United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

Memorandum

DEC 15 2013

To: Field Supervisor, Lafayette Ecological Services Office

From: Deputy Deepwater Horizon, Department of the Interior Natural Resource Damage Assessment and Restoration (NRDAR), Case Manager

Subject: Biological Assessment for the Proposed North Breton Island Restoration, Chandeleur Islands Barrier System, Louisiana

As you are no doubt aware, on or about April 20, 2010, the mobile offshore drilling unit *Deepwater Horizon* experienced an explosion, leading to a fire and its subsequent sinking in the Gulf of Mexico (the Gulf). These events resulted in the discharge of millions of barrels of oil into the Gulf over a period of 87 days. In addition, various response actions were undertaken in an attempt to minimize impacts from spilled oil. These events are hereafter collectively referred to as the Oil Spill.

The Department of the Interior (DOI), acting through the U.S. Fish and Wildlife Service (the Service) and other Bureaus, is a designated natural resource trustee agency authorized by the Oil Pollution Act of 1990 (OPA) and other applicable federal laws to assess and assert a natural resource damage claim for this Oil Spill. DOI is only one of several Trustees, including state agencies, so authorized. Consistent with their federal and state authorities, the Trustees are investigating the natural resource injuries and losses that occurred as a result of the Oil Spill and have initiated restoration planning to identify the actions that will be needed or appropriate to restore injured natural resources and to make the public whole for the injuries and losses that occurred. This process is known as a Natural Resource Damage Assessment (NRDA).

On April 20, 2011, DOI, the National Oceanic and Atmospheric Administration and the Trustees for the five Gulf states affected by the Oil Spill entered into an agreement with BP, a responsible party for the Oil Spill, under which BP agreed to provide $1 billion for early restoration projects in the Gulf to address injuries to natural resources caused by the Oil Spill. The above-referenced project is being evaluated by the Trustees as a potential early restoration project. If the project is proposed in a draft restoration plan, and then selected by the Trustees, after publication of the plan and consideration of public comment, and final agreement is reached with BP, it will be implemented by DOI.

The above facts lead us to the conclusion that consultation and conference under Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), is required for the proposed project and we wish to engage in such coordination. Accordingly, we have reviewed the proposed North Breton Island Restoration, Chandeleur Islands Barrier System, Louisiana, for potential impacts to listed, proposed, and candidate species and critical habitats in accordance with section 7 of the ESA. We determined the proposed project may adversely affect piping

plover (*Charadrius melodus*) and red knot (*Calidris canutus rufa*), if red knot is listed prior to the completion of the project. Short-term temporary impacts will occur in piping plover critical habitat though no destruction or adverse modification of critical habitat will occur. Our analysis is provided in the attached Biological Assessment.

We also reviewed the proposed project for impacts to bald eagles and migratory birds in accordance with the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703–712), respectively. Consultation will also be initiated with National Marine Fisheries Service for: species under their jurisdiction, or where ESA regulatory authority is shared, in regards to Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1461 *et seq.*), and Essential Fish Habitat.

By this memo we are requesting initiation of formal consultation and conference under Section 7 of the Endangered Species Act of 1973. If you have questions or concerns regarding this request for consultation, please contact Holly Herod, Fish and Wildlife Biologist, at 404-679-7089 or holly_herod@fws.gov or Brian Spears, at (251) 928-9765 or brian_spears@fws.gov.

Attachment – Biological Assessment for the North Breton Island Restoration

BIOLOGICAL ASSESSMENT
North Breton Island Restoration

Introduction

For an explanation of the origin of this project and certain defined terms, such as "Oil Spill" or "Trustees", please see the cover letter accompanying this BA, which is by this reference incorporated herein.

Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, requires that, *"Each Federal agency shall, in consultation with and with the assistance of the secretary, insure that any action authorized, funded, or carried, out by such agency.... Is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species..."*

This Biological Assessment (BA) provides the information required pursuant to the ESA and implementing regulation (50 CFR 402.14), to ensure the proposed project is not likely to jeopardize the continued existence of nine species or adversely modify or destroy critical habitat for one species (Table 1). This BA evaluates the potential impacts of the proposed restoration of North Breton Island (Figure 1) on Federally-listed and proposed threatened and endangered species and designated and proposed critical habitat, and determines whether any such species or habitat are likely to be adversely affected by implementing the project. Additional information is provided to address potential impacts to marine mammals, migratory birds, and bald eagles pursuant to the Marine Mammal Protection Act of 1972; the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712) (MBTA), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d) (BGEPA), respectively.

Table 1. Species and critical habitat evaluated for effects from the proposed action and discussed in this biological assessment.

SPECIES PRESENT	CRITICAL HABITAT	MAY AFFECT	LIKELY TO ADVERSELY AFFECT/NO ADVERSE MODIFICATION
Loggerhead sea turtle (T) (*Caretta caretta)*, Northwest Atlantic Distinct Population Segment	No*	Yes	No
Green sea turtle (E) (*Chelonia mydas)*	No	Yes	No
Leatherback sea turtle (E) (*Dermochelys coriacea*)	No	Yes	No
Kemp's ridley sea turtle (E) (*Lepidochelys kempii*)	No	Yes	No
Hawksbill sea turtle (E) *Eretmochelys imbricata imbricata*	No	Yes	No
Gulf sturgeon (T) (*Acipenser oxyrinchus desotoi*)	No	No	No
bottlenose dolphin (*Tursiops truncates*)	No	Yes	No
Atlantic spotted dolphin (*Stenella frontalis*)	No	Yes	No
Risso's dolphin (*Grampus griseus*)	No	Yes	No

Sperm whale (*Physeter macrocephalus*)	No	Yes	No
Sei whale (*Balaenoptera borealis*)	No	Yes	No
Fin whale (*Balaenoptera physalus*)	No	Yes	No
blue (*Balaenoptera musculus*),	No	Yes	No
Humpback whale (*Megaptera novaeangliae*)	No	Yes	No
West Indian manatee (E) (*Trichechus manatus*)	No	Yes	No
Piping plover (T) (*Charadrius melodus*)	Yes	Yes	Yes/Yes
**Red knot (P) (*Calidris canutus rufa*)	No	Yes	Yes
Migratory birds (MBTA)	n/a	No Take	n/a
Bald eagle (BGEPA) (*Haliaeetus leucocephalus*)	n/a	No	n/a

Threatened (T), Endangered (E), or Candidate (C). * Critical habitat for Northwest Atlantic Distinct Population segment of the loggerhead sea turtle has not been proposed in Louisiana. Breton has not been proposed as critical habitat for the Red Knot. ** Red knot is a species proposed for listing as Threatened under the ESA. Because of the proposed status of the red knot, this determination may be considered for ESA conference rather than ESA consultation concurrence. ESA consultation is for listed species and critical habitat, where conferences can be used to assess effects to proposed and candidate species and proposed critical habitat.

Consultation to Date

In 1999, the USACE, New Orleans District completed an Environmental Assessment for their proposal to beneficially use dredge from the Mississippi River- Gulf Outlet (MR-GO) navigation channel for restoration of Breton Island in a configuration similar to the current proposal. The environmental assessment resulted in a Finding of No Significant Impact by the U.S. Army Corps of Engineers (USACE) and included consideration of federally threatened or endangered species, critical habitat and essential fish habitat, and was concurred with by FWS and coordinated with NMFS. This project was not implemented.

Description of the Proposed Action

North Breton Island, located at the southern end of the Chandeleur Island chain in Louisiana, is part of the Breton NWR established in 1904 by Theodore Roosevelt. Breton NWR is recognized by the National Audubon Society as a globally important bird area because of the resources it provides to birds. North Breton Island hosts one of Louisiana's largest historical brown pelican nesting colonies. However, surveys by Breton NWR staff indicate that this colony has declined from over 15,000 pairs before 1998 to fewer than several thousand pairs in 2012, including a reduction of approximately 50% of breeding pelicans between 2008 and 2012. Erosion from tides and storms constitutes a major and ongoing threat to North Breton Island, its habitats, and the breeding bird colonies it supports (Lavoie 2009; Martinez *et al.* 2009; Kindinger *et al.* 2013). Without actions to restore sand into the North Breton Island system, the island is expected to be completely submerged sometime between 2013 and 2037, depending on the frequency and magnitude of future storms (Lavoie 2009). This project aims to increase island longevity by restoring beach, dune, and back-barrier marsh habitats on the island, providing nesting and foraging habitat for brown pelicans, terns, skimmers and gulls injured by the Oil Spill. Restoration will be guided by the data analyses presented in Lavoie (2009), Visser *et al.* (2005), Hingtgen *et al.* (1985), and other related documents. As recommended by Lavoie (2009), restoration would be designed to mimic the natural processes of barrier island evolution, including erosion and longshore transport of sand. Work would reestablish a dune platform along the length of the shoreline and construct a marsh platform on the landward side of the dune. The conceptual design for the placement of sand and back-barrier marsh sediment mimics the pre-Hurricane Katrina island coverage and expected island evolution pattern.

Action Area

North Breton Island action area includes the existing island and surrounding estuarine water in the north central Gulf of Mexico off the Louisiana coastline. A 2010 USGS description on the island (Figure 1) described the island as 109 acres of intertidal zone, 88 acres of mud flat, 7 acres of salt scrub, 4 acres of salt march, 2 acres of *Spartina* salt marsh and 1 acre of bare sand. Based on these acreages, most of the remnant island is wash over and tidal mud flats providing foraging habitat for birds, but little shoreline or loafing areas (one acre estimated). The action area of the project will extend beyond this acreage to the borrow area (Figures 2-4), and include the removal and conveyance of sediments via pipeline from the borrow area to the island and any sedimentation controls necessary at North Breton Island and area noise disturbance around the borrow area and the island.

The total area of construction footprint includes all access routes and staging areas. Dredged material would be transported to the island via a hydraulic dredge pipeline. The entirety of the borrow area from which material would be dredged and pipeline to be included in the action area encompasses approximately 35 square miles. This area is in addition to approximately ten square miles of island area to be considered. The total action area is considered to be 45 square miles, and consists predominantly of open waters and the underlying sediment, followed by intertidal zone and mud flats.

Project Description

Currently, North Breton Island consists of approximately 109 acres of intertidal zone, 88 acres of mud flat, 7 acres of salt scrub, 4 acres of salt march, 2 acres of *Spartina* salt marsh and 1 acre of bare sand. As conceptually designed, the project will provide for placement of sand and back barrier marsh sediment mimicking the Breton Island pre-Hurricane Katrina island coverage and expected island evolution pattern (Figure 5). Restoration is intended to produce approximately 16,000 linear feet (76.2 acres) of beach, 138.7 acres of dune, and 137.3 acres of back barrier marsh habitat for a total of 352 additional acres of barrier island created through project implementation. Other design features include:

- a total island width of 1,100 feet, bounded by sloped foreshore and back barrier marsh platforms (optimum slope to be determined);
- an elevated dune platform of + 8-10 feet above sea level (optimum elevation to be determined) by 400 feet-wide at the base and 100 feet-wide at the top;
- Gulf-side beach 3 feet above sea level by 200 feet-wide;
- a landward back barrier marsh platform approximately 3 feet above sea level and 500 feet wide;
- sand fencing to trap and retain deposited sediments and build dune habitats; and
- vegetative plantings of dune and back barrier marsh.

To achieve the above conceptual design specifications, approximately 3.7 million cubic yards of sand, silt and clay material will be dredged from one or more sites within an offshore shoals borrow area[1] (Figures 2-4) and placed on the existing submerged island platform to create the desired island configuration. Dredging will be accomplished using a 30-inch diameter hydraulic dredge with a cutterhead. Dredged material will be transported via temporary pipeline from the borrow area to Breton Island and pumped directly to placement locations at the restoration site (i.e., single handling) through submerged piping. Dredged material retention dikes will be constructed on the island and in shallow

[1] Location and design of borrow sites within the borrow area would be developed during project development following acquisition of funding. However, conclusions following preliminary geotechnical and infrastructure review indicate that they would most likely be located within the existing borrow area that are used routinely for sediment sources for other projects.

water to contain the dredged material for marsh restoration then leveled to match appropriate topography after construction. Dozers will shape the sand for the dune and beach portions of the project. The total area of construction footprint includes all access routes and staging areas.

Project engineering and design has not yet proceeded to the point of producing a detailed construction schedule. However, construction could take from 6 months to a year or more given potential logistics indicated by the conceptual design. Construction windows will take into consideration potential effects to fish and wildlife resources and will be adjusted to the maximum extent practicable in consultation with both the U.S. Fish and Wildlife Service (Service) and National Marine Fisheries Service (NMFS). To this end, monitoring of fish and wildlife resources will be incorporated into the plan to include baseline (prior to construction), construction (to direct activities around resources), and post-construction (for a period after construction to evaluate physical and biological responses to the island restoration).

Species Accounts, Status of the Species in the Action Area and Potential Effects of the Action

Bald eagles

Though no longer protected by the ESA, the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) of 1940 (BGEPA), prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. BGEPA provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb". The guidelines (USFWS 2007) on the BGEPA define "disturb" as: to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment. We have reviewed the project for potential impacts to bald eagles. Bald eagle nesting is not known to occur on Breton Island. All other habitats that could potentially support nesting are greater than 5 miles away. Therefore, no take of bald eagles as defined in BGEPA is expected from the proposed project.

Migratory Birds

The Migratory Bird Treaty Act (16 U.S.C. 701 *et seq.*) of 1918 (MBTA) implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under MBTA, unless permitted by regulations, it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg or product, manufactured or not. Service regulations broadly define "take" under MBTA to mean "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." Unlike the ESA, the definition of "take" in the MBTA does not include "harm" (or "harass") and the MBTA does not address habitat modification and destruction. There is no "incidental take" for migratory birds as with the ESA. Therefore, incidental take cannot be permitted and actions must be implemented such that take does not occur.

There are more than 400 species of migratory birds and hundreds of thousands of individuals reside

along the Gulf Coast during the winter to forage and rest while others are present during the summer to breed. Colonial nesting wading birds (including, but not limited to herons, egrets, and ibis) and seabirds/waterbirds (including, but not limited to, terns, gulls, black skimmers, and brown pelicans) are known to nest in the project area. Care will be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbances will be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project will occur during daylight hours only. Nesting birds will be avoided: through restoring areas remote from the nesting areas during breeding season and/or conducting sand placement in breeding habitats outside of the nesting activity period that extends from February 15 through September 15. Providing species specific recommendations are unnecessary as nesting birds will be avoided following the guidance below. Because nesting birds will be avoided, no take under the MBTA is anticipated.

Migratory Bird Avoidance Measures:

a. Nesting birds will be avoided.
    i. Construction activities will be conducted in accordance with any recommendations provided by the USFWS to protect solitary nesting shorebirds;
    ii. rookeries containing brown pelicans shall have a 2,000 foot buffer;
    iii. rookeries containing wading birds (e.g., herons, egrets, ibis) shall have a 1,000 foot buffer; and,
    iv. rookeries containing shorebirds (e.g., gulls, terns, skimmers) shall have a 650 foot buffer.
    v. When rookeries are mixed (e.g. gulls and pelicans), buffers for the most sensitive species shall be observed.
b. All construction personnel will be notified of the potential presence of nesting shorebirds and seabirds within the project area.
c. All construction personnel will be instructed and trained in the protection of shorebirds and seabirds.
d. Construction personnel will be notified of the criminal and civil penalties associated with harassing, injuring, or killing shorebirds and seabirds.
e. Construction noise will be kept to the minimum feasible.
f. All construction personnel will be notified that if equipment is left onsite overnight, they should walk around the equipment and look for signs of birds before moving the equipment, contacting a qualified biologist if signs of bird presence are detected.

Marine Mammals

The Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1461 *et seq.*) (MMPA), establishes, as national policy, maintenance of the health and stability of marine ecosystems, and whenever consistent with this primary objective, obtaining and maintaining optimum sustainable populations of marine mammals. It also establishes a moratorium on the taking of marine mammals, which includes harassing, hunting, capturing, killing, or attempting to harass, hunt, capture, or kill any marine mammal. NMFS will provide consultation under the Marine Mammal Protection Act.

Twenty-two different species of marine mammals are known to occur in the Gulf of Mexico, including cetaceans (baleen whales, toothed whales, dolphins) and the West Indian manatee (*Trichechus manatus*).

Cetaceans

Of the 22 species of marine mammals known to occur in the Gulf of Mexico, only three protected

species of dolphins commonly occur in nearshore waters: bottlenose (*Tursiops truncates*), Atlantic spotted (*Stenella frontalis*), and Risso's (*Grampus griseus*). The bottlenose dolphin inhabits the Gulf of Mexico year round and is the most commonly observed dolphin in nearshore waters. The Atlantic spotted dolphins prefer warm-temperate waters over the continental shelf, edge, and upper reaches of the slope and are very active at the surface. The bottlenose dolphin and the Atlantic spotted dolphin are the two most common marine mammals found in the Gulf of Mexico. Both species feed primarily on fish, squid and crustaceans. While *S. frontalis* spends the majority of its life offshore, *T. truncatus* often travel into coastal bays and inlets for feeding and reproduction. Risso's dolphins are typically found around the continental shelf edge and steep upper sections of the slope (>328 feet in depth) (NOAA 2010). Because of the relatively shallow depth of both the project location and dredge site, and the established ranges and depths that the majority of the dolphins occupy, it is not anticipated that these species would be encountered in the project area during construction. Noise and other activity associated with proposed construction may temporarily disturb certain dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise, and may temporarily increase the potential for boat collisions with certain species in the project area during construction. However, the mobility of these species reduces the risk of harm due to construction activity. Based on mobility of this species and the short cycles of activity, effects on dolphin species are not anticipated.

In addition, to protections afforded by the MMPA, five species of whales (sperm (*Physeter macrocephalus*), sei (*Balaenoptera borealis*), fin (*Balaenoptera physalus*), blue (*Balaenoptera musculus*), and humpback (*Megaptera novaeangliae*)) known to occur in the Gulf of Mexico are also protected by the ESA. However, only the sperm whale is considered to commonly occur in the Gulf of Mexico. Whales do not typically occur in the nearshore waters over the continental shelf of the Gulf of Mexico where the project area is located (i.e., within the NOAA-defined nearshore estuarine waters to the continental shelf edge at depths of 0-656 feet). For example, the sperm whale is predominantly found in deep ocean waters, generally deeper than 3,280 feet, on the outer continental shelf. Due to the relatively shallow depth in the project area, whales are not likely to be present.

West Indian manatee

The West Indian manatee is protected under the MMPA as well as the ESA. The manatee is a rare visitor to coastal Louisiana, almost always occurring in coastal bays and estuaries (USFWS 2013b). Manatees occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months. They have also been reported in the Amite, Blind, Tchefuncte, and Tickfaw rivers, and in canals within the adjacent coastal marshes of Louisiana. Manatees are not expected to be encountered in the project area, which is 16 miles offshore to the northeast of Venice, LA. Although we do not expect manatees will be found in the project area due to lack of water clarity and sea grasses or other forage, they could possibly be resting or migrating in the area. If present, vessel operation and placement of materials in water could startle or strike a manatee. Strikes generally result in injury or mortality. We will include specifications to avoid potential impacts to this species if an individual were present; including implementation of the Standard Manatee Conditions for In-Water Work (FWS 2011a). A trained on-site monitor will be present during installation of the dredge pipeline, dredging, and materials placement (herein referred to as construction). The on-site monitor will ensure no listed species are entrapped during retention dike construction. If marine mammals are present in the area during construction, work will be halted until the mammal has moved on its own volition from harm's way and it is deemed safe, by the monitor, to continue. The low likelihood of manatee presence and the use of a marine mammal monitor will facilitate avoidance of startling or striking a manatee.

Therefore, we have determined that manatees are not likely to be adversely affected by the proposed action. No critical habitat for the manatee is designated within the action area; therefore, none will be adversely modified or destroyed by the proposed project. The conservation measures described above will avoid take of the manatee under the MMPA as well.

Sea turtles
The Service and NMFS share Federal jurisdiction for sea turtles under the ESA. The Service has responsibility for sea turtles on the nesting beaches. NMFS has jurisdiction for sea turtles in the marine environment.

Of all the sea turtle species present in the Gulf, loggerheads (Northwest Atlantic Distinct Population Segment) (*Caretta caretta*) are one of the most commonly reported sea turtles in Louisiana. However, less than 10 loggerhead nests are found in Louisiana on an annual basis (78 FR 18000). Loggerhead sea turtles are known to nest on the Chandeleur Islands, but not on North Breton Island (Breton NWR Manager, Neil Lalonde, pers. com). Loggerheads occasionally enter estuarine bays.

Green sea turtles (*Chelonia mydas*) are more tropical in their distribution, and are rarely seen in Louisiana coastal waters. Nesting within the project area is highly unlikely, as green sea turtles prefer to nest on high-energy beaches with deep sand and little organic content.

Kemp's ridley sea turtles (*Lepidochelys kempii*) occur mainly in bays and coastal waters of the Atlantic Ocean and Gulf of Mexico. Nesting occurs on the northeastern coast of Mexico and occasionally on Texas Gulf Coast beaches. Along the Louisiana coast, Kemp's ridley sea turtles are generally found foraging in shallow nearshore and inshore areas, and especially in salt marsh habitats, from May through October. Kemp's ridley sea turtle nesting habitat is extremely unlikely to occur near the project site, and nesting has not been known to occur in the area.

The hawksbill (*Eretmochelys imbricata*) is a small sea turtle, generally spending most of its life in tropical waters such as the warmer portions of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Nesting may occur on almost any undisturbed deep-sand beach in the tropics—in North America, the Caribbean coast of Mexico is a major nesting area. In the continental United States, recorded nesting sites are almost exclusively found in Florida where nesting is sporadic at best.

Leatherback sea turtles (*Dermochelys coriacea*) are mainly pelagic, inhabiting the open ocean and seldom entering coastal waters except for nesting purposes. Nesting in the United States is mainly confined to the Florida coast, and no nesting has been reported from Louisiana.

No sea turtle nesting currently takes place on North Breton Island likely due to unsuitable nesting habitat (most of the non-marsh, beach habitats are subject to regular washover and inundation. Turtle nests laid in areas that are regularly inundated are unlikely to survive. Within the terrestrial environment, we have concluded the proposed project will not adversely affect any listed species of sea turtles, but it may provide for future conditions allowing for successful nesting. Neither designated nor proposed terrestrial critical habitat for any species of sea turtle is present within the action area; therefore, none will be adversely modified or destroyed.

In general, disposal of dredged material as part of the proposed action would occur in shallow open waters where sea turtles are not expected to occur. However, sediments collected with a suction dredge will be conveyed to the island via a pipeline which may represent a suction hazard or physical barrier to swimming turtles. If present, sea turtles will be easily avoidable during the deposition of dredged

material in these areas. A trained on-site monitor will be present during construction and will ensure no listed species are entrapped during retention dike construction. If sea turtles are present in the area during implementation, work will be halted until the turtle has moved on its own volition from harm's way and it is deemed safe, by the monitor, to continue. Furthermore, NMFS has previously determined that non-hopper-type dredging activities, including hydraulic and mechanical-type dredges (including cutterhead and clamshell dredges), are not likely to adversely affect sea turtles, primarily because these dredges are noisy and slow moving, enabling the faster moving sea turtles to detect and avoid them, creating an insignificant or discountable effect. For these reasons, we have determined that the project as proposed will not adversely affect sea turtles in the marine environments. Neither designated nor proposed marine critical habitat for any species of sea turtle is present within the action area; therefore, none will be adversely modified or destroyed.

Gulf sturgeon

The Gulf sturgeon's status and protection is a result of collaboration between the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Due to its anadromous nature and migration patterns, the sturgeon spends time in freshwater, estuarine, and marine habitats. NMFS is responsible for all consultations regarding Gulf sturgeon and critical habitat in marine units. The USFWS is responsible for all consultations regarding Gulf Sturgeon and critical habitat in riverine units. Responsibility for estuarine units is divided based upon the action agency involved. The USFWS consults with the Department of Transportation, Environmental Protection Agency, U.S. Coast Guard, and Federal Emergency Management Agency. NMFS consults with the Department of Defense, U.S. Army Corps of Engineers, Bureau of Ocean Energy Management (formerly Minerals Management Service) and any other Federal agencies. Any Federal projects that extend into the jurisdiction of both the Services will be consulted on by the FWS with internal coordination with NMFS. This consultation reviews impacts to Gulf sturgeon from activities solely within the marine environment. Therefore, impacts to Gulf sturgeon and Gulf sturgeon critical habitat will be analyzed by NMFS in coordination with the USFWS.

The Gulf sturgeon is an anadromous fish inhabiting coastal rivers from Louisiana to Florida during the warmer months and overwintering in estuaries, bays, and the Gulf of Mexico. Historically, Gulf sturgeon occurred from the Mississippi River east to Tampa Bay. Its present range extends from Lake Pontchartrain and the Pearl River system in Louisiana and Mississippi east to the Suwannee River in Florida. The only documented catches of Gulf sturgeon in the Mississippi River have reportedly taken place near its mouth; however, these are considered incidental occurrences since no resident (i.e., reproducing) population for the Mississippi River is believed to exist. Gulf sturgeon from the Pearl and Pascagoula Rivers have been documented to winter in Mississippi sound and around Gulf Islands National Seashore in Mississippi; however, this species has not been observed to winter around the Chandeleur Islands (Ross et al. 2009). During the summer period (approximately April through October), Gulf sturgeon will be within riverine ecosystems and will not be present within the action area. Based upon known wintering migration patterns (Ross et al. 2009), it is extremely unlikely that Gulf sturgeon will be present within the action area during the wintering period (approximately November to March) as well. On-site monitors will ensure no listed species are entrapped during retention dike construction. If present, Gulf sturgeon could also be affected by dredging. However, we would expect sturgeon to move away from the dredge primarily because the dredge is noisy and slow moving, enabling wildlife to detect and avoid the equipment. Because Gulf sturgeon are extremely unlikely to be present, and if present can either be avoided (i.e., during dike construction) or are likely to move on their own, we have determined that the project as proposed will not adversely affect Gulf sturgeon. Critical habitat for the Gulf sturgeon is not designated within the action area; therefore, none will be adversely modified or destroyed by the proposed project.

Piping plover

On January 10, 1986, the piping plover was listed as endangered in the Great Lakes watershed and threatened elsewhere within its range, including migratory routes outside of the Great Lakes watershed and wintering grounds (50 FR 50726).

The piping plover is a small, sand-colored, robin-sized shorebird. Three separate breeding populations have been identified, each with its own recovery criteria: the northern Great Plains (threatened), the Great Lakes (endangered), and the Atlantic Coast (threatened) (USFWS 1988, 1996, 2003). Piping plovers migrate to the Gulf of Mexico from each of the three breeding populations to winter (i.e., forage, loaf, other non-breeding activities), spending up to 10 months of their life cycle on their migration and winter grounds, generally July 15 through as late as May 15. Some individuals may remain in the Gulf during one or more summer seasons[2] (i.e. vs. returning to breeding areas). The source breeding population of a given wintering individual cannot be determined in the field unless it has been banded or otherwise marked. However, research has demonstrated that the winter ranges of the breeding populations overlap; with the majority of individuals wintering in the project area coming from the northern Great Plains breeding population (Gratto-Trevor et al. 2012).

Wintering is a particularly critical time in the species' life cycle due to the energetics involved with migration and preparing for the next breeding season. Behavioral observations of piping plovers on the wintering grounds suggest that they spend the majority of their time foraging (Nicholls and Baldassarre 1990, Drake 1999a, 1999b). Feeding activities may occur during all hours of the day and night (Staine and Burger 1994, Zonick 1997), and at all stages in the tidal cycle (Goldin 1993, Hoopes 1993). Wintering plovers primarily feed on invertebrates such as polychaete marine worms, various crustaceans, fly larvae, beetles, and occasionally bivalve mollusks (Bent 1929, Nicholls 1989, Zonick and Ryan 1996). They peck these invertebrates on top of the soil or just beneath the surface.

Wintering plovers are dependent on a mosaic of habitat patches and commonly make local movements (i.e., cross-inlet movements as well as occasional movements of up to 18 km (11 miles), Maddock et al. 2009) among these patches depending on local weather and tidal conditions for foraging. However, the average distance traveled has been estimated to be only 3.3 km (2.1 miles) (Drake 1999b; Drake et al. 2001). These habitat mosaics used for foraging include moist substrate features such as intertidal portions of ocean beaches, washover areas, mudflats, sand flats, algal flats, shoals, wrack lines, sparse vegetation, shorelines of coastal ponds, lagoons, ephemeral pools, and areas adjacent to salt marshes (USFWS 2001). Studies from the coastal breeding range have shown that the relative importance of various feeding habitat types may vary by site. Prey items and biomass are more abundant and available to plovers on sound islands and sound beaches than the ocean beach. Intertidal mudflats and/or shallow subtidal grass flats appear to have greater value as foraging habitat than the unvegetated intertidal areas of a flood shoal (Gibbs 1986, Coutu et al. 1990, McConnaughey et al. 1990, Loegering 1992, Goldin 1993, Hoopes 1993, Cohen et al. 2006, Ecological Associates, Inc. 2009). Therefore, habitats on the sound sides of inlets and islands, mudflats, and shallow subtidal grass flats are typically considered optimal habitats for plovers, though individuals may be using all habitat types.

Several studies identified wrack as the primary component of roosting habitat for nonbreeding piping plovers. Both old and fresh wrack are used by piping plovers as roosting habitat. Other habitats valuable for roosting include intertidal habitats, backshore (defined as zone of dry sand, shell, cobble,

[2] These individuals are assumed to be juveniles; no nesting occurs along the Gulf Coast.

and beach debris from mean high water line up to the toe of the dune), washover areas and ephemeral pools (Lott et al. 2009, Maddock et al. 2009, Smith 2007, Drake 1999).

The 2006 Piping Plover Breeding Census, the last comprehensive survey throughout the breeding grounds, documented 3,497 breeding pairs with a total of 8,065 birds throughout Canada and U.S (Elliott-Smith et al. 2009). While, approximately 30 percent of the piping plover population winters in coastal habitats from Louisiana through the Gulf Coast of Florida (Table 2), this portion of the population is spread over several hundred miles such that at any given location within Louisiana, including the project site, relatively few piping plovers are present at a time. Other barrier islands and locations where human presence is limited and habitat features are optimal may support larger concentrations of piping plovers. Threats to piping plovers and their habitats used during winter and migration include habitat loss and fragmentation, motorized vehicle use, pedestrian recreational use, inlet and shoreline stabilization projects, inlet dredging, artificial structures such as jetties and groins, beach maintenance and nourishment, and pollution.

Disturbance (i.e., human and pet presence that alters bird behavior) disrupts piping plovers as well as other shorebird species. Intense human disturbance (including long-term or repeated disturbance) in shorebird winter habitat can be functionally equivalent to habitat loss if the disturbance prevents birds from using an area for a significant amount of time (Goss-Custard et al. 1996), which can lead to roost abandonment and local population declines (Burton et al. 1996). Burger et al. (2004) found that shorebirds flew away and did not return to forage in response to 58 percent or more human disruptions. However, if nearby suitable habitats are not experiencing the intense human disturbance, these effects may be reduced in that individuals have a nearby area to use during the activity. Disturbance can also cause shorebirds to spend less time roosting or foraging and more time in alert postures or fleeing from the disturbances (Johnson and Baldassarre 1988, Burger 1991, Burger 1994, Elliott and Teas 1996, Lafferty 2001a, 2001b, Thomas et al. 2002), which can limit the local abundance of piping plovers (Zonick and Ryan 1996, Zonick 2000). Shorebirds that are repeatedly flushed in response to

Table 2. Results of the 1991, 1996, 2001, and 2006 International Piping Plover Winter Census (Haig et al. 2005, Elliott-Smith et al. 2009).

Location	**1991**	**1996**	**2001**	**2006**	**Average**
Florida (Gulf Coast including peninsular Florida but not the Atlantic coast)	481	344	305	321	363
Alabama	12	31	30	29	26
Mississippi	59	27	18	78	46
Louisiana	750	398	511	226	471
Gulf Coast (excluding Texas) Total	1,302	800	864	654	906
Range Wide TOTAL (excluding Texas)	3,451	2,515	2,389	3,884	3,060

disturbance expend energy on costly short flights (Nudds and Bryant 2000) and may not feed enough to support migration and/or subsequent breeding efforts (Puttick 1979, Lafferty 2001).

Elliott and Teas (1996) found a significant difference in actions between piping plovers encountering pedestrians and those not encountering pedestrians. Piping plovers encountering pedestrians spend proportionately more time in non-foraging behavior. This study suggests that interactions with pedestrians on beaches cause birds to shift their activities from calorie acquisition to calorie expenditure. In wintering and migration sites, human disturbance continues to decrease the amount of undisturbed habitat and appears to limit local piping plover abundance (Zonick and Ryan 1996).

Off-road vehicles (ORV) and equipment can degrade piping plover habitat (Wheeler 1979) or disrupt the birds' normal behavior patterns (Zonick 2000). Studies have noted that plover abundance is reduced in areas of ORV use and plovers may avoid more suitable habitat and use less suitable habitats due to ORV use (Zonick 2000, Cohen et al. 2008a). The 1996 Atlantic Coast Recovery Plan indicates tire ruts also crush wrack into the sand, making it unavailable as cover or as foraging substrate (Hoopes 1993, Goldin 1993). Godfrey et al. (1978, 1980 as cited *in* Lamont et al. 1997) also postulated that vehicular traffic along the beach may compact the substrate and kill marine invertebrates that are food for the piping plover. An ORV driving along a beach without stopping may have a relatively insignificant effect. However, when they are used with great frequency or for long periods (such as when ORVs are used for recreation as opposed to transportation), they probably cause shorebirds to leave and not return (Niles et al. 2007). The magnitude of the threat from ORVs is particularly significant, because vehicles extend impacts to remote stretches of beach where human disturbance would otherwise be very slight.

Piping plover have been observed using terrestrial habitats at the project site during their wintering period (ebird.org - August 22, 2013, Catlin *et al.* 2011). The piping plover has been reported on North Breton Island and within the Chandeleur Islands. Although piping plovers could occur on the islands during winter migration, they are not permanent residents of North Breton Island. Project implementation timeframes for the restoration of North Breton Island would likely coincide with piping plover wintering season (August through early May); therefore, it is possible that individuals may be present while the project is underway. However, because only one acre of loafing area supports the nearly 200 acres of tidal and mudflat feeding area, few piping plover are expected to be present.

During implementation, the project will create noise and visual disturbance that may harass the wintering piping plover foraging in nearby mudflats. Piping plovers migrate great distances during the fall and spring between their wintering and breeding grounds. However, as stated earlier, the average wintering movement is a distance of approximately 2 miles. Because of the distance of the project from nearby islands or the mainland shore (5 to 10 miles), we believe piping plovers may remain on the island during construction. Short term increases in noise and human presence could startle individuals, though normal activity would be expected to resume within a few minutes in the general vicinity. However, repeated startling events can result in reduced foraging and resting efficiencies, thereby lowering fitness. Therefore, we would consider the individuals remaining in the area subject to harassment via dredge and material placement noise or other human/equipment disturbance.

Additional, unavoidable short-term adverse impacts to piping plovers remaining on North Breton Island during construction would occur in the form of reduced prey and foraging opportunities resulting from the placement of sediments onto existing beach, tidal areas and mud flat habitats during construction of the proposed restoration measures. However, prey species smothered by dune and beach nourishment activities are expected to recolonize the project area within 6 months to 2 years once construction activities cease (Rakocinski et al. 1996, Schlacher et al. 2012), especially given the use of appropriate sandy materials from near the island's littoral zone for renourishment. Impacts to existing habitat will be temporary though up to two years, and will provide for the long-term maintenance and/or enhancement of habitat within the project area.

Piping plovers could also be temporarily displaced to other islands or the mainland (approximately 5 to 10 miles away) as this distance is within known distances for occasional winter in movements for feeding and loafing (Maddock et al. 2009). We would expect temporary displacement if disturbance becomes too great or foraging on North Breton Island becomes limiting during or after construction. However, we expect that habitat and prey abundance on the other islands and mainland to be sufficient to

support displaced birds. Therefore, we expect any adverse effects from temporary displacement and energy expenditures to locate alternative habitats to be minimal and of limited duration, though fitness could be lowered.

Beneficial Effects
We expect that the proposed project would increase the longevity of piping plover foraging and resting habitats on the island given that the project would increase the longevity of the island itself.

We propose the follow conservation measures to minimize effects to piping plover use during project implementation:

a) All construction personnel will be notified of the potential presence of piping plover within the project area.
b) All construction personnel will be instructed and trained in the protection of piping plover.
c) Construction activities will be conducted in accordance with any recommendations provided by the USFWS to protect piping plover.
d) Construction personnel will be notified of the criminal and civil penalties associated with harassing, injuring, or killing piping plover.
e) Construction noise will be kept to the minimum feasible.
f) All construction personnel will be notified that if equipment is left onsite overnight, they should walk around the equipment and look for signs of birds before moving the equipment, contacting a qualified biologist if signs of bird presence are detected.
g) If piping plovers are present, work will not occur until the birds have moved from the area by 150 feet.

Available information suggests that up to 27 individuals could be present on North Breton Island at any one time during peak winter months (Catlin *et al.* 2011). Potential adverse impacts to piping plovers would be repetitive startling of individuals remaining during construction activities, temporary loss of forage and prey items after construction, and temporary displacement if construction disturbance is too great or forage becomes limited on North Breton. Additionally, the proposed project will result in changes to shoreline habitats where piping plover could be feeding or resting; therefore, temporary indirect effects may be expected. This will include the temporary loss of mudflat and tidal areas through replacement with barren sand upland and associated shoreline, and the relocation of tidal areas and mudflats to other areas associated with the island. Therefore, we believe any piping plovers present may be harassed such that their normal feeding behaviors are modified and their condition possibly reduced. Reduced condition could reduce reproductive efforts or may prevent individuals from reaching their breeding grounds (due to mortality); though we consider reduced reproductive efforts and changes in migration unlikely since food resources are abundant within 5 to 10 miles.

Therefore, we request take of 27 piping plover through harassment. We do not believe this level of anticipated take would result in jeopardy to the species because:

a) The most recent census indicates there are 3,497 breeding pairs with a total of 8,065 birds throughout Canada and U.S (Elliott-Smith et al. 2009);
b) Though reduced condition is possible, we believe it is unlikely because available foraging habitats nearby. If foraging levels become unsuitable during project implementation, we would expect piping plover to move to nearby locations. Though these locations are a greater distance than typical foraging movements, they are within the distance documented for occasional wintering movements.

c) After implementation of the proposed project, increased habitats and foraging opportunities for piping plover will be available within six months to two years.

Piping Plover Critical Habitat

The final rule designating critical habitat for the wintering population of the piping plover was published in the Federal Register on July 10, 2001. The project involves less than five percent of the over 50 linear miles of Critical Habitat Unit – LA-7, one of 137 areas designated as Critical Habitat along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas for the wintering population of the piping plover. Primary Constituent Elements (PCEs) of piping plover critical habitat include: (1) sand or mud flats (or both) with no or sparse emergent vegetation; (2) adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide; (3) beach/dune ecosystem including surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas. We expect temporary impacts to critical habitat because of the intermittent and temporary loss of PCEs in the action area portions of critical. Some of the nearly 6,800 feet of tidal and mudflat feeding area will be affected at any given time while the dredge material is placed on these areas to restore the island. The proposed project will result in changes to shoreline habitats where piping plover could be feeding or resting; therefore, indirect effects may also be expected. We do not believe this level of impact rises to the level of destruction or adverse modification of critical habitat because:

a) Less than five percent of the critical habitat unit will be within the action area and subject to temporary impacts including shoreline and mudflat changes and PCE's will return to the area over the short-term;
b) The project will create more area than currently available on North Breton Island that contains all of the PCEs;
c) All remaining critical habitat within the unit will continue to support existing PCEs; and
d) Nearby critical habitats may gain area with PCE's over time as the proposed project would introduce sediment (via natural coastal processes) into the system that would be re-worked and redistributed through future storm events, thus maintaining and/or enhancing piping plover habitat in the longer term over the greater area.

Red knot

There are six subspecies of red knot (*Calidris canutus*); however, only one subspecies (*C. c. rufa*) is currently proposed for listing and may be affected by the proposed project[3]. All of the information below and any reference to the red knot is in reference to *C.c. rufa*, unless otherwise stated.

All of the following information regarding red knot is summarized from the Species Assessment and Listing Priority Assignment Form (USFWS 2011). The red knot is a medium-sized shorebird about 9 to 11 inches (in) (23 to 28 centimeters) in length with a proportionately small head, small eyes, short neck, and short legs. It has a black bill which 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 (feathers). Because the action area is not a breeding area, the red knot would be exhibiting non-breeding plumage[4] which is dusky gray above and whitish below. Juveniles resemble non-breeding adults, but the feathers of the scapulars (shoulders) and wing coverts (small feathers covering base of larger feathers) are edged

[3] While consultation is required when the proposed action may affect a listed species, a conference is required only when the proposed action is likely to jeopardize the continued existence of a proposed species. However, Federal action agencies may request (and are encouraged to do so) a conference on any proposed action that may affect a proposed or candidate species. As a matter of policy, the Service conferences on any action it undertakes which may affect a candidate or proposed species.

[4] For information regarding breeding plumage descriptions, see the Species Assessment and Listing Priority Assignment Form (USFWS 2011b).

with white and have narrow, dark subterminal bands, giving the feather a scalloped appearance. Adult body mass varies seasonally, with lowest mean mass during early winter (125 grams (g)) and highest mean values during spring (205 g) and fall (172 g) migration.

The range of the red knot during migration extends along the Atlantic and Gulf of Mexico coasts of North, Central, and South America, from the Canadian arctic to the southernmost extent of South America. Breeding occurs within the central Canadian high arctic. Southward migration from arctic breeding areas begins in mid-July, stopping at various locations along the Atlantic slope to feed and rest. Red knots would generally be expected to "stopover" within the action area throughout September and October, then continue their fall migration to their wintering grounds. However, red knots were identified as present on "Breton Islands" in June of 1988 (see ebird.com).

Wintering areas for the red knot include the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego that spans both countries), the north coast of Brazil (particularly in the State of Maranhao), the Northwest Gulf of Mexico from the Mexican State of Tamaulipas through Texas (particularly at Laguna Madre) to Louisiana, and the Southeast United States from Florida (particularly the central Gulf coast) to North Carolina (78 FR 60024 and references within). Smaller numbers of red knots winter in the Caribbean, and along the central Gulf coast (Alabama, Mississippi), the mid-Atlantic, and the Northeast United States.

In southwestern Florida, birds start arriving in early August with highest use occurring from early October through March. Few red knots are seen in Florida between mid-May and late July. For red knots wintering in South America, the birds are present in the South America wintering areas from November through February. Range and distribution during the fall and spring migration and winter in Mexico and Central America is not well known. It is also unknown if segregation of juvenile and adult red knots occurs on the wintering grounds. However, recent studies indicate there is a low proportion of juvenile birds on known wintering grounds and peak use is different than adult use suggesting that juveniles may winter separately from adults or may occur in other habitats not used by adults.

During the spring migration, red knots begin moving northward along the Atlantic coast of South America in late February or March. The northward migration is very rapid. Red knots complete their pass along the Atlantic coast of the United States from the middle to the end of May. Known spring stopover areas are along coastal Virginia and Delaware Bay in Delaware and New Jersey, where the birds are present in mid-to late May in high abundance (i.e., approximately 90 percent of the entire population may be present in the Delaware Bay in a single day). These dates suggest that red knots could potentially use the AOR between March and May for a spring migration stopover area. After a few weeks during the spring stopover on the mid-Atlantic Coast, the red knot may make additional stops in southern Canada and then return to their breeding grounds in the Canadian Artic.

Assessing the population size of a wide-ranging migratory species such as the red knot is difficult as counts on the expansive Arctic breeding areas are not feasible. More recently, long-term survey data from two key areas (Tierra del Fuego wintering area and Delaware Bay spring stopover site) both show a roughly 75 percent decline in red knot numbers since the 1980s (78 FR 60024 and references within).

The number of individuals that have a fall or spring stopover or winter along the Gulf coast have been documented from various observations (AKN 2013). The southeastern wintering population (Florida, Georgia, South Carolina, North Carolina, and Virginia) was reported at approximately 7,500 individuals and 4,500 individuals in 2005 and 2006, respectively. Five surveys along the west coast of Florida between 2005 and 2010 indicated an approximate average of 1,432 individuals. Records compiled prior

to 1999 indicated the Louisiana coastline supported approximately 2,500 red knots. Red knots have been observed along other Gulf coast States at various locations, though generally in lower numbers (Alabama = 70, Mississippi = 35) across nearly all months of the year (AKN 2013). Red knots in southwest and northwest Florida have been observed utilizing more than one site within a region or sub-region. In the northwest birds during spring and winter moved among the sites at distances of 5 km, 23 km, and 27 km (Smith 2010) and birds in the in southwest during the winter moved among sites varying between 1 km and 20 kilometers (Schwarzer 2011).

Habitats for the red knot vary across their vast migratory range and are described in detail in the Species Assessment and Listing Priority Assignment Form (USFWS 2011). In the United States, the red knot is found principally in intertidal marine habitats, especially near coastal inlets, estuaries, and bays, or along restinga formations[5]. Wintering and migration habitats within the United States are used for resting and foraging. In the Southeastern United States, red knots commonly forage on bivalves, gastropods, and crustaceans along sandy beaches, tidal mudflats, salt marshes, and peat banks. In Florida, the birds also use mangrove and brackish lagoons. Along the Texas coast, red knots forage on beaches, oyster reefs, and exposed bay bottoms and roost on high sand flats, reefs, and other sites protected from high tides. Coquina clams are a frequent and often important food resource for red knots, and are common along Gulf beaches and in some places occur abundantly.

Main threats to the red knot in the United States include: reduced forage base at the Delaware Bay migration stopover; decreased habitat availability from beach erosion, sea level rise, and shoreline stabilization in Delaware Bay; reduction in or elimination of forage due to shoreline stabilization, hardening, dredging, beach replenishment, and beach nourishment in Massachusetts, North Carolina, and Florida; and beach raking which diminishes red knot habitat suitability. These and other threats in Canada and South America are detailed in the Species Assessment and Listing Priority Assignment Form (USFWS 2011b). Unknown threats may occur on the breeding grounds.

As with piping plover, human disturbance and vehicle or equipment use (based on ORV use) can have an adverse effect on foraging and roosting shorebirds. The severity of the impact depends on the degree of disturbance and the availability of other suitable feeding and resting areas. An ORV driving along a beach without stopping may have a relatively insignificant effect. However, when they are used with great frequency or for long periods (such as when ORVs are used for recreation as opposed to transportation), they probably cause shorebirds to leave and not return (Niles et al. 2007).

Disturbance compels birds to pay the energetic cost of flying to a new area; it may reduce the amount of time that the birds are able to feed, and can prevent them from feeding in the most preferred sites. Disturbance, however, may have little impact on birds if suitable alternate foraging areas are nearby in which the birds can feed (Niles et al. 2007). One measure of sensitivity to disturbance is whether the birds return to an area after being disrupted. When shorebirds foraging on beaches are disturbed by people and dogs, the birds usually respond by flying away. Burger et al. (2004) found that shorebirds flew away and did not return to forage in response to 58 percent or more human disruptions. Human disturbance causes disruption of resting and foraging birds and shifting of use from optimal foraging sites to less suitable sites; this could negatively impact the ability of the red knots, if affected, to attain the weight gain needed for migration to the Arctic and successful breeding there. Studies have shown that human disturbance causes a substantial disruption to foraging and resting red knots. When coupled with diminished prey resources and reduced habitat availability, such human disturbance displaces red knots from optimal foraging sites to areas that may be less suitable.

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[5] A Restinga formation is an intertidal shelf typically formed of densely-packed dirt blown by strong, offshore winds.

Red knots have been observed using terrestrial habitats in the general area (ebird.org as of August 22, 2013) and 25 were reported from "Breton Islands" during one 4-hour period in June of 1988. Project implementation timeframes coincide with red knot stopovers periods and will coincide if any red knots are wintering on Breton; therefore, it is possible that individuals may be present during project construction. However, because only one acre of loafing area supports the nearly 200 acres of tidal and mudflat feeding area, few red knot are expected to be present.

During implementation, the project will create noise and visual disturbance that may harass the wintering red knot foraging in nearby mudflats. The proposed project could result in short term increases in noise and human presence which could startle individuals remaining on the island during construction or cause temporary displacement to other nearby habitats. Both responses lead to increased energy expenditures that might not otherwise occur in the absence of the project.

Though red knots migrate great distances during the fall and spring between their wintering and breeding grounds, we do not believe individuals would fly from the island in response to the human disturbance and machinery. The short term increases in noise and human presence could startle individuals, though we would expect normal activity to resume quickly in the general vicinity. Repeated startling events can result in reduced foraging and resting efficiencies, thereby lowering fitness. Therefore, we consider the individuals remaining in the area subject to harassment via dredge and material placement noise or other human/equipment disturbance.

Additional, unavoidable short-term adverse impacts to red knot remaining on the island during construction would occur in the form of reduced prey and foraging opportunities resulting from the placement of sediments onto existing beach, tidal areas and mud flat habitats during construction of the proposed restoration measures. However, prey species smothered by dune and beach nourishment activities are expected to recolonize the project area within 6 months to 2 years once construction activities cease (Rakocinski et al. 1996, Schlacher et al. 2012). Impacts to existing habitat will be temporary though up to two years.

Red knot could be temporarily displaced to other islands or the mainland (approximately 5 to 10 miles away) for feeding and loafing, especially if disturbance becomes too great or foraging on North Breton becomes limiting during or after construction. Temporary displacement can result in lowered fitness due to energy expended searching for a new location with adequate habitat and food resources, or displacement to a lower quality habitat. However, we expect that habitat and prey abundance on the other islands and mainland to be sufficient to support displaced birds. Therefore, we expect any adverse effects from temporary displacement to be minimal, of limited duration, and well within the scope of winter movements.

Other effects from the proposed project to red knot include increasing foraging and resting habitats on the island. We expect the restored island will bolster feeding and loafing habitats for red knot within 6 months to two years.

We propose the follow conservation measures to minimize effects to red knots wintering or stopping over during project implementation:

a) Conservation measures a-g above for piping plover will be implemented for red knot.

Available information suggests that 25 individuals could be present in the area at any one time

(ebird.org). Therefore, we believe any red knots present may be harassed such that their normal feeding behaviors are modified and their condition possibly reduced. In the event red knot are listed we request take of up to 25 red knot through harassment. We do not believe this level of anticipated take would result in jeopardy to the species because:

a) Records compiled prior to 1999 indicated the Louisiana coastline supported approximately 2,500 red knots.
b) Though reduced condition is possible, we believe it is unlikely because available foraging habitats exist nearby. If foraging levels become unsuitable during project implementation, we would expect red knot to move to nearby locations. Though these locations are a greater distance than typical foraging movements, they are within the distance documented for occasional movements.
c) After the proposed project increased habitats and foraging opportunities for red knot will be available within six months to two years.

Conclusion and Determination

We believe that the project, as proposed, would not adversely affect sea turtle species, manatee or Gulf sturgeon or their respective critical habitat. We do anticipate that the proposed project May Affect, and is Likely to Adversely Affect the piping plover and red knot (if listed prior to or during project implementation). Although short-term temporary impacts to piping plover critical habitat are expected, these impacts do not rise to the level of adverse modification or destruction. Therefore, the proposed project will not adversely modify or destroy critical habitat for any species, including piping plover. We request your concurrence with our determinations for sea turtles, West Indian manatee and Gulf sturgeon. We also request to initiate formal consultation and conference for the piping plover, its critical habitat, and red knot, respectively.

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Maps

Figure 1. Map of North Breton Island in 2010 with National Wetlands Inventory classifications.
Figure 2. Map of borrow sand source areas.
Figure 3. Approximate location of the North Breton Island Restoration offshore shoals target borrow area.
Figure 4. Offshore shoals target borrow area with proposed geophysical survey lines (black).
Figure 5. North Breton Island conceptual construction design.

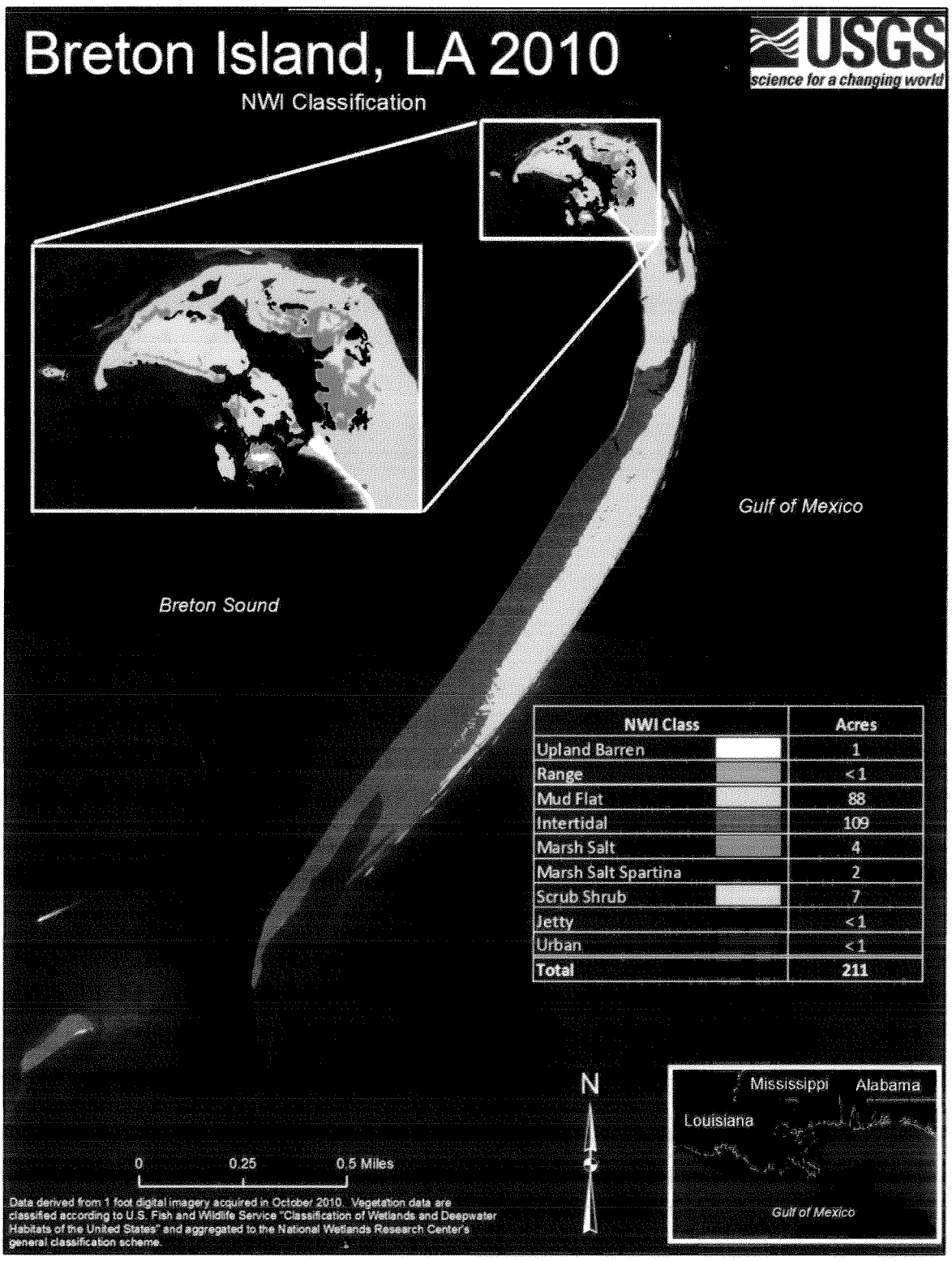

Figure 1. Map of North Breton Island in 2010 with National Wetlands Inventory classifications.

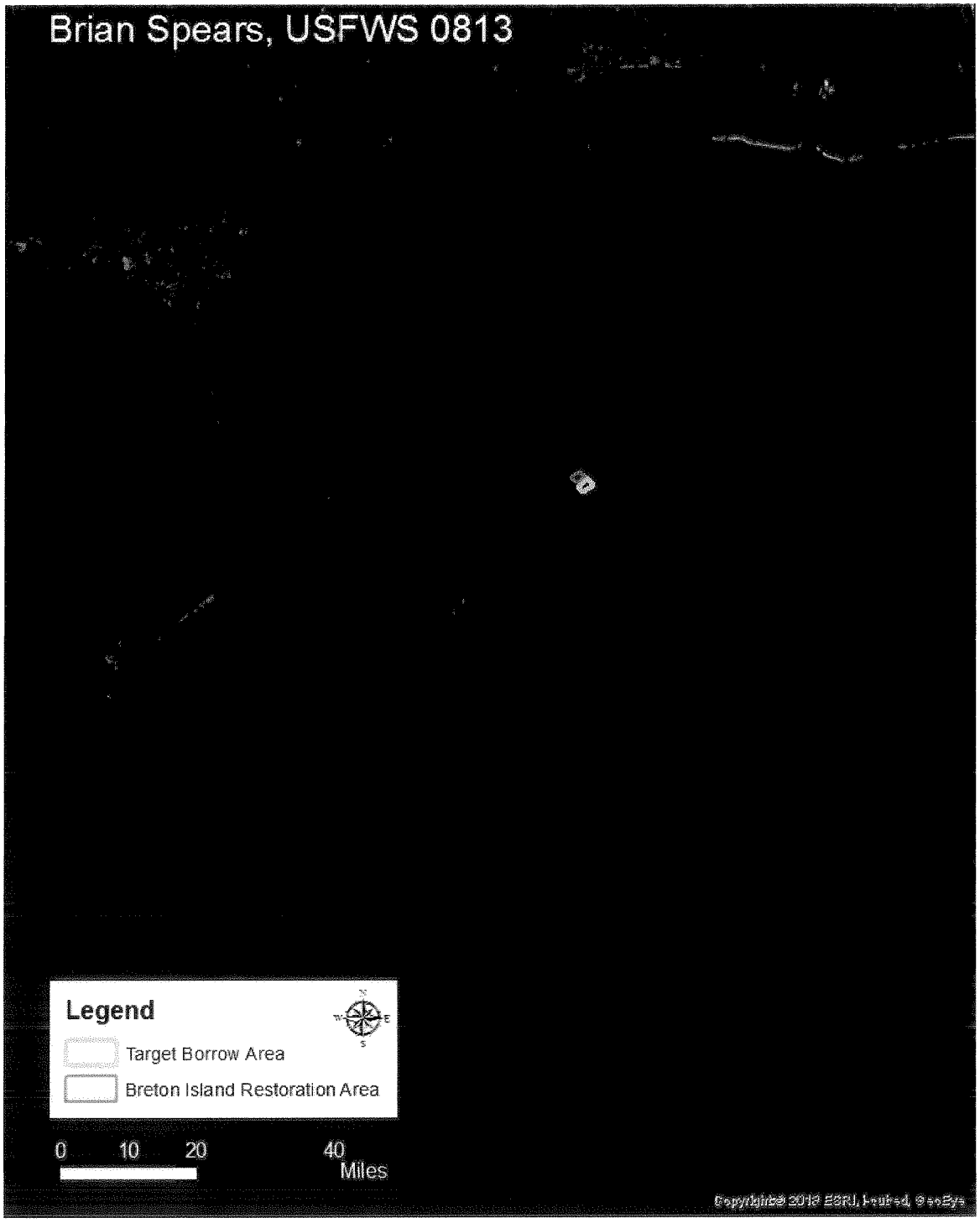

Figure 2. Map of North Breton Island restoration proposal borrow sand source areas.

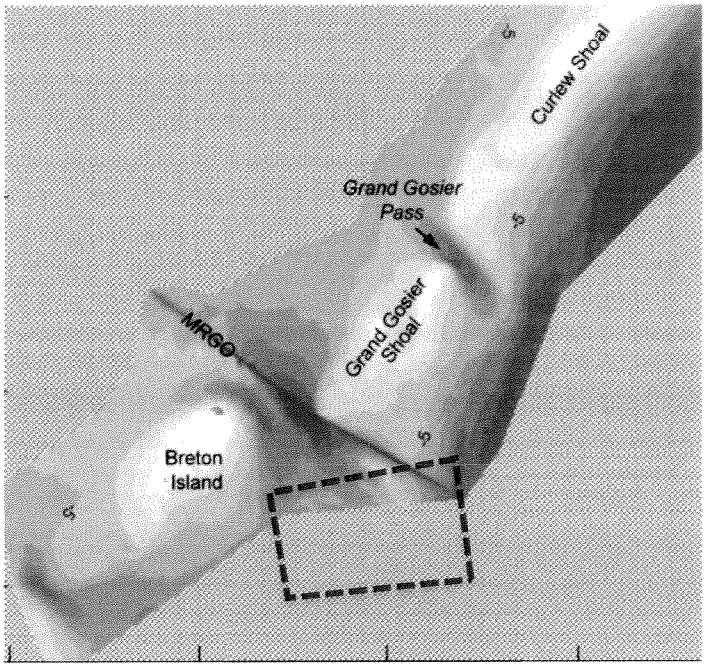

Figure 3. Approximate location of the North Breton Island restoration offshore shoals target borrow area.

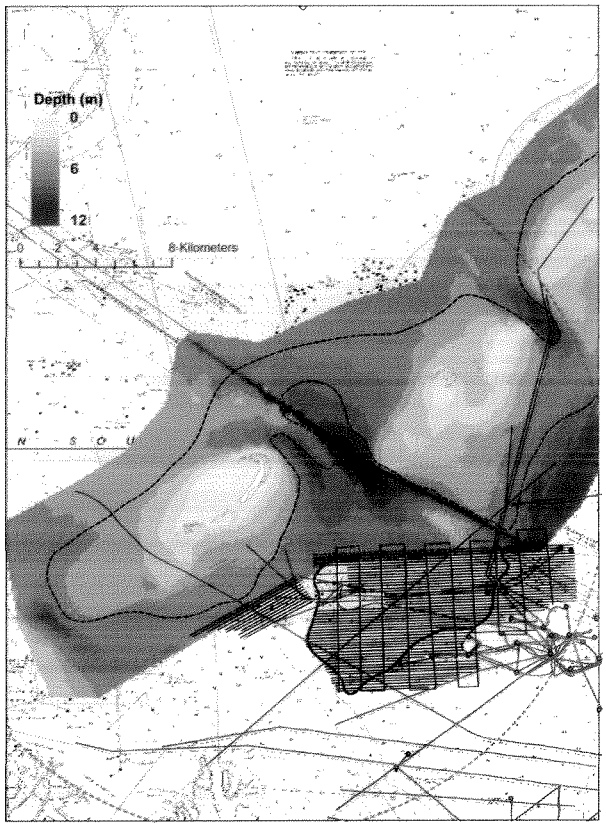

Figure 4. Offshore shoals target borrow area with proposed geophysical survey lines (black). (Pipe line infrastructure designated with pink lines.)

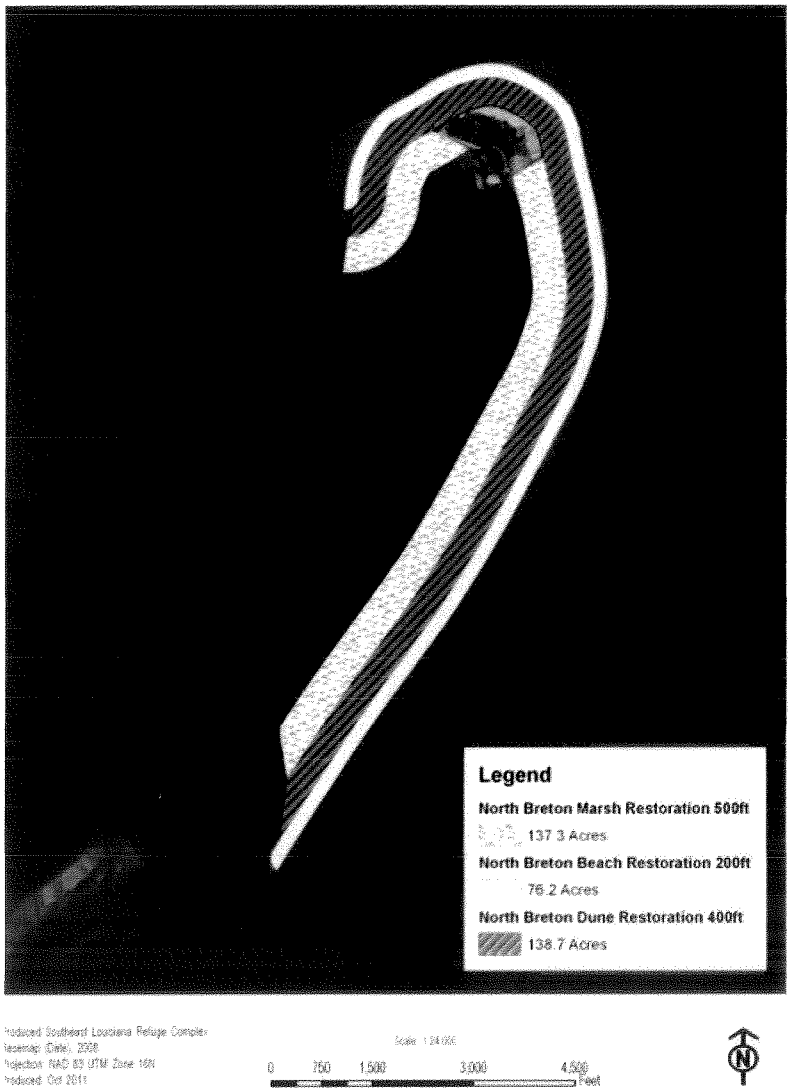

Figure 5. North Breton Island conceptual construction design.

Citations

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