

APPENDIX N INSHORE AND OFFSHORE T&E SPECIES REPORT

**THREATENED AND ENDANGERED SPECIES REPORT FOR
INSHORE COMPONENTS OF THE PROPOSED BLUEWATER
SPM PROJECT IN ARANSAS, NUECES, AND SAN PATRICIO
COUNTIES, TEXAS**

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1 INTRODUCTION

Lloyd Engineering, Inc. (Lloyd) retained SWCA Environmental Consultants (SWCA) to conduct a threatened and endangered species evaluation and survey for inshore components associated with the proposed Bluewater SPM Project located in Aransas, Nueces, and San Patricio Counties, Texas. The proposed Bluewater SPM Project will be located within the U.S. Army Corps of Engineers (USACE) Galveston District area of responsibility (Appendix A, Figure 1).

The proposed Bluewater SPM Project consist of the construction and operation of onshore, inshore, and offshore components including a deepwater port to provide a logistical solution for the safe and reliable export of crude oil. This wetland delineation report presents the results of field surveys conducted for inshore project components including two 30-inch-diameter pipelines, booster station, and associated construction workspaces. The proposed inshore pipeline infrastructure originates near Aransas Pass, Texas, crosses to Stedman Island, and parallels State Highway 361 onto Harbor Island where a booster station will be positioned. From this point, the inshore pipelines will cross Lydia Ann Channel onto San Jose Island to extend offshore into the Gulf of Mexico. Refer to Figure 1 (Vicinity Map) in Appendix A for a depiction of the survey area investigated for inshore components associated with the proposed Bluewater SPM Project.

2 METHODS

2.1 Species Identification

The species evaluated in this report were based on a list of federally threatened and endangered species for Aransas, Nueces, and San Patricio Counties, Texas, available at the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) website (USFWS 2019a) (Appendix B) in order to facilitate compliance with the Endangered Species Act of 1973 (ESA), as amended. SWCA also evaluated the project survey area for potential bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) habitat, as they are protected by the Bald and Golden Eagle Protection Act of 1940 (BGEPA). SWCA accessed the Texas Parks and Wildlife Department (TPWD) Natural Diversity Database (TXNDD), which provides known occurrence records for listed species (TXNDD 2019). Please refer to Figure 2 (Appendix A) for a map of occurrence records for listed species near the project survey area. SWCA also accessed the USFWS Critical Habitat Map, which provides spatial data for active proposed and designated critical habitat for threatened and endangered species (USFWS 2019b). The potential for occurrence within the project survey area for the species addressed in this report is based on 1) documented occurrences; 2) existing information on distribution; and 3) qualitative comparisons of the habitat requirements of each species with vegetation communities or landscape features observed within the project survey area. Possible impacts to these species resulting from construction of the proposed project were evaluated based on reasonably foreseeable project-related activities.

2.2 Species Evaluation

The potential for occurrence of each federally listed and proposed species was summarized according to the categories listed below. In the evaluation, the rationale for category assignment is provided after each category in Table 1. Potential for occurrence categories are as follows:

- *Known to occur*—the species has been documented in the project survey area by a reliable observer.

- *May occur*—the survey area is within the species’ currently known range, and habitat types within the survey area resemble those known to be used by the species.
- *Unlikely to occur*—the area is within the species’ currently known range, but habitat types within the survey area do not resemble those known to be used by the species.
- *Does not occur*—the survey area is clearly outside the species’ currently known range.

Those species listed as threatened, endangered, or as a candidate for federal listing by the USFWS were assigned to one of three or one of two categories of possible effect, following USFWS recommendations. The evaluation of impact to species is limited to the project survey area and does not assess the impacts to the species or their habitats at regional or global levels. The effects determinations recommended by USFWS (USFWS 1998) include:

- *May affect, is likely to adversely affect/May impact*—adverse effects to listed species may occur, as a direct or indirect result of the proposed project, and the effect is not discountable, insignificant, or beneficial.
- *May affect, is not likely to adversely affect/May impact*—the proposed project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial.
- *No effect*—the proposed project will not affect federally listed species or critical habitat.

The BGEPA prohibits anyone, without the proper permit, from taking bald eagles or golden eagles, including their parts, nests, or eggs. The BGEPA defines *take* as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” The two possible effect determinations for taking bald eagles or golden eagles include:

- *Will cause a take*—the proposed project and its activities reasonably anticipate causing a take of bald eagles or golden eagles including their parts, nests, or eggs.
- *Unlikely to cause a take*— the proposed project and its activities do not reasonably anticipate a take of bald eagles or golden eagles including their parts, nests, or eggs.

2.3 Field Reconnaissance

SWCA conducted a field reconnaissance of the project survey area in January and February 2019. SWCA used global positioning system (GPS) data uploaded with the project survey area for general orientation and locating the project boundaries. The survey corridor boundary consists of a 500- to 800-foot-wide corridor centered on the pipeline centerline. The field reconnaissance consisted of pedestrian visual surveys to evaluate the absence or presence of suitable habitat and occurrences of listed species within the project survey area. SWCA was not contracted to, nor conducted, tailored presence/absence surveys specific for individual species.

3 RESULTS

3.1 Species Evaluation

SWCA evaluated impacts of the proposed project on 19 species of federal concern, including federally listed threatened or endangered species and the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), as they are protected under the BGEPA (USFWS 2019a) (Appendix B). The least

tern [*Sterna antillarum*] need only be evaluated for wind-related projects along this species' migratory route (USFWS 2019a), and therefore this species was eliminated from further analysis for this project. Additionally, the golden eagle's range of migration does not extend further southeast than Central Texas (NatureServe 2019a), and it too was eliminated from further analysis for this project.

Table 1 identifies the species carried forward for further evaluation of impacts from the proposed project. The table also includes a summary of species' habitat requirements, potential for occurrence, and determined effect caused by construction activities associated with the proposed project within the survey area.

Table 1. Federally Listed Species in Aransas, Nueces, and San Patricio Counties, Texas

Common Name (Scientific Name)	Federal Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
BIRDS				
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	O	Ranges throughout North America. Found in forested areas primarily near (within < 2.48 miles) large bodies of water (NatureServe 2019b). Nests in tall trees or cliffs near water from October to July with breeding pairs returning to the same nest annually. May occur in dry open uplands if adjacent to large waterbodies (Campbell 2003).	<i>Unlikely to occur.</i> There have been no TXNDD occurrences near the project area (TXNDD 2019). The project area does not contain preferred habitat because it lacks forested habitat with trees for nesting. The species is more often found in east Texas. See section 3.1.1.	<i>Not likely to cause a take.</i> See Section 3.1.1.
Piping Plover (<i>Charadrius melodus</i>)	T	The piping plover is a migratory species with a breeding distribution within the Great Lakes region and Atlantic coast and along central North America from Alberta, Canada to Colorado and Oklahoma (USFWS 2012a). The non-breeding or wintering distribution occurs mainly coastal from North Carolina to Florida and the Gulf Coast states including Texas (USFWS 2012a; NatureServe 2019c). Piping plovers nest on wide, gravelly beaches with little vegetation in alkali lakes and wetlands, inland lakes, reservoirs, and major rivers in the northern Atlantic coast, Great Lakes region, and around waterbodies of the Great Plains and Canada. Wintering habitat includes beaches, tidal sand flats, mud flats, algal mats, washover passes, and small dunes where they feed primarily on small invertebrates (Campbell 2003; NatureServe 2019c).	<i>Known to occur.</i> A large portion of San Jose Island is currently listed as critical habitat for the piping plover (USFWS 2019b). Critical habitat for the wintering population of piping plovers was designated July 10, 2001, and divided into 137 units across eight states (USFWS 2001). The proposed project crosses one identified piping plover critical habitat designated unit, referred to as TX-16 (USFWS 2009a). Only 10 acres of the 1,378 acres of TX-16, or 0.007% of the total area, occur within the proposed project area. This area will be avoided by horizontal directional drill (HDD) (Figure 3, Appendix A) (USFWS 2001). See section 3.1.2.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.2.
Whooping Crane (<i>Grus americana</i>)	E	Endemic to North America the species can currently only be found in three locations. Breeding occurs in northern Canada and Wisconsin, and the species winters along the Texas Gulf Coast within and near the Aransas National Wildlife Refuge (USFWS 2012b). A variety of habitats are used during migration including croplands and wetlands (Austin and Richert 2001).	<i>May occur.</i> Project site near the known migration pattern of the species. The closest designated critical wildlife habitat is approximately 19 miles away at the Aransas Wildlife Refuge; no critical habitat areas are located within the project boundaries and associated activities. No known TXNDD occurrences are in the vicinity of the project area (TXNDD 2019). See section 3.1.3.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.3.

Threatened and Endangered Species Report for Inshore Components of the Proposed Bluewater SPM Project in Aransas, Nueces, and San Patricio Counties, Texas

Common Name (Scientific Name)	Federal Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Northern Aplomado Falcon (<i>Falco femoralis septentrionalis</i>)	E	In Texas, northern aplomado falcons are found in the South Texas and Trans-Pecos regions (Campbell 2003; USFWS 2014a). Their geographical distribution ranges from southern Argentina through Mexico and into the southwestern U.S., including south Texas. They can be found in a variety of habitats, generally containing open grassland with scattered patches of shrubs or trees or woodland and forest borders. In the Gulf Coast region of Texas and Mexico the species occupies coastal prairie habitat, coastal savannas, marshes, and tidal flats with few trees, mesquite, yucca and cactus, or other tall succulent shrubs (Keddy-Hector 2000).	<i>Unlikely to occur.</i> The closest populations occur near Brownsville, over 100 miles south of the project area, and in and near the Aransas National Wildlife Refuge on Matagorda Island and the northern end of San Jose Island, approximately 10 miles northeast of the project area (USFWS 2014a). There are no known TXNDD occurrences near the project area (TXNDD 2019). No nest or falcons were observed during the time of SWCA's survey. See section 3.1.4.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.4.
Rufa Red Knot (<i>Calidris canutus rufa</i>)	T	The rufa red knot prefers the shoreline of coast, bays, and uses mudflats during rare inland encounters. Primary prey items include coquina clam (<i>Donax</i> spp.) on beaches and dwarf surf clam (<i>Mulinia lateralis</i>) in bays (USFWS 2013a). Wintering range includes Aransas County, as well as areas further up and down the Texas coast. It winters close to the coast, inhabiting tidal flats and beaches, herbaceous wetlands, and tidal flats and shorelines (USFWS 2015a).	<i>May occur.</i> There are no known TXNDD occurrences in the vicinity of the project area (TXNDD 2019), and no critical habitat has been designated for the rufa red knot. While there are no documented occurrences in close proximity to the project area, the species is known to occur in the surrounding region. See section 3.1.5.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.5.
Attwater's Greater Prairie-chicken (<i>Tympanuchus cupido attwateri</i>)	E	Prairie-chickens require coastal prairie with open grasslands with a variety of grass heights and minimal shrub and tree cover (Campbell 2003; USFWS 2010a). Minimum areas required to support a viable population range from several hundred to several thousand acres. There are only three known wild populations remaining in Texas.	<i>Does not occur.</i> There are three known and closely monitored populations in the region, which are located outside of the proposed project area (USFWS 2010a). The nearest known population occurs in a priority management zone in Refugio and Goliad Counties, approximately 16 miles from the project area, and Aransas County is only part of the historic range of the species. There is no suitable habitat in the project area, and thus the species would not be found in the project area. See section 3.1.6.	<i>No effect.</i> See section 3.1.6.
MAMMALS				
West Indian Manatee (<i>Trichechus manatus</i>)	T	Found in shallow coastal waters, estuaries, bays, rivers, and lakes from Florida to Texas. However, the Texas Gulf Coast is at the very western	<i>Known to occur/Unlikely to occur.</i> The project area is outside of critical habitat areas. Manatees have occasionally been seen in bays near the project area,	<i>No effect.</i> See section 3.1.7.

Threatened and Endangered Species Report for Inshore Components of the Proposed Bluewater SPM Project in Aransas, Nueces, and San Patricio Counties, Texas

Common Name (Scientific Name)	Federal Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
		extent of their range, and manatees are rarely sighted in the region. Known to prefer rivers and estuaries over marine habitats and can travel through dredged canals or quiet marinas (NatureServe 2019d).	with the most recent TXNDD occurrence approximately 0.5 miles from the project area near Port Aransas in 2016 (TXNDD 2019). While nearby bays and channels of the project area could be traversed by the species, the species is not known to occur year-round in the region due to winter temperatures, thus reducing the likelihood that the species will occur in the vicinity of the project area. Any possible contact during construction will be avoided by HDD methods to bypass waterways. See section 3.1.7.	
Gulf Coast Jaguarundi (<i>Puma yagouarundi cacomitli</i>)	E	The jaguarundi's historic range occurs from southern Texas and coastal Mexico in the north, through Central and South America east of the Andes, and as far south as northern Argentina (Campbell 2003). Habitat is lowland brush areas close to a source of running water, including dry, dense thorn forest to wet grassland (Campbell 2003).	<i>Does not occur.</i> The closest known population occurs more than 100 miles to the southwest in Mexico (USFWS 2013b). While there are two TXNDD occurrence records in the vicinity of the project area (one dated 1984 and another dated 1991 [TXNDD 2019]), they are listed as needing review; TPWD now lists the last Jaguarundi sighting in the state of Texas in Brownsville, located over 100 miles south of the project, in 1986, and the species is largely considered extinct in Texas (Campbell 2003). Additionally, the project area does not contain suitable habitat. See section 3.1.8.	<i>No effect.</i> See section 3.1.8.
Ocelot (<i>Leopardus pardalis</i>)	E	Ocelots historically ranged throughout south Texas, Mexico, Central America, and South America (USFWS 2016, 2018a; Navarro-Lopez et al. 1993). Habitat preference includes dense Tamaulipan thornscrub and woodland habitats with >75% canopy cover (and canopy height greater than 6 feet), and dense ground cover interspersed with alkali sacaton grasses (Tewes and Everett 1986; Simpson 2010).	<i>Does not occur.</i> The closest known populations occur more than 100 miles to the south of the project area, and there are no known TXNDD occurrences in the area (Campbell 2003; Janečka et al. 2011; TXNDD 2019). In addition, the habitat present within the project area does not meet the species' life history needs. See section 3.1.9.	<i>No effect.</i> See section 3.1.9.
REPTILES				
Kemp's Ridley Sea Turtle (<i>Lepidochelys kempii</i>)	E	Ranges from north Atlantic Ocean across the east coast and west into the Gulf of Mexico as far west as Texas and northern Mexico, particularly at Tamaulipas, Mexico (USFWS 2015b). Adult and sub-adult Kemp's Ridley sea turtles primarily occupy nearshore habitats that contain muddy or sandy bottoms where prey can be found (Herps of Texas 2019a). Kemp's Ridley	<i>May occur.</i> In Texas, these species can be found along South Texas inshore and near-shore coastal waters. This species is known to occur at the Padre Island National Seashore (PINS) vicinity, approximately 20 to 100 miles south of the project area. There are no known TXNDD occurrences in the project vicinity (TXNDD 2019). See section 3.1.10.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.10.

Threatened and Endangered Species Report for Inshore Components of the Proposed Bluewater SPM Project in Aransas, Nueces, and San Patricio Counties, Texas

Common Name (Scientific Name)	Federal Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
		hatchlings and small juveniles inhabit a very different environment than adults. After emerging from the nest, hatchlings enter the water and quickly swim offshore to open ocean developmental habitat where they associate with floating sargassum seaweed (National Marine Fisheries Service [NMFS] et al. 2011; National Park Service [NPS] 2019).		
Green Sea Turtle (<i>Chelonia mydas</i>)	T	Global distributions in either the tropics, subtropics, or temperate waters (National Oceanic and Atmospheric Administration [NOAA] 2019; Herps of Texas 2019b). Dependent upon life history stage the green sea turtle has been documented using a variety of habitats. Adults spend most of their time within shallow coastal waterways with large sea grass beds (Reich et al. 2007). Juvenile turtles will spend most of their time within deep pelagic waters (Reich et al. 2007).	<i>Known to occur.</i> Several TXNDD occurrences within 5 miles of the project area in Redfish Bay in 2004 and 2008 (TXNDD 2019). The green sea turtle is known to occur in the inshore Texas waters in relative abundance (Landry 2010). See section 3.1.10.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.10.
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	T	The loggerhead sea turtle occurs in both hemispheres in temperate and tropical waters, typically found along the continental shelf region and estuaries nearshore (NMFS and USFWS 2007; SpaceX 2013; NOAA 2019). Juveniles will spend time within sargassum. The species is known for its relatively large head and powerful jaw which allows it to feed on hard-shelled prey (NOAA 2019).	<i>Known to occur.</i> Last TXNDD occurrence approximately 7.5 miles southwest of the project area in Corpus Christi Bay (TXNDD 2019). The loggerhead sea turtle is known to occur in the inshore Texas waters in relative abundance (Landry 2010). See section 3.1.10.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.10.
Atlantic Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	E	Global distributions in either the tropics, subtropics or temperate waters (NOAA 2019). The Atlantic Hawksbill sea turtle gets its name from its hawk-like beak and is typically small to medium sized (NMFS and USFWS 2013a; SpaceX 2013; Herps of Texas 2019c). While they occupy different marine environments throughout their lifecycle, such as shallow coastal areas and lagoons, they have a preference for coral reefs where there is adequate shelter from predators and areas for resting.	<i>May occur/known to occur.</i> Last TXNDD occurrence near port Aransas in 1958 (TXNDD 2019). Project area does not contain the preferred habitat of coral reefs. See section 3.1.10.	<i>May affect, is not likely to adversely affect/May impact.</i> See section 3.1.10.

Threatened and Endangered Species Report for Inshore Components of the Proposed Bluewater SPM Project in Aransas, Nueces, and San Patricio Counties, Texas

Common Name (Scientific Name)	Federal Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	T	Global distributions in either the tropics, subtropics or temperate waters (NMFS and USFWS 2013; SpaceX 2013; NOAA 2019). Found primarily in open ocean habitat. This species has been documented traveling distances of over 6,800 miles. The species is a the most pelagic of sea turtle species and is typically found in deeper waters of the open ocean (SpaceX 2013).	<i>Unlikely to occur.</i> The leatherback sea turtle is usually found in the deeper, open ocean rather than nearshore regions. There are no known TXNDD occurrences in the project area (TXNDD 2019; NPS 2019). See section 3.1.10.	<i>No effect.</i> See section 3.1.10.
CLAMS				
Golden Orb (<i>Quadrula aurea</i>)	C	The Golden Orb prefers flowing fresh waters in moderately sized rivers with firm and stable substrate (USFWS 2009b, 2011). Distribution is restricted to the Guadalupe, San Antonio, and Nueces-Frio River basins in central Texas.	<i>Does not occur.</i> The Golden Orb is a freshwater species with habitat requirements not found within the project area. There are a no TXNDD occurrences in the project vicinity (TXNDD 2019). See section 3.1.11.	<i>No effect.</i> See section 3.1.11.
FLOWERING PLANTS				
Slender rush-pea (<i>Hoffmannseggia tenella</i>)	E	Both plants have very small and localized ranges in south Texas, limited to Nueces and Kleberg Counties (USFWS 2018b).	<i>Unlikely to occur.</i> Both species are unlikely to occur to due to lack of habitat requirements in the project area. There are no TXNDD occurrences in the project vicinity (TXNDD 2019). See Section 3.1.12.	<i>No effect.</i> See Section 3.1.12.
South Texas Ambrosia (<i>Ambrosia cheiranthifolia</i>)		The slender rush-pea prefers coastal prairie grasslands on level uplands and on gentle slopes along drainages, usually in areas of shorter or sparse vegetation with Blackland clay soils (NatureServe 2019e). The South Texas ambrosia prefers thorn shrub and mesquite wooded habitats. Both prefer fine, calcareous clay soils associated with Pleistocene deltas (USFWS 2018b).		

*USFWS *Status Definitions

E = Endangered. The Endangered Species Act (ESA) specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. The ESA specifically prohibits the take of a species listed as threatened. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

C = Candidate. A species under consideration for official listing for which there is sufficient information to support listing.

O = Other. Additional formal federal protections under the Bald and Golden Eagle Protection Act (BGEPA).

Based on the best available information, no species protected under the ESA or BGEPA are likely to be adversely affected or impacted in or near the project area. Of all the species considered, five are known to occur within the project area or vicinity: piping plover (*Charadrius melodus*), loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), West Indian manatee (*Trichechus manatus*), and Atlantic hawksbill sea turtle (*Eretmochelys imbricata*). The Atlantic hawksbill sea turtle is not commonly found in the region and has only one occurrence record 70 years ago (TXNDD 2019). Kemp's Ridley sea turtle (*Lepidochelys kempii*), rufa red knot (*Calidris canutus rufa*), and whooping crane (*Grus americana*) are known to occur in the surrounding region and may occur in the area. Five species evaluated are unlikely to occur due to lack of suitable habitat. Four species do not occur in the project area because they were historically known to occur in the surrounding region but are no longer present or are generally found further inland away from the project area.

3.1.1 **Bald Eagle**

Current Federal Status: Other (protected under BGEPA).

Habitat and Range Requirements: The bald eagle is a large, white-headed, and white-tailed raptor that was initially listed as endangered in 1967. Delisted in 2007, the bald eagle continues to have protection under the BGEPA (USFWS 2007). Bald eagles are opportunistic predators that feed primarily on fish within large, perennial bodies of water. Nests are typically constructed in large, tall trees (i.e., 40–120 feet) within 1 mile of rivers, reservoirs, or open water (Campbell 2003; NatureServe 2019b). Nesting, in Texas, typically takes place from October through July with breeding pairs returning to the same nest annually (Campbell 2003). Wintering areas are typically associated with open water or waterfowl concentration areas. Bald eagles are typically found in the eastern half of Texas and isolated locations within the panhandle of the state (Campbell 2003).

Potential for Occurrence: This species is unlikely to occur in the project area. No TXNDD sightings have occurred within the project vicinity (TXNDD 2019) and bald eagles do not commonly occur in this region. No nests or individuals were observed within the survey area during the wetland delineation or threatened and endangered species surveys. Additionally, the project area does not contain preferred habitat. While the project area is located near bodies of water, no forested habitat exists in the project areas and thus lacks trees for nesting.

Determination of Impact: The project area does not contain suitable habitat for bald eagles. Additionally, no individuals, nests, or suitable habitat were identified within the survey area, and therefore activities within the survey area are *not likely to cause a take* of bald eagles.

3.1.2 **Piping Plover**

Current Federal Status: Threatened

Habitat and Range Requirements: The piping plover is a small, pale sand-colored shorebird with a weight of 1.5 to 2.5 ounces, a body length of 7 inches and a wingspan of 15 inches (Palmer 1967; Elliot-Smith and Haig 2004). Plumage differs in breeding and wintering seasons by the presence of a single black breast band, often incomplete, and a black bar across the forehead in the breeding season. The bill color may also turn from orange to black. It is a migratory species with a breeding distribution within the Great Lakes region and Atlantic coast and along central North America from Alberta, Canada to Colorado and Oklahoma (USFWS 2012a). The non-breeding or wintering distribution occurs mainly coastal from North Carolina to Florida and the Gulf Coast states, including Texas (USFWS 2012a; NatureServe 2019c).

The piping plover was listed as threatened in Texas wintering grounds on January 10, 1986 (USFWS 1985). The primary threats to the species occur in its breeding areas, where it is listed as federally endangered. Population declines were historically due to hunting and currently due to habitat alteration at nesting grounds, nest depredation, and nest disturbance on beach habitat. Secondary threats occur in wintering habitats where the species is no longer listed as endangered and instead listed as federally threatened. Wintering habitats on the Texas Gulf Coast are threatened by industrial activities, urban development, and maintenance activities for commercial waterways, with the potential for pollution from spills of petrochemicals or other hazardous materials also being a concern (Campbell 2003). Human activity on beaches can also disturb wintering piping plovers and degrade habitat conditions (Campbell 2003; USFWS 2003a). The Texas wintering population census indicates a fluctuating to increasing trend in populations from 1,904 plovers in 1991 to 2,145 plovers in 2011 (Haig et al. 2005; USFWS 2012a). Fluctuations may be due to localized effects of weather conditions; changes in roosting, foraging, or nesting habitats; or variance in survey efforts among observers.

Piping plovers nest on wide, gravelly beaches with little vegetation in alkali lakes and wetlands, inland lakes, reservoirs, and major rivers in the northern Atlantic coast, Great Lakes region, and around waterbodies of the Great Plains and Canada. Wintering habitat includes beaches, tidal sand flats, mud flats, algal mats, washover passes, and small dunes where they feed primarily on small invertebrates (Campbell 2003). The migration and wintering period may last as long as 10 months (mid-July through Mid-May). Migration to breeding grounds may occur from mid-February through mid-May, with peak migrations in March (USFWS 2012a). The piping plover exhibits intra and inter-annual wintering site fidelity (Drake et al. 2001; Noel and Chandler 2008; Stucker et al. 2010) and the mean-average home-range size for piping plovers in southern Texas is 4.9 square miles with a core area of 1.1 square miles. They may move 2 miles between sites within a season (Drake et al. 2001). Piping plovers can also be seen foraging along sandy, wet areas along waterways and wetlands beaches. Wintering piping plovers forage on invertebrates located on top of the sand or just below the surface along wrack lines. Specific prey items may include polychaete marine worms, crustaceans, fly larvae, beetles, and bivalve mollusks (USFWS 2012a).

Potential for Occurrence: Critical habitat for the wintering population of piping plovers was designated July 10, 2001, and divided into 137 units across eight states (USFWS 2001). Critical habitat for the piping plover has been designated and revised based on current use and conditions of the habitat (USFWS 2012a). With revisions of critical habitats in North Carolina (USFWS 2008a) and Texas (USFWS 2009a), there are now 141 designated units, totaling 256,513 acres, still among eight states; 18 of these units are located along the Texas coastline and comprise 139,029 acres. Although these units are designated to protect essential life cycle needs of the species (i.e. primary constituent elements), these critical habitat units are protecting the wintering habitat of the species, which are not associated with the leading threats to the species. The project area contains critical habitat areas along San Jose Island, designated as TX-16 by the USFWS, and piping plovers are known to occur in the area (USFWS 2009a, 2019b; TXNDD 2019).

Determination of Impact: The project area contains designated critical habitat along the eastern shore of San Jose Island (USFWS 2009a; USFWS 2019b). Sightings recorded by the TXNDD are as close as 1 mile south of the project area and 1.4 miles north of the project area (TXNDD 2019). The beachfront of San Jose Island, containing TX-16, will be strictly avoided during construction by use of specialized construction methods such as horizontal directional drilling (HDD). Therefore, it is SWCA's professional opinion that the project *may affect, is not likely to adversely affect/may impact* the piping plover.

3.1.3 **Whooping Crane**

Current Federal Status: Endangered

Habitat and Range Requirements: Whooping cranes (*Grus americana*) use a variety of habitats during migration, including croplands for feeding and wetlands for roosting (Howe 1989; Lingle et al. 1991). Austin and Richert (2001) report that migrant whooping cranes observed at feeding sites have primarily been recorded in upland crop fields, including row crops, and that they have also been observed feeding in palustrine wetlands, seasonally flooded habitats, permanent water, pastures, and meadows.

Migrant whooping cranes roost predominantly in palustrine or riverine wetland systems, with these types of wetlands accounting for 91.5% of roost sites recorded (Austin and Richert 2001). Most palustrine roost sites were adjacent to cropland or grassland; less than 8% of palustrine roost sites were reported as occurring adjacent to woodland (Austin and Richert 2001). Studies cited by Canadian Wildlife Service (CWS) and USFWS (2007) suggest landscapes characterized as “wetland mosaics” provide the most suitable stopover habitat.

Whooping cranes currently exist in the wild at three locations and in captivity at 12 sites (USFWS 2012b). In April 2011 the wild population was estimated at 279. There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park (WBNP) and adjacent areas in the Northwest Territories and Alberta provinces of Canada, and winters mainly in and adjacent to Aransas National Wildlife Refuge (ANWR) along the central Texas coast in Aransas, Calhoun, and Refugio Counties. The cranes migrate during spring and fall through an approximately 170-mile-wide corridor between ANWR and WBNP. The migration corridor follows a straight line through the Great Plains, with the cranes traveling through Alberta, Saskatchewan, extreme eastern Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas (CWS and USFWS 2007). The birds begin to arrive at their wintering grounds in mid-October, with most birds arriving from late October through mid-November. Spring migration generally begins in late March, with some birds remaining on the wintering grounds into early May.

Potential for Occurrence: There are no known TXNDD occurrences in the vicinity of the proposed project area (TXNDD 2019). The project area does not occur within the nesting grounds (Northwest Territories and Alberta) or wintering grounds (Aransas, Calhoun, and Refugio Counties), and is located outside of the main migratory corridor used by whooping cranes; the project area does cross the southernmost end of Aransas County, but is located approximately 20 miles southwest of the wintering grounds at the ANWR. Due to the proximity to their known wintering grounds, whooping crane may occur in the project area, though are not known to regularly occur as far south as the project location.

Determination of Impact: While populations of whooping cranes winter along the Texas Gulf coast, the project area is outside of the main wintering grounds and migratory route, and the species has not been sighted near the project area (TXNDD 2019). Due to the unlikeliness for the species to occur in the project vicinity and the localized, temporary nature of construction impacts, it is SWCA’s professional opinion that the project *may affect, is not likely to adversely affect/may impact* the whooping crane.

3.1.4 **Northern Aplomado Falcon**

Current Federal Status: Endangered

Habitat and Range Requirements: Northern aplomado falcons’ (*Falco femoralis septentrionalis*) geographical distribution ranges from southern Argentina through Mexico and into the southwestern U.S., including south Texas (Campbell 2003; USFWS 2014a). They can be found in a variety of habitats,

generally containing open grassland with scattered patches of shrubs or trees or woodland and forest borders. In the Gulf Coast region of Texas and Mexico, the species occupies coastal prairie habitat, coastal savannas, marshes, and tidal flats with few trees, mesquite, yucca and cactus, or other tall succulent shrubs. In northern Mexico, southeastern Arizona, New Mexico, and west Texas, the species has a strong association with Chihuahuan desert grasslands with scattered tall yuccas. In the southwestern U.S., the northern aplomado falcon uses old nests of ravens and other raptors. Nests can be found in Spanish dagger (*Yucca treculeana*), mesquite (*Prosopis* spp.), and man-made structures like power poles. Nests built in Spanish dagger are typically 6 to 10 feet off the ground and average 1 to 3 feet in diameter. Nesting/breeding activities occur between February 1 and August 31; however, this species is territorial and pairs may stay near and defend their nest or nest site throughout the year. Their diet consists primarily of birds, but also includes insects, small snakes, lizards, and rodents (Keddy-Hector 2000).

Potential for Occurrence: There are no known TXNDD occurrences in the vicinity of the proposed project area (TXNDD 2019). The nearest populations, which were reintroduced into the region starting in 1978, occur near Brownsville, over 100 miles south of the project area, and in and near the ANWR on Matagorda Island and the northern end of San Jose Island, approximately 10 miles northeast (USFWS 2014a). While the project area does contain coastal wetland and prairie habitat, there are minimal shrub and trees for perching and nesting, and consequently is not considered prime habitat. Additionally, no nests nor individuals were observed during the time of SWCA's survey, and thus the species is unlikely to occur in the project area.

Determination of Impact: The northern aplomado falcon historically ranges throughout northern Mexico and the southern tip of Texas, with the nearest population introduced to the ANWR in 1978 (USFWS 2014a). This population is located at least 10 miles from the project area, and there are no TXNDD document occurrences within the project area (USFWS 2014a; TXNDD 2019). Therefore, it is SWCA's professional opinion that the project *may affect, but is not likely to adversely affect/may impact* the northern aplomado falcon.

3.1.5 **Rufa Red Knot**

Current Federal Status: Threatened

Habitat and Range Requirements: The rufa red knot is a medium-sized shorebird with a body length of 10 inches with distinctive red plumage during breeding season, which covers the face, breast, and upper belly. During the nonbreeding season, plumage shifts to predominately dusky gray above and whitish below (USFWS 2013a). The rufa red knot breeding range encompasses the central Canadian Arctic and breeding takes place from late May to early August, with females of the species beginning a southward migration earlier than males of the species (USFWS 2015a). The species migrates annually between breeding grounds in the Canadian Arctic to various wintering locations spanning from northern Brazil, Tierra del Fuego at the southern tip of South America, the Southeast United States, and the Northwest Gulf of Mexico, including Texas. During both spring and fall migrations, the Texas Gulf Coast serves as a well-known stopover area for members of the species that winter in South America (USFWS 2013a).

Wintering habitat for the species includes both coastal marine and estuarine habitats with large areas of exposed intertidal sediments (USFWS 2015a). The species prefers muddy or sandy coastal areas located in the mouths of bays, with a strong preference being given towards beaches. Along the Texas Gulf Coast specifically, the species will make regional movements between the Upper and Lower Laguna Madre in order to take advantage of periods of inundation and exposed flats (USFWS 2013a). The wintering and migration diet of the rufa red knot includes hard-shelled mollusks, small crustaceans, and marine worms found along beaches, oyster reefs, and exposed bay bottoms (USFWS 2013a, 2015a).

The species was listed as threatened on December 11, 2014 (USFWS 2014b). The primary threats to the species occur throughout its entire range. Population declines are currently due to habitat loss and vegetation shifts at nesting grounds, rapid sea level rise at nonbreeding locations, and human driven efforts to stabilize shorelines. Wintering habitats on the Texas Gulf Coast are threatened by industrial activities, urban development, and maintenance activities for commercial waterways, with the potential for pollution from spills of petrochemicals or other hazardous materials also being a concern (Campbell 2003). Human activity on beaches can also disturb wintering red knots and degrade habitat conditions (USFWS 2013a). Due to the recent listing of the species, no recovery plan or critical habitat has been established at this time.

Potential for Occurrence: No critical habitat has yet been established for the rufa red knot (USFWS 2019a, b). The Texas Gulf Coast, particularly at Laguna Madre and Padre Island located approximately 15 miles southwest of the project area, is known as common wintering grounds for the species due to the extensive sandy coastline and food supply (USFWS 2015a). There have been no TXNDD occurrences in or near the project area (TXNDD 2019), nor any sightings during the time of SWCA’s field surveys. While no occurrences have occurred in close proximity to the project area, the species have been sighted south of the project area at Laguna Madre, Padre Island, and Mustang Island (USFWS 2015a). Consequently, the rufa red knot may occur in the project area.

Determination of Impact: There have been no TXNDD occurrences nor species sightings during SWCA field surveys in the project area (TXNDD 2019). However, the species is known to occur at Laguna Madre and Padre Island as well as Mustang Island, located south of the project area, and there is potential habitat on San Jose Island and Harbor Island. However, the species is more likely to occur in less developed portions of Harbor Island outside of the project area. While there is potential for occurrence in or near the project area, particularly at San Jose Island, there will be efforts to minimize construction impacts, such as HDD drilling for sensitive areas of San Jose Island. Therefore, it is SWCA’s professional opinion that the project *may affect, is not likely to adversely affect/may impact* the rufa red knot.

3.1.6 **Attwater’s Greater Prairie-Chicken**

Current Federal Status: Endangered

Habitat and Range Requirements: Attwater’s greater prairie-chicken (*Tympanuchus cupido attwateri*) is a small, brown bird about 17 inches long with a short, rounded dark tail (USFWS 2010a, 2019c; TWPD 2019b). Males have large orange sacs on the sides of their necks. The historical range included Louisiana and Texas, though presently their range is fairly constricted. Preferred habitat includes open grasslands with a variety of grass heights and minimal shrub and tree cover. Although native grasses are not a requirement, permanent grassland is necessary (USFWS 2010a). Minimum areas required to support a viable population range from several hundred to several thousand acres. Prairie chickens occur on a sustainable basis in areas with at least 33% grassland and no more than 10–25% woody cover. Due primarily to habitat destruction and fragmentation, the species was listed as endangered in 1973 with the implementation of the ESA (USFWS 2010a).

Potential for Occurrence: As of 2009, there were approximately 90 free-ranging birds remaining in three Texas locations: Attwater’s Prairie Chicken National Wildlife Reserve (Colorado County), Texas City Prairie Preserve (Galveston County), and a private ranch in Goliad County (USFWS 2010a). The nearest known population occurs in a priority management zone in Refugio and Goliad Counties and is approximately 16 miles from the project area. There are no TXNDD sightings of this species in the vicinity of the project area (TXNDD 2019). Additionally, the project area does not contain sufficient acreage of ideal habitat, and the species is generally found on mainland coastal prairies rather than barrier

islands. Thus, while the species has historically been found in the coastal prairies of nearby counties, the Attwater's greater prairie-chicken does not occur in or near the project area.

Determination of Impact: The project area is outside of the range of the closely monitored remaining population. Additionally, the project area does not meet the habitat requirements of the species, as there are no large grassland or prairie areas suitable for the species. Consequently, it is SWCA's professional opinion that project activities will have *no effect* on Attwater's greater prairie-chicken.

3.1.7 **West Indian Manatee**

Current Federal Status: Threatened

Habitat and Range Requirements: The West Indian manatee is a migratory marine mammal of Florida, the Greater Antilles, Central America, and South America. Texas is the extreme western extent of this species' distribution, and they are rarely sighted along the Texas Gulf Coast because waters are too cold during parts of the year (USFWS 2003b). Year-round populations only occur near Florida and Georgia and thus are only found in Texas occasionally. Manatees are found in estuaries, rivers, bays, shallow coastal waters, and lakes, with a preference for estuaries and river environments with warm waters (greater than 20 degrees Celsius) around 3–5 meters deep (NatureServe 2019d). Their diet is primarily submergent, emergent, and floating vegetation. The manatee is protected under the Marine Mammal Protection Act (MMPA) of 1972, which prohibits the take of marine mammals in U.S. waters.

Potential for Occurrence: The project area is located outside of critical habitat areas, and occurrences in Texas are rare since it is at the extreme western extent of the species' range. Manatees have occasionally been seen in bays near the project area, with the most recent TXNDD occurrence approximately 0.5 miles from the project area near Port Aransas in 2016 (TXNDD 2019). While nearby bays and channels of the project area could be traversed by the species, the species is not known to occur year-round in the region due to winter temperatures, thus the species is unlikely to occur in the vicinity of the project area.

Determination of Impact: Texas is at the extreme western extent of this species' distribution and occurrences are rare. It is unlikely that the species would be found in the project area. While the species could possibly traverse through nearby bays and coastal waters, the project will use specialized construction methods such as HDD to bypass waterways and avoid impacts. Consequently, it is SWCA's professional opinion that project activities will have *no effect* on the manatee.

3.1.8 **Gulf Coast Jaguarundi**

Current Federal Status: Endangered

Habitat and Range Requirements: The Gulf Coast jaguarundi (*Herpailurus yagouaroundi*) is a small, secretive cat listed as endangered in 1976 (USFWS 1976). Within the U.S., jaguarundis historically occurred primarily in dense thorny scrublands in Cameron, Hidalgo, Willacy, and Starr Counties, Texas (USFWS 2013b). Because of its secretive nature, its status and distribution within its historic northern range limits in the Lower Rio Grande Valley (LRGV) of southern Texas are poorly known. Approximately 95 percent of lands that formerly contained brushy habitat in southernmost Texas have been converted to agriculture. Loss of habitat poses the greatest threat to existence of the jaguarundi in Texas (Campbell 2003).

Potential for Occurrence: The nearest currently known population of Gulf Coast jaguarundis is approximately 150 miles south of the survey area in Tamaulipas, Mexico (USFWS 2013b). While there are two TXNDD occurrence records in the vicinity of the project area (one dated 1984 and another dated

1991 [TXNDD 2019]), they are listed as needing review. TPWD now lists the last Jaguarundi sighting in the state of Texas in Brownsville in 1986, located over 100 miles south of the project area; the species is largely considered extinct in Texas (Campbell 2003; TPWD 2019). According to the SpaceX (2013) Biological and Conference Opinion Summary, there have been three sightings of the species since 1993 in southern Texas. Due to the small number of sightings which are largely concentrated in Southern Texas, distances over 100 miles away from the project area, and the lack of potential habitat in the project area, it is concluded that the species does not occur in the project area.

Determination of Impact: The project area is dominated by estuarine intertidal emergent vegetation communities, as the project route crosses through coastal marsh and barrier islands. Thorn scrub habitat represented by plant species such as spiny hackberry (*Celtis pallida*), Brazilian bluewood (*Condalia hookeri*), and desert yaupon (*Schaefferia cuneifolia*) were not identified during surveys. Furthermore, the species is considered extinct in Texas (Campbell 2003; TPWD 2019). Consequently, the project is anticipated to have *no effect* on the jaguarundi.

3.1.9 **Ocelot**

Current Federal Status: Endangered

Habitat and Range Requirements: The ocelot (*Leopardus pardalis*) is a medium-sized, mostly nocturnal species listed as endangered in 1982 because of extensive habitat destruction and past predator-control operations in Texas (USFWS 2016, 2018a). The species historically ranged throughout south Texas, Mexico, Central America, and South America (USFWS 2016; Navarro-Lopez et al. 1993). Habitat preference includes dense Tamualipan thornscrub and woodland habitats with >75% canopy cover (and canopy height greater than 6 feet), and dense ground cover interspersed with alkali sacaton grasses (Tewes and Everett 1986; Simpson 2010). They may also use palustrine scrub-shrub or densely vegetated riparian corridors. Greater plant species richness and greater plant densities were positively correlated with the ocelot's habitat preferences (Simpson 2010).

Potential for Occurrence: With the conversion of brush habitat in southernmost Texas and past predator-control operations, known populations are currently restricted to two disparate aggregations in Willacy and Cameron Counties with population sizes of less than 50 individuals (Campbell 2003; Janečka et al. 2011). One aggregation is in Cameron County and is contained in and around the Laguna Atascosa National Wildlife Refuge (LANWR). The other is a smaller group of ocelots present in northern Willacy County on the privately owned Yturria Ranch (Navarro-Lopez et al. 1993; USFWS 2016). Both aggregations occur more than 100 miles south of the proposed project area. There are no TXNDD occurrences in the project vicinity (TXNDD 2019), and thus it is considered the ocelot does not occur in the project area.

Determination of Impact: The survey area does not contain suitable habitat for the species. The habitat within the survey area is dominated by densely vegetated palustrine emergent wetlands and tidal mud flats. The preferred habitat of thornscrub and species that generally make this habitat type up were not documented during the field survey. In addition, the two known populations are more than 100 miles south of the project vicinity. Consequently, the project is anticipated to have *no effect* on the ocelot.

3.1.10 **Sea Turtles**

Current Federal Status: Threatened and Endangered

There are five sea turtle species listed by USFWS as having the potential to occur in the counties associated with the survey area: Kemp's Ridley sea turtle, green sea turtle, loggerhead sea turtle, Atlantic

hawksbill sea turtle, and leatherback sea turtle (*Dermochelys coriacea*) (USFWS 2019a). All but the Kemp's Ridley sea turtle have global distributions in either the tropics, subtropics, or temperate waters (NOAA 2019).

The primary nesting areas for all sea turtle species are located outside of Texas, though all are known to occur along the Texas Gulf Coast and Gulf of Mexico (SpaceX 2013; USFWS 2019a). These species exhibit site fidelity, returning to the same nesting area annually and across generations. Although there are slight temporal differences in the specific nesting dates for each species, most nesting occurs during the summer months (March – November) with peak activities May – July (National Marine Fisheries Service [NMFS] and USFWS 2007, 2013a, 2013b; NMFS et al. 2011; SpaceX 2013; NOAA 2019). The leatherback and hawksbill typically nest outside of Texas but are known to use Texas offshore waters for feeding, resting, and migration (NMFS and USFWS 2013a, 2013b; SpaceX 2013; NOAA 2019).

The prime habitat area for sea turtle nesting or activity in the project area is at San Jose Island, which contains uninhabited beachfront; however, prime habitat areas along the beachfront will be avoided by specialized construction methods such as HDD to mitigate potential impacts to wildlife. Areas suitable for foraging, resting, or travel will only experience localized, temporary impacts during construction, such as disruption of sediments, and are not expected to cause significant environmental impacts for any of these species.

3.1.10.1 KEMP'S RIDLEY SEA TURTLE

The Kemp's Ridley sea turtle is the smallest of sea turtles at 2 feet in length and weighing 75-100 pounds at maturity (SpaceX 2013). The Kemp's Ridley sea turtle distribution is limited to the Gulf of Mexico, primarily near Tamaulipas, Mexico, though juveniles may be found along the U.S. Atlantic coast (NMFS et al. 2011; USFWS 2015a; National Park Service [NPS] 2019). In Texas, these species can be found along South Texas inshore and nearshore coastal waters. During adult non-nesting and juvenile stages, these species occur in pelagic, coral reefs, or nearshore coastal areas for foraging and breeding. This species is relatively common in inshore waters of Texas and has a broad preference for hard-shelled marine invertebrates, crabs, shrimp, snails, bivalves, jellyfish, and sometimes marine plants and algae (USFWS 2015b; Herps of Texas 2019a).

Potential for Occurrence: In the terrestrial environment, suitable beach nesting habitat is present in the project area on San Jose Island; however, the probability of a nesting occurrence is low given the primary nesting areas are in Mexico and secondarily at the Padre Island National Seashore (PINS). While there have been no TXNDD sightings in the project vicinity (TXNDD 2019), the species is known to occur in the region and thus may occur in the project area, particularly at San Jose Island.

Determination of Impact: While the species may occur in the project area, particularly along San Jose Island, there will be no effects on beach habitat in the action area because it will be avoided via HDD construction methods, and offshore construction is anticipated to occur outside of sea turtle nesting season. This species is relatively common in inshore waters of Texas and has a broad preference for hard-shelled marine invertebrates not limited to the vicinity of the project area. Individuals would be able to continue foraging outside the project area and after the temporary disturbance of offshore construction activities. The sediment plume associated with offshore construction activities will be localized and temporary, and thus not expected to appreciably affect foraging activities of the Kemp's Ridley sea turtle. Biological monitors will be present to ensure there will be no unanticipated take of Kemp's Ridley sea turtles during construction activities. Consequently, the project *may affect, but is not likely to adversely affect/may impact* the Kemp's Ridley sea turtle in the terrestrial and marine environments.

3.1.10.2 GREEN SEA TURTLE

The green sea turtle is one of the largest sea turtles and has a worldwide geographical range (National Ocean and Atmospheric Administration [NOAA] 2019; Herps of Texas 2019b). The species is unique in that they are herbivores, primarily consuming seagrasses and algae. They are commonly found in inshore waters of Texas foraging for food. The green sea turtle has been documented using a variety of habitats dependent upon life history and stage. Adults spend most of their time within shallow coastal waterways with large sea grass beds (Reich et al. 2007). Juvenile turtles will spend most of their time within deep pelagic waters (Reich et al. 2007).

Potential for Occurrence: The species is known to occur in the project area, with several occurrences documented within 5 miles of the project area in 2004 and 2008 (TXNDD 2019). The species is common along the Texas coast in nearshore waters, such as at the PINS, and future occurrences are likely (Landry 2010; NPS 2019).

Determination of Impact: The green sea turtle is known to occur in the project area, with suitable nesting habitat present on San Jose Island and foraging areas in nearby waters. There will be no effects on beach habitat in the action area because it will be avoided via HDD construction methods, and offshore construction is anticipated to occur outside of sea turtle nesting season. There are no anticipated effects to food sources given avoidance of construction in sea grass beds that occur in the action area. Furthermore, biological monitors will be present to ensure there will be no unanticipated take of green sea turtles during offshore construction. Consequently, the project *may affect, but is not likely to adversely affect/may impact* green sea turtle in the terrestrial and marine environments.

3.1.10.3 LOGGERHEAD SEA TURTLE

The loggerhead sea turtle occurs in both hemispheres in temperate and tropical waters, typically found along the continental shelf region and estuaries nearshore (NMFS and USFWS 2007; SpaceX 2013; NOAA 2019). The species is known for its relatively large head and powerful jaw which allows it to feed on hard-shelled prey (NOAA 2019); they are primarily carnivorous and rarely eat plant material. Juveniles are known to spend time within sargassum.

Potential for Occurrence: The species is known to occur in the project area, with the last TXNDD occurrence approximately 7.5 miles southwest of the project area in Corpus Christi Bay in 2009 (TXNDD 2019). Loggerhead sea turtles are known to occur in the inshore Texas waters in relative abundance (NMFS and USFWS 2007; Landry 2010). Nesting occurrences have been documented at the PINS, located south of the project area, and thus are anticipated to continue to occur in the region (SpaceX 2013). The project is located outside of final critical habitat for the species (USFWS 2019b).

Determination of Impact: In the terrestrial environment, suitable beach nesting habitat is present in the action area at San Jose Island. There will be no effects on beach habitat in the action area because it will be avoided via HDD construction methods, and offshore construction is anticipated to occur outside of sea turtle nesting season. This species is known to inhabit the inshore waters of Texas and has a broad preference for hard-shelled marine invertebrates not limited to the vicinity of the survey area, and individuals would be able to continue foraging outside and after the temporary disturbance of offshore construction activities. The sediment plume associated with offshore construction activities will be localized and temporary, and thus is not expected to affect foraging activities of the loggerhead sea turtle. Additionally, biological monitors will be present to ensure there will be no unanticipated take of loggerhead sea turtles during offshore construction. Consequently, the project *may affect, but is not likely to adversely affect/may impact* loggerhead sea turtle in the terrestrial and marine environments.

3.1.10.4 ATLANTIC HAWKSBILL SEA TURTLE

The Atlantic Hawksbill sea turtle gets its name from its hawk-like beak and are typically small to medium sized (NMFS and USFWS 2013a; SpaceX 2013; Herps of Texas 2019c). They are not generally deep divers compared to other sea turtle species, and thus are often found in shallow coastal areas as opposed to the open ocean (NMFS and USFWS 2013a). While they occupy different marine environments throughout their lifecycle, such as shallow coastal areas and lagoons, they have a preference for coral reefs where there is adequate shelter from predators and areas for resting. They feed primarily on sponges but will also feed on other invertebrates and algae (NMFS and USFWS 2013a; SpaceX 2013).

Potential for Occurrence: There is one TXNDD occurrence record in the project area, near Port Aransas in 1958 (TXNDD 2019). The project is located outside of final critical habitat (USFWS 2019b). The project area does not contain their preferred habitat and food source of coral reefs and sponges, and therefore they are unlikely to occur even though they have been historically seen nearby.

Determination of Impact: In the terrestrial environment, suitable beach nesting habitat is present in the survey area at San Jose Island, though the species is not known to nest in Texas (SpaceX 2013). There will be no effects on the beach habitat because it will be avoided via HDD construction methods, and offshore construction is anticipated to occur outside of sea turtle nesting season. The preferred prey species, sponges, are uncommon in this portion of the Gulf of Mexico and the sediment plume associated with offshore construction activities will be localized and temporary, thus construction activities are not anticipated to affect foraging activities of this species. Biological monitors will be present to ensure there will be no take of Atlantic hawksbill sea turtle during offshore construction. Consequently, project activities *may affect, is not likely to adversely affect/may impact* the species.

3.1.10.5 LEATHERBACK SEA TURTLE

The leatherback sea turtle has a global distribution, found in the tropical waters of the Atlantic, Pacific, Indian oceans, and Gulf of Mexico (NMFS and USFWS 2013b; SpaceX 2013; NOAA 2019). They can migrate significant distances, known to travel up to 6,800 miles from their breeding areas (USFWS 2013). They are a large, pelagic species, known to prefer deep, open ocean as opposed to nearshore environments. The species almost exclusively feeds on jellyfish (SpaceX 2013). While the species has been seen along the Texas Gulf Coast, the region is not part of their major nesting range (NMFS and USFWS 2013).

Potential for Occurrence: There have been no TXNDD occurrences in the project vicinity (TXNDD 2019). Additionally, the species is known to prefer deeper waters of the open ocean and are not commonly found in nearshore areas such as the project area (SpaceX 2013). The project is located outside of final critical habitat for this species (USFWS 2019b). Thus, while the species has been known to occur in the Gulf of Mexico, they are unlikely to occur in the project area.

Determination of Impact: In the terrestrial environment, suitable beach nesting habitat is present in the survey area at San Jose Island. However, the probability of a nesting occurrence is very low given the rarity of nesting on the Texas coast and the very few sightings of these species in near-shore marine environments (NMFS and USFWS 2013b; SpaceX 2013). There will be no effects on the beach habitat because it will be avoided via HDD construction methods, and offshore construction is anticipated to occur outside of sea turtle nesting season. The leatherback sea turtle prefers jellyfish, of which some species do occur in the area. The sediment plume associated with offshore construction activities will be localized, temporary, and thus not expected to affect foraging activities of these sea turtle species. Biological monitors will be present to ensure there will be no take of leatherback sea turtles during

offshore construction. Consequently, the project is anticipated to have *no effect* on the leatherback sea turtle.

3.1.11 **Golden Orb**

Current Federal Status: Candidate

Habitat and Range Requirements: The golden orb (*Quadrula aurea*) is a species of freshwater mussel with shell coloring varying from tan, reddish brown, orange-brown to gray-brown (USFWS 2009b; 2011). The shape is somewhat rectangular to broadly elliptical and reaches an overall length of 7.7 centimeters. The species is restricted to flowing waters with sand, gravel, and cobble bottoms at depths of a few centimeters to over 3 meters. It historically occurred in the Guadalupe, San Antonio, Colorado, and Nueces-Frio river systems.

Potential for Occurrence: Currently the golden orb is known from the upper and central Guadalupe River, lower San Marcos River, and Lake Corpus Christi in the lower Nueces River drainage (USFWS 2009b). Aside from the upper Guadalupe River, all existing populations occur in the lower portion of occupied basins in a small geographical area (USFWS 2011). The proposed project area does not include any of the known range of the golden orb. The nearest known occurrence of the species is in Lake Corpus Christi, a part of the lower Nueces River drainage located approximately 45 miles to the northwest (USFWS 2009b), and thus, the species does not occur in the project area.

Determination of Impact: The golden orb is a freshwater mussel and not suited to any saltwater or brackish environment; therefore, no suitable habitat for the species exists within the project area. Consequently, it is SWCA's professional opinion that project activities will have *no effect* on the golden orb.

3.1.12 **Slender Rush-pea and South Texas Ambrosia**

Current Federal Status: Endangered

Habitat and Range Requirements: The South Texas ambrosia (*Ambrosia cheiranthifolia*) occurs within sparsely covered thorn shrub-lands, mesquite woodlands, or open grasslands, and require sandy loam soils or well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series) (USFWS 2010b, 2018a).

The slender rush-pea (*Hoffmannseggia tenella*) prefers coastal prairie grasslands on level uplands and on gentle slopes along drainages, usually in areas of shorter or sparse vegetation with Blackland clay soils. Habitat is coastal shortgrass prairie dominated by native grasses such as buffalograss (*Buchloe dactyloides*), Texas wintergrass (*Stipa leucotrica*), and Texas grama (*Bouteloua rigidiseta*). Other plants include huisache (*Acacia farnesiana*), spiny hackberry, and retama (*Parkinsonia aculeata*) (Pressly 2002).

Both species have limited distributions and populations in southern Texas and are tied to specific drainage systems (USFWS 2008b, 2010b, 2018a). The slender rush-pea and South Texas ambrosia have two and four verified extant populations respectively, limited to Nueces and Kleberg Counties.

Potential for Occurrence: While the two species have been found in other parts of Nueces County and nearby Kleberg County, the habitat present within the survey area does not have favorable growing conditions for these two species. They are more likely to occur inland where typical habitat still exists. Moreover, no TXNDD occurrence records exist in or near the proposed project area for either species (TXNDD 2019).

Determination of Impact: The proposed project does not contain preferred habitat for either species, and the species are more likely to occur further inland than within the project area. No individuals or ideal habitat was identified within the proposed project area during SWCA field surveys. Therefore, the proposed project will have *no effect* on the slender rush-pea and south Texas ambrosia.

3.1.13 **Critical Habitat and Wildlife Refuges**

Potential effects to habitat(s) within the project area critical to endangered species must be analyzed along with the endangered species themselves, while any activity proposed on National Wildlife Refuge lands must undergo a “Compatibility Determination” conducted by the Refuge (USFWS 2017, 2019a).

No wildlife refuges were identified by USFWS within the project area (USFWS 2019a, b). However, the project area contains piping plover critical habitat, designated TX-16 by the USFWS, along the eastern side of San Jose Island (USFWS 2019a, b). Critical habitat TX-16 will be avoided during construction by use of specialized construction methods such as HDD.

While critical habitat for the whooping crane also exists in Aransas County, the project area is located approximately 20 miles away from the nearest designation for that species.

4 **SUMMARY AND CONCLUSIONS**

SWCA performed an evaluation of impacts of the proposed project on threatened and endangered species listed in Aransas, Nueces, and San Patricio Counties, Texas. SWCA also assessed the potential for the proposed project to cause a take of bald eagle, which is protected under the BGEPA. This review included a field reconnaissance of habitat conditions, a review of species’ habitat requirements, and a desktop literature review of species’ temporal and spatial distributions and occurrences. Based upon this information, it is SWCA’s opinion that the proposed project will have *no effect* on eight federally threatened / endangered species, *may affect, but is not likely to adversely affect/may impact* eight federally threatened / endangered species, and is *not likely to cause a take* of the bald eagle.

5 **LIMITATIONS AND WARRANTY**

Within the limitations of schedule, budget, and scope of work, SWCA warrants that this study was conducted in accordance with technical guidelines, evaluation criteria, and species’ listing status in effect at the time this evaluation was performed.

The results and conclusions of this report represent the best professional judgment of SWCA scientists. No other warranty, expressed or implied, is made.

Please be aware that the USFWS and NOAA NMFS are the federal agencies charged with administration of the ESA and have final authority to either concur or not concur with determinations provided herein.

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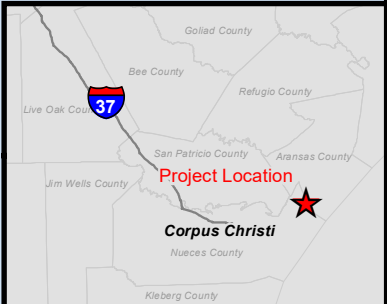
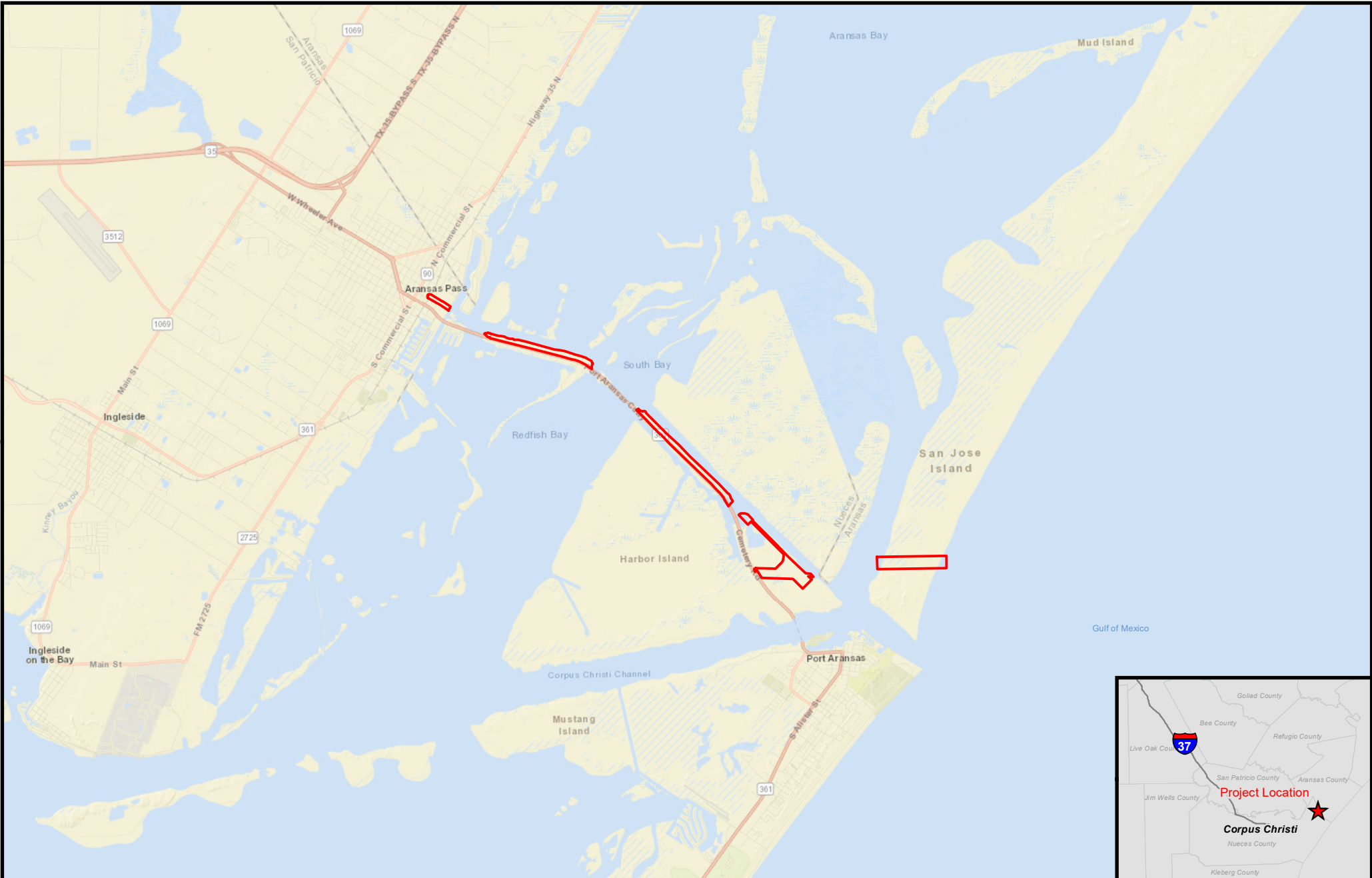
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APPENDIX A

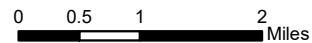
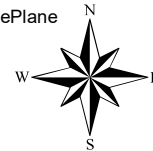
Vicinity Map and Threatened and Endangered Species Map



Legend

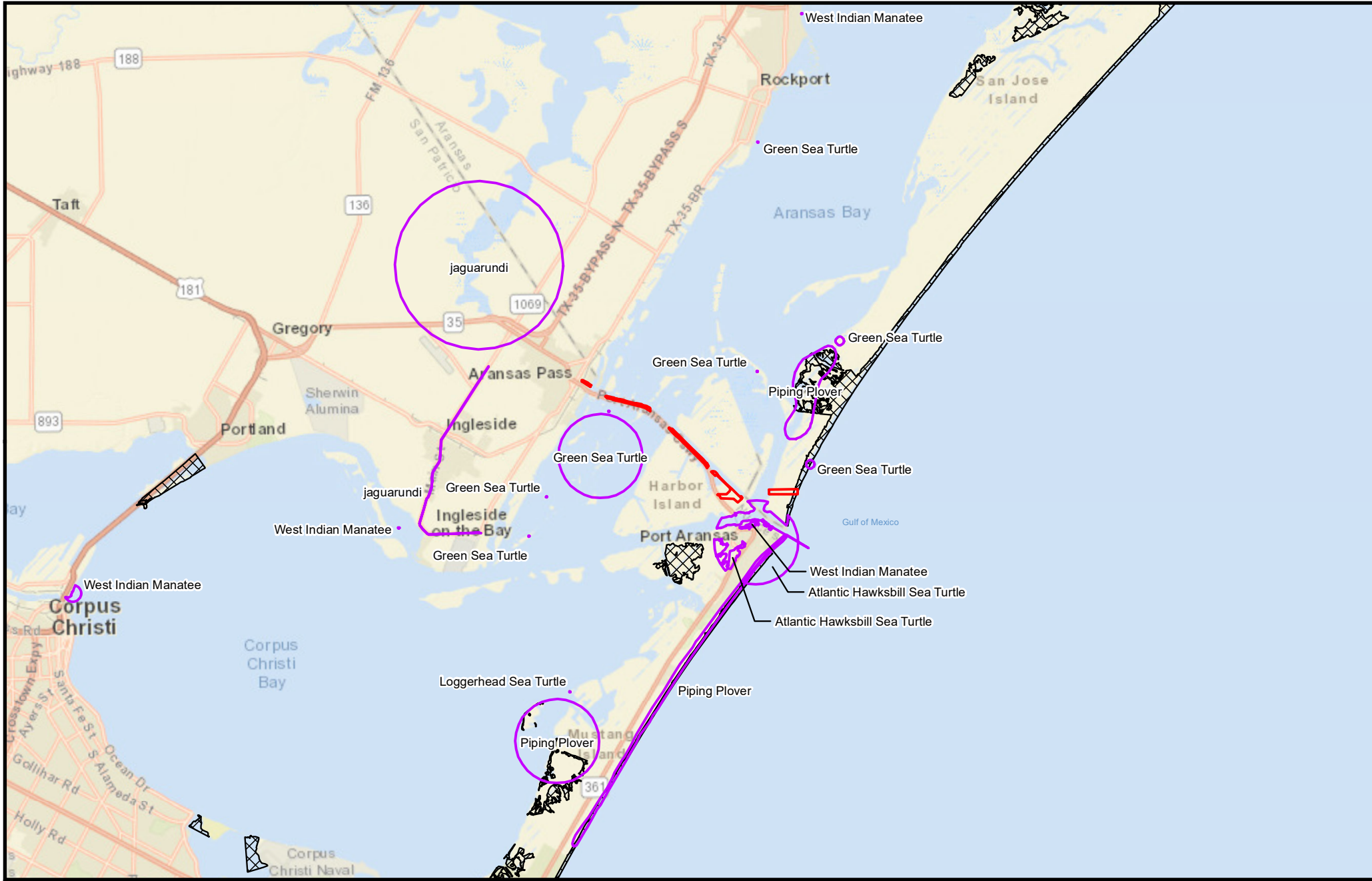
 Project Boundary

Coordinate System: NAD 1983 StatePlane
 Texas South Central FIPS 4204 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Units: Foot US
 Basemap: ESRI Street Map
 1 inch = 8,333 feet



BLUEWATER SPM PROJECT
 VICINITY MAP

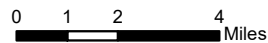
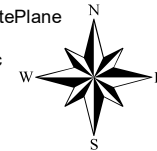
FIGURE 1



Legend

- Project Boundary
- TXNDD Occurrence Record
- Piping Plover Critical Habitat

Coordinate System: NAD 1983 StatePlane
 Texas South Central FIPS 4204 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Units: Foot US
 Basemap: ESRI Street Map
 1 inch = 20,000 feet



BLUEWATER SPM PROJECT
 THREATENED AND
 ENDANGERED SPECIES MAP

FIGURE 2

APPENDIX B

USFWS Federally Listed Species Report

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Aransas, Nueces and San Patricio counties, Texas



Local office

Texas Coastal Ecological Services Field Office

☎ (281) 286-8282

📅 (281) 488-5882

17629 El Camino Real #211

Houston, TX 77058

<http://www.fws.gov/southwest/es/TexasCoastal/>

http://www.fws.gov/southwest/es/ES_Lists_Main2.html

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

<p>Gulf Coast Jaguarundi <i>Herpailurus (=Felis) yagouaroundi</i> cacomitli No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3945</p>	Endangered
<p>Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4474</p>	Endangered
<p>West Indian Manatee <i>Trichechus manatus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4469</p>	Threatened Marine mammal

Birds

NAME	STATUS
<p>Attwater's Greater Prairie-chicken <i>Tympanuchus cupido</i> attwateri No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7259</p>	Endangered
<p>Least Tern <i>Sterna antillarum</i> This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Wind Related Projects Within Migratory Route <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8505</p>	Endangered
<p>Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1923</p>	Endangered
<p>Piping Plover <i>Charadrius melodus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/6039</p>	Threatened
<p>Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864</p>	Threatened
<p>Whooping Crane <i>Grus americana</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/758</p>	Endangered

Reptiles

NAME	STATUS
<p>Green Sea Turtle <i>Chelonia mydas</i></p> <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199</p>	Threatened
<p>Hawksbill Sea Turtle <i>Eretmochelys imbricata</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3656</p>	Endangered
<p>Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i></p> <p>There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5523</p>	Endangered
<p>Leatherback Sea Turtle <i>Dermochelys coriacea</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1493</p>	Endangered
<p>Loggerhead Sea Turtle <i>Caretta caretta</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1110</p>	Threatened

Clams

NAME	STATUS
<p>Golden Orb <i>Quadrula aurea</i></p> <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9042</p>	Candidate

Flowering Plants

NAME	STATUS
<p>Slender Rush-pea <i>Hoffmannseggia tenella</i></p> <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5298</p>	Endangered
<p>South Texas Ambrosia <i>Ambrosia cheiranthifolia</i></p> <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3331</p>	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Piping Plover <i>Charadrius melodus</i> https://ecos.fws.gov/ecp/species/6039#crithab	Final
Whooping Crane <i>Grus americana</i> https://ecos.fws.gov/ecp/species/758#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to

occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walrus, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
<https://ecos.fws.gov/ecp/species/4469>

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.



This location overlaps the following National Wildlife Refuge lands:

LAND

ACRES

Aransas National Wildlife Refuge

141,659.53 acres

 (361) 286-3559 (361) 286-3722

MAILING ADDRESS

1 Wildlife Circle
Austwell, TX 77950-0100

PHYSICAL ADDRESS

Farm Market Road 2040
Austwell, TX 77950

<https://www.fws.gov/refuges/profiles/index.cfm?id=21532>

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION