Appendix J

Fish and Wildlife Coordination Act – Coordination Act Report

Brazos Island Harbor, Texas Channel Improvement Project Cameron County, Texas

U.S. Army Corps of Engineers, Galveston District
2000 Fort Point Road
Galveston, Texas 77550

December 2013

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
c/o TAMU-CC, Unit 5837
6300 Ocean Drive
Corpus Christi, Texas 78412-5837

July 25, 2013

Carolyn Murphy
Chief, Environmental Section
U. S. Army Corps of Engineers
Galveston District
P.O. Box 1229
Galveston, Texas 77553

Dear Ms. Murphy:

Enclosed is the U.S. Fish and Wildlife Service's (Service) Fish and Wildlife Coordination Act Report, Brazos Island Harbor Project, Texas July 2013. Both a printed and an electronic version have been provided with this letter.

The Service has been coordinating with the U. S. Army Corps of Engineers (USACE) as well as with the Port of Brownsville (POB) and other state and federal agency representatives on proposals to deepen the Brazos Island Harbor Entrance Channel, Brownsville Ship Channel and Turning Basin since 2007. Although driven, in part, by current federal economic restraints, the Service appreciates the considerable efforts of the USACE to avoid significant impacts to fish and wildlife resources, including federally listed, threatened and endangered species with the tentatively selected plan.

The Service looks forward to working with the USACE and the POB in the future as funding becomes available to proceed with final design and implementation of the BIH Project and, subsequent to project construction, coordination as needed for implementation of maintenance activities over the 50-year project life.

If you have any additional questions, or comments regarding this document, please contact Pat Clements at 361-994-9005 ext 225, or by email at pat_clements@fws.gov.

Sincerely,

for Edith Erfling
Field Supervisor

Enclosure

FISH AND WILDLIFE
COORDINATION ACT REPORT

Brazos Island Harbor Channel Improvement Project
For the 52 X 250 feet Alternative
Cameron County, Texas

Submitted by

Patricia Bacak-Clements

U.S. Fish and Wildlife Service
Texas Coastal Ecological Services Field Office
Corpus Christi Field Office
Corpus Christi, Texas

July 2013

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Under the Fish and Wildlife Coordination Act, the U.S. Fish and Wildlife Service (Service) provides conservation measures that Federal and federally-permitted or licensed water development projects are required to consider. Through a transfer funding agreement with the U.S. Army Corps of Engineers (USACE), the Service has prepared this Coordination Act Report (CAR). The proposed Brazos Island Harbor Project (BIH Project), Cameron County, Texas will deepen the entrance channel and main channel portions of the Brownsville Ship Channel. Impacts of the work are proposed to be significantly avoided by utilizing currently authorized dredge material placement areas (DMPAs). Dredged material from the new work and future maintenance activities would be accommodated within the existing boundaries of the DMPAs by elevation of containment dikes rather than outward expansion of the placement areas. The CAR describes the project area of the BIH Project, the habitats, and trust species that could be affected by the project. Additionally, the CAR describes impacts, negative and/or beneficial, as well as measures which could benefit the project's construction and maintenance work on fish and wildlife resources.

The Service reviewed the USACE's Draft Biological Assessment for federally-Listed Threatened and Endangered Species (USACE 2013a) (Draft BA) for the proposed BIH Project. In the Draft BA, the USACE determined that, for the trust resources which are the responsibility of the Service, with the exception of nesting sea turtles, that the proposed project would have "no effect" on each of these species. The USACE did not make a call on the impact of the project to nesting sea turtles. The USACE was advised that the Service does not provide concurrence on "no effect" calls, so if the Draft BA is not revised, there is no need for a response from us. The Service, however, recommends to the USACE that a record of decision is maintained on file that clearly outlines how and why the USACE made each determination. In the event an impact does occur, the USACE would be responsible for those impacts. Within the section of this CAR on federally listed threatened and endangered species are included some conservation recommendations for several species that, in our opinion, if included in the project plans, would provide better protection for the species. If these conservation recommendations are incorporated into the project plans, and the USACE's call, is changed to "may affect not likely to adversely affect", the Service could provide a concurrence letter, offering the USACE better protection under the Endangered Species Act.

The CAR includes the Service's review of each of the federally listed threatened and endangered species, and candidates for listing, that occur in Cameron County. The Service has provided comments regarding the potential for impacts related to the construction and maintenance of the BIH Project, as well as recommendations regarding maintenance over the project's 50-year life. As presented in the USACE's tentatively selected Plan (USACE 2013b), the BIH Project will be designed to avoid direct impact to federally listed species; however, the Service provides recommendations of additional conservation measures to be incorporated into construction and maintenance plans. Recommendations relative to the USACE's Draft BA are included in a text box following each species description. Conservation recommendations are provided for the ocelot (*Leopardus pardalis*), jaguarundi (*Herpailurus yagouaroundi cacomitli*), West Indian

manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), and northern aplomado falcon (*Falco femoralis septentrionalis*).

Of the many diverse habitat types present in the immediate vicinity of the proposed project, three are of special importance to the Service's trust species and for which we have included conservation measures for project construction, maintenance, and over the life of the project. These special habitats are unvegetated tidal flats, which are also in some of the adjacent areas designated piping plover critical habitat, coastal prairie, and vegetated lomas. Although, as the proposed project plan, construction and maintenance of placement area levees would be done from within the existing placement areas, the Service recommends that the importance of not diverting from this approach be emphasized and reinforced with construction crews using: on-site observers to prevent accidental intrusion into areas outside of the levee, education of contractors regarding the importance of these habitats and the need for their protection, and coordination with the Service in cases, such as erosion or storm damage to the levees, prior to initiation of repairs. Additionally, the Service has provided recommendations to assist the USACE and the POB in their responsibilities under the Migratory Bird Treaty Act. Migratory birds should be considered and addressed during construction and throughout the life of the project.

The Service was advised by the POB in a meeting on July 11, 2013, that several years could elapse before funding is in place to construct the BIH Project. As information regarding federally listed species and their habitat requirements changes over time, the USACE and the POB should coordinate with the Service to review and update information regarding federal trust resources within and adjacent to the project area.

INTRODUCTION

The U.S. Fish and Wildlife Service (Service) is mandated to provide expertise during the planning and development of major federal projects, to ensure fish and wildlife resources are conserved, and that impacts to these resources are avoided or minimized.

Regulatory Background:

The Fish and Wildlife Coordination Act (16 U.S.C. 661-667e; the Act of March 10, 1934; Ch. 55; 48 Stat. 401), requires consultation with the Service and State fish and wildlife agencies where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." Second, The Rivers and Harbors Act of 1938 (33 U.S.C. 540, and other U.S.C. sections; Chapter 535, June 20, 1938; 52 Stat. 802), provides for wildlife conservation to be given "due regard" in planning federally authorized water resource projects.

The Fish and Wildlife Coordination Act provides a basic procedural framework for the orderly consideration of fish and wildlife conservation measures to be incorporated into Federal and Federally-permitted or licensed water development projects. The principle provisions of the Coordination Act include:

1. A statement of Congressional purpose that fish and wildlife conservation shall receive equal consideration with other project features;

2. Mandatory consultation with wildlife agencies to achieve such conservation;

3. Full consideration by action agencies of the recommendations resulting from consultations;

4. Authority for action agencies to implement such recommendations as they find acceptable.

Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544, 87 Stat. 884, as amended) requires Federal agencies to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify critical habitat.

The Migratory Bird Treaty Act of 1918 (16. U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended) establishes a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, at any time, or in any manner, any migratory bird (*e.g.* waterfowl, shorebirds, birds of prey, song birds, etc.) included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird."

DESCRIPTION OF STUDY AREA

Project Background:

The Brazos Santiago Pass in Cameron County, Texas cuts through the Rio Grande delta and borders the southern boundary of the Lower Laguna Madre of Texas. The Brazos Santiago Pass, once a natural inlet into the Lower Laguna Madre was deepened and expanded with the dredging of the Brazos Island Harbor (BIH) Entrance Channel and the Brownsville Ship Channel (BSC) in 1938 as a permanent commercial waterway and connection to the Gulf of Mexico (Tunnell 2002). The BIH connects to the Gulf Intracoastal Waterway (GIWW), for commercial barge and boat traffic, via the Port Isabel Channel. Immediately west of the BIH Entrance Channel, the BSC borders the southern terminus of the Laguna Madre for a distance of approximately 2 miles along the northern edge of the BSC.

Prior to the current proposal, as noted in the 2007 Project Review Plan (USACE 2007), the most recent deepening of the BSC was authorized by the Water Resources Development Act of 1986. The 2007 Project Review Plan addressed the feasibility of deepening the entrance and jetty channel (2 miles) to 48 feet, deepening the lower 9 miles of main channel to 48 feet, and deepening the upper 7 miles of main channel and turning basin to 45 feet. The feasibility study identified in the Project Review Plan also proposed to investigate potential restoration opportunities of over 6,500 acres of tidal marsh habitats, as well as brush habitat with the Bahia Grande in collaboration with federal and state agencies. The Service participated in interagency coordination team meetings in 2007 and 2008 with the USACE and the Port of Brownsville (POB) to review and discuss options for widening and deepening the BIH Entrance Channel and BSC Main Channel. The current project proposal, taken from the USACE's tentatively selected Plan (USACE 2013b) is summarized in the following section.

Project Description:

The proposed Brazos Island Harbor (BIH) Channel Improvement Project (BIH Project) (USACE 2013b) would extend and deepen the BIH entrance channel, deepen the BIH Jetty Channel, the BSC Main Channel, and BSC Turning Basin. According to the draft, tentatively selected plan the project would extend the BIH Entrance Channel 0.75 miles farther into the Gulf of Mexico to a depth of -54 feet mean lower low water (MLLW) and a width of 300 feet. The existing BIH Entrance Channel would be deepened to a depth of -54 feet MLLW at the existing bottom width of 300 feet. The BIH Jetty Channel would be deepened to -54 feet MLLW at the existing bottom width of 300 feet, transitioning to the existing 400-foot bottom width at the connection with the Laguna Madre. The BSC Main Channel, which has an existing width of 400 feet on the eastern end, transitions into an existing width of 250 feet and is proposed to be deepened to a depth of -52 feet MLLW for approximately 15.5 miles. The western terminus of the BSC and the turning basin (approximately 1.2 miles total) would be maintained at the existing depth of -42 feet MLLW and widths which transition from 325 feet in the main channel to 1200 feet in the turning basin.

The project as proposed would utilize existing disposal areas for new work dredged material, for the expansions, and for maintenance material over the 50-year project life. New work material from channel deepening would be distributed among the existing New Work Ocean Dredged Material Disposal Site (ODMDS) and upland, confined, Dredged Material Placement Areas (DMPAs) 2, 4A, 4B, 5A, 5B, 7 and 8 along the south side of the BSC. In addition, new work material may be placed in DMPA 3, a placement area managed by the San Benito Navigation District and generally used for Port Isabel Channel material. The clay new work material would be stockpiled and used to raise the DMPA 3 dikes for later, unrelated maintenance dredging of the Port Isabel Channel. None of the existing placement areas would be expanded beyond their current footprint. Construction to raise the containment dikes to heights needed to accommodate new work quantities would be done within the footprints of the existing placement areas. The resulting elevations of the placement area dikes for the new work placement activities would range from a total elevation of 12 feet NAVD 88 around DMPA 5A to a total elevation of 36 feet around DMPA 2. Additionally, armoring of the exterior toe of the PA 4A and 4B dikes on the side facing the channel is needed from station 22+000 to 33+800 where the outer toe of the existing placement area dikes is, or is close to, eroding into the ship channel. According to the seagrass survey conducted by the USACE for the project, no seagrass beds are located along the shoreline where the armoring is proposed (USACE 2012a, USACE 2012b).

Placement of maintenance dredging material over the 50-year life of the project is proposed to be into a nearshore Feeder Berm or the existing Maintenance ODMDS, and upland, confined DMPAs 4A, 4B, 5A, 5B, 7 and 8. The Feeder Berm, known as BU Site 1A was authorized in 1988 and is located between 1.5 and 2.5 miles from the north jetty and from 0.4 to 0.9 miles from shore. This site is proposed to receive the maintenance material from the Entrance and Jetty Channels and the first 11,000 feet of the Main Channel. Monitoring by the USACE of the use of BU Site 1A has shown that sediment placed in it moves back into the cross-shore and longshore sediment transport system of South Padre Island. If for some reason the Feeder Berm cannot be used, maintenance material from the Entrance and Jetty Channels would be placed in the Maintenance ODMDS which is located approximately 2.5 nautical miles from shore and north of the channel. Over the 50-year life of the project, the placement area dikes are estimated to be raised from 17 feet NAVD88 at DMPA 5A to 48 feet NAVD88 at DMPA 7.

Although not included in the text of the USACE description of its tentatively selected plan for the BIH project, the plan drawings identify a proposed levee to be constructed on the south side of Placement Area 4B to complete the containment dike system for this DMPA. The new levee would separate the disposal area from an existing loma or mound that has, to date, served as a part of the south boundary of 4B (USACE 2013b).

Project Area Description:

The project area for the BIH Project is situated within and bordered by nearshore areas of the Gulf of Mexico, the southern terminus of the Town of South Padre Island, the northern terminus of Boca Chica Island, the entrance channel to South Bay, and the southern terminus of the Laguna Madre. South Bay was historically connected to the Gulf of Mexico by a washover pass on Boca Chica. Historically, South Bay formed the southern end of the Laguna Madre. South

Bay was cut off, except for a small area, when the Brownsville Ship Channel was deepened in 1938 (Breuer 1962). The entrance into South Bay, which averages approximately 800 feet in width, is bounded by DMPA 4A on the west and Boca Chica Island on the east.

Habitat types within and immediately adjacent to the dredged channel and leveed disposal areas of the Brownsville Channel include permanently inundated marine waters, unvegetated shallow water areas, sea grass beds, tidal flats, sand flats, emergent low and high marsh, upland coastal prairie, and upland brushlands including lomas. Rainfall in the region averages 26 inches per year; however, the timing of the rains is irregular, and intermittent (Shearer 2003). Storm events including hurricanes may contribute much of the annual precipitation in a few days. A map of United States drought conditions, published online by the National Oceanic and Atmospheric Administration (NOAA) indicates that the project area is currently within a zone of extreme to exceptional drought (Rosencrans 2013).

Fish and Wildlife Resources:

The work on the BIH Project is proposed to be confined to the permanently inundated marine environment of the channel in the Gulf of Mexico, plus an additional 0.75-mile extension of the BIH Entrance Channel east into the Gulf of Mexico, the existing BIH Entrance Channel, BSC Main Channel, BSC Turning Basin, and the existing DMPAs. There are, however, three important habitat types, for Service trust resources, in immediate proximity to the project footprint that the USACE and POB should be aware of, and knowledgeable about, during construction and maintenance, and throughout the life of the project. These are tidal flats, coastal prairie, and vegetated lomas. Protection and preservation of these habitat types is highly important to several federally listed threatened and endangered species, as well as to the overall environmental health of the South Texas ecosystem.

Tidal Flats

The tidal flats are a significant feature of the Laguna Madre and unique in being more affected by wind and storm tides than by astronomical tides (Tunnell 2002). Likely minor changes in elevation in tidal flats from accretion of sediments carried from the disposal area could have no or minor impact to these areas, and could possibly counter the effects of long-term sea level rise; however, the difference between no, or positive, benefit and adverse impact are very small in this region of the Texas coast. Wind tidal flats have been well documented as providing important foraging habitat for large numbers of resident and wintering shore birds, wading birds and waterfowl (Tunnell 2002). Additionally, piping plover Critical Habitat Texas Unit 1 (CH TXU1) extends south and east from DMPA 2, 4A and 4B. Although the BIH Project does not propose to directly impact tidal flats adjacent to the DMPAs, over the life of the project, storm damage or erosion could result in impacts to these areas. A significant storm impact could result in relocation of disposal area material including, possibly levee material. While the Service understands that standard procedures for POB levee repairs occur from the inside of the DMPAs, if erosion has moved material outwards, on the south side of the disposal areas, sediments that have become deposited should be removed for the health of the tidal flat. The Service recommends that the USACE and POB document existing elevations of the flats, particularly

those of CH TXU1 near the dikes of the disposal areas, and be aware of changes that occur in these areas over time and following storm events. If changes occur to the elevations of CH TXU1 from the movement of disposal area or levee material, the Service recommends that the USACE consult with the Service.

Coastal Prairie

Coastal prairie consists of open terrain with scattered trees or shrubs and is a required habitat for endangered falcons. In the proposed project area, this species forages and nests along yucca covered sand ridges of the coastal prairies (Service 1990).

Important plant species of the coastal prairie include salt-tolerant species such as sea ox-eye daisy (*Borrichia frutescens*), saltwort (*Batis maritima*), glasswort (*Salicornia* sp.), saltgrass (*Distichlis spicata*), and salt-flat grass (*Monanthochloe littoralis*) in the lower coastal prairie flats. Higher areas of the flats will support Gulf cordgrass (*Spartina spartinae*), four-flower trichloris (*Trichloris pluriflora*), and Spanish dagger (*Yucca treculeana*) (Lonard 1991).

As previously noted, the BIH Project does not propose to impact new areas, including the coastal prairie areas south of the DMPAs. As the port grows, however, and if the BIH Project is constructed, new and expanded facilities at the port could cause additional pressures on this habitat. The Service recommends that the USACE and the POB maintain communication with the Service and refuge staff regarding aplomado falcons in the area.

Lomas

Lomas, or tidal flat islands, adjacent to and south of the BIH Project area support a dense cover of woody vegetation and other native species where they have not been impacted by humans. As noted in a report completed for the I-69 Highway project, this habitat type is important to a range of species including migratory and neotropical birds (Service 2008b), as well as to, a range of species important to, the federally listed ocelot and jaguarundi.

Important plant species of the lomas include Spanish dagger, mesquite (*Prosopis glandulosa*), huisache (*Acacia smallii*), brasil (*Condalia hookeri*), Texas ebony (*Pithecellobium ebano*), tepeguaje (*Leucaena pulverulenta*), granjeno (*Celtis pallida*), prickly pear (*Opuntia lindheimeri*), lotebush (*Ziziphus obtusifolia*), night-blooming cereus (*Acanthocereus pentagonus*), Texas kidneywood (*Eysenhardtia texana*), allthorn (*Castela texana*), and others in this diverse chaparral association (Lonard 1991) (Everitt 1993).

On July 11, 2013, Service biologists met with Port of Brownsville officials to conduct an on-site inspection of the loma adjacent to DMPA 4B, identified as 'MOUND' on the project plans, where a new levee is proposed to be constructed to complete containment for the placement area. POB representatives noted that all work, both construction and maintenance of containment dikes for the project would be conducted from inside the disposal area, including any necessary work to raise levees for accommodating dredge material over the 50-year life of the project; therefore, no work corridor would be needed along the outside perimeter of the proposed new

dike. The Service recommended, and the POB representatives were in agreement that an offset distance from the toe of the existing loma of approximately 30 feet would provide a reasonable separation from the loma vegetation complex. The Service recommends that the levee alignment follow the outer curve of the loma; however, if a straight-line orientation is determined to be needed for construction by the USACE design engineers, then the toe of the new levee at its closest point be located 30 feet from the loma. The outer edge of the loma begins where the land elevation begins to rise and the plant association shifts from the predominantly vegetated tidal flat complex, typified by batis, salicornia and related wetland species, to upland species such as those listed in the paragraph above. The Service agreed with POB representatives that nearby scattered mesquite trees are within the DMPA 4B boundary and not a part of the loma. The Service would like to participate in pre-construction meetings for the project to assist the USACE and POB in educating staff and contractors for the BIH Project about this important habitat type which is a unique and vital component of the South Texas landscape.

Migratory birds

The birds, nests, and eggs of migratory birds are protected under the Migratory Bird Treaty Act as noted in the section on Regulatory Background in this CAR. Cameron County is avian rich as evidenced by the 413 species of birds recorded at nearby Laguna Atascosa National Wildlife Refuge (Service 2008a) and the 403 species of birds at Santa Ana National Wildlife Refuge (Service 2011). Many of the bird species recorded for Cameron County sites are spring and/or fall migrants. The mild climate and diverse habitats of Cameron County also support a rich variety of nesting birds. Of particular importance to the activities of the BIH Project construction and maintenance activities are ground-nesting avian species that utilize the sparse or unvegetated substrates which might be found on the containment dikes and within the DMPAs. These include: the snowy plover (*Charadrius nivosus*), Wilson's plover (*Charadrius wilsonia*), killdeer (*Charadrius vociferus*), and least tern (*Sterna antillarum*). If, because of extended periods between maintenance dredging cycles, depressional ponds and some emergent wetland vegetation develops within a DMPA, other bird species could opportunistically nest within the project area such as the black-necked stilt (*Himantopus mexicanus*), and American avocet (*Recurvirostra americana*). The greater the time period between dredging cycles, the more likely a given DMPA is to become stabilized with vegetation and other features that could support nesting birds. As the BIH Project plan is for a 50-year project life, the USACE should coordinate with the Service and review conditions in the DMPAs prior to each dredging event with a goal of understanding conditions which may be conducive to support nesting birds.

The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March 1 through August 31 to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, the Service recommends surveying for nests prior to commencing work. If a nest is found, and if possible, the Service recommends a buffer of vegetation ($\geq$ 50m for songbirds, > 100m for wading birds, and > 180m for terns, skimmers and birds of prey) remain around the nest until young have fledged or the nest is abandoned. A list of migratory birds may be viewed at http://migratorybirds.fws.gov/intrnltr/mbta/proposedbirdlist.pdf or http://federalregister.gov/a/2010-3294.

Federally Regulated Species:

The proposed project area for the BIH Project is entirely within the boundary of Cameron County, Texas and within State-owned submerged lands and federal waters of the Gulf of Mexico. The species, federally-listed as threatened or endangered, for this county, as well as any candidates proposed for listing, and critical habitat, are discussed below. As presented in the tentatively selected plan, the BIH Project has been designed by the USACE to avoid direct impact to federally listed species; however, the Service is including recommendations of conservation measures to be incorporated into construction and maintenance plans. Conservation recommendations are provided for the ocelot (*Leopardus pardalis*), jaguarundi (*Herpailurus yagouaroundi cacomitli*), West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), and northern aplomado falcon (*Falco femoralis septentrionalis*). These species should be considered in the decision-making process for the construction and maintenance dredging plans. Additionally, over the 50 year life-of-project, new opportunities could arise, or be required, for managing dredge materials and the authorized placement areas. As these issues arise, impacts to the species listed above will need consideration and consultation. Other species that may also need additional consideration and consultation over the 50-year life of the project include the 5 species of nesting sea turtles, Texas ayenia (*Ayenia limitaris*), the red knot (*Calidris canutus* ssp. *rufa*), and Sprague's pipit (*Anthus spragueii*).

Ocelot

Description/Habitat: The ocelot is a medium-sized (30-41 inches long and 15-30 lbs) feline. Its body coloration is variable; with the upper parts gray or buff with dark brown or black spots, small rings, blotches, and short bars. The under parts are white spotted with black. The tail is ringed or marked with dark bars on the upper surface. The backs of the rounded ears are black with a white central spot. They hunt and move around beginning at dusk. Their area of activity is normally 1-4 square miles. The female ocelot hunts during the night but spends the day at the den site. Kittens are born from late spring through December. The usual litter size is one or two kittens. They accompany the mother on hunts at about 3 months of age and stay with her until they are about a year old (Service 1995).

In Texas, the ocelots occur in dense shrubland. Although the ocelot's prime habitat needs are 70 to 90% canopy coverage, it will utilize a lesser degree of cover for hunting areas, and as protected corridors for travel. Tracts of at least 100 acres of isolated dense brush, or 75 acres of brush interconnected with other habitat tracts by brush corridors are important, however, ocelots will use tracts as small as 5 acres, when adjacent to larger areas of habitat. Roads, narrow water bodies, and rights-of-way, brushy fence lines, watercourses and other brush strips connecting areas of habitat are important habitat (Service 2010).

The ocelot population in Texas is very small; probably no more than 80 to 120 individuals (1993 estimate) and approximately 30-35 are known to occur in the chaparral remaining at or near the Laguna Atascosa National Wildlife Refuge in Cameron County (Mitch Sternberg, Ocelot Recovery Team Leader, LRGVNWR, pers. com., 2013). Although the distribution of these endangered cats is limited for the most part to the southern portion of Texas, a northern

population of ocelot may range through portions of Jim Wells, Live Oak, Atascosa, and McMullen, San Patricio and Aransas counties.

Threats: Population declines are primarily due to habitat loss associated with clearing of brush. Losses of individuals in recent years have been predominately due to collisions with vehicles as the cats attempt to cross roads to gain access to other areas (Mitch Sternberg, Ocelot Recovery Team Leader, LRGVNWR, pers. com., 2013) .

Issues for Brazos Island Harbor Project: As proposed, the BIH Project, new work and maintenance activities and DMPAs will not impact areas supporting brush habitat, including two lomas adjacent to DMPAs 4A and 4B. The Service recommends that a proposed new levee on the south side of DMPA 4B be constructed in such a manner that the outer toe of the levee will terminate at least 30 feet from the outer edge of the loma. Also, personnel involved in levee construction and maintenance should be instructed to strictly avoid driving equipment onto any part of the loma. Cat sightings should be reported immediately to the Ocelot Recovery Team Leader (956-784-7592).

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Although the BIH Project new and maintenance work is not proposed to directly impact brush vegetation, this species may use a variety of habitats for moving between preferred habitat sites. The Draft BA notes that this species is known to occur in areas around the project area. An important conservation measure is to conduct work, particularly construction work only during daylight hours. Additionally, the Service recommends that the conservation measures included in the issues section above be incorporated into the project construction and maintenance plans. If these measures are adopted, the Service would agree that the project may affect, but is not likely to adversely affect the ocelot.

Jaguarundi

Description/Habitat: The jaguarundi is a small, slender-bodied, unspotted cat, slightly larger than a domestic cat (8-16 lbs). They have a long tail, short legs, small, flattened head and have two color phases, a rusty-brown and a charcoal gray. They hunt primarily in the morning and evening. They are not as cautious as the ocelot and have been observed during the day. It is believed that the jaguarundi is similar to the ocelot in their requirement for dense brush cover, however, information from Mexico indicate that they may be more tolerant of open areas. They are good swimmers and enter the water freely. Mating season occurs in November and December, and kittens have been reported in March and also in August. Gestation period is 9 to 10 weeks and litters contain two to four young (Service 2012).

In Texas, the jaguarundi occurs in dense shrub lands. Although the distribution of these endangered cats is limited for the most part to the Rio Grande Valley, there have been unconfirmed sightings of jaguarundi as far north as Aransas, Jim Wells, Kleberg, Live Oak, and San Patricio counties.

Threats: Habitat loss and alteration, primarily due to brush clearing, and predator control activities threaten the jaguarundi (Service 2012).

Issues for Brazos Island Harbor Project: As proposed, the BIH Project, new work and maintenance activities and DMPAs will not impact areas supporting brush habitat, including two lomas adjacent to DMPAs 4A and 4B. The Service recommends that a proposed new levee on the south side of DMPA 4B will be constructed in such a manner that the outer toe of the levee will terminate at least 30 feet from the outer edge of the loma. Also, personnel involved in levee construction and maintenance should be instructed to avoid driving equipment onto any part of the loma. Cat sightings should be reported immediately to the Ocelot Recovery Team Leader (956-784-7592).

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Because this species can utilize habitats similar to those of the ocelot, the Service recommends that conservation measures, recommended for the ocelot as follows be adopted:

Although the BIH Project new and maintenance work is not proposed to directly impact brush vegetation, this species may use a variety of habitats for moving between preferred habitat sites. The Draft BA notes that this species is known to occur in areas around the project area. An important conservation measure is to conduct work, particularly construction work only during daylight hours. Additionally, the Service recommends that the conservation measures in the issues section above be incorporated into the project construction and maintenance plans. If these measures are adopted, the Service would agree that the project may affect, but is not likely to adversely affect the jaguarundi.

Northern aplomado falcon

Description/Habitat: The name aplomado means "steel gray" in Spanish. The aplomado falcon is a medium sized falcon with a total length about 15-18 inches with a wingspan about 32-36 inches. Adults are characterized by rufous (rust) under parts, a gray back, a long, banded tail and a distinctive black and white facial pattern. They are extremely fast in level flight and agile on foot. Aplomado falcons hunt together, soar together, perch near one another, and even feed together outside the breeding season. During the spring of their second year, pair bonds are formed. They do not construct their own nest, but use the stick platforms built by other birds. Nests are usually 1-3 feet in diameter. They nest only once a year during the dry season

(January-June) with most nesting occurring in April and May. They lay 2-3 eggs between the months of March and June and both parents incubate the eggs. Eggs hatch in about 32 days, and nestlings fledge at 32 to 40 days (Service 1990).

Their habitat consists of open terrain with scattered trees, relatively low ground cover, abundance of insects and small to medium-sized birds as well as rodents and reptiles for prey, a supply of previously constructed nests, and above ground nesting substrate such as Spanish dagger and mesquite habitat. As falcons do not construct stick platforms, availability of nesting platforms may be a factor limiting populations within otherwise ideal habitat (Service 1990).

Threats: Habitat degradation due to brush encroachment and grassland degradation from overgrazing, conversion of habitat to agriculture, urban and suburban sprawl, and organochlorine pesticide contamination (Service 1995).

Issues for Brazos Island Harbor Project: As proposed there are no known nest sites in or immediately adjacent to the BIH project new work and maintenance DMPAs; however, nest structures that could be utilized by the aplomado falcon have been documented approximately ½ half mile south of DMPA 7, and DMPA 5A.

Prior to work commencing for the new work project and future maintenance work, areas adjacent to the levees on the south side of the DMPAs, and near the lomas at DMPA 4A and 4B will be evaluated for suitable habitat. Grassland and savannah habitats with abundant small birds and stick nests built by ravens or other raptors should receive special attention. During March through June, all large stick nests should be examined from a distance for signs of adults incubating eggs or brooding chicks. Observers should remain a safe distance away from the nest or perch, at least 100-300 yards, depending on the sensitivity of the individual bird, and keep human contact to a minimum. If suitable habitat is found to exist within 100 yards of a DMPA levee, further surveys should be performed and the Service should be contacted for review of survey results and impact determinations.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Although the BIH Project new and maintenance work is not proposed to directly impact foraging or potential nesting habitat of this species, coastal prairie is found south of the dredge material placement areas. An important conservation measure is to evaluate adjacent prairie for use by nesting aplomado falcons prior to commencing new work or maintenance activities, particularly areas in close proximity to levees (within 100 yards). If these measures, as outlined in the issues section above, are adopted and incorporated into project construction and maintenance plans, the Service would agree that the project may affect, but is not likely to adversely affect the aplomado falcon. Additionally, the USACE should coordinate with Service's National Wildlife Refuge biologists to stay apprised of the latest information regarding nesting sites and foraging areas for the aplomado falcon.

West Indian (=Florida) manatee

Description/Habitat: Manatees are massive gray to gray-brown, herbivorous aquatic mammals. They have fusiform, seal-like bodies, tails broadened into a horizontal paddle, no hind limbs, and front limbs formed into paddle-like flippers. They are hairless except for 3-4 stiff whiskers on the snout. Manatees are docile, harmless and completely defenseless. They feed on a variety of submerged, emergent and floating aquatic and marine plants, consuming 10-15% of their body weight daily. They may be solitary or in groups of two or three in warm-water aggregations during cold spells (Service 1995).

The manatee prefers shallow, slow moving rivers, river mouths, estuaries, bays and other coastal ecosystems in subtropical to tropical waters. They are extremely sensitive to cold temperatures and can be found in water that is fresh, salty, turbid, clear, acidic, or alkaline. Some may travel great distances (125 miles or more) along the coast or when moving from one island to another. (Service 1995)

In Texas, strandings have occurred in Galveston, Willacy, and Matagorda counties. Other live sightings have occurred along the Texas coastline with one in 1994 in the Lower Laguna Madre, Cameron County, and the most recent in the Corpus Christi Ship Channel in Nueces County in July 2013.

Threats: Current threats to the species include loss of habitat and human-related mortality caused primarily by water craft collisions, poaching, entanglement in fishing nets and line, and crushing or drowning in flood gates. Natural causes of mortality are related to cold temperature exposures, red tide, and disease (Service 1995).

Issues for Brazos Island Harbor Project: Close coordination between the Service and the USACE should be initiated when a manatee has been sighted along the Texas Gulf Coast when project construction or maintenance activities are planned or are underway. Experience with manatees documented on along the Texas coast is that the individuals can move over large distances, and in an unpredictable pattern. Dredging operators should be instructed to contact the

Texas Marine Mammal Stranding Network at (361) 947-4313 or the group's hotline at (800) 962-6625 if a manatee is sighted. If dredging operations are occurring or planned in the area of a recently sighted manatee, operators should be instructed to be cautious when operating boats to prevent a collision with a manatee.

We recommended the following measures be included in construction and maintenance project plans:

a. Training should be provided on avoiding potential impacts on the West Indian manatee for all personnel involved in construction and maintenance of in-water dredging activities.
b. The training information should advise contractors and staff that manatees may be found in the Brazos Island Harbor Entrance Channel, the Brownsville Ship Channel, and adjacent areas of the Lower Laguna Madre.
c. The training materials should include a poster to assist in identifying the mammal.
d. The training materials should instruct personnel not to feed or water the animal, and
e. The training materials should include instructions to call the Corpus Christi Office of the Texas Coastal Ecological Services Field Office (TCESFO-CC) in the event a manatee is sighted in or near the project area.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

As is noted in the Draft BA, a manatee could enter into the project area during construction or maintenance activities. Although sightings of manatees are rare along the Texas coast, they do occur. For this reason, the Service consistently recommends the education measures outlined above in the issues section as a conservation measure for similar projects along the coast. With the incorporation of these measures, the Service would agree that the project may affect, but is not likely to adversely affect the manatee.

Piping plover

Description/Habitat: The piping plover is a small, stocky, shorebird about 7 inches long with a wingspan of about 15 inches. Adults have a sand-colored upper body, white undersides, and orange legs. A white rump, which is visible in flight, distinguishes this species from other small plovers. During the breeding season, adults acquire a dark narrow breast band, a dark strip across the forehead and black-tipped orange bill. They breed on sandy beaches along the Atlantic Coast from Canada to North Carolina, and along the sand and gravel shores of the Lakes Michigan and Superior. In Michigan, they nest on river sandbars and islands, barren shorelines of inland lakes, and alkali wetlands in the northern Great Plains of Canada and the United States. They spend 60-70% of the year on the wintering grounds along the coastal regions from North Carolina through Texas, adjacent barrier islands, and to the islands of the Caribbean. Piping plovers winter in Texas from approximately arriving as early as July, and some individuals may

be found year-round on the Texas coast (Service 2001). On their wintering grounds, piping plovers feed on organisms that live in exposed wet sand in wash zones, intertidal ocean beach, in the debris line left from high tide (wrack lines), wash over passes, and mud- sand-algal wind tidal flats. The birds also forage on shorelines of freshwater streams, ephemeral ponds, lagoons and salt marshes. They use beaches adjacent to foraging areas for roosting and preening. Small sand dunes, debris, and sparse vegetation within adjacent beaches provide shelter from wind and extreme temperatures.

Threats: Threats to wintering populations include habitat loss and degradation due to coastal development, recreation, navigation, dredging, and shoreline stabilization and replenishment projects. Each has been major contributor to this species decline. Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the habitat for this species as well as, potentially, the community composition of prey species consumed by the piping plover and other shorebirds (Service 2003).

Issues for Brazos Island Harbor Project: No placement of dredge material, or beach nourishment activities will occur within areas of proposed or designated critical habitat; however piping plovers may opportunistically utilize unvegetated tidal flats in a wide range of areas because of extreme high or low tides or inclement weather conditions.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

The Draft BA describes, and the Service agrees, that the project as proposed will not directly impact designated critical habitat of the piping plover. The Draft BA also describes, and the Service agrees, the unvegetated sand flats within dredge material placement areas could, at times, be utilized by piping plovers for foraging or roosting. A recommended conservation measure prior to placement of dredge material is to survey the area for use by the piping plover. Some Issues of Concern for wintering piping plovers include: cold temperatures (below 40 º F), high winds (above 15-20 mph), and precipitation. Under these conditions, especially in combination, piping plovers are likely to roost to conserve energy and body reserves. Disturbing birds under these conditions will cause stress to the birds. A survey of disposal areas that support unvegetated sand flats to ensure that the area is not being utilized by roosting piping plovers would help achieve the goal of avoiding harm to the piping plover from dredge maintenance activities.

By incorporating the above conservation measure into the BIH Project construction and maintenance plans, the Service would agree that the project may affect, but is not likely to adversely affect the piping plover.

Green sea turtle (*Chelonia mydas*)

Description/Habitat: The carapace of the adults of this member of the Family Cheloniidae can grow to a length of four feet and range from 250 to 450 pounds. The adult's carapace is smooth, lacks a keel (center ridge), and is light to dark brown with dark mottling. They are mostly herbivorous, feeding on marine algae and shallow meadows of sea grasses. Small mollusks, sponges, crustaceans and jellyfish are also often consumed. Open beaches with sloping platforms and minimal disturbance are required for nesting. A variety of sand types are used for nesting, but must be friable and well drained. Clutch sizes range from 75 to 250 eggs with incubation lasting from 48 to 70 days. Nocturnal nesting occurs in 2, 3, or 4 year intervals and as many as seven clutches may be laid in one season. Renesting is usually within 1 mile from the previous nesting site (Service 1995).

Green sea turtles are distributed worldwide in tropical and subtropical waters. They are found in shallow waters (except when migrating) in or near reefs, bays, estuaries, and inlets, and especially within seagrass beds. Favored habitat appears to be lagoons and shoals with an abundance of marine grass and algae (Service 1991). This species has been documented nesting on the Texas coast including the Gulf beaches of South Padre Island.

Threats: Human exploitation of eggs and meat as a food source is a major threat as is mortality from commercial fishing operations and dredging, and habitat (nesting) disturbance (beach development). Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the nesting habitat for this species (Service 1991).

Issues for Brazos Island Harbor Project: All sea turtles, except when on nesting beaches, are the trust resource of NMFS. Sea turtles on beaches are the trust resource of the Service. As proposed, no new work or maintenance dredge material is proposed to be placed on Gulf of Mexico beaches to avoid impact to nesting sea turtles. Green sea turtles could occur in areas of the ship channel that support submerged aquatic vegetation (SAV). According to information provided in the project plan materials, some SAV occurs in shallow shoreline areas along the channel between stations 3+000 and 18+000 (USACE 2012a, USACE 2012b). The USACE proposes to avoid impacts to these seagrass beds. Green sea turtles may also occur in the Brazos Island Harbor entrance channel along the jetties. In general, best management practices with regard to nesting sea turtles include completion of all dredging outside of the turtle nesting season of March 15 to October 15. Additionally, the Service recommends: use of on-ship observers; screening dredge intake pipes; sea turtle deflection on drag head; dredge take reporting; use of shielded, low-sodium vapor lights; and turning off, lowering, and shielding non-essential lighting. If dredging activities are anticipated to continue past March 15th, into the turtle nesting season, the Service requests that this office be notified two weeks prior to that date to discuss appropriate conservation measures. Additionally, the Service would like to receive a copy of the biological opinion for the USACE's consultation with NMFS.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Sea turtles on the beach, whether nesting or stranded, are a trust resource of the Service; therefore, we recommend that the USACE make an effects determination of the BIH Project on the green sea turtle.

Kemp's ridley sea turtle (*Lepidochelys kempii*)

Description/Habitat: This is the smallest member of the sea turtle Family Cheloniidae, reaching 75-100 pounds. It has an unusually broad, heart-shaped, keeled carapace that is serrated behind the bridge. It has a triangular head and somewhat hooked beak with large crushing area. Juveniles have a dark-charcoal colored carapace and as they age this color changes to olive-green or grey. The lower shell has a light yellowish color. Diet consists primarily of crabs, shrimp, snails, sea urchins, sea stars, fish and occasionally marine plants may be consumed. A well-defined and elevated dune area is preferred for nesting. They prefer sections of beach backed up by extensive swamps, or large bodies of water having seasonal, narrow ocean connections. Average clutch size is 105 eggs with nesting taking place between April and June, primarily during daylight hours, and often in groups called arribada. A single female is capable of nesting three times per season (Service 1995).

The largest nesting population is found on the Playa del Rancho Nuevo, in the State of Tamaulipas, Mexico. Solitary females nest on Padre Island National Seashore and on other locations in the western Gulf of Mexico, as far north as Galveston, Texas and south to Boca Chica Island in Cameron County, Texas. Juveniles have been documented in Texas bays and estuaries, including the Laguna Madre.

Threats: The Kemps is threatened by human exploitation of eggs and meat, mortality from incidental commercial fishing operations, primarily shrimp trawling. Added threats to this species are from predation on eggs by raccoons, coyotes, and other carnivores. Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the nesting habitat for this species. (NMFS 2011)

Issues for Brazos Island Harbor Project: All sea turtles, except when on nesting beaches, are the trust resource of NMFS. Sea turtles on beaches are the trust resource of the Service. As proposed, no new work or maintenance dredge material is proposed to be placed on Gulf of Mexico beaches to avoid impact to nesting sea turtles. In general, best management practices with regard to nesting sea turtles include completion of all dredging outside of the turtle nesting season of March 15 to October 15. Additionally, the Service recommends: use of on-ship observers; screening dredge intake pipes; sea turtle deflection on drag head; dredge take reporting; use of shielded, low-sodium vapor lights; and turning off, lowering, and shielding non-essential lighting. If dredging activities are anticipated to continue past March 15th, into the turtle nesting season, the Service requests that this office be notified two weeks prior to that date to discuss appropriate conservation measures. Additionally, the Service would like to receive a copy of the biological opinion for the USACE's consultation with NMFS.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Sea turtles on the beach, whether nesting or stranded, are a trust resource of the Service; therefore, we recommend that the USACE make an effects determination of the BIH Project on the Kemp's ridley sea turtle.

Hawksbill sea turtle (*Eretmochelys imbricata*)

Description/Habitat: The hawksbill is one of the smaller members of the Family Cheloniidae, reaching 95-165 pounds. The shell is elongated and oval, and the scutes (shell plates) overlap. The carapace (top shell) is brown and strikingly patterned with yellow, orange or reddish-brown. Their beaks are relatively long and pointed like a hawk's bill. Nesting is nocturnal, occurring every 2 to 3 years, and several clutches may be laid during the season at two-week intervals. Average clutch size is 160 eggs. Hatchlings primarily eat sponges and are often found in floating masses of sea plants. Hawksbills are found in rocky areas, reefs, shallow coastal areas, and lagoons of oceanic islands, generally in waters less than 60 feet deep (Service 1995). They are found worldwide in subtropical and tropical seas. In the U.S. nesting is limited to Florida but may be found along the Texas Coast from Jefferson to Cameron County.

Threats: Human exploitation of eggs and carapace is a major threat as well as predation on hatchlings by ants, crabs, birds, and mammals can be an occasional problem (NMFS 1993). Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the nesting habitat for this species.

Issues for Brazos Island Harbor Project: All sea turtles, except when on nesting beaches, are the trust resource of NMFS. Sea turtles on beaches are the trust resource of the Service. As proposed, no new work or maintenance dredge material is proposed to be placed on Gulf of Mexico beaches to avoid impact to nesting sea turtles. In general, best management practices with regard to nesting sea turtles include completion of all dredging outside of the turtle nesting season of March 15 to October 15. Additionally, the Service recommends: use of on-ship observers; screening dredge intake pipes; sea turtle deflection on drag head; dredge take reporting; use of shielded, low-sodium vapor lights; and turning off, lowering, and shielding non-essential lighting. If dredging activities are anticipated to continue past March 15th, into the turtle nesting season, the Service requests that this office be notified two weeks prior to that date to discuss appropriate conservation measures. Additionally, the Service would like to receive a copy of the biological opinion for the USACE's consultation with NMFS.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Sea turtles on the beach, whether nesting or stranded, are a trust resource of the Service; therefore, we recommend that you make an effects determination of the BIH Project on the hawksbill sea turtle.

Leatherback sea turtle (*Dermochelys coriacea*)

Description/Habitat: This member of the Family Dermochelyidae is the largest of all marine turtles, reaching weights between 650 and 1,200 pounds and above. This turtle has lost its shell plate and is covered with smooth, mottled brown or mottled slaty-black to dark bluish-black skin with seven longitudinal dorsal ridges. Diet may include sea urchins, squid, crustaceans, tunicates, fish, blue-green algae, and floating seaweed, but the principal diet component is jellyfishes. Females nest at night, at 2 to 3 year intervals with as many as 10 clutches laid in a single season. The average clutch size is 80 to 85 eggs, with maturation taking 6 to 10 years. Leatherbacks are the most pelagic (open sea) species of the sea turtles (NMFS 1992).

This species is distributed worldwide; forages in temperate waters and nesting in tropical and subtropical latitudes. Preferred nesting sites are sandy, sloping beaches backed-up by vegetation on mainland or islands near deep water and rough seas. In the United States, nesting is restricted to the Florida Coast (NMFS 1992). However, they have been found occasionally along the Texas coast from Jefferson to Cameron County. The most recent confirmed nesting of this species on the Texas coast was in 2008; however, an individual was observed off shore of South Padre Island in March of 2013.

Threats: Human exploitation of eggs and meat, destruction of nesting habitat, and predation by crabs, sharks and other fish, reptiles, and mammals on eggs and hatchlings threaten leatherback sea turtles. Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the nesting habitat for this species.

Issues for Brazos Island Harbor Project: All sea turtles, except when on nesting beaches, are the trust resource of NMFS. Sea turtles on beaches are the trust resource of the Service. As proposed, no new work or maintenance dredge material is proposed to be placed on Gulf of Mexico beaches to avoid impact to nesting sea turtles. In general, best management practices with regard to nesting sea turtles include completion of all dredging outside of the turtle nesting season of March 15 to October 15. Additionally, the Service recommends: use of on-ship observers; screening dredge intake pipes; sea turtle deflection on drag head; dredge take

reporting; use of shielded, low-sodium vapor lights; and turning off, lowering, and shielding non-essential lighting. If dredging activities are anticipated to continue past March 15th, into the turtle nesting season, the Service requests that this office be notified two weeks prior to that date to discuss appropriate conservation measures. Additionally, the Service would like to receive a copy of the biological opinion for the USACE's consultation with NMFS.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Sea turtles on the beach, whether nesting or stranded, are a trust resource of the Service; therefore, we recommend an effects determination be made for the BIH Project on the leatherback sea turtle.

Loggerhead sea turtle (*Caretta caretta*)

Description/Habitat: Loggerheads have characteristically large heads with powerful jaws. The carapace is brown to reddish-brown, flippers are brown to yellow, and the lower shell (plastron) is yellow. Adults weigh 170-500 pounds, and have a carapace length of up to 45 inches long. They eat a variety of marine invertebrates and plants, primarily feeding on mollusks and crustaceans. Nesting takes place from May to August, usually during the nighttime. Preferred nest sites are sloping beaches 1.5 to 2.5 feet above waterline. Nesting occurs at 2 to 3 year intervals with a clutch size of about 125 eggs and several clutches are usually laid in any given season (Service 1995).

The species is distributed worldwide in warmer latitudes, including Atlantic, Pacific, and Indian oceans and the Mediterranean. The loggerhead ranges into temperate latitudes in summer. This species is widely distributed within its range and can be found hundreds of miles offshore. It also inhabits inshore areas such as bays, lagoons, salt marshes, ship channels and mouths of large rivers (NMFS 2008). This species has been documented nesting on the Texas Gulf Coast including the Gulf beaches of South Padre Island.

Threats: Human exploitation of eggs and meat is a major threat as well as loss of nesting habitat due to housing development, fishing operations and incidental catch or mortality by fishing gear (e.g. shrimp trawls). Added threats to this species are from predation on eggs by raccoons, coyotes, and other carnivores. Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the nesting habitat for this species (Service 1995).

Issues for Brazos Island Harbor Project: All sea turtles, except when on nesting beaches, are the trust resource of NMFS. Sea turtles on beaches are the trust resource of the Service. As proposed, no new work or maintenance dredge material is proposed to be placed on Gulf of Mexico beaches to avoid impact to nesting sea turtles. In general, best management practices with regard to nesting sea turtles include completion of all dredging outside of the turtle nesting season of March 15 to October 15. Additionally the Service recommends: use of on-ship observers; screening dredge intake pipes; sea turtle deflection on drag head; dredge take reporting; use of shielded, low-sodium vapor lights; and turning off, lowering, and shielding non-essential lighting. If dredging activities are anticipated to continue past March 15th, into the turtle nesting season, the Service requests that this office be notified two weeks prior to that date to discuss appropriate conservation measures. Additionally, the Service would like to receive a copy of the biological opinion for the USACE's consultation with NMFS.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Sea turtles on the beach, whether nesting or stranded, are a trust resource of the Service; therefore, we recommend an effects determination be made for the BIH Project on the loggerhead sea turtle.

Brown pelican (*Pelecanus occidentalis*)

Description/Habitat: A large (up to 9 pounds), dark gray-brown waterbird with a long pouched grayish bill and wingspan of approximately 5-7 feet. Adults have white head and neck, brownish-black on their breast and belly, and silver grayish on most of the upper parts. Immature birds are grayish brown above and dull white below. The birds breed in the spring. Nesting habitat ranges from mud banks and spoil islands to offshore islands covered with mangroves and other woody vegetation where they are safe from predators such as raccoons and coyotes. Nests vary in size and structure consisting of piles of sticks, grass reeds and other available vegetation. They usually lay two to four white eggs often stained brown by nest materials. Young hatch in about 30 days and are completely blind, with black, hairless, leathery skin. They have down feathers at two weeks and adult plumage by the third year (Shields 2002).

In Texas, they are found along the coast from Chambers County on the upper coast to Cameron County on the lower coast. Nesting populations occur in Aransas, Brazoria, Calhoun, Galveston, Matagorda, Nueces and San Patricio counties. Part of the Texas population spends the non-breeding season along the Texas coast while others migrate south to spend the winter on the eastern coast of Mexico (Service 1995).

Threats: In the 1920's and 30's they were killed because it was believed they competed with man for food, although their main diet consists of fish, game fish are not a typical food source. Widespread use of DDT and similar insecticides were used in the 1940s which impaired the reproductive system of the bird, and caused a thinning of the egg shells, preventing hatching. Numbers dramatically decreased in the 1960s and 70s but rebounded in the mid-1990's with an estimated 2,400 pairs in 1995 (Oberholser 1974). All 6 sub-species of the brown pelican were delisted in 2009. In September 2009, the Service published a final draft post-delisting monitoring plan (Service 2009). The plan notes that the Endangered Species Act (Act) requires implementing, at a minimum, a system in cooperation with the States to monitor effectively, for at least 5 years, the status of all species that have been recovered and no longer need the protection afforded by the Act. The plan, however, proposes to monitor the status of the brown pelican, annually, over a 10-year period from 2010 through 2020.

Issues for Brazos Island Harbor Project: No nesting islands for this species occur in the BIH project area, and to date, no significant impacts to this species are anticipated as a result of the continued maintenance dredging operations. As with all species that forage in the project area, the actions and decisions taken for the program need to consider the effects on the resources needed by this species.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

No additional comments. Please see issues section above.

Red knot

Description/Habitat: The red knot is a medium-sized shorebird about 9 to 11 inches in length. The red knot is easily recognized during the breeding season by its distinctive rufous-red plumage (feathers). The face, prominent stripe above the eye, breast, and upper belly are a rich rufous-red to a brick or salmon red, sometimes with a few scattered light feathers mixed in. The feathers of the lower belly and under the tail are whitish with dark flecks. Upperparts are dark brown with white and rufous feather edges; outer primary feathers are dark brown to black. Females are similar in color to males, though rufous colors are typically less intense, with more buff or light gray on the dorsal (back) parts (Oberholser 1974). Main foods during the nonbreeding season include invertebrates, especially bivalves, small snails, and crustaceans (Harrington 2001).

The red knot forages in coastal areas primarily on intertidal sand flats and beaches. Foraging activity is largely dictated by tidal conditions, and it rarely wades in water greater than .79 to 1.2 inches deep. The red knot migrates annually between its breeding grounds in the Canadian

Arctic and several wintering regions, including the Southeast United States (including Texas), the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. During both the northbound (spring) and southbound (fall) migrations, red knots use key staging and stopover areas to rest and feed. Major wintering areas for the red knot include the Atlantic coasts of Argentina and Chile, the north coast of Brazil, the Northwest Gulf of Mexico from the Mexican State of Tamaulipas through Texas (particularly at Laguna Madre) to Louisiana, and the Southeast from Florida to North Carolina (Harrington 2001).

Threats: Much of the U.S. coast within the range of the red knot is already extensively developed. Direct loss of shorebird habitats occurred over the past century as substantial commercial and residential developments were constructed in and adjacent to ocean and estuarine beaches along the Atlantic and Gulf coasts. In addition, red knot habitat was also lost indirectly, as sediment supplies were reduced and stabilization structures were constructed to protect developed areas. Biological invasions of both plants and animals threaten sandy beaches, with the potential to alter food webs, nutrient cycling, and invertebrate assemblages. The practice of intensive beach raking may cause physical changes to beaches that degrade their suitability as red knot habitat. At key stopover sites, other threats to red knot populations include habitat loss, food shortages, and asynchronies between the birds' stopover period and the occurrence of favorable food and weather conditions. Predation pressures can worsen threats when red knots are pushed out of otherwise suitable foraging and roosting habitats (Harrington 2001). Superimposed on an existing threat of late arrivals in Delaware Bay are new threats of asynchronies emerging due to climate change. Rising sea levels associated with climate change are expected to affect the amount, physical shape, and quality of the habitat for this species as well as potentially the community composition of prey species consumed by the red knot and other shorebirds

Issues for Brazos Island Harbor Project: No placement of dredge material, or beach nourishment activities will occur within areas used by this species. As currently proposed, construction activities related to levee repair and expansion will be conducted on and within existing DMPAs. No outward expansion of the levees will occur.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

Because the red knot is still a candidate species, it has no protection under the Endangered Species Act. Habitat utilized by this species overlaps in part that also used by the wintering piping plover. The Service recommends that the conservation measures recommended for the piping plover should be applied, as well, to the red knot. The red knot is currently being reviewed for listing under the Endangered Species Act with critical habitat. The Service recommends that the USACE continue to coordinate, and the Service will provide updates on this process as they become available.

Sprague's pipit

Description/Habitat: The Sprague's pipit is about 3.9 to 5.9 inches in length, and weighs 0.8 to 0.9 ounce, with buff and blackish streaking on the crown, nape, and underparts. Males and females are similar in appearance. The Sprague's pipit has a plain buffy face with a large eye-ring. The bill is relatively short, slender, and straight, with a blackish upper mandible. The lower mandible is pale with a blackish tip. The wings and tail have two indistinct wing-bars, and the outer retrices (tail feathers) are mostly white. Juveniles are slightly smaller, but similar to adults, with black spotting rather than streaking (Service 2010c).

Sprague's pipits are strongly tied to native prairie (land which has never been plowed) throughout their life cycle. Sprague's pipits will use nonnative planted grassland and vegetation structure may be a better predictor of occurrence than plant species composition (Service 2010c).

The Sprague's pipit's wintering range includes south-central and southeast Arizona, Texas, southern Oklahoma, southern Arkansas, northwest Mississippi, southern Louisiana, and northern Mexico. There have been migration sightings in Michigan, western Ontario, Ohio, Massachusetts, and Gulf and Atlantic States from Mississippi east and north to South Carolina. Sprague's pipits also have been sighted in California during fall migration. Migration and wintering ecology are poorly known, but migrating and wintering Sprague's pipits are found in both densely and sparsely vegetated grassland, and pastures and only are rarely found in fallow cropland. Sprague's pipit's exhibit a strong preference for grassland habitat during the winter and an avoidance of areas with too much shrub encroachment. Their use of an area is dependent on habitat conditions, for example, on their wintering grounds, after a wet year, when grass is denser, Sprague's pipits were dense, compared with few individuals in the same areas after dry years when grasses were sparse. In migration, they may be found near or on trails and roads or near water, and in sunflower fields (Service 2010c).

Threats: The primary threat to the species is from habitat conversion and fragmentation, especially due to native prairie conversion to other uses and fragmentation from energy (oil, gas, and wind) development. Much of the land conversion is from native prairie to agricultural uses. Grazing is a major driver in the prairie ecosystem. An appropriate level of grazing can help to maintain the prairie habitat, while too much or too little may make the habitat unsuitable for Sprague's pipits. Like grazing, fire is a major driver on the prairie ecosystem. While there are still some controlled and wild prairie burns, fire is no longer a widespread regular phenomenon as it was in pre-colonial times. Fire suppression has allowed suites of plants, especially woody species, to flourish (Service 2010c).

Although there have been few studies of non-breeding Sprague's pipits, Sprague's pipits appear to be strongly tied to native prairie habitat during the winter. Sprague's pipit's presence on the wintering grounds in a particular area is related to rainfall the previous year. Pipits move to different parts of the wintering range annually, with densities dependent on local conditions. Therefore, it is likely necessary for sufficient suitable habitat to be available throughout the wintering range so that areas that are too dry one year may be used when conditions improve but are poor elsewhere. However, there have not been specific studies examining Sprague's pipits'

habitat use during migration or on the wintering grounds, so it is not possible to determine if the changes to the migration and wintering grounds already constitute a threat to the species that may be placing the species at risk of extinction now or in the future. At present, the magnitude of loss on the breeding grounds is sufficient to determine that the species is at risk of extinction now or in the future even in the absence of specific information on the wintering grounds (Service 2010c).

Issues for Brazos Island Harbor Project: As proposed, the BIH Project will not impact coastal prairies or other grasslands with structure suitable for wintering Sprague's pipits.

Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

No additional comments. See issues section above.

Red-crowned parrot (*Amazona viridigenalis*)

Description/Habitat: The red-crowned parrot is a mid-sized parrot, measuring approximately 13 inches (in) in length and weighing approximately 0.70 pounds (Enkerlin-Hoeflich 1997). Average male and female wing length measures approximately 8.2 in and 7.9 in, respectively. Average tail lengths for males and females measure 4.3 in and 4.0 in, respectively (Forshaw 1989). Adults have a bright green overall plumage distinguished by bright yellow-green cheek areas, bright red on the crown (top of head) and lores (area between eye and bill), and a violet-blue band extending from behind each eye down each side of the crown and neck (McKinney 2003). The back of the head and neck is scaled with black-tipped feathers. The flight feathers are bluish-black overall, with the outer secondary flight feathers also bearing a red patch. The tail feathers are tipped with yellowish green. The bill is cream-yellow colored, the iris is yellow, and the orbital ring and feet are pale gray. Juveniles are similar to adults except that the bright red feathers on the head are limited to the forehead and lores, and the violet-blue band on the sides of the crown tends to form a broad band over and behind the eye (Forshaw 1989, Enkerlin-Hoeflich 1997).

In Texas' Lower Rio Grande Valley (LRGV), red-crowned parrots occur primarily in urban (town) areas. Although little information on urban habitat use specific to the LRGV is available, in cities where the species is introduced it is reported to prefer areas with large trees that provide both food and nesting sites. The red-crowned parrot usually forages in the crowns of trees, but will occasionally feed on low-lying bushes. Foraging appears to be opportunistic, including a variety of seeds and fruits and buds and flowers. Nesting by red-crowned parrots occurs from

March to August. As with other *Amazona* species, red-crowned parrots nest in pre-existing tree cavities, including those created by other birds or resulting from tree decay (Hagne 2011).

Threats: Habitat destruction and modification is one of the main threats to the red-crowned parrot. Parrots have been traded commercially in Mexico for centuries and capture of adults and nestlings for the pet trade represents one of the main threats to the red-crowned parrot. Escaped pets and "released" birds in illegal transit are the driving force behind the establishment of additional introduced populations in southern California, Texas, Puerto Rico, Hawaii, and Florida, where the species numbers in the hundreds if not thousands of birds. In South Texas, construction and development projects may impact the red-crowned parrot due to the loss or conversion of native habitat and nesting sites for urbanization. Examples of such projects include residential and commercial development; oil, gas, and water pipelines; commercial scale wind energy facilities; and U.S. Border Patrol activities (Service 2013).

Issues for Brazos Island Harbor Project: As proposed, the BIH Project will not impact existing or potential habitat for this species.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

No additional comments.

South Texas ambrosia (*Ambrosia cheiranthifolia*)

Description/Habitat: South Texas ambrosia is a perennial plant and a member of the Asteraceae Family. It is herbaceous, erect, silvery to grayish-green in color, and rhizomatous. The leaves are simple and oriented alternative above and opposite below. The flowers occur in inconspicuous terminal racemes of 5-10, and appear as hanging bowls containing 10-20 small yellow buds. The species flowers in the fall (July to November) (Service 1995).

South Texas ambrosia is found in grasslands and mesquite dominated shrub lands on various soils ranging from clay loams to sandy loams. It occurs in open grassy, often disturbed areas on clayey soils, and is known to occur on roadway and pipeline rights-of-way. South Texas ambrosia is known from northern Tamaulipas in Mexico, Cameron, Jim Wells, Kleberg and Nueces counties in Texas (Service 1995).

Threats: Reason for decline is clearing of savannas, non-native grass invasion, and maintenance practices on rights-of-way, and weed control (Service 1995).

Issues for Brazos Island Harbor Project: This species is noted for Cameron County based on historic information/range and last collected by Robert Runyon in 1932 and 1938 in the same

location within the county. No known recent occurrences have been documented for this species in Cameron County.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

No additional comments.

Texas ayenia

Description/Habitat: The Texas ayenia of the Sterculiaceae Family (Cacao) is a slightly hairy, unarmed shrub approximately 2-5 feet tall with simple, hairy, alternate oval leaves. The few small flowers present on this shrub are clustered in the upper leaves. The color of the flowers may be green, cream, or pink. The plant has a small, round, five-parted fruit that is covered with short, curved, sharp prickles (Service 1995). Texas ayenia occurs in dense brush on alluvial soils in Cameron and Hidalgo Counties (Service 1995).

Threats: Texas ayenia is threatened with habitat destruction and fragmentation through alteration and conversion of native plant communities to commercial use, invasion of non-native grasses, and low population numbers (Service 1995).

Issues for Brazos Island Harbor Project: As proposed, the BIH Project, new work and maintenance activities and DMPAs will not directly impact areas supporting potential habitat for this species. Over the 50 year life-of-project, assessment and review of the maintenance program, particularly for disposal options which currently are not proposed, may in the future become important to re-visit. At that time, impacts to this species will need consideration and consultation.

Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project, USACE, June 2013

Comments and Recommendations:

No additional comments. Please see issues section above.

FISH AND WILDLIFE CONCERNS AND PLANNING OBJECTIVES

The Service's fish and wildlife concerns relative to the project's proposed construction and maintenance plan have been discussed in the above sections. With regard to the actual implementation of the proposed project; however, POB representatives indicated that, due to funding issues, it is likely that construction of the BIH Project will have to wait 3 years or more. Coastal South Texas, including the project area, is in a dynamic environment, and new information is likely to become available on federal trust species, such as the red knot. The Service therefore recommends that whenever funding becomes available for the project, that the USACE and the POB coordinate with the Service to discuss new information as well as review the status of the project area itself to determine if changes need to be made to the project plan or if consultation under section 7 of the Endangered Species Act should be re-initiated.

LITERATURE CITED

Breuer, Joseph P. 1962: Ecological Survey of the Lower Laguna Madre of Texas, 1953-1959. Publications of the Institute of Marine Science, Vol. 8, 1962, Institute of Marine Science, Port Aransas, Texas.

Enkerlin-Hoeflich, E. C. and K. M. Hogan. 1997. Red-crowned Parrot (Amazona viridigenalis), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/292. Accessed May 5, 2011

Everitt, J. H., D. L. Drawe. 1993. Trees, Shrubs, & Cacti of South Texas. Texas Tech University Press, Lubbock, Texas.

Forshaw, J.M. 1989. Parrots of the World, 3rd Edition. Silvio Mattachhione & Co., Ontario, Canada.

Hagne, M. 2011. Response to request for information about red-crowned parrot numbers and population trends in Texas. June 13, 2011, email to E. VanGelder.

Harrington, B. A. 2002. Red Knot (*Calidris canutus*). *In* The Birds of North America, No. 563 (A. Poole and F. Gill, eds.) the Birds of North American, Inc., Philadelphia, PA.

Lonard, R. I., J. H. Everitt, and F. W. Judd. 1991. Woody Plants of the lower Rio Grande Valley, Texas. Number 7, Miscellaneous Publications, Texas Memorial Museum, University of Texas at Austin.

McKinney, B. 2003. Photo credit for red-crowned parrot at the World Birding Center, Texas.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1992. Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic and Gulf of Mexico. National Marine Fisheries Service, Washington, D.C. Recovery plan is available online at http://ecos.fws.gov/docs/recovery_plan/920406.pdf

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1993. Recovery Plan for Hawksbill Turtles in the U.S. Caribbean Sea, Atlantic Ocean, and Gulf of Mexico. National Marine Fisheries Service, St. Petersburg, Florida. Recovery plan is available online at http://ecos.fws.gov/docs/recovery_plan/931110.pdf

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 2008. Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (*Caretta caretta*), Second Revision. National Marine Fisheries Service, Silver Spring, MD.

National Marine Fisheries Service, U.S. Fish and Wildlife Service, and SEMARNAT. 2011. Bi-National Recovery Plan for the Kemp's Ridley Sea Turtle (Lepidochelys kempii), Second

Revision. National Marine Fisheries Service, Silver Spring, Maryland. Recovery plan available online at http://ecos.fws.gov/docs/recovery_plan/kempsridley_revision2_with%20signature.pdf

Oberholser, H. C. 1974. The Bird Life of Texas. University of Texas Press, Austin, TX.

Rosencrans, M. 2013 U. S. Drought Monitor, Released July 11, 2013, NOAA/NWS/NCEP/CPC. Map is available online at http://droughtmonitor.unl.edu/

Shearer, T. 2003. Fish and Wildlife Coordination Act Report for an Environmental Impact Statement on the Laguna Madre, Texas Gulf Intracoastal Waterway Dredge Material Management Plan. U. S. Fish and Wildlife Service, March 2003.

Shields, M. 2002. Brown Pelican (*Pelecanus occidentalis*). *In* The Birds of North America, No. 609 (A. Poole and F. Gill, eds.) the Birds of North American, Inc., Philadelphia, PA.

Tunnell, J. and F. Judd, editors. 2002. The Laguna Madre of Texas and Tamaulipas, Texas A&M University Press, College Station, Texas.

U. S. Army Corps of Engineers. 2007. Brazos Island Harbor, Texas, Project Review Plan, Independent Technical Review and External Peer Review, April 2007.

U. S. Army Corps of Engineers. 2012a. Brazos Island Harbor, Texas Brownsville Ship Channel Existing and Proposed Channel, Plan Sta. 7+000 to sta. -7+000.

U. S. Army Corps of Engineers. 2012b. Brazos Island Harbor, Texas Brownsville Ship Channel Existing and Proposed Channel, Plan Sta. 21+000 to sta. 7+000.

U. S. Army Corps of Engineers. 2013a. Draft Biological Assessment for Federally-Listed Threatened and Endangered Species, Brazos Island Harbor Channel Improvement Project Tentatively Selected Plan (52 Feet by 250 Feet Project), Cameron County, Texas. U.S. Army Corps of Engineers, Galveston, Texas. June 2013.

U. S. Army Corps of Engineers. 2013b. Draft Description of the Tentative Selected Plan (TSP), the 52- by 250-foot TSP for the BIH channel Improvement Project. June 2013. Text and draft plan drawings.

U. S. Fish and Wildlife Service. 1990. Northern Aplomado Falcon Recovery Plan. Fish and Wildlife Service. Albuquerque, New Mexico. Recovery plan available online at http://ecos.fws.gov/docs/recovery_plan/900608.pdf

U. S. Fish and Wildlife Service and National Marine Fisheries Service. 1991. Recovery Plan for U.S. Population of Atlantic Green Turtle (*Chelonia mydas*). Prepared by The Loggerhead/Green Turtle Recovery Team for Southeast Region, U.S. Fish and Wildlife Service, Atlanta, Georgia, and National Marine Fisheries Service, Washington, D.C.

U.S. Fish and Wildlife Service. 1995. Threatened and Endangered Species of Texas. U.S. Fish and Wildlife Service. Revised June 1995.

U. S. Fish and Wildlife Service. 2001. Final determination of critical habitat for wintering piping plovers. Federal Register 66(132): 36038-36040.

U. S. Fish and Wildlife Service. 2003. Recovery Plan for the Great Lakes Piping Plover (*Charadrius melodus*), September 2003. Department of the Interior, U.S. Fish and Wildlife Service, Great Lakes-Big Rivers Region. Recovery plan available online at http://ecos.fws.gov/docs/recovery_plan/030916a.pdf

U. S. Fish and Wildlife Service. 2008a. Birds: Laguna Atascosa National Wildlife Refuge. Bird checklist available online at http://www.fws.gov/uploadedFiles/BirdFactSheet_2008-508.pdf

U. S. Fish and Wildlife Service. 2008b. South Texas brushland inventory: Identifying potential ocelot (*Leopardus pardalis*) habitat 2008. U.S. Fish and Wildlife Service Southwest Region (R2) National Wildlife Refuge System (NWR), Div. of Planning Habitat and Population Evaluation Team (HAPET).

U.S. Fish and Wildlife Service. 2009. Draft post-delisting monitoring plan for the brown pelican. U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, Ventura, California. Available online at http://www.gpo.gov/fdsys/pkg/FR-2009-09-30/pdf/E9-23557.pdf#page=1

U. S. Fish and Wildlife Service. 2010a. Final Biological Opinion on the Effects to the Endangered Ocelot (*Leopardus pardalis*), and the endangered Gulf Coast Jaguarundi (*Herpailurus yagouaroundi cacomitli*), from the Proposed Upgrade of U.S. 77 Between Corpus Christi, Nueces County, Texas and Harlingen, Cameron County, Texas.

U. S. Fish and Wildlife Service. 2010b. Ocelot Recovery Plan (*Leopardus pardalis*), Draft First Revision, Original Approval: August 22, 1990. Southwest Region, U.S. Fish and Wildlife Service, Albuquerque, New Mexico. Draft recovery plan available online at http://ecos.fws.gov/docs/recovery_plan/100826.pdf

U. S. Fish and Wildlife Service. 2010c. 12-Month Finding on a Petition to List Sprague's Pipit As Endangered or Threatened Throughout Its Range. Federal Register 75: 56028-56050. Available online at http://www.gpo.gov/fdsys/pkg/FR-2010-09-15/pdf/2010-22967.pdf#page=1

U. S. Fish and Wildlife Service. 2011. Birds: Santa Ana National Wildlife Refuge. Bird checklist available online at http://www.fws.gov/uploadedFiles/BirdList-2011_508.pdf]

U. S. Fish and Wildlife Service. 2012. Gulf Coast Jaguarundi Recovery Plan (*Puma yagouaroundi cacomitli*), Draft First Revision, Original version part of Listed Cats of Texas and Arizona, 1990. Southwest Region, U.S. Fish and Wildlife Service, Albuquerque, New Mexico. Draft revision of recovery plan available online at http://ecos.fws.gov/docs/recovery_plan/FR00001276%20DRAFT%20RECOVERY%20PLAN%20v8%20clean.pdf

U. S. Fish and Wildlife Service. 2013. Species Assessment and Listing Priority Assignment Form. Scientific Name: *Amazona viridigenalis*. Common Name: red-crowned parrot. Lead region: Region 2 (Southwest Region). Available online at http://ecos.fws.gov/docs/candidate/assessments/2013/r2/B0GO_V01.pdf