to the BBWW site.

A maximum of approximately 1,100,000 cubic yards (cy) would be dredged for the project using a cutterhead dredge. This assumes all both of renourishment Areas 1 and 2 are completed. If only Area 1 is renourished, then about 900,000 cy would be dredged. Roughly an additional 120,000 cy would be dredged if all of Area 2 is renourished, but this volume would be reduced if only a portion of Area 2 is renourished. Besides the cutterhead dredge, other vessels used during the dredging process would likely include tug boats, survey boats, skiffs, and barges.

The dredging quantities indicated above would be the same if only the BBWW site is used, if only the CPS site is used, or both of these borrow sites are used. At this time, there is no means of estimating how much material would be dredged at each of the borrow sites if both sites are used.

The sand sediment dredged from the CPS borrow site would be transported to the beach/dune renourishment areas via a pipeline. The location and route of this pipeline would be adjusted as the project progresses, and could be situated anywhere within the pipeline corridor envelope illustrated in Figure 4. The initial portion of the pipeline, roughly 2,000 linear feet, would likely be floating. The remaining pipeline, roughly 4,000 linear feet, would be submerged to run along the gulf floor once the pipeline reaches shallow waters.

The sediment dredged from the BBWW borrow site would also be transported to the beach/dune renourishment areas via pipeline. The route of the pipeline would be adjusted as necessary during dredging, and could be located anywhere within the pipeline corridor envelope shown in Figure 5. The first approximately 4,000 linear feet of pipeline would likely be floating, while the remaining 35,000 linear feet would be submerged to run along the gulf floor.

Once the pipeline(s) has carried sediment to the beach/dune renourishment areas, track hoes and marsh buggies would be used to distribute and spread the sand material as necessary to achieve the desired finish grades in portions of the renourishment footprint not inundated for long periods. Temporary silt fence, or in some cases temporary orange enviro-fence, would be installed along the northern boundary of the beach/dune renourishment areas prior to adding and spreading sand on the dune to help minimize turbid stormwater runoff and to help ensure construction equipment does not disturb areas situated outside the project's limits of construction. The staging area for beach nourishment work would be located directly north of the renourishment Area 1 in an existing gravel/sand lot that has access from Highway 1. This staging area would occupy approximately 2.1 acres and is shown in Figure 6.

Upon completion of all sand placement and grading work in the beach/dune renourishment areas, all dune areas disturbed or renourished would be planted with Fouchon bitter panicum (Panicum amarum var. Amarum) and Caminada sea oats (Uniola paniculata). The plantings would extend from the disturbed limits on the dune's landward slope, then over the dune crest and down its seaward slope to a distance of roughly 10 feet beyond the dune's toe-of-slope. The bitter panicum would be planted at a density of approximately 6,000 plants per acre using 4-inch container stock and/or bitter panicum plants harvested from dune areas that would be disturbed by the proposed renourishment work. This species would be planted in all of the planting area except the dune crown. The dune crown would be planted with sea oats at a density of approximately 400 plants per acre using 1-gallon stock. Using a water truck, the plants would be watered twice a week for 28 consecutive days following plant installation, unless rainfall allows reduction of the watering rate. USACE staff would monitor the planted areas at the end of this period for a minimum of one month. Bare areas larger than one hundred (100) square feet are to be considered unacceptable.

Wooden sand fencing would also be installed to help windblown, drifting sand accumulate along the fencing, control erosion, and help stabilize the dune. Sand fencing segments would be installed along the dune's seaward toe-of-slope in a line parallel to the dune's centerline. Another row of sand fencing segments would be installed approximately 10 feet seaward from the aforementioned row, and would also run parallel to the dune's centerline. The segments would be situated to span the gaps between the landward row of sand fencing segments, with the segment ends extending 10 feet beyond the ends of the gaps. No sand fencing would be installed within approximately 5 feet of any existing pedestrian or vehicular dune crossovers.

It is currently anticipated that project construction would likely begin in mid to late January of 2021. It is estimated that the proposed project would be completed in approximately 220 days (a little over 7 months). This duration assumes all of both Areas 1 and 2 of the proposed beach/dune renourishment would be constructed. If none of Area 2 ends up being part of the project, it is estimated the construction duration would be reduced to approximately 120 days (about 4 months). All of these durations could be extended by adverse wind and wave conditions occurring during renourishment activities.

Occurrence of Protected, Threatened and Endangered Species

T&E species are known or believed to occur within the project area including: piping plover (Charadrius melodus), piping plover critical habitat, rufa red knot (Calidris canutus rufa), Gulf sturgeon (Acipenser oxyrhynchus desotoi), West Indian manatee (Trichechus manatus), and Kemp's Ridley (Lepidochelys kempii), Leatherback (Dermochelys coriacea), Hawksbill (Eretmochelys imbricate), Green (Chelonia mydas) and Loggerhead (Caretta caretta) sea turtles. T&E species that may occur in coastal waters of the study area are the sperm whale (Physeter catodon), the humpback whale (Megaptera novaeangliae), the sei whale (Balaenoptera borealis), and black right whale (Eubalaena glacialis).

Conclusion and Determination

CEMVN initiated coordination with the USFWS on March 9, 2019 for EA #573. A second site visit for SEA #573A was completed in December 2019 by USACE and USFWS biologists to view results from EA #573 and assess conditions for SEA #573A. On February 28, 2020, NMFS indicated during coordination that this proposed action falls under the Gulf of Mexico Regional Biological Opinion (GRBO) and required no further consultation.

Because whales are unlikely to be present in the project area due to the shallow water depths, CEMVN determined that the proposed action would have no effect on sei, humpback, black right and sperm whales. CEVMN determined construction of the beach and dune renourishment features would not likely adversely affect piping plover and its critical habitat, rufa red knot, Gulf sturgeon, West Indian manatee, and the five species of sea turtles.

Please review this plan and inform us whether or not you agree with our determinations. If you have any questions about the project or need additional information please telephone me at (504) 862-1002.

Figure 1. Proposed beach/dune renourishment (Areas 1 and 2), proposed Caminada Pass Shoal borrow site, and proposed project construction staging area.

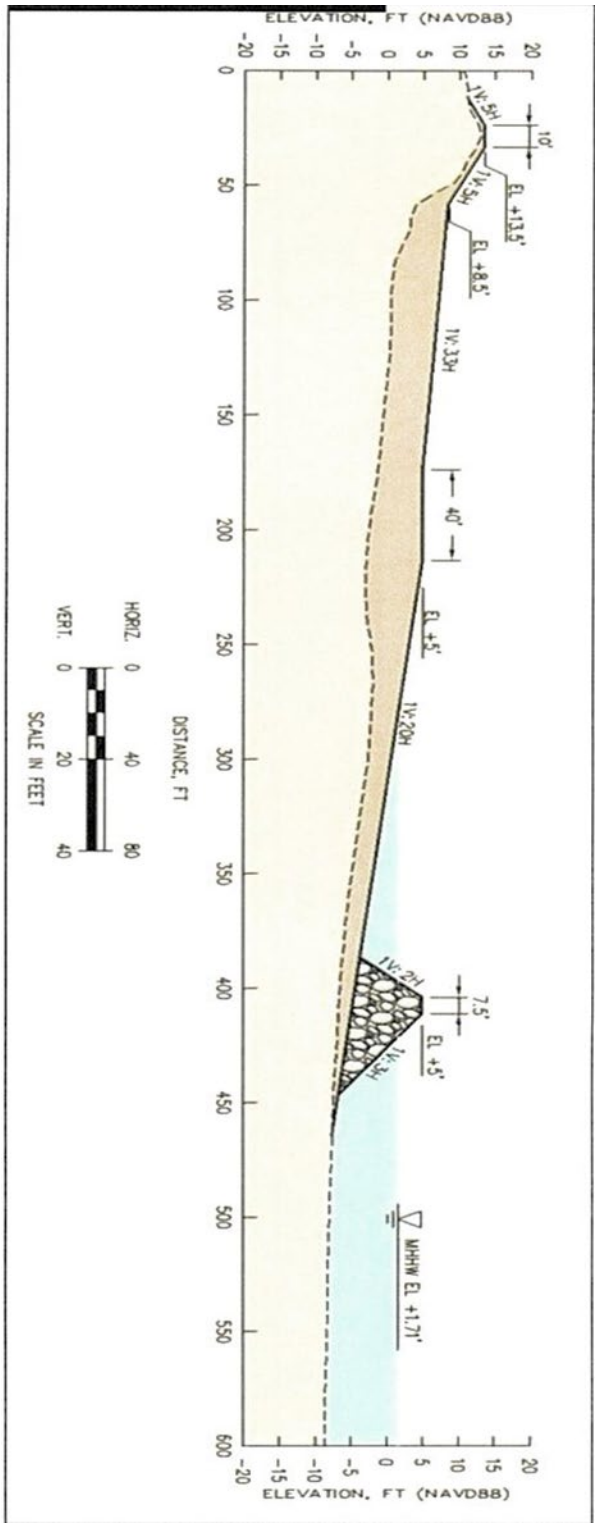

Figure 2. Typical cross-section through the proposed beach/dune nourishment area and one of the previously constructed breakwater features. Darker brown shading indicates the sand that would be added for restoration/renourishment purposes

Figure 3: Proposed Borrow Locations

Figure 4. Proposed dredge pipeline corridor extending from the proposed Caminada Pass Shoal borrow site to the proposed beach/dune renourishment areas.

Figure 5. Proposed Barataria Bay Waterway (BBWW) borrow site and the approximate limits of the corridor that would be used to pipe dredged sediments (sand) to the proposed beach/dune renourishment areas.

Figure 6: Proposed Staging Area

From: BAKER, EVERARD CIV USARMY CEMVN (USA)

Sent: Friday, February 28, 2020 2:08 PM

To: Laura Wright - NOAA Affiliate <laura.wright@noaa.gov>

Subject: RE: [Non-DoD Source] Re: GRBO - SERO-2020-00149 EXPEDITED Grand Isle Beach-Dune

Yes, I will go ahead and keep this email for our administrative record indicating that we are withdrawing our consultation request as it appears after your agency's review that the project is covered by the Gulf of Mexico Regional Biological Opinion from NMFS.

Thank you for the quick response!

Sincerely,

Everard Baker, MS, MNR

Biologist, Coastal Environmental Planning

From: Laura Wright - NOAA Affiliate [mailto:laura.wright@noaa.gov <mailto:laura.wright@noaa.gov>]

Sent: Friday, February 28, 2020 11:09 AM

To: BAKER, EVERARD CIV USARMY CEMVN (USA) <Everard.Baker@usace.army.mil

<mailto:Everard.Baker@usace.army.mil> >

Subject: [Non-DoD Source] Re: GRBO - SERO-2020-00149 EXPEDITED Grand Isle Beach-Dune

Hello,

I received your voicemail. To assist in clarifying the inquiry, I've included information below.

Per our internal guidance listed below, we believe this project may be covered under GRBO.

Rationale:

- Equipment and activities authorized under GRBO include pipeline and other hydraulic dredges (e.g.

cutterhead)

- Hydraulic dredging is determined not likely to adversely affect (NLAA)

- Areas where GRBO is applicable include Gulf of Mexico waters from Mexico/Texas border to the Gulf side of Key West, Florida

- USACE-permitted (Civil Works and Regulatory) dredging of channels and turning basins beyond previous congressionally authorized depths and dimensions is authorized if the action is described in the GRBO project descriptions (see pages 11-20 of the 2003 GRBO) and only when the project is located outside of designated GSCH

- USACE-permitted dredging of all U.S. Gulf of Mexico borrow sites and virgin (previously unused) borrow sites, within state waters only, for beach nourishment, restoration, and protection projects, outside of designated GSCH

- Non-hopper type dredging in Gulf of Mexico waters up to 1 mile into rivers should be conducted whenever possible as an alternative to hopper dredging, particularly in the following circumstances to prevent taking of listed species (especially sea turtles): between April 1 and November 30

If you have information to the contrary, please provide. Otherwise, please advise how you would like to proceed with this consultation request.

Thank you,

Laura

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701
(727) 824-5312; FAX 824-5309
http://sero.nmfs.noaa.gov

JAN - 9 2007

F/SER3:EH

BG Joseph Schroedel, USA
Division Engineer
South Atlantic Division
U.S. Army Corps of Engineers
60 Forsyth Street S.W.
Atlanta, GA 30303-8801

Dear General Schroedel:

This responds to the U.S. Army Corps of Engineers' (COE), South Atlantic Division (SAD) e-mail request dated May 31, 2006, by Mr. Dennis Barnett of your Planning and Policy Division (PPD) to Mr. Eric Hawk of my Protected Resources Division (PRD). Mr. Barnett, acting as spokesperson for the three COE divisions containing the four COE Gulf of Mexico districts, submitted COE-requested changes to the current National Marine Fisheries Service (NMFS) Gulf of Mexico hopper dredging regional biological opinion (GRBO), issued November 19, 2003. Our response also addresses the Endangered Species Act (ESA) section 7(a)(2)/7(d) analysis submitted by e-mail on September 12, 2006, by Mr. Daniel Small of COE PPD in response to a take of a federally-listed smalltooth sawfish on August 12, 2006, by a COE-authorized relocation trawler during Tampa Harbor Entrance Channel maintenance dredging. A June 27, 2006, conference call and numerous subsequent e-mails, phone calls, and sharing of ideas between our respective staffs resulted in Revision 2 to the GRBO, enclosed herein.

NMFS previously amended the GRBO on June 24, 2005 (Revision 1). The COE requested additional changes to address remaining issues of concern, specifically: 1) GRBO-required funding for genetic testing of tissue samples collected from sea turtles taken on COE projects or COE-permitted projects; and 2) the methodology of how applicants on COE permits will be involved in consultation discussions regarding authorized levels of protected species take. Other COE requests included, specifically: 1) A request for a 25-percent annual overage of authorized take under the GRBO for any one calendar year, as long as the total anticipated take for the encompassing 5-year period was not exceeded; and 2) a request that the GRBO be revised to authorize relocation trawling takes of smalltooth sawfish. Currently, the GRBO authorizes takes of federally-listed sea turtles and Gulf sturgeon, but not smalltooth sawfish.

The COE and NMFS agreed during their conference call to hold the COE request for a 25-percent overage in abeyance pending significant additional analysis needed by both the COE and NMFS. Because these analyses will require significant additional effort and time, it was agreed

to proceed with resolving those high-priority issues that can be addressed with a simple revision to the Incidental Take Statement (ITS). However, it will be reconsidered during NMFS' reinitiation of formal consultation on the GRBO to analyze the effects of the COE's request for an increase in its currently authorized non-lethal relocation trawling take limits for sea turtles and Gulf sturgeon. At that time, NMFS will also consider the COE's requested increase in its lethal relocation trawling take limit for sea turtles and its request for relocation trawling take authority for smalltooth sawfish. Increased take limits and take authority for species not included in the GRBO's ITS cannot be authorized without a thorough effects assessment and jeopardy analysis.

With respect to the COE's concern about genetic sampling, NMFS agrees that the GRBO requirement for COE funding of genetic sampling be modified because the COE has provided evidence that it cannot, within its current fiscal authority, fund this requirement. The COE, however, agrees to require the collection and shipment to NMFS for genetic analysis of tissue samples from all sea turtles and Gulf sturgeon taken by hopper dredges and relocation trawlers until NMFS, in consultation with COE scientists, determines they are no longer needed. The GRBO has been modified accordingly; this requirement has been included in the reasonable and prudent measures of the ITS.

With respect to applicant participation in the ESA consultation process and input into permitted-project protected species take levels, the COE will coordinate with NMFS prior to permit issuance. The COE will forward draft permit conditions to NMFS that are consonant with the RPMs and terms and conditions of the GRBO, including a proposed amount of authorized take of sea turtles and Gulf sturgeon per project allocated from the overall annual authorized take limit. Currently the COE's sea turtle and Gulf sturgeon take database and NMFS' take records are useful for estimation purposes, but are still too incomplete to support analyses to accurately predict particular dredging project protected species takes levels with any degree of certainty.

As requested by the COE and based on information provided by the COE with input from NMFS, Revision 2 segregates the previously established Gulf-wide protected species take limits into two allotments – one for COE civil works projects and one for COE-permitted projects. The COE retains the authority and flexibility to manage the allotment ratio, initially set at 80:20 (i.e., 80% for civil, 20% for permitted) for the combined Gulf districts, and adjust them yearly as necessary within the established ITS ceiling, according to its operational needs and its own internal hopper dredging protocol, in coordination with NMFS.

At the COE's request, NMFS' partitioning of the GRBO's Gulf-wide authorized take level into fixed allotments for each of the four COE districts has been superseded by the 80:20 ratio allotment take-limit scheme described above. Revision 2 includes NMFS' estimates of *anticipated* take by each district, unchanged from the original GRBO; however, NMFS has eliminated the district-level protected species allocations, where each district formerly held a guaranteed share of the Gulf-wide authorized level of per-fiscal-year take. The COE is developing an internal protocol to handle within-year management and sharing of takes between Gulf of Mexico COE districts. Other minor modifications to the GRBO and noteworthy changes included in Revision 2 are:

1) The COE is no longer required to consult with/notify NMFS whenever it deviates from the recommended hopper dredging windows (T&C 1).
2) Notification to NMFS and transmittal of information on protected species takes by hopper dredge can now occur by electronic mail to **takereport.nmfsser@noaa.gov** (T&C 9).
3) Any strandings or relocation trawler takes of protected species bearing evidence of potential dredge interaction, regardless of type of dredge implicated, shall not be counted against the GRBO's ITS (T&C 10), although the reporting requirement remains unchanged (T&C 11).
4) The minimum dimensions for a seawater holding tank for captured Gulf sturgeon have been eliminated and more flexible, protective standards have been instituted (T&C 15-f).
5) The GRBO is now the permitting authority to conduct PIT tagging; an ESA Section 10 permit is no longer required to conduct PIT tagging (T&C 15-h, T&C 15-i, T&C 16).
6) Submission requirements for PIT tag scan and external tag data, and genetic samples, have been standardized, to within 60 days after project completion (T&C 15-j, T&C 16).
7) The definition of hardgrounds is clarified to exclude navigation channels and jettys (T&C 17).

In addition, there are some minor changes to address inconsistent or unclear language use in the original GRBO: e.g., the terms "NMFS-approved observer," "observer," and "endangered species observer," have been standardized/changed to "NMFS-approved protected species observer." Other minor language changes clarify that weighing/measuring/sampling of protected species is only required when it can be done safely (T&C 15-d, T&C 20), and that NMFS-approved protected species observers are not required to take tissue samples of sea turtle viral fibropapillomas when these are encountered (T&C 15-l). Finally, NMFS encourages the COE to make fuller use of protected species taken during hopper dredging and relocation trawling by allowing and encouraging duly-permitted "piggy-back" research projects on protected species taken during these activities (T&C 15-d, Conservation Recommendation 5).

Revision 2 to the GRBO is enclosed. It replaces and supersedes Revision 1, and replaces and supersedes the corresponding sections of the 2003 GRBO. If you have any questions, please contact Eric Hawk at (727) 551-5773 or by e-mail at Eric.Hawk@noaa.gov.

We sincerely appreciate all the COE's past and ongoing protected species conservation efforts during hopper dredging activities in the Gulf and South Atlantic, and look forward to continued collaborative efforts to preserve our protected species. My compliments to your staff at SAD, in particular Mr. Daniel Small, and in the four Gulf of Mexico COE districts for working assiduously and effectively with NMFS staff, which enabled us to resolve your remaining concerns with the GRBO. We look forward to working closely with the COE to facilitate other activities, including reinitiation of consultation on the South Atlantic Regional Biological Opinion on hopper dredging, while conserving endangered and threatened species.

I would especially like to take this opportunity to applaud and congratulate the U.S. Army Corps of Engineers, and especially Dr. Dena Dickerson and her staff at the Environmental Data Research Center in Vicksburg, Mississippi, for the excellent job they have done developing and maintaining the COE's Sea Turtle Data Warehouse. The wealth of historic and current

information contained in this database regarding hopper dredging project/protected species interactions, and the ease of use of the Sea Turtle Data Warehouse Website, has been exceedingly valuable to NMFS, and will continue to be very useful to both our agencies when making management and conservation decisions regarding protected species.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

cc: COE SAD, Atlanta – Daniel Small, Dennis Barnett
COE MVD, Vicksburg
COE SWD, Dallas
COE, Mobile District – Susan Ivester Rees
COE, Galveston District – Carolyn Murphy
COE, Jacksonville District – Marie Burns, Terri Jordan
COE, New Orleans District – Linda Mathies
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F/SEC3 – Sheryan Epperly Chester

File: 1514-22.f.1.GOM, SAD
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

Revision 2 to the National Marine Fisheries Service (NMFS) November 19, 2003, Gulf of Mexico Regional Biological Opinion (GRBO) to the U.S. Army Corps of Engineers (COE) on Hopper Dredging of Navigation Channels and Borrow Areas in the U.S. Gulf of Mexico

The followings replaces parts of the original GRBO and supersedes Revision 1 to the GRBO. All replacements/revisions noted below are to be made to the November 19, 2003, biological opinion. Revision 1 should be discarded in its entirety.

REPLACE:
Anticipated Gulf-wide Take of Sea Turtles and Gulf Surgeon by Hopper Dredges (in Section 5, pp. 57-58 of GRBO), with the following:

Anticipated Gulf-wide Take of Sea Turtles and Gulf Sturgeon by Hopper Dredges and Bed-leveling associated with Hopper Dredging Projects:

For the entire Gulf of Mexico from the U.S.-Mexico border to Key West, the annual documented COE incidental take per fiscal year, by injury or mortality, is expected to consist of twenty (20) Kemp's ridley turtles, fourteen (14) green turtles, four (4) hawksbill turtles, forty (40) loggerhead turtles, and four (4) Gulf sturgeon. This take level represents a total take per fiscal year for all channel dredging and sand mining by hopper dredges in the Gulf of Mexico under the purview of the COE's Galveston, New Orleans, Mobile, and Jacksonville Districts collectively. These totals include hopper dredging activities conducted by the COE (for maintenance of civil works and military navigation channels and for construction of federally-authorized hurricane-storm damage reduction projects) and performed by non-federal interests under COE permits (i.e., "regulatory" projects), including any bed-leveling associated with these hopper dredging activities. These totals are based on the following estimates of anticipated take levels in the Gulf of Mexico, by region, which are not allotments or limits per se. Subdivision of the COE's Gulf-wide anticipated incidental take is made later in this opinion, into two distinct and separate levels or allotments: one for COE-conducted ("civil works and national defense") projects, and the other for COE-permitted ("regulatory") projects.

Texas Coastal Area
For this area, the annual documented incidental take, by injury or mortality, is expected to consist of seven (7) Kemp's ridleys, five (5) green turtles, one (1) hawksbill, and fifteen (15) loggerhead turtles.

Louisiana Coastal Area
For this area, the documented annual incidental take, by injury or mortality, is expected to consist of seven (7) Kemp's ridleys, three (3) green turtles, one (1) hawksbill, and fifteen (15) loggerhead turtles, and one (1) Gulf sturgeon.

Florida Panhandle Coastal Area, west of Aucilla River Basin; Alabama Coastal Area; and Mississippi Coastal Area
For these areas, combined, the documented annual incidental take, by injury or mortality, is expected to consist of three (3) Kemp's ridley, three (3) green turtles, one (1) hawksbill, five (5) loggerhead turtles, and two (2) Gulf sturgeon.

West Florida Coastal Area: Aucilla River Basin to, but not including, Key West
For this area, the documented annual incidental take, by injury or mortality, is expected to consist of three (3) Kemp's ridleys, three (3) green turtles, one (1) hawksbill, five (5) loggerhead turtles, and one (1) Gulf sturgeon. Hopper dredging of Key West navigation channels is covered under the September 25, 1997, regional hopper dredging biological opinion (RBO) to the COE's South Atlantic Division (SAD), which includes by reference the reasonable and prudent measures (RPMs) of the August 25, 1995, hopper dredging RBO to the SAD.

REPLACE:
Anticipated Gulf-wide Take by Hopper Dredging Activities (in Section 8, pp. 63-65 of GRBO), with the following:

8.1 Anticipated Gulf-wide Take by Hopper Dredging and Bed-leveling and Relocation Trawling Activities Associated with Hopper Dredging Projects:

For the entire Gulf of Mexico from the U.S.-Mexico border to Key West, the annual documented COE incidental take per fiscal year, by injury or mortality, is expected to consist of forty (40) loggerhead turtles, twenty (20) Kemp's ridley turtles, fourteen (14) green turtles, four (4) hawksbill turtles, and four (4) Gulf sturgeon. This take level represents total take by injury or mortality per fiscal year anticipated for all navigation channel maintenance dredging and sand mining by hopper dredges and any associated bed-leveling activity in the Gulf of Mexico within the COE's Galveston, New Orleans, Mobile, and Jacksonville Districts, by COE-conducted ("civil works and national defense") projects and COE-permitted ("regulatory") projects.

Based upon consultation with the COE, the annual documented lethal or injurious incidental take per fiscal year is allocated as follows:

8.1.1 For COE-*conducted* hopper dredging for federal civil works or national defense activities:

Thirty-two (32) loggerhead turtles, sixteen (16) Kemp's ridley turtles, eleven (11) green turtles, three (3) hawksbill turtles, and three (3) Gulf sturgeon.

8.1.2 For COE-*permitted* hopper dredging performed by others (i.e., non-COE entities):

Eight (8) loggerhead turtles, four (4) Kemp's ridley turtles, three (3) green turtles, one (1) hawksbill turtle, and one (1) Gulf sturgeon.

8.1.3 For relocation trawling:

Zero to two (2) turtles and zero to one (1) Gulf sturgeon. These numbers are in addition to anticipated lethal or injurious takes by hopper dredges noted in 8.1.1 and 8.1.2, above.

8.1.4 For relocation trawling, the following non-lethal take is anticipated/authorized per fiscal year.

Three hundred (300) sea turtles, of any combination of species (Kemp's ridley, green, loggerhead, leatherback, and hawksbill), and eight (8) Gulf sturgeon, across all the COE districts and hopper dredging projects. This take is limited to relocation trawling conducted during the 0-3 days immediately preceding the start of hopper dredging (as a means to determine/reduce the initial abundance of sea turtles in the area and determine if additional trawling efforts are needed), during actual hopper dredging, and during "down" times when the hopper dredging operations may be temporarily suspended due to lethal turtle/sturgeon takes, weather, hopper dredge mechanical problems, etc. Relocation trawling performed to reduce endangered species/hopper dredge interactions is subject to the requirements detailed in the terms and conditions of this opinion.

Regulatory Permits

Each COE district issuing a regulatory permit involving hopper dredging will be responsible for initiating contact with NMFS on behalf of permit applicants, and will forward draft permit conditions to NMFS that are consonant with the RPMs and terms and conditions of this Regional Biological Opinion, including a proposed amount of authorized take of sea turtles and Gulf sturgeon where applicable per project allocated from the overall annual authorized take limit. The COE will coordinate with NMFS prior to permit issuance. This may be done by electronic mail with an electronic response from NMFS. The draft permit conditions and proposed take level allocated may be of standardized content.

COE Gulf of Mexico Hopper Dredging Protocol

The COE will develop internal protocols for managing, documenting, reporting, and coordinating incidental takes for both COE-conducted and COE-permitted activities across Gulf of Mexico Districts to ensure compliance with the provisions of this Regional Biological Opinion. The protocol and any future revisions to it will be shared with the NMFS Southeast Regional Office, Protected Resources Division staff in a timely manner.

Adjustment of Take Allocations

The balance between the basic hopper dredging requirements (quantities, duration, timing, and locations) for COE-conducted dredging for civil works and national defense and for COE-permitted dredging may vary in the future. Based on annual changes in these requirements, the COE may, in coordination with NMFS, adjust the allocation of the authorized Gulf-wide incidental take numbers between COE-conducted hopper dredging and COE-permitted hopper

dredging in advance of any given fiscal year, such that changes could be made to the allotments for the start of the subsequent fiscal year. Such adjustments would not affect the jeopardy analysis of this opinion or the terms and conditions of this ITS and can be made without reinitiation of consultation on this opinion.

New information requiring subsequent reinitation of consultation on this opinion, pursuant to the reinitiation triggers of 50 CFR 402.16, could result in an increase or decrease of the total allocated incidental take numbers for COE-conducted or COE-permitted hopper dredging within the current authorized ITS limit.

REPLACE:
Terms and Conditions (in Section 9, pp. 72-78 in the GRBO), Section 10 (Conservation Recommendations, pp. 78-80 in the GRBO), and Section 11 (Reinitiation of Consultation, pp. 80-81 in the GRBO), with the following:

Terms and Conditions

1. *Hopper Dredging*: Hopper dredging activities in Gulf of Mexico waters from the Mexico-Texas border to Key West, Florida, up to one mile into rivers shall be completed, whenever possible, between December 1 and March 31, when sea turtle abundance is lowest throughout Gulf coastal waters. Hopper dredging of Key West channels is covered by the existing September 25, 1997, RBO to the COE's SAD.

2. *Non-hopper Type Dredging*: Pipeline or hydraulic dredges, because they are not known to take turtles, must be used whenever possible between April 1 and November 30 in Gulf of Mexico waters up to one mile into rivers. This should be considered particularly in channels such as those associated with Galveston Bay and Mississippi River - Gulf Outlet (MR-GO), where lethal takes of endangered Kemp's ridleys have been documented during summer months, and Aransas Pass, where large numbers of loggerheads may be found during summer months. In the MR-GO, incidental takes and sightings of threatened loggerhead sea turtles have historically been highest during April and October.

3. *Annual Reports*: The annual summary report, discussed below (No. 9), must give a complete explanation of why alternative dredges (dredges other than hopper dredges) were not used for maintenance dredging of channels between April and November.

4. *Observers*: The COE shall arrange for NMFS-approved protected species observers to be aboard the hopper dredges to monitor the hopper bin, screening, and dragheads for sea turtles and Gulf sturgeon and their remains.

    a. Brazos Santiago Pass east to Key West, Florida: Observer coverage sufficient for 100% monitoring (i.e., two observers) of hopper dredging operations is required aboard the hopper dredges year-round from Brazos Santiago Pass to (not including) Key West, Florida, between April 1 and November 30, and whenever surface water temperatures are 11°C or greater.

b. Observer coverage of hopper dredging of sand mining areas shall ensure 50% monitoring (i.e., one observer).

c. Observers are not required at any time in Mississippi River - Southwest Pass (MR-SWP).

5. *Operational Procedures*: During periods in which hopper dredges are operating and NMFS-approved protected species observers are *not* required (as delineated in No. 4 above), the appropriate COE District must:

a. Advise inspectors, operators, and vessel captains about the prohibitions on taking, harming, or harassing sea turtles.

b. Instruct the captain of the hopper dredge to avoid any turtles and whales encountered while traveling between the dredge site and offshore disposal area, and to immediately contact the COE if sea turtles or whales are seen in the vicinity.

c. Notify NMFS if sea turtles are observed in the dredging area, to coordinate further precautions to avoid impacts to turtles.

d. Notify NMFS immediately by phone (**727/824-5312**), fax (**727/824-5309**), or electronic mail (**takereport.nmfsser@noaa.gov**) if a sea turtle or Gulf sturgeon or any other threatened or endangered species is taken by the dredge.

6. *Screening*: When sea turtle observers are required on hopper dredges, 100% inflow screening of dredged material is required and 100% overflow screening is recommended. If conditions prevent 100% inflow screening, inflow screening may be reduced gradually, as further detailed in the following paragraph, but 100% overflow screening is then required.

a. Screen Size: The hopper's inflow screens should have 4-inch by 4-inch screening. If the COE, in consultation with observers and the draghead operator, determines that the draghead is clogging and reducing production substantially, the screens may be modified sequentially: mesh size may be increased to 6-inch by 6-inch, then 9-inch by 9-inch, then 12-inch by 12-inch openings. Clogging should be greatly reduced with these flexible options; however, further clogging may compel removal of the screening altogether, in which case effective 100% overflow screening is mandatory. The COE shall notify NMFS beforehand if inflow screening is going to be reduced or eliminated, and provide details of how effective overflow screening will be achieved.

b. Need for Flexible, Graduated Screens: NMFS believes that this flexible, graduated-screen option is necessary, since the need to constantly clear the inflow screens will increase the time it takes to complete the project and therefore increase the exposure of sea turtles to the risk of impingement or entrainment. Additionally, there are increased risks to sea turtles in the water column when the inflow is halted to clear screens, since

this results in clogged intake pipes, which may have to be lifted from the bottom to discharge the clay by applying suction.

c. Exemption - MR-SWP: Screening is not required at any time in MR-SWP.

7. *Dredging Pumps*: Standard operating procedure shall be that dredging pumps shall be disengaged by the operator when the dragheads are not firmly on the bottom, to prevent impingement or entrainment of sea turtles within the water column. This precaution is especially important during the cleanup phase of dredging operations when the draghead frequently comes off the bottom and can suck in turtles resting in the shallow depressions between the high spots the draghead is trimming off.

8. *Sea Turtle Deflecting Draghead*: A state-of-the-art rigid deflector draghead must be used on all hopper dredges in all Gulf of Mexico channels and sand mining sites at all times of the year except that the rigid deflector draghead is not required in MR-SWP at any time of the year.

9. *Dredge Take Reporting*: Observer reports of incidental take by hopper dredges must be faxed or e-mailed to NMFS' Southeast Regional Office **[fax: (727) 824-5309; e-mail: takereport.nmfsser@noaa.gov]** by onboard NMFS-approved protected species observers within 24 hours of any sea turtle, Gulf sturgeon, or other listed species take observed.

A preliminary report summarizing the results of the hopper dredging and any documented sea turtle or Gulf sturgeon takes must be submitted to NMFS within 30 working days of completion of any dredging project. Reports shall contain information on project location (specific channel/area dredged), start-up and completion dates, cubic yards of material dredged, problems encountered, incidental takes and sightings of protected species, mitigative actions taken (if relocation trawling, the number and species of turtles relocated), screening type (inflow, overflow) utilized, daily water temperatures, name of dredge, names of endangered species observers, percent observer coverage, and any other information the COE deems relevant.

An annual report (based on fiscal year) must be submitted to NMFS summarizing hopper dredging projects and documented incidental takes.

10. *Sea Turtle and Gulf Sturgeon Strandings*: The COE or its designated representative shall notify the Sea Turtle Stranding and Salvage Network (STSSN) state representative (contact information available at: http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp) of the start-up and completion of hopper dredging, bed-leveler dredging, and relocation trawling operations and ask to be notified of any sea turtle strandings in the project area that, in the estimation of STSSN personnel, bear signs of potential draghead impingement or entrainment, or interaction with a bed-leveling type dredge. Similarly, the COE shall notify NMFS SERO PRD of any Gulf sturgeon strandings in the project area that, in the estimation of STSSN personnel, bear signs of potential draghead impingement or entrainment, or interaction with a bed-leveling type dredge.

Information on any such strandings shall be reported in writing within 30 days of project completion to NMFS' Southeast Regional Office. Because the deaths of these turtles, if hopper dredge or bed-leveler dredge related, have already been accounted for in NMFS' jeopardy analysis, these strandings will not be counted against the COE's take limit.

11. *Reporting - Strandings*: Each COE District shall provide NMFS' Southeast Regional Office with an annual report detailing incidents, with photographs when available, of stranded sea turtles and Gulf sturgeon that bear indications of draghead impingement or entrainment or any dredge-type interaction. This reporting requirement may be included in the end-of-year report required in Term and Condition No. 9, above.

12. *District Annual Relocation Trawling Report*: Each COE District shall provide NMFS' Southeast Regional Office with end-of-project reports within 30 days of completion of relocation trawling projects, and an annual report summarizing relocation trawling efforts and results within their District. The annual report requirement may be included in the end-of-year report required in Term and Condition No. 9, above.

13. *Conditions Requiring Relocation Trawling*: Handling of sea turtles and Gulf sturgeon captured during relocation trawling in association with hopper dredging projects in Gulf of Mexico navigation channels and sand mining areas shall be conducted by NMFS-approved protected species observers. Relocation trawling shall be undertaken by the COE at all projects where any of the following conditions are met; however, other ongoing projects not meeting these conditions are not required to conduct relocation trawling:

    a. Two or more turtles are taken in a 24-hour period in the project.

    b. Four or more turtles are taken in the project.

    c. 75% of any of the incidental take limits, including per species limits, specified in Section 8.1, has previously been met.

14. *Relocation Trawling Waiver*: For individual projects the affected COE District may request by letter to NMFS a waiver of part or all of the relocation trawling requirements. NMFS will consider these requests and decide favorably if the evidence is compelling.

15. *Relocation Trawling - Annual Take Limits*: This opinion authorizes, without the need for an ESA section 10 permit: the annual (by fiscal year) non-injurious take of 300 sea turtles (of one species or combination of species including Kemp's ridley, loggerhead, green, leatherback, and hawksbill) and 8 Gulf sturgeon, and annual (by fiscal year) lethal or injurious takes of up to 2 sea turtles and 1 Gulf sturgeon, by trawlers conducting relocation trawling, and handling of those captured threatened or endangered species by NMFS-approved protected species observers, in association with all relocation trawling conducted or contracted by the four Gulf of Mexico COE Districts to temporarily reduce or assess the abundance of these listed species during, and in the 0-3 days immediately

preceding, a hopper dredging or bed-leveling project in order to reduce the possibility of lethal hopper dredge or bed-leveler interactions, subject to the following conditions:

a. *Trawl Time*: Trawl tow-time duration shall not exceed 42 minutes (doors in - doors out) and trawl speeds shall not exceed 3.5 knots.

b. *Handling During Trawling*: Sea turtles and Gulf sturgeon captured pursuant to relocation trawling shall be handled in a manner designed to ensure their safety and viability, and shall be released over the side of the vessel, away from the propeller, and only after ensuring that the vessel's propeller is in the neutral, or disengaged, position (i.e., not rotating). Resuscitation guidelines are attached (Appendix IV).

c. *Captured Turtle and Gulf Sturgeon Holding Conditions*: Turtles and Gulf sturgeon may be held briefly for the collection of important scientific measurements, prior to their release. Captured sea turtles shall be kept moist, and shaded whenever possible, until they are released, according to the requirements of T&C 15-e, below. Captured Gulf sturgeon shall be held in a suitable well-aerated seawater enclosure until they are released, according to the conditions of T&C 15-f, below.

d. *Scientific Measurements*: When safely possible, all turtles shall be measured (standard carapace measurements including body depth), tagged, weighed, and a tissue sample taken prior to release. When safely possible, all Gulf sturgeon shall be measured (fork length and total length), tagged, weighed, and a tissue sample taken prior to release. Any external tags shall be noted and data recorded into the observers log. Only NMFS-approved protected species observers or observer candidates in training under the direct supervision of a NMFS-approved protected species observer shall conduct the tagging/measuring/weighing/tissue sampling operations.

   NMFS-approved protected species observers may conduct more invasive scientific procedures (e.g., blood letting, laparoscopies, anal and gastric lavages, mounting satellite or radio transmitters, etc.) and partake in or assist in "piggy back" research projects but only if the observer holds a valid federal sea turtle or Gulf sturgeon research permit (and any required state permits) authorizing the activities, either as the permit holder, or as designated agent of the permit holder, and has first notified NMFS' Southeast Regional Office, Protected Resources Division.

e. *Take and Release Time During Trawling - Turtles*: Turtles shall be kept no longer than 12 hours prior to release and shall be released not less than 3 (three) nautical miles (nmi) from the dredge site. If two or more released turtles are later recaptured, subsequent turtle captures shall be released not less than 5 (five) nmi away. If it can be done safely and without injury to the turtle, turtles may be transferred onto another vessel for transport to the release area to enable the relocation trawler to keep sweeping the dredge site without interruption.

f. *Take and Release Time During Trawling - Gulf Sturgeon*: Gulf sturgeon shall be released immediately after capture, away from the dredge site or into already dredged

areas, unless the trawl vessel is equipped with a suitable well-aerated seawater holding tank, container, trough, or pool where a maximum of one fish may be held for not longer than 30 minutes before it must be released or relocated away from the dredge site.

g. *Injuries and Incidental Take Limits*: Any protected species injured or killed during or as a consequence of relocation trawling shall count toward the Gulf-wide limit for injurious or lethal takes during relocation trawling (0-2 sea turtles and 0-1 Gulf sturgeon per fiscal year). Minor skin abrasions resulting from trawl capture are considered non-injurious. Injured sea turtles shall be immediately transported to the nearest sea turtle rehabilitation facility.

h. *Turtle Flipper External Tagging*: All sea turtles captured by relocation trawling shall be flipper-tagged prior to release with external tags which shall be obtained prior to the project from the University of Florida's Archie Carr Center for Sea Turtle Research. This opinion serves as the permitting authority for any NMFS-approved protected species observer aboard these relocation trawlers to flipper-tag with external-type tags (e.g., Inconel tags) captured sea turtles. Columbus crabs or other organisms living on external sea turtle surfaces may also be sampled and removed under this authority.

i. *PIT Tagging:* This opinion serves as the permitting authority for any NMFS-approved protected species observer aboard a relocation trawler to PIT-tag captured sea turtles and Gulf sturgeon. PIT tagging of sea turtles and Gulf sturgeon is not required to be done, if the NMFS-approved protected species observer does not have prior training or experience in said activity; however, if the observer has received prior training in PIT tagging procedures, then the observer shall PIT tag the animal prior to release (in addition to the standard external tagging):

   Sea turtle PIT tagging must then be performed in accordance with the protocol detailed at NMFS' Southeast Fisheries Science Center's Web page: http://www.sefsc.noaa.gov/seaturtlefisheriesobservers.jsp. (See Appendix C on SEFSC's "Fisheries Observers" Web page);

   Gulf sturgeon PIT tagging must then be performed in accordance with the protocol detailed at the NMFS SERO PRD Web site address: http://sero.nmfs.noaa.gov/pr/protres.htm.

   PIT tags used must be sterile, individually-wrapped tags to prevent disease transmission. PIT tags should be 125-kHz, glass-encapsulated tags–the smallest ones made. Note: If scanning reveals a PIT tag and it was not difficult to find, then do not insert another PIT tag; simply record the tag number and location, and frequency, if known. If for some reason the tag is difficult to detect (e.g., tag is embedded deep in muscle, or is a 400-kHz tag), then insert one in the other shoulder.

j. *Other Sampling Procedures*: All other tagging and external or internal sampling procedures (e.g., blood letting, laparoscopies, anal and gastric lavages, mounting satellite or radio transmitters, etc.) performed on live sea turtles or live Gulf sturgeon are not permitted under this opinion unless the observer holds a valid sea turtle sturgeon research permit authorizing the activity, either as the permit holder, designated agent of the permit holder.

k. *PIT-Tag Scanning and Data Submission Requirements*: All sea turtles and Gulf sturgeon captured by relocation trawling or dredges shall be thoroughly scanned for the presence of PIT tags prior to release using a multi-frequency scanner powerful enough to read multiple frequencies (including 125-, 128-, 134-, and 400-kHz tags) and read tags deeply embedded in muscle tissue (e.g., manufactured by Trovan, Biomark, or Avid). Turtles whose scans show they have been previously PIT tagged shall nevertheless be externally flipper tagged. Sea turtle data collected (PIT tag scan data and external tagging data) shall be submitted to NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center, Attn: Lisa Belskis, 75 Virginia Beach Drive, Miami, Florida 33149. All sea turtle data collected shall be submitted in electronic format within 60 days of project completion to Lisa.Belskis@noaa.gov and Sheryan.Epperly@noaa.gov. Sea turtle external flipper tag and PIT tag data generated and collected by relocation trawlers shall also be submitted to the Cooperative Marine Turtle Tagging Program (CMTTP), on the appropriate CMTTP form, at the University of Florida's Archie Carr Center for Sea Turtle Research.

Gulf sturgeon data (PIT tag scan data and external tagging data) shall be submitted within 60 days of project completion to NOAA, National Marine Fisheries Service, Protected Resources Division, 263 13th Avenue South, St. Petersburg, Florida 33701, or by **fax: (727) 824-5309;** or by **e-mail: takereport.nmfsser@noaa.gov**, Attn: Dr. Stephania Bolden.

l. *Handling Fibropapillomatose Turtles*: NMFS-approved protected species observers are not required to handle or sample viral fibropapilloma tumors if they believe there is a health hazard to themselves and choose not to. When handling sea turtles infected with fibropapilloma tumors, observers must either: 1) Clean all equipment that comes in contact with the turtle (tagging equipment, tape measures, etc.) with mild bleach solution, between the processing of each turtle or 2) maintain a separate set of sampling equipment for handling animals displaying fibropapilloma tumors or lesions.

16. *Requirement and Authority to Conduct Tissue Sampling for Genetic Analyses*: This opinion serves as the permitting authority for any NMFS-approved protected species observer aboard a relocation trawler or hopper dredge to tissue-sample live- or dead-captured sea turtles, and live- or dead-captured Gulf sturgeon, without the need for an ESA section 10 permit.

All live or dead sea turtles and Gulf sturgeon captured by relocation trawling and hopper dredging (for both COE-conducted and COE-permitted activities) shall be tissue-sampled

prior to release. Sampling shall continue uninterrupted until such time as NMFS determines and notifies the COE in writing that it has sufficient samples from specific areas across the Gulf of Mexico in order to obtain reliable genetic information on the nesting or sub-population identity of sea turtles and Gulf sturgeon being captured or lethally taken, to improve the effectiveness of future consultations.

Sea turtle tissue samples shall be taken in accordance with NMFS' Southeast Fisheries Science Center's (SEFSC) procedures for sea turtle genetic analyses (Appendix II of this opinion). The COE shall ensure that tissue samples taken during a dredging project are collected and stored properly and mailed within 60 days of the completion of their dredging project to: NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center, Attn: Lisa Belskis, 75 Virginia Beach Drive, Miami, Florida 33149.

Gulf sturgeon tissue samples (i.e., fin clips or barbel clips) shall be taken in accordance with NMFS SERO's Protected Resources Division's Gulf Sturgeon Tissue Sampling Protocol found at the NMFS SERO PRD Web site address: http://sero.nmfs.noaa.gov/pr/protres.htm. The COE shall ensure that tissue samples taken during a dredging project are collected and stored properly and mailed to SERO PRD (Attn: Dr. Stephania Bolden) within 60 days of the completion of their dredging project.

17. *Hardground Buffer Zones*: All dredging in sand mining areas will be designed to ensure that dredging will not occur within a minimum of 400 feet from any significant hardground areas or bottom structures that serve as attractants to sea turtles for foraging or shelter. NMFS considers (for the purposes of this opinion only) a significant hardground in a project area to be one that, over a horizontal distance of 150 feet, has an average elevation above the sand of 1.5 feet or greater, and has algae growing on it. The COE Districts shall ensure that sand mining sites within their Districts are adequately mapped to enable the dredge to stay at least 400 feet from these areas. If the COE is uncertain as to what constitutes significance, it shall consult with NMFS SERO's Habitat Conservation Division (727-824-5317) and NMFS' Protected Resources Division (727-824-5312) for clarification and guidance. Walls of federally-maintained navigation channels, and jetties and other such man-made structures, are not considered hardgrounds for the purpose of this opinion.

18. *Training - Personnel on Hopper Dredges*: The respective COE Districts must ensure that all contracted personnel involved in operating hopper dredges (whether privately-funded or federally-funded projects) receive thorough training on measures of dredge operation that will minimize takes of sea turtles. It shall be the goal of each hopper dredging operation to establish operating procedures that are consistent with those that have been used successfully during hopper dredging in other regions of the coastal United States, and which have proven effective in reducing turtle/dredge interactions. Therefore, COE Engineering Research and Development Center experts or other persons with expertise in this matter shall be involved both in dredge operation training, and installation, adjustment, and monitoring of the rigid deflector draghead assembly.

19. *Dredge Lighting*: From May 1 through October 31, sea turtle nesting and emergence season, all lighting aboard hopper dredges and hopper dredge pumpout barges operating within 3 nmi of sea turtle nesting beaches shall be limited to the minimal lighting necessary to comply with U.S. Coast Guard and/or OSHA requirements. All non-essential lighting on the dredge and pumpout barge shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to minimize illumination of the water to reduce potential disorientation effects on female sea turtles approaching the nesting beaches and sea turtle hatchlings making their way seaward from their natal beaches.

10.0 Conservation Recommendations

Pursuant to section 7(a)(1) of the ESA, the following conservation recommendations are made to assist the COE in contributing to the conservation of sea turtles and Gulf sturgeon by further reducing or eliminating adverse impacts that result from hopper dredging.

1. *Channel Conditions and Seasonal Abundance Studies*: Channel-specific studies should be undertaken to identify seasonal relative abundance of sea turtles and Gulf sturgeon within Gulf of Mexico channels. The December 1 through March 31 dredging window and associated observer requirements listed above may be adjusted (after consultation and authorization by NMFS) on a channel-specific basis, if (a) the COE can provide sufficient scientific evidence that sea turtles and Gulf sturgeon are not present or that levels of abundance are extremely low during other months of the year, or (b) the COE can identify seawater temperature regimes that ensure extremely low abundance of sea turtles or Gulf sturgeon in coastal waters, and can monitor water temperatures in a real-time manner. Surveys may indicate that some channels do not support significant turtle populations, and hopper dredging in these channels may be unrestricted on a year-round basis, as in the case of MR-SWP. To date, sea turtle deflector draghead efficiency has not reached the point where seasonal restrictions can be lifted.

2. *Draghead Modifications and Bed Leveling Studies*: The New Orleans, Galveston, Mobile, and Jacksonville Districts should supplement the efforts of SAD and ERDC to develop modifications to existing dredges to reduce or eliminate take of sea turtles, and develop methods to minimize sea turtle take during "cleanup" operations when the draghead maintains only intermittent contact with the bottom. Some method to level the "peaks and valleys" created by dredging would reduce the amount of time dragheads are off the bottom. NMFS is ready to assist the COE in conducting studies to evaluate bed-leveling devices and their potential for interaction with sea turtles, and develop modifications if needed.

3. *Draghead Evaluation Studies and Protocol*: Additional research, development, and improved performance is needed before the V-shaped rigid deflector draghead can replace seasonal restrictions as a method of reducing sea turtle captures during hopper dredging activities. Development of a more effective deflector draghead or other entrainment-deterring device (or combination of devices, including use of acoustic

deterrents) could potentially reduce the need for sea turtle relocation or result in expansion of the winter dredging window. NMFS should be consulted regarding the development of a protocol for draghead evaluation tests. NMFS recommends that the COE's Galveston, New Orleans, Mobile, and Jacksonville Districts coordinate with ERDC, SAD, the Association of Dredge Contractors of America, and dredge operators (Manson, Bean-Stuyvesant, Great Lakes, Natco, etc.) regarding additional reasonable measures they may take to further reduce the likelihood of sea turtle and Gulf sturgeon takes.

4. *Continuous Improvements in Monitoring and Detecting Takes*: The COE should seek continuous improvements in detecting takes and should determine, through research and development, a better method for monitoring and estimating sea turtle and Gulf sturgeon takes by hopper dredge. Observation of overflow and inflow screening is only partially effective and provides only partial estimates of total sea turtle and Gulf sturgeon mortality.

   Overflow Screening: The COE should encourage dredging companies to develop or modify existing overflow screening methods on their company's dredge vessels for maximum effectiveness of screening and monitoring. Horizontal overflow screening is preferable to vertical overflow screening because NMFS considers that horizontal overflow screening is significantly more effective at detecting evidence of protected species entrainment than vertical overflow screening.

   Preferential Consideration for Horizontal Overflow Screening: The COE should give preferential consideration to hopper dredges with horizontal overflow screening when awarding hopper dredging contracts for areas where new materials, large amounts of debris, or clay may be encountered, or have historically been encountered. Excessive inflow screen clogging may in some instances necessitate removal of inflow screening, at which point effective overflow screening becomes more important.

5. *Section 10 Research Permits, Relocation Trawling, and Piggy-Back Research*: NMFS recommends that the COE's Galveston, New Orleans, Mobile, and Jacksonville Districts, either singly or combined, apply to NMFS for an ESA section 10 research permit to conduct endangered species research on species incidentally captured during relocation trawling. For example, satellite tagging of captured turtles could enable the COE Districts to gain important knowledge on sea turtle seasonal distribution and presence in navigation channels and sand mining sites and also, as mandated by section 7(a)(1) of the ESA, to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. SERO shall assist the COE Districts with the permit application process. Similarly, NMFS encourages the COE to cooperate with NMFS' scientists, other federal agencies' scientists, and university scientists to make fuller use of turtles and Gulf sturgeon taken pursuant to the authority conferred by this opinion during hopper dredging and relocation trawling, by allowing and encouraging "piggy-back" research projects by duly-permitted individuals or their authorized designees. Piggy-back projects could include *non-lethal* research of many types,

including blood letting, laparoscopies, anal and gastric lavages, mounting satellite or radio transmitters, etc.

6. *Draghead Improvements - Water Ports*: NMFS recommends that the COE's Gulf of Mexico Districts require or at least recommend to dredge operators that all dragheads on hopper dredges contracted by the COE for dredging projects be eventually outfitted with water ports located in the *top* of the dragheads to help prevent the dragheads from becoming plugged with sediments. When the dragheads become plugged with sediments, the dragheads are often raised off the bottom (by the dredge operator) with the suction pumps on in order to take in enough water to help clear clogs in the dragarm pipeline, which increases the likelihood that sea turtles in the vicinity of the draghead will be taken by the dredge. Water ports located in the top of the dragheads would relieve the necessity of raising the draghead off the bottom to perform such an action, and reduce the chance of incidental take of sea turtles.

   NMFS supports and recommends the implementation of proposals by ERDC and SAD personnel for various draghead modifications to address scenarios where turtles may be entrained during hopper dredging (Dickerson and Clausner 2003). These include: a) an adjustable visor; b) water jets for flaps to prevent plugging and thus reduce the requirement to lift the draghead off the bottom; and c) a valve arrangement (which mimics the function of a "Hoffer" valve used on cutterhead type dredges to allow additional water to be brought in when the suction line is plugging) that will provide a very large amount of water into the suction pipe thereby significantly reducing flow through the visor when the draghead is lifted off the bottom, reducing the potential to take a turtle.

7. *Economic Incentives for No Turtle Takes*: The COE should consider devising and implementing some method of significant economic incentives to hopper dredge operators such as financial reimbursement based on their satisfactory completion of dredging operations, or *X* number of cubic yards of material moved, or hours of dredging performed, *without taking turtles*. This may encourage dredging companies to research and develop "turtle friendly" dredging methods; more effective, deflector dragheads; pre-deflectors; top-located water ports on dragarms; etc.

8. *Sedimentation Limits to Protect Resources (Hardbottoms/Reefs)*: NMFS recommends water column sediment load deposition rates of no more than 200 mg/cm^2/day, averaged over a 7-day period, to protect coral reefs and hard bottom communities from dredging-associated turbidity impacts to listed species foraging habitat.

9. *Boca Grande Pass - Conditions*: If the COE's Jacksonville District decides to renew dredging permits for the Boca Grande Pass, NMFS recommends that the District conduct or sponsor a Gulf sturgeon study, including gillnetting and tagging utilizing ultrasonic and radio transmitters, and mtDNA sampling, to help determine the genetic origins, relative and seasonal abundance, distribution and utilization of estuarine and marine habitat by Gulf sturgeon within Charlotte Harbor estuary and Charlotte Harbor Entrance

Channel, and shall report to NMFS biannually on the progress and final results of said study.

10. *Relocation Trawling - Guidelines*: Within six months of the issuance of this opinion, the COE's Gulf of Mexico Districts, in coordination with COE's SAD, should develop relocation trawling guidelines to ensure safe handling and standardized data gathering techniques for sea turtles and Gulf sturgeon by COE contractors, and forward copies to NMFS' Protected Resources Division.

11. *Sodium Vapor Lights on Offshore Equipment*: On offshore equipment (i.e., hopper dredges, pumpout barges) shielded low-pressure sodium vapor lights are highly recommended for lights that cannot be eliminated.

11.0 Reinitiation of Consultation

Requirements for Reinitiation of Consultation: Reinitiation of formal consultation is required if (a) the amount or extent of taking specified in the incidental take statement is exceeded (any of the specified limits), (b) new information reveals effects of the action that may affect listed species or critical habitat when designated in a manner or to an extent not previously considered, (c) the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in the opinion, or (d) a new species is listed or critical habitat designated that may be affected by the identified action.

Advance Discussions of Potential Need for Reinitiation: NMFS requests that COE districts initiate discussions with the Southeast Regional Office Protected Resources Division early to identify the potential need for reinitiation of consultation, well in advance of actually exceeding the amount or extent of taking specified in the incidental take statement. NMFS requests notification when a) more than one turtle is taken by a dredge in any 24-hour period; b) four turtles are taken by a dredge during a single project; c) the dredge take reaches 75% of the total take level established for any one species; d) a Gulf sturgeon is taken by a dredge; e) a hawksbill turtle is taken by a dredge; f) a turtle or Gulf sturgeon is injuriously or lethally taken by a relocation trawler; or g) the relocation trawling incidental take limit for turtles or sturgeon is reached. The NMFS Southeast Regional Office will work with the COE to quickly review such incidents, to discuss the need and advisability of further mitigating measures, and to plan for a reinitiation of consultation if it appears that one of the reinitiation triggers is likely to be met.

Dredging/Trawling Operations During Reinitiation of Consultation: Once the need for reinitiation is triggered, the COE is not necessarily required to suspend dredging or relocation trawling operations pending the conclusion of the reinitiated consultation, so long as the continuation of operations (by all districts and all permittees) would not violate section 7(a)(2) or 7(d) of the ESA. In that case, the COE is advised to document its determination that these provisions would not be violated by continuing activities covered by this opinion during the reinitiation period and to notify NMFS of its findings.