Deepwater Port License Application
Blue Marlin Offshore Port (BMOP) Project

Volume IIb – Onshore Project Components Environmental Evaluation (Public)
Topic Report 5: Wildlife and Protected Species

Submitted to:

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September 2020

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Deepwater Port License Application
Blue Marlin Offshore Port (BMOP) Project

Volume I:	General (Public), including Deepwater Port License Application and Appendices (*under separate cover*)
Volume IIa:	Offshore Project Components Environmental Evaluation (Public) (*under separate cover*)
Volume IIb:	**Onshore Project Components, Environmental Evaluation (Public)** **(*herein*)**
Volume III:	Technical Information [***Confidential***] (*under separate cover*)
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ABBREVIATIONS AND ACRONYMS

Applicant	Blue Marlin Offshore Port LLC
ATWS	Additional Temporary Workspace
BA	Biological Assessment
BES	Benchmark Ecological Services, Inc.
BMOP	Blue Marlin Offshore Port
BMPs	Best Management Practices
bph	barrels per hour
CALM	Catenary Anchor Leg Mooring
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DWP	Deepwater Port
DWPA	Deepwater Port Act
E2EM	Estuarine, Intertidal Emergent
ECOS	Environmental Conservation Online System
ESA	Endangered Species Act
GOM	Gulf of Mexico
HDD	Horizontal directional drill
IBA	Important Bird Area
IPaC	Information, Planning, and Conservation
LDWF	Louisiana Department of Wildlife and Fisheries
LNHP	Louisiana Natural Heritage Program
LQ	living quarters
MARAD	United States Maritime Administration
MBTA	Migratory Bird Treaty Act
MLV	Mainline valve
MP	Milepost
NPDES	National Pollutant Discharge Elimination System
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWR	National Wildlife Refuge
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PLEM	Pipeline end manifold
Project	Louisiana Offshore Petroleum Export Facility Project
PSS	Palustrine Scrub Shrub Wetland
ROW	right-of-way
SH	State Highway
SPAR	Spill Prevention and Response
TPWD	Texas Parks and Wildlife Department
TXNDD	Texas Natural Diversity Database
U.S.	United States
USACE	United States Army Corps of Engineers

USCG	United States Coast Guard
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
VBT	Vent Boom Tripods
VLCC	Very Large Crude Carriers
WC 433	West Cameron Lease Block 433
WMA	Wildlife Management Area

PROJECT FAST FACTS

General Project Terminology	
Applicant	Blue Marlin Offshore Port LLC
Project Name	Blue Marlin Offshore Port (BMOP)

BMOP Location and General Information	
Nederland Terminal (NT)	The location where the oil for BMOP originates. This is the existing Sunoco Partners Marketing & Terminals L.P. facility located in Nederland, Jefferson County, Texas
New 42-inch Pipeline	37.02 miles of 42-inch pipeline from NT to Station 501
Existing Mainline from Cameron parish Louisiana to WC 509	Cameron Parish, Louisiana Louisiana State Blocks: WC 11, 20, 21 OCS Blocks: WC 21, 44, 43, 58, 79, 78, 95, 114, 113, 132, 133, 148, 169, 170, 183, 196, 205, 212, 213, 224, 230, 241, 245, 246, 255, 258, 259, 266, 269, 276, 275, 277, 282, 408, 431, 432, 433, 456, 459, 482, 483, 484, 508, 509
Deepwater Port Location (Platform – CALM Buoys)	West Cameron Block 509 (WC 509) West Cameron 508 (WC 508) East Cameron 263 (EC 263)
Deepwater Port Water Depth	156 to 162 feet water depth
Loading Capacity	80,000 barrels per hour (bph)

BMOP Deepwater Port Components	
Existing Stingray Pipeline (Mainline)	One existing 36-inch Outer Diameter (OD) pipeline, approximately 104 miles long from Station 501 in Cameron Parish, Louisiana to WC 509. This line consists of the existing 36-inch OD subsea line from WC 509 to Station 701 and the existing 36-inch OD onshore line from Station 501 to Station 701.
Deep Water Port (DWP)	The offshore loading facility site located in WC 509, WC 508, and EC 263. The facilities consist of the existing WC 509 Platform Complex; two new PLEMs and CALM Buoys in WC 508 and EC 263; two new Crude Oil Loading Pipelines from the WC 509 Platform Complex to the PLEMs and the flexible hoses attached to the CALM Buoys. The WC 509 Platform Complex will be converted from gas service to oil and gas service. The converted platforms will support oil export and natural gas transportation.
WC 509 Platform Complex (509 Complex)	The existing WC 509 Platform Complex consists of three platforms and two Vent Boom Tripods (VBT). The WC 509A Platform is the natural gas gathering platform. This will also house the 36-inch riser and pig barrel of the crude oil Mainline. The WC 509B Platform currently is the natural gas compression and control platform. It houses natural gas compressors, separators, the Control Room and Platform Complex's utilities. The WC 509B Platform will continue to house the natural gas separation facilities and the Platform Complex's utilities. It will also house the crude oil Control Room, metering facilities, and pig barrels for the two Crude Oil Loading Lines. The WC 509C Platform is the Living Quarters (LQ) platform and will continue in that role. The WC 509 VBTs are utilized to bridge the natural gas vent piping to a point approximately 660 feet from the 509B Platform and will continue in this role for any planned and emergency natural gas blowdowns.
WC 148 Platform	The existing WC 148 Platform will be converted from natural gas transportation service to oil transportation service. All gas piping facilities on

BMOP Deepwater Port Components	
	the deck will be removed and replaced with new pipe and a new Mainline Valve (MLV). This valve will be able to be remotely operated.
Catenary Anchor Leg Mooring (CALM) System	There will be two floating Calm Buoys installed approximately 4,710 feet and 6,085 feet from the WC 509B Platform. The CALM Buoys will be installed with a minimum of 5,000 feet separation. Each Buoy will be moored in place with 6 or more anchor chains connected to engineered anchors installed at locations around the Buoy. Flexible hoses will be connected from the PLEMs to the Calm Buoys. Floating flexible hoses will also be connected to the CALM Buoy and, during loading, the opposite end will be connected to the ship. CALM Buoy No. 1 will be installed in WC 508 and CALM Buoy No. 2 will be installed in EC 263.
Crude Oil Loading Pipelines	Two 36-inch diameter pipelines from the existing WC 509B Platform to the PLEMs.
Pipeline End Manifold (PLEM)	One PLEM will be installed on the seafloor at each CALM Buoy. Each PLEM will be connected to a 36-inch Crude Oil Loading Pipeline from the WC 509B Platform and a CALM Buoy floating above the PLEM. The two PLEMs will be in WC 508 and EC 263.
VLCC or other Crude Carrier	Very Large Crude Carriers (VLCCs), Suezmax, Aframax or other large capacity seafaring vessels.
Meter for Measuring Departing Crude Oil	The DWP will have two-meter stations with associated prover and lab facilities. One of the meter stations will be located at the new BMOP Pump Station adjacent to the NT and one will be located on the offshore crude export platform (WC 509B Platform).
Pre-fabrication Yards	Existing yards will be used along the northern Gulf of Mexico (GOM) coast.
Support Facility	An onshore support base will be established at an existing port facility to provide the necessary security to support the DWP operations.

BMOP Onshore Pipeline Components	
BMOP Pump Station	The onshore metering, pumping, and pig launcher station will be located in Nederland, Texas, adjacent to the existing NT.
Onshore Crude Oil Pipeline	A new, approximate 37.02-mile, 42-inch OD pipeline connecting the existing NT in Jefferson County, extending across Orange County, Texas to the existing 36-inch OD Mainline at Station 501 in Cameron Parish, Louisiana.
Station 501	The existing NGPL/Stingray interconnect facility (Station 501) will be abandoned and demolished. A new pig receiver and launcher will be installed to connect the new 42-inch OD onshore pipeline with the existing 36-inch OD onshore Stingray Mainline.
Station 701	The existing compressor Station 701 in Cameron Parish, Louisiana will be demolished. All existing natural gas equipment will be removed from the Station except for several large 10,000-barrel storage tanks. Approximately 1,000 feet of new 36-inch pipe, surge tanks, surge valves, and a new MLV will be installed. The existing 10,000-barrel tanks located at Station 701 will be converted to surge relief tanks.
Stingray ANR Tap Removal Site	BMOP will remove the tap and install 36-inch pipe in its place.
Mainline Valves (MLV)	Six new MLVs will be installed within the permanent pipeline right-of-way (ROW) of the new build pipeline. MLVs will also be installed at the BMOP Pump Station, Station 501, and Station 701. These valves will be used for isolation and spill control purposes.

BMOP Onshore Pipeline Components	
Pipeline Pig Launchers and Receivers	Pig Launchers/Receivers will be located at the BMOP Pump Station, Station 501, and the DWP. These are utilized for cleaning the pipelines and running intelligent devices to assess pipeline integrity.
Access Roads and Canals	The Project will utilize existing access roads and canals. One new temporary access road and four new permanent access roads will be required.
Pipe and Contractor Yards	BMOP will utilize existing facilities along the northern GOM coast, U.S. or international locations for manufacturing pipe and for fabricating the PLEMs, CALM Buoys, and end connectors. Pipe coating activities will be performed at existing facilities along the northern GOM coast. Selection of the marine contractor will be completed after the MARAD filing; however, the successful contractor(s) will utilize existing fabrication and logistical facilities located along the northern GOM coast.

PROJECT ENVIRONMENTAL EVALUATION ASSESSMENT CRITERIA

Environmental Evaluation Assessment Criteria		
Criteria	**Values**	**Definition**
Outcome	**Direct**	***Direct effects*** are "caused by the action and occur at the same time and place" of the Project (40 CFR § 1508.8).
	Indirect	***Indirect effects*** are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR § 1508.8). Indirect impacts are caused by the Project, but do not occur at the same time or place as the direct impacts.
	Cumulative	***Cumulative impact*** is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).
Type	**Adverse (Negative)**	***Adverse*** would cause unfavorable or undesirable outcomes for the natural or social environment. Negative impacts result in a net loss to the resource.
	Beneficial (Positive)	***Beneficial*** impact would cause positive or desirable outcomes for the natural or social environment. Beneficial impacts result in a net benefit to the resource.
Duration	**Short-term (Temporary)**	***Short-term (or temporary)*** impacts are those that would occur only during a specific phase of the proposed Project, such as noise during construction or certain installation activities. Short-term impacts would end at the time, or shortly after, construction activities ceased. The duration of most short-term impacts would be a few hours to a few days.
	Long-term	***Long-term*** impacts would occur either continually or periodically throughout the life of the Project (e.g., operational air emissions, stormwater discharge), or would last for years after an impact-producing activity occurred (e.g., removal of wildlife habitat).
Magnitude	**Negligible**	***Negligible*** impacts are generally those that might be perceptible, but in certain cases may be undetectable.
	Minor	***Minor*** effects are those that could be perceptible but are of very low intensity and may be too small to measure.
	Moderate	***Moderate*** impacts are more perceptible, can often be quantified, and may approach the thresholds for major impacts.
	Major	***Major*** impacts, based on their context and intensity (or severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR § 1508.27). Major impacts warrant additional attention in a NEPA analysis and a review of potential mitigation measures that would fulfill the policies set forth in NEPA, which include avoiding, minimizing, or mitigating major impacts.
Likelihood	**Unlikely**	Low probability.
	Potential	Possible or probable.
	Likely	Certain.

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5.0 WILDLIFE AND PROTECTED SPECIES

5.1 PROJECT OVERVIEW

Blue Marlin Offshore Port LLC (the Applicant) is proposing to develop the Blue Marlin Offshore Port (BMOP) Project (Project) in the Gulf of Mexico (GOM) to provide crude oil transportation and loading services for crude oil produced in the continental United States (U.S.). A Project overview map is provided in **Figure 5-1**. The Deepwater Port (DWP) will be utilized to load the transported crude oil onto very large crude carriers (VLCCs) (and other crude oil carriers) for export to the global market. The Applicant is filing this application for a license to construct, own, and operate the Deepwater Port (DWP) pursuant to the Deepwater Port Act (DWPA) of 1974, as amended, and in accordance with U.S. Coast Guard (USCG) and U.S. Maritime Administration (MARAD) implementing regulations.

The primary purpose of the Project will be to provide for safe and reliable long-term supply of crude oil for export to the global market. Oil for export will be transported out of the existing Sunoco Partners Marketing and Terminals, L.P., a terminal and storage facility in Jefferson County, Texas (Nederland Terminal or NT). This terminal is connected to multiple crude oil pipelines connecting to production from across the U.S. In addition, an affiliate of the Applicant owns the Stingray Pipeline System and has confirmed that its subsea pipeline and offshore platforms are suitable for converting to facilitate crude oil export from a DWP in the northern GOM. The Applicant has the exclusive right to lease or purchase the Stingray Pipeline System for use in the Project.

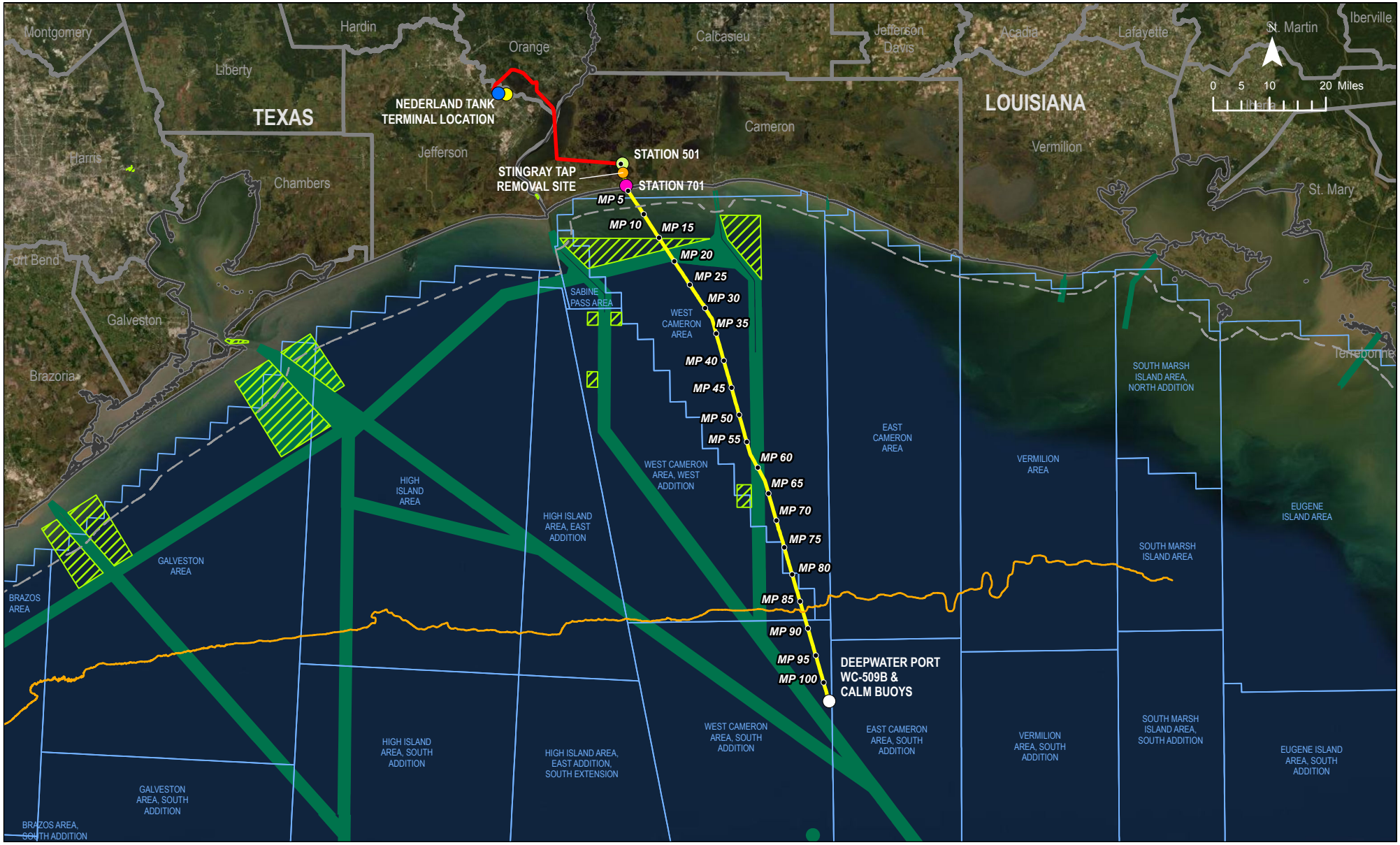
The DWP will be located in federal waters within and adjacent to the Outer Continental Shelf (OCS) in West Cameron Lease Blocks (WC) 509 and 508 and East Cameron Block 263. The DWP will be approximately 99 statute miles off the coast of Cameron Parish, Louisiana, with an approximate water depth of 162 feet. Crude oil will be routed from pumps at Nederland, through a new 42-inch outer diameter (OD) onshore pipeline to the existing Stingray Mainline at Station 501 (see Section 5.1.1), and from there through the existing Stingray Mainline to the DWP.

As depicted in **Figure 5-1**, the BMOP facilities consist of the pumps and meters at NT; a new approximate 37-mile, 42-inch OD pipeline; the existing 36-inch OD Mainline; an existing fixed, manned platform complex at WC 509; an existing platform at WC 148; two new Crude Oil Loading Pipelines; and two new PLEM and CALM Buoys located in WC 508 and EC 263. A Project overview map of the onshore Project components is provided in **Figure 5-2.** Details of the Project's offshore facilities are provided in Topic Report 1, "Project Description, Purpose, and Need" (Volume IIa). This Topic Report includes details of the onshore Project facilities.

This Topic Report identifies and discusses terrestrial wildlife resources including protected species in the Project area, the potential impacts of construction, operation, and decommissioning on these resources, and measures that will be implemented to reduce and mitigate potential Project-related impacts. Characterization of wildlife potentially impacted by construction and operation of the onshore components of the Project is based on field surveys, publicly available data, and consultation with various federal and state natural resource agencies. Agency correspondence referenced within this resource report are provided in Volume IIa, Appendix B.

To avoid and minimize potential impacts to wildlife and habitats during construction and operation of the Project, the Applicant will implement construction and operation Best Management Practices (BMPs) included in the Project-specific Onshore Construction BMP Plan (**Appendix C-1**), Revegetation Plan (**Appendix C-2**), Spill Prevention and Response Plan (SPAR Plan, **Appendix C-3**), Unanticipated Discovery Plan (**Appendix C-4**), and Horizontal Directional Drill (HDD) Contingency Plan (**Appendix C-5**).

BMOP PROJECT - FIGURE 5-1 - PROJECT OVERVIEW MAP



LEGEND

- EXISTING OFFSHORE PIPELINE MILEPOSTS
- STINGRAY TAP REMOVAL SITE
- NEDERLAND TANK TERMINAL LOCATION
- NEDERLAND PUMP STATION
- STATION 701 (TO BE CONVERTED TO OIL SERVICE)
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- DEEPWATER PORT WC-509B AND CALM BUOYS
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- DEPTH CONTOUR -108'
- STATE WATERS BOUNDARY
- SAFETY ANCHORAGES
- PROTRACTION AREA
- SHIPPING FAIRWAY
- COUNTY / PARISH
- STATE BOUNDARY

BLUE MARLIN OFFSHORE PORT PROJECT

PROJECT OVERVIEW MAP

COUNTY/PARISH:	VARIOUS	DRAWN BY:	CA
STATE:	TX/LA	CHECKED BY:	CW
DATE:	2020/09/17	PROJECTION:	NAD 1983 UTM Zone 15N

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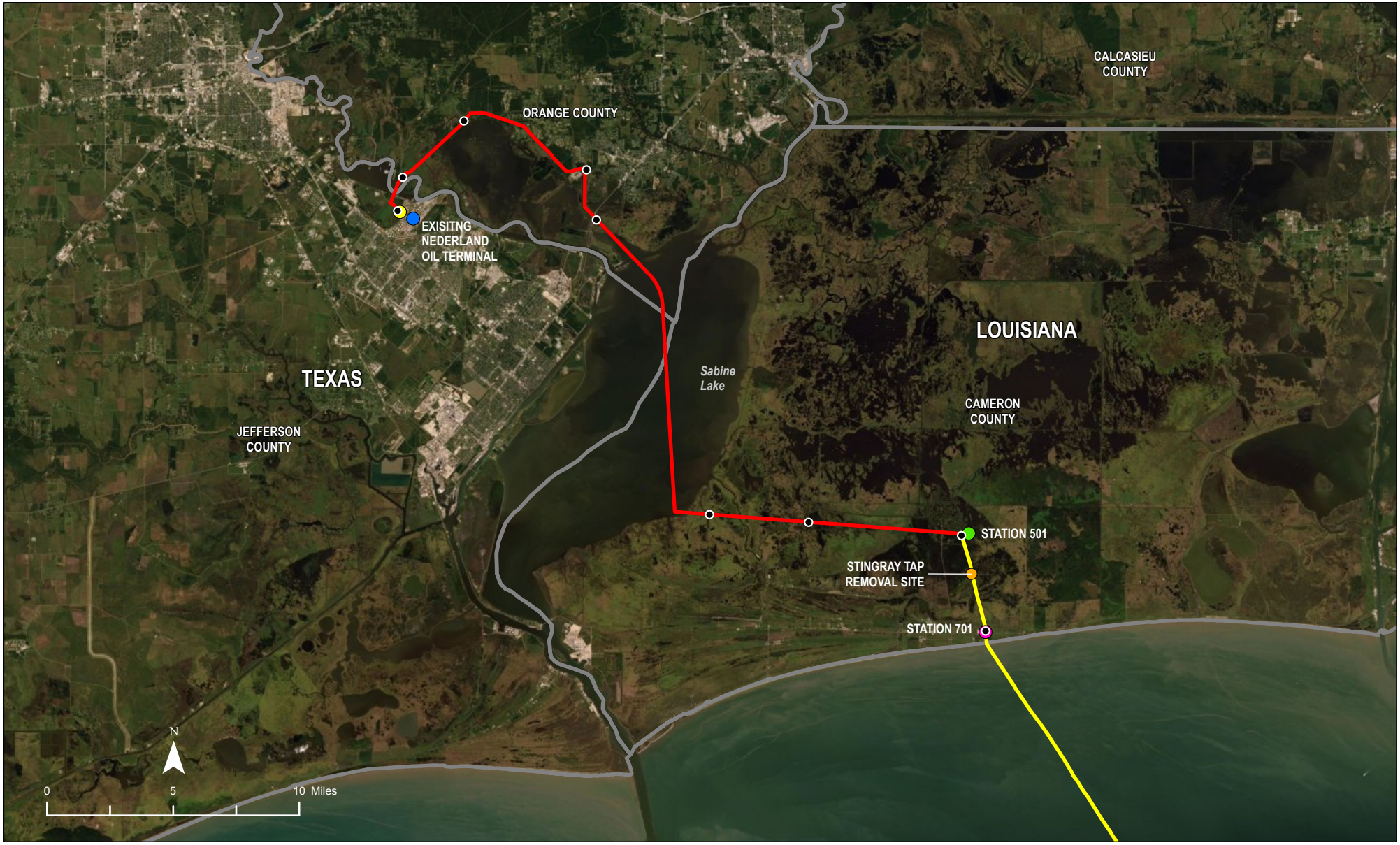
BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 5-1

DWG:	0802-01-005	SHEET:	1 OF 1

BMOP PROJECT - FIGURE 5-2 ONSHORE PROJECT COMPONENT OVERVIEW MAP



LEGEND

- MAINLINE VALVE
- NEDERLAND PUMP STATION
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- STATION 701 (TO BE CONVERTED TO OIL SERVICE)
- EXISITNG NEDERLAND OIL TERMINAL
- STINGRAY TAP REMOVAL SITE
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED 42-INCH PIPELINE
- COUNTY / PARISH

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 5-2 - ONSHORE PROJECT COMPONENT OVERVIEW MAP

COUNTY/PARISH:	VARIOUS	DRAWN BY:	CA
STATE:	TX/LA	CHECKED BY:	CW
DATE:	2020/09/17	PROJECTION:	NAD 1983 UTM Zone 15N

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BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 5-2

DWG:	0802-01-009	SHEET:	1 OF 1

5.1.1 Abandonment and Conversion of Existing Facilities

The Stingray Pipeline is currently comprised of a 36-inch pipeline (Mainline) that is fed natural gas and natural gas liquids by multiple lateral pipelines from various suppliers and producers that feed natural gas into the Mainline. Stingray transports natural gas and liquids on the Mainline from the WC 509 Platform Complex to the onshore compressor station facility (Station 701) near Holly Beach in Cameron, Louisiana, and northward approximately four additional miles to the NGPL/Stingray interconnect (Station 501). The Stingray facilities from WC 509 to Station 501 will be abandoned through a FERC 7(b) Order. This work will be completed by Stingray. Stingray will assign the existing right-of-way (ROW) Grant (and associated facilities—platforms at WC 148 and WC 509) to BMOP or another affiliate of ET for use in the BMOP Project. The Applicant intends to operate the new facilities under 49 Code of Federal Regulations (CFR) Part 195. Details of the existing offshore Stingray Mainline facilities are provided in Topic Report 1 (Volume IIa).

5.1.2 Major Onshore Project Components

All facilities for the proposed BMOP Project will be designed, constructed, tested, operated, and maintained in accordance with the U.S. Department of Transportation (USDOT) regulations in 49 CFR Part 195 (Transportation of Hazardous Liquids by Pipeline) and all other applicable federal and state regulations. Details of the offshore supply components are provided in Topic Report 1 (Volume IIa). The Project will consist of construction and operation of the following onshore components:

<u>New Onshore Facilities</u>

- A new, approximate 37-mile, 42-inch OD pipeline connecting the existing NT in Jefferson County, Texas, to the existing 36-inch OD Mainline at Station 501 in Cameron Parish, Louisiana.
- A new pump station (BMOP Pump Station) located adjacent to the existing NT in Jefferson County, Texas at MP 0.0. The land where the BMOP Pump Station site is located is to be filled as part of the "Nederland Terminal Buildout Project," which is anticipated to commence construction in January 2021, prior to construction of the BMOP Project. The pump station will include:
    - A pipeline header;
    - MLV;
    - Metering and pump equipment;
    - Electrical substation; and
    - Permanent access road.
- Six new MLVs will be installed within the permanent pipeline right-of-way (ROW) of the new build pipeline. MLVs will also be installed at the BMOP Pump Station, Station 501, and Station 701. These valves will be used for isolation and spill control purposes.

<u>Conversion of Existing Onshore Facilities</u>

- The existing Station 501 is located at approximate MP 37 of the new 42-inch pipeline in Cameron Parish, Louisiana. All existing natural gas-related equipment owned by BMOP will be removed from the Station and new pipeline facilities will be installed. The new 42-inch pipeline will tie into the existing 36-inch Mainline at the site. The conversion of Station 501 will be expanded to include:
    - A pig receiver for the new 42-inch pipeline termination;
    - Pig launcher for existing 36-inch Mainline; and
    - MLV.

- The existing compressor Station 701 in Cameron Parish, Louisiana, located at approximate MP 3.9 on the converted Stingray Mainline in Cameron Parish, Louisiana, will be demolished. All existing natural gas equipment will be removed from the Station except for several large 10,000-barrel storage tanks. Approximately 1,000 feet of new 36-inch pipe, surge tanks, surge valves, and a new MLV will be installed. The existing 10,000-barrel tanks located at Station 701 will be converted to surge relief tanks.
- The existing ANR Tap (Stingray Tap Removal Site) is located at approximate MP 1.6 on the converted Stingray Mainline in Cameron Parish, Louisiana (approximate MP 38.6 on the BMOP pipeline system). BMOP will install a 36-inch OD pipe segment following removal of the tap.
- The existing Mainline from Station 501 to the Station 701 will be converted to crude oil service.

Onshore Support Facilities

- Temporary use of existing pipe and contractor yards; and
- Use of existing public roads, highways, and canals and construction of new temporary and permanent access roads.

5.2 EXISTING ENVIRONMENT

The following sections describe the existing environment in regard to wildlife resources that have the potential to be impacted by the onshore Project facilities. A discussion of offshore wildlife resources is included in Volume IIa, Topic Report 6, "Wildlife and Protected Species."

5.2.1 Wildlife Resources

Wildlife species occurring in the Project area are characteristic of the habitats provided by the plant communities in these areas. The composition, structure, and distribution of the plant community in an area constitute a large part of the cover and food components of wildlife habitat. As a result, areas with similar vegetative characteristics tend to have similar assemblages of wildlife species. Some wildlife species have very specific habitat requirements and are found in only a few habitats while other species have broader habitat requirements and are ubiquitous in nature. Existing vegetation conditions and acres affected by construction and operation of the project are described in Topic Report 3, "Land Cover and Vegetation." The proposed Project facilities will cross the following general vegetation cover types:

- Agricultural land – In the Project area, this classification was assigned to pastureland for cattle grazing.
- Developed land – All areas of human development such as residential, industrial, or commercial land that has been disturbed. Includes human-placed vegetation such as residential lawns and landscaping as well as remnants of various natural communities persisting in areas of low-density development;
- Forest – All non-wetland forested and woodland communities, including deciduous, coniferous/evergreen, and mixed deciduous/coniferous forest;
- Wetlands – Wetland habitats including Palustrine Emergent (PEM), Estuarine, Intertidal Emergent (E2EM), Palustrine Scrub Shrub (PSS), and Palustrine Forested (PFO) wetlands; and
- Open water – Features such as lakes, ponds, rivers, and streams that are not normally associated with a vegetation class.

Representative wildlife species that could be found in the cover types within the Project area are described in **Table 5-1**.

TABLE 5-1
Representative Wildlife Species Within Onshore Vegetation Communities Present in the Project Area

Habitat/ Vegetation Cover Type	Vegetation Community/ Habitat Description	Common Wildlife Species
Agricultural Land	Pastureland for cattle grazing	**Birds:** mourning dove (*Zenaida macroura*), Northern bobwhite (*Colinus virginianus*), American crow (*Corus brachyrhynchos*), common grackle (*Quiscalus quiscula*), red-winged blackbird (*Agelaius phoeniceus*), American kestrel (*Falco sparverius*), song sparrow (*Melospiza melodia*), and red-tailed hawk (*Buteo jamaicensis*).
		Mammals: white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), cotton mouse (*Peromyscus gossypinus*), and eastern cottontail rabbit (*Sylvilagus floridanus*).
		Reptiles and amphibians: common garter snake (*Thamnophis sirtalis*), southern black racer (*Coluber constrictor priapusa*), green anole (*Anolis carolinensis*), and Gulf Coast toad (*Incilius nebulifer*).
Developed Land	Residential, industrial, or commercial land that has been disturbed. Includes human-placed vegetation such as residential lawns and landscaping as well as remnants of various natural communities persisting in areas of low-density development. Road and utility ROW.	**Birds:** Great-tailed Grackle (*Quiscalus mexicanus)*, mourning dove, Northern Mockingbird (*Mimus polyglottus*)
		Mammals: eastern gray squirrel, Great-tailed grackle (*Quiscalus mexicanus*), mourning dove (*Zenaida macroura*), Northern mockingbird (*Mimus polyglottus*), raccoon, and Virginia opossum.
		Amphibians and reptiles: brown anole (*Anolis sagrei*), green anole, Gulf Coast toad.
Forest	All non-wetland forested and woodland communities, including deciduous, coniferous/ evergreen, and mixed deciduous/coniferous forest	**Birds:** barred owl (*Strix varia*), blue jay (*Cyanocitta cristata*), brown thrasher (*Toxostoma rufum*), Carolina chickadees (*Peocile carolinensis*), cedar waxwing (*Bombycilla cedrorum*), Cooper's hawk (*Accipiter cooperi*), red-winged blackbird.
		Mammals: White-tailed deer, feral hog (*Sus scrofa*), coyote, red fox (*Vulpes vulpes*); bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*); Virginia opossum (*Didelphis virginiana*), and nine-banded armadillo (*Dasypus novemcinctus*).
		Amphibians and reptiles: ground skink (*Scincella lateralis*), common five-lined skink (*Plestiodon fasciatus*), Texas rat snake (*Pantherophis obsoleta lindheimeri*).
Wetlands and Open Water	Open water and wetland habitats including Palustrine Emergent (PEM), Palustrine Scrub Shrub (PSS), Palustrine Forested (PFO) and Estuarine, Intertidal Emergent (E2EM) wetlands	**Birds:** American bittern (*Botaurus lentiginosus*), American coot (*Fulica americana*), American white ibis (*Eudocimus albus),* American widgeon (*Anas americana*), Cattle egret (*Bubulcus ibis*), great egret (*Ardea alba*), snowy egret *(Egretta thula),* great blue heron (*Ardea herodias*); little blue heron (*Egretta caerulea),* tricolored heron (*Egretta tricolor*), mallard duck (*Anas playrhynchos*), mottled duck (*Anas fulvigula*), and white ibis (*Eudocimus albus*).
		Mammals: American beaver (*Castor canadensis*), marsh rice rat (*Oryzomys palustris*), nutria (*Myocastor coypus*), swamp rabbit (*Sylvilagus aquaticus*), muskrat (*Ondatra zibethicus*), and raccoon.
		Amphibians and reptiles: alligator (*Alligator mississippiensis*), banded water snake (*Nerodia fasciata*), cottonmouth (*Agkistrodon piscivorus*), bullfrog (*Rana catesbeiana*), Eastern newt

TABLE 5-1 Representative Wildlife Species Within Onshore Vegetation Communities Present in the Project Area		
Habitat/ Vegetation Cover Type	**Vegetation Community/ Habitat Description**	**Common Wildlife Species**
		(*Notophthalmus viridesens louisianenisis*), southern toad (*Bufo terrestris*), common musk turtle (*Sternotherus odoratusand*).
Sources: Herps of Texas; 2020; LDWF, 2020a; TPWD, 2016; TPWD; 2020c; Wiken et al., 2011		

5.2.2 Managed and Sensitive Wildlife Habitat

Sensitive wildlife habitat includes state or federal lands managed to support wildlife, areas designated by conservation organizations as providing critical habitat for wildlife species, and other areas identified through consultation with state and Federal resource agencies. Sensitive vegetation communities are addressed in Topic Report 3 of Volume IIb. Managed, and sensitive wildlife habitat in the vicinity of the Project are shown in **Figure 5-3** and include:

- Sabine National Wildlife Refuge (NWR);
- Lower Neches Wildlife Management Areas (WMA), Bessie Height and Old River Units;
- Piping plover U.S. Fish and Wildlife Service (USFWS) Designated Critical Habitat;
- Baton Rouge Audubon Society Peveto Woods Bird and Butterfly Sanctuary;
- Colonial Nesting Waterbird Rookeries; and
- Important Bird Areas (IBAs).

A discussion of managed and sensitive wildlife habitat in the Project area is provided below.

5.2.2.1 *Sabine National Wildlife Refuge*

The Sabine NWR is a 125,790-acre wildlife refuge adjacent to the northeast and east shore of Sabine Lake in Cameron Parish, Louisiana (USFWS, 2016). Sabine NWR occupies the marshes between Calcasieu and Sabine Lakes and is managed to provide habitat for migratory waterfowl and other birds, and to preserve and enhance coastal marshes for wildlife and fish. As shown in **Figure 5-3**, no Project activities will occur within the Sabine NWR. Sabine NWR is approximately 3,000 feet (0.57 mile) at its closest point from the onshore pipeline near MP 28.3 in Cameron Parish.

5.2.2.2 *Lower Neches Wildlife Management Area*

The proposed pipeline will cross the Lower Neches WMA, Bessie Height and Old River Units. The Lower Neches WMA, Bessie Height and Old River Units, are owned and managed by Texas Parks and Wildlife Department (TPWD) for research, demonstration, and/or public hunting. The Applicant is consulting with the TPWD in the selection of a proposed route through the Lower Neches WMA and plans to request an easement to cross the Lower Neches WMA after some additional coordination and consultation with TPWD.

The Lower Neches WMA consists of approximately 8,000 acres in Orange County, Texas and is primarily coastal marshland and open water habitats (TPWD, 2020a). The low-level coastal plains surrounding the rivers, bayous, and shoreline in this area have an attractive environment to many migratory birds, including

both game and non-game species, that stop over during their flight to and from South America on the Central Flyway. The WMA offers fishing, hiking, hunting, and wildlife viewing activities for visitors.

The Bessie Height Unit of the Lower Neches WMA is located near Bessie Height in Orange County, Texas and is approximately 3,350 acres. As shown on **Figure 5-3**, the proposed pipeline route crosses approximately 2,560 feet (0.5 mile) of the northeast corner of this WMA at approximate MP 8.3 to MP 8.8 while collocating with an existing powerline. The entire route across the Lower Neches WMA, Bessie Height Unit will be crossed by the HDD method avoiding any surface impacts or potential impacts to wildlife habitat. The Old River Unit of the Lower Neches WMA is located near Bridge City in Orange County, Texas and is comprised of approximately 4,650 acres. As shown on **Figure 5-3**, the proposed pipeline route crosses approximately 7,400 feet (1.4 miles) of the west side of this WMA from approximate MP 12.3 to 13.7 while collocating with an existing abandoned pipeline and Entergy canal system that flows into Sabine Lake. Approximately 3,720 feet (0.7 mile) at the State Highway (SH) 73/87 crossing and approximately 735 feet (0.1 mile) north of the Sabine Lake shoreline will be crossed using the HDD method. The remaining portion of the Old River Unit will be crossed by the push/pull wetland crossing technique.

All of the workspace used for the installation of the pipeline will be on lands previously disturbed during the construction of the canal system.

5.2.2.3 *Piping Plover USFWS-Designated Critical Habitat*

Critical habitat refers to specific geographic areas that are essential for the conservation of a threatened or endangered species and which may require special management considerations by the USFWS in accordance with the Endangered Species Act (ESA). As shown in **Figure 5-3**, Piping plover (*Charadrius melodus*) designated critical habitat is located along the shoreline in Cameron Parish, Louisiana. Although the existing Stingray Mainline crosses piping plover critical habitat, no disturbance to this habitat will occur. Converting the existing Mainline from natural gas to crude service will not require any construction at this location.

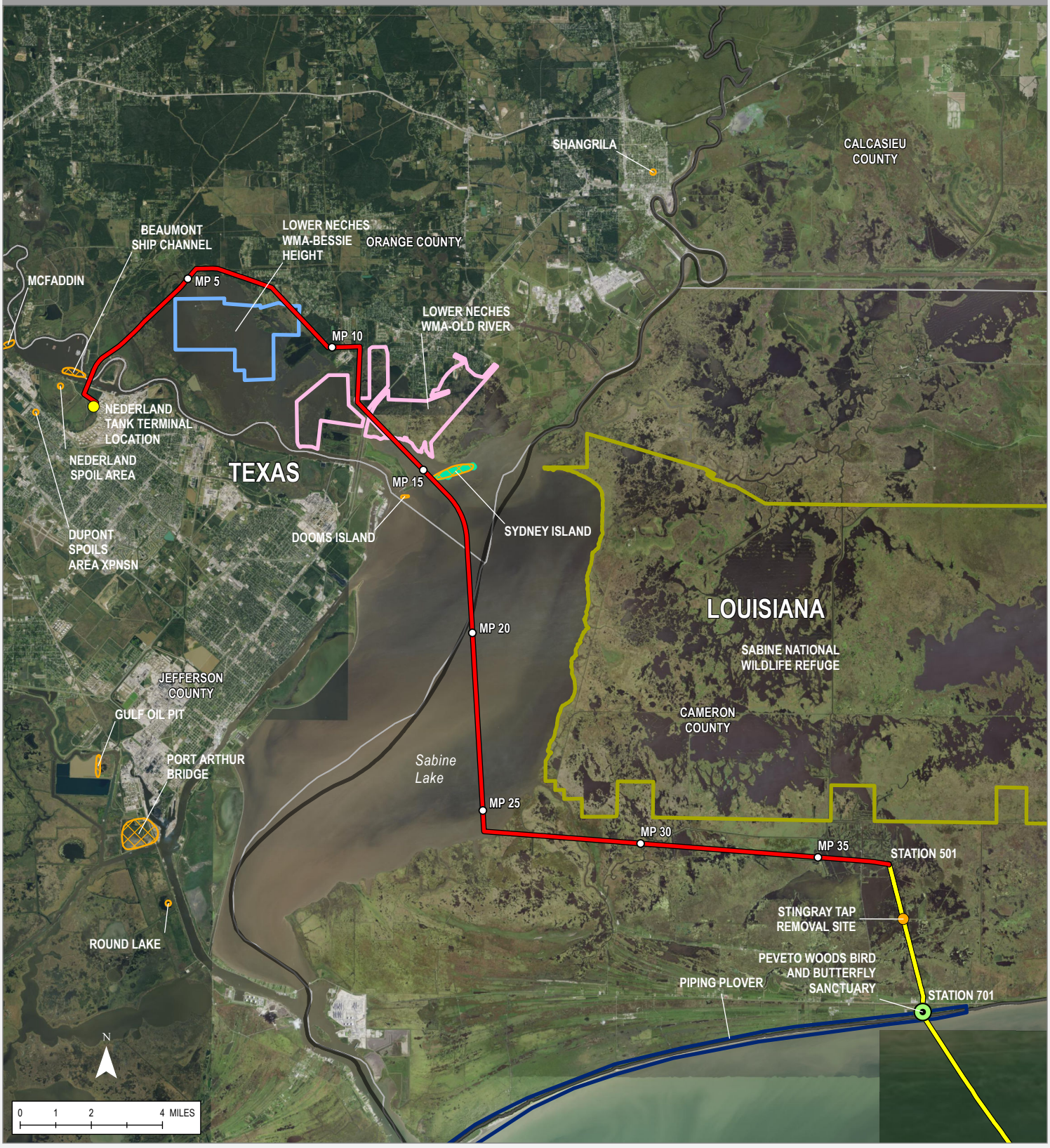
5.2.2.4 *Baton Rouge Audubon Society Peveto Woods Sanctuary*

The Baton Rouge Audubon Society Peveto Woods Bird and Butterfly Sanctuary is an approximate 40-acre coastal woods migratory bird and butterfly sanctuary just south of SH 82 at Gulf View Avenue along the Louisiana coast in Cameron Parish, Louisiana. This site was the first chenier sanctuary, critical for Neotropical migratory bird stopover in Louisiana. The Sanctuary's oak-hackberry forest habitat vegetation community is considered critically imperiled in Louisiana. The existing Stingray Mainline is located adjacent to Gulf View Avenue and the Peveto Woods Sanctuary. No disturbance to this habitat will occur. Converting the existing Mainline from natural gas to crude service will not require any construction near or at this location.

5.2.2.5 *Colonial Nesting Waterbird Rookeries*

Colonial nesting waterbirds are those that forage predominately in aquatic environments and gather in rookeries of numerous individuals during nesting season. Colonial nesting waterbirds that occur in the Project area include various herons, egrets, ibises, terns, gulls, pelicans, and other species. To minimize disturbance to nesting waterbirds, the TPWD and Louisiana Department of Wildlife and Fisheries (LDWF) recommend restricting construction activity within 1,000 feet of an active nesting colony to the non-nesting season (September 1 to February 15). For colonies containing nesting gulls, terns, or black skimmers, all activity occurring within 60 feet (2,000 feet for Brown pelicans) of an active nesting colony should be restricted to the non-nesting period (i.e., September 16 through April 1).

BMOP PROJECT - FIGURE 5-3 MANAGED AND SENSITIVE WILDLIFE HABITAT IN PROXIMITY OF THE PROJECT



VICINITY MAP

LEGEND

- MILE POST
- NEDERLAND TANK TERMINAL LOCATION
- STINGRAY TAP REMOVAL SITE
- PEVETO WOODS BIRD AND BUTTERFLY SANCTUARY
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- USFWS - DESIGNATED PIPING PLOVER CRITICAL HABITAT
- LOWER NECHES WMA-BESSIE HEIGHT
- LOWER NECHES WMA-OLD RIVER
- SYDNEY ISLAND AUDOBON SOCIETY
- COLONIAL WATERBIRD ROOKERY AREA
- SABINE NATIONAL WILDLIFE REFUGE
- STATE BOUNDARY
- COUNTY BOUNDARY

DRAWING INFORMATION

DRAWN BY:	CA	COUNTY/PARISH:	N/A
CHECKED BY:	CW	STATE:	TEXAS/LOUISIANA
DATE:	2020/09/17	SHEET:	1
DWG #:	0802-01-052	SCALE:	1:240,000

REVISIONS

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BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 5-3
Managed and Sensitive Wildlife Habitat in Proximity of the Project

A review of the Texas Natural Diversity Database (TXNDD) element occurrence records identified the following four historical occurrences of colonial nesting waterbird rookeries within one mile of the centerline of the onshore pipeline route in Texas (TXNDD, 2020) (**Figure 5-3**):

- Nederland Spoil Area Colonial Waterbird Rookery is located approximately 3,275 feet (0.62 mile) west of pipeline near MP 0.5 in Jefferson County, Texas.
- Neches River Colonial Waterbird Rookery is located approximately 690 feet (0.13 mile) west of the HDD pipeline crossing of Neches River near MP 1 in Jefferson County, Texas.
- Sydney Island Colonial Waterbird Rookery is located approximately 525 feet (0.01) east of the pipeline near MP 15.5 in Orange County, Texas.
- Dooms Island Colonial Waterbird Rookery is located approximately 4,240 feet (0.8 mile) feet west of the pipeline near MP 15.2 in Orange County, Texas.

Element occurrence records represent an area of land or water where a natural resource element is, or was, present, and are based on at least one (and potentially hundreds of) observation over many years. While element occurrences represent known populations of an element in an area, the database is based on reported sightings, some of which cannot be verified, and is not the result of comprehensive field surveys. According to LDWF, nesting colonies can move from year to year, and no current information is available on the status of colonies in Louisiana (LDWF, 2020b).

Benchmark Ecological Services, Inc. (BES) conducted listed species surveys, including colonial waterbird rookeries, in the Project area in May 2020. **Appendix D** (Volume IIb) includes the threatened and endangered species field survey reports. Although rookeries are documented within the study area, no rookeries were observed during the field survey. The Applicant will conduct pre-construction field surveys prior to construction to confirm the presence of colonial waterbird rookeries in the Project area. If a colonial nesting waterbird rookery is identified in the Project area prior to construction, the Applicant will implement specific measures included in Section 5.5 (Mitigation Measures) to minimize potential impacts.

5.2.2.6 *Important Bird Areas*

The National Audubon Society in the U.S. administers the IBA program. The goal of the IBA is to identify and conserve a network of sites that provide critical habitat for birds. Site selection uses standardized criteria through a collaborative effort with non-governmental conservation organizations, government agencies, local conservation groups, academics, birders, and others (Burger and Liner, 2005). The IBA program is not a regulatory initiative and places no restriction on land use or activities (CEC, 1999). The intent of the IBA is to recognize areas that are essential for bird populations.

The Project area in Louisiana is located within the Chenier Plain IBA, one of Louisiana's largest IBAs at over 2.3 million acres. Cheniers are beach ridges vegetated by coastal oak woodlands, which provide important stopover habitat for neotropical migratory birds. These are the first lands that migratory birds see after a journey of more than 500 miles across the GOM (National Audubon Society, 2020). The extensive open water and marshes in the Chenier Plain IBA are home to over 360 species of birds, including ducks, egrets, geese, raptors, wading birds, and shorebirds. It also serves as a stopover area for many of the transient birds that overwinter in Central and South America (National Audubon Society, 2020).

5.2.3 Protected Species

The ESA establishes protection and conservation of threatened and endangered species and the ecosystems upon which they depend. The federal definition of "*endangered species*" is any species which is in danger of extinction throughout all or a significant portion of its range. A "*threatened*" species is any species that

is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Endangered and threatened species may be in jeopardy due to destruction, modification, or curtailment of habitat, over utilization, effects of disease, pollution, or predation. Species likely to become threatened in the foreseeable future may be listed as "*rare*," "*protected*," "*candidate*," or "*of special concern*." In addition to the required protection of individual species, some rare, natural vegetative communities may also be protected.

Protection is also afforded under the ESA to "*critical habitat*," which the USFWS defines as specific areas both within and outside the geographic area occupied by a species on which are found those physical and biological features essential to its conservation.

This section identifies all federal and state listed endangered, threatened, and candidate species as well as their habitats that have the potential to occur in the vicinity of the onshore Project area. The listed species discussed herein were identified by a review of federal and state publicly available databases and through coordination with federal and state resource agencies.

The National Oceanic and Atmospheric Administration (NOAA) Fisheries (also known as the National Marine Fisheries Service [NMFS])-Southeast Regional Office was consulted for offshore Project components on January 24, 2020 and February 13, 2020. A discussion of the offshore Project component consultation under the jurisdiction of NOAA Fisheries is included in Volume IIa, Topic Report 6, "Wildlife and Protected Species."

5.2.3.1 *Field Surveys*

Prior to initiating field surveys for listed species, the Applicant conducted pre-application meetings with the following agencies to discuss survey protocol and potential listed species concerns (Volume IIa, Appendix B):

- USFWS, Louisiana Ecological Services Field Office on February 12, 2020;
- USFWS, Texas Coastal Ecological Services Field Office on March 5, 2020;
- LDWF on February 13, 2020; and
- TPWD email correspondence on February 26, 2020.

The USFWS Environmental Conservation Online System (ECOS) Information, Planning, and Conservation (IPaC) System consultation tool (USFWS, 2020a) was used to generate a species list to fulfill the requirements of Section 7 of the ESA. Element occurrence data and annotated county species lists was also obtained from the Louisiana Natural Heritage Program (LNHP), LDWF, and TPWD regarding state-listed species or sensitive habitat with the potential to be affected by construction and operation of the Project (LDWF, 2020b; LDWF 2020c; TPWD, 2020b; TXNDD, 2020).

Field surveys were conducted within the entire Project area for wildlife and potential habitat for protected species. During the surveys, an approximate 300-foot survey corridor centered along the proposed pipeline centerline (150 feet from each side of the centerline) was evaluated in March, May and June of 2020. The threatened and endangered species field survey report prepared for the onshore Project area is included in **Appendix D-2** (Volume IIb).

Along the Sabine Lake pipeline crossing, where the pipeline will be installed by trenching, a 1,000-foot-wide corridor centered along the proposed pipeline centerline (500 feet from each side of the centerline) was surveyed in June of 2020. A discussion of the Texas state waters benthic habitat field survey results is

included in Volume IIb, Topic Report 4, Fisheries and **Appendix D-3**, Project Benthic (Oyster) Habitat report.

5.2.3.2 *Federally Listed Species*

Based on agency consultation and data obtained from the USFWS IPaC System consultation tool (USFWS, 2020a), nine federally listed threatened and endangered species and one candidate (proposed threatened) species may occur within the counties or parishes affected by the Project. **Table 5-2** summarizes the conservation status, preferred habitat, and likelihood of occurrence for each of the species that potentially occur in the Project area. There are no federally listed threatened or endangered plant species that have the potential to occur in the onshore Project area (USFWS, 2020a). A discussion of the offshore Project component consultation under the jurisdiction of NOAA Fisheries is included in Volume IIa, Topic Report 6, "Wildlife and Protected Species."

The designations for likelihood of species occurrence are defined as:

- ***Unlikely to Occur*** – the onshore Project area is within a species' currently known range, but vegetation communities, soils, etc. do not resemble those known to be used by the species, or the onshore Project area is clearly outside the species' current known range.
- ***May Occur*** – the onshore Project area is within the species' currently known range, and vegetation communities, soils, etc., resemble those known to be used by the species.
- ***Known to Occur*** – the species has been documented in the onshore Project area during field surveys or in the element of occurrence database.

The USFWS IPaC tool identified the potential for the occurrence of the federally listed endangered least tern (*Sterna antillarum*) in the Project area; however, the USFWS only considers this species as federally listed when the occurrence of the species is greater than 50 statute miles from the coast (USFWS, 2020b). Since all of the onshore pipeline components are within 50 statute miles of the coastline, any occurrences of least terns within onshore pipeline components workspaces would not be classified as federally listed individuals. Therefore, the least tern was not included in this section.

TABLE 5-2
Federally Listed Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name/ Scientific Name	Listing County/ Parish	Federal Status	State Status	Habitat Requirements	Potential to Occur in Project Area	Effects Determination[c]
Birds						
Eastern Black Rail (*Laterallus jamaicensis jamaicensis*)	Jefferson County, TX and Cameron Parish LA	C PT[a]	N/A	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of *Salicornia*	***May occur (Non-nesting)***	***Not likely to jeopardize the continued existence of the species*** Conference on species ongoing. Project will implement Onshore Construction BMP Plan, Revegetation Plan and SPAR Plan

TABLE 5-2
Federally Listed Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name/ Scientific Name	Listing County/ Parish	Federal Status	State Status	Habitat Requirements	Potential to Occur in Project Area	Effects Determination[c]
Piping Plover (*Charadrius melodus*)	Jefferson County, TX and Cameron Parish LA	T[a]	T	Breeding habitat is in the northern great plains, the shorelines of the great lakes, and the Atlantic coast. Wintering habitat consists of intertidal beaches and mudflats with sparse to no vegetation. Critical Habitat for his species is crossed by the existing Stingray Mainline.	***May occur (Non-nesting)***	***May affect, not likely to adversely affect*** Project will implement Onshore Construction BMP Plan, Revegetation Plan and SPAR Plan
Red Knot ***(****Calidris canutus rufa****)***	Jefferson and Orange County, TX and Cameron Parish LA	T[a]	N/A	Inhabits seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Winters along the Gulf Coast July-October.	***May occur (Non-nesting)***	***May affect, not likely to adversely affect*** Project will implement Onshore Construction BMP Plan, Revegetation Plan and SPAR Plan
Whooping Crane (*Grus Americana)*	Jefferson and Orange County, TX Cameron Parish LA	NEP-LA E-TX[a]	E	Inhabits salt marshes dominated by salt grass, dry prairies, and cypress or oak forests. Uses potholes surrounded by bulrush for nesting.	***May occur (Non-nesting in Project area)***	***May affect, not likely to adversely affect*** Project will implement Onshore Construction BMP Plan, Revegetation Plan and SPAR Plan
Mammals						
West Indian Manatee *(Tricheceus manatus latirostri)*	Jefferson and Orange County, TX and Cameron Parish LA	T[b]	E	Inhabits tropical and subtropical estuaries, freshwater rivers, and coastal waters. Relies on access to natural springs or warm freshwater ponds that contain aquatic vascular vegetation. They seek out quiet areas in riverine habitat for feeding, resting, mating, and nursing.	***Unlikely to occur***	***May affect, not likely to adversely affect*** Project will comply with USFWS' Standard Manatee Conditions for In-Water Work

TABLE 5-2
Federally Listed Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name/ Scientific Name	Listing County/ Parish	Federal Status	State Status	Habitat Requirements	Potential to Occur in Project Area	Effects Determination[c]
Reptiles						
Green sea turtle (*Chelonia mydas*)	Jefferson County, TX	T	T	Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds; nesting behavior extends from March to October, with peak activity in May and June.	***May occur (Not known to nest in Project area)***	***May affect, not likely to adversely affect*** Project will comply with NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions and Vessel Strike Avoidance Measures and Reporting for Mariners
Hawksbill sea turtle *(Eretmochelys imbricata)*	Jefferson County, TX and Cameron Parish LA	E	E	Nests from April to November on tropical and subtropical undisturbed deep sand beaches. Females climb over reefs and rocks to nest in beach vegetation. Nests nocturnally up to five times a season in 14-day intervals.	***May occur (Not known to nest in Project area)***	***May affect, not likely to adversely affect*** Project will comply with NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions and Vessel Strike Avoidance Measures and Reporting for Mariners
Kemp's Ridley sea turtle (*Lepidochelys kempii*)	Jefferson County, TX and Cameron Parish LA	E	E	Nests from April to July on tropical and subtropical soft sand beaches that are backed by dunes in Texas and Mexico. Nests diurnally up to 3 times a season in 14- to 28-day intervals.	***May occur (Not known to nest in Project area)***	***May affect, not likely to adversely affect*** Project will comply with NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions and Vessel Strike Avoidance Measures and

TABLE 5-2
Federally Listed Threatened and Endangered Species Potentially Occurring in the Project Area

Common Name/ Scientific Name	Listing County/ Parish	Federal Status	State Status	Habitat Requirements	Potential to Occur in Project Area	Effects Determination[c]
						Reporting for Mariners
Leatherback sea turtle *(Dermochelys coriacea)*	Jefferson County, TX and Cameron Parish LA	E	E	Nests from March to July on tropical and temperate sandy beaches backed with vegetation and in close proximity to deep rough seas. Beaches must be sloped sufficiently so that the distance to dry sand is limited.	***May occur (Not known to nest in Project area)***	***May affect, not likely to adversely affect*** Project will comply with NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions and Vessel Strike Avoidance Measures and Reporting for Mariners
Loggerhead sea turtle (*Caretta*	Jefferson County, TX and Cameron Parish LA	T	T	Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November.	***May occur (Not known to nest in Project area)***	***May affect, not likely to adversely affect*** Project will comply with NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions and Vessel Strike Avoidance Measures and Reporting for Mariners

Sources: USFWS, 2020a; TPWD, 2020b; LDWF, 2020c

Notes:

T = Threatened; E = Endangered; C = Candidate; PT = Proposed Threatened; NEP = Non-Essential Experimental Population; LA = Louisiana; TX = Texas

[a] Species protected under MBTA

[b] Species protected under MMPA

[c] Based on the potential for the species to occur within or in proximity to the Project footprint. Determination based on agency database information and field survey results as defined in Section 5.2.3.3 of this report.

5.2.3.3 *Listed Species Assessment*

Based on the agency database information and field survey results, an assessment as to whether the proposed Project may impact federally listed species was made using the following USFWS effect determinations (USFWS and NMFS, 1998):

- ***No effect*** – This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed, proposed, or candidate species or designated/proposed critical habitat of such species.
- ***May affect, not likely to adversely affect*** – This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals and designated critical habitat. Certain avoidance and minimization measures may need to be implemented to reach this level of effect.
- ***May affect, likely to adversely affect*** – Adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial.

In addition to the "*no effect*" determination, the following USFWS effect determinations are also applicable to proposed and candidate species or designated/proposed critical habitat:

- ***Not likely to jeopardize*** – This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat.
- ***Likely to jeopardize*** – This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat.

Table 5-2 summarizes the effect determinations for federally protected species with the potential to occur within the onshore Project area. As discussed below, the Project ***may affect, but is not likely to adversely*** affect nine federally listed threatened or endangered species and would not likely jeopardize the continued existence of one candidate (proposed threatened) species.

The onshore threatened and endangered species sections of this Topic Report (Sections 5.2.3, 5.3.3, 5.4, and 5.5), as well as the offshore threatened and endangered species sections and Essential Fish Habitat Sections in Volume IIa, Topic Report 6 serve as the Biological Assessment (BA) for the Project. A discussion of the onshore species listed in **Table 5-2** is provided below.

Eastern Black Rail

The Eastern black rail (*Laterallus jamaicensis jamaicensis*) is currently a candidate species that was proposed for listing as threatened on October 9, 2018. Due to the overlap between the schedule for the species status review and the Project schedule, the USFWS Louisiana Field Service Office has recommended that the Applicant treat the Eastern black rail as a federally listed species in the event the black rail does get listed during Project planning or construction (see Agency Meeting Minutes, USFWS, February 12, 2020 in Volume IIa, Appendix B). The Eastern black rail is currently protected under the Migratory Bird Treaty Act (MBTA) (Section 5.2.4).

Eastern black rails occur year-round along the GOM coast in the Project area. Eastern black rails are found in a variety of salt, brackish, and freshwater marsh habitats that can be tidally or non-tidally influenced. Within these habitats, the birds occupy relatively high elevations along heavily vegetated wetland gradients, with soils that are moist or flooded to a shallow depth. Eastern black rails require dense vegetation cover that allows for movement underneath the canopy. Plant structure is considered more important than plant species composition in predicting habitat suitability for this species. Occupied habitat tends to be primarily composed of fine-stemmed emergent plants (rushes, grasses, and sedges) with high stem densities and dense canopy cover (83 FR 50610). However, when shrub densities become too high, the habitat becomes less suitable for Eastern black rails (USFWS, 2020c).

Eastern black rails were not observed during field surveys of the Project area. Although there is suitable habitat for the Eastern black rail within the Project area, Louisiana and Texas are not currently known to support a breeding population (Watts, 2016). There are no confirmed breeding records and historic observations during the breeding season are rare. Therefore, impacts to nesting are not anticipated.

As discussed in detail in Section 5.3 (Environmental Consequences), potential effects from construction and operation (i.e., maintenance) of the Project on wildlife include temporary habitat removal or displacement of individuals within the construction workspaces, disturbances from construction noise, vehicle traffic, spills of hazardous materials, and inadvertent returns of drilling mud. Eastern black rails will likely easily avoid areas of on-going construction activity (e.g., noise, traffic, presence of workers) due to their mobile nature and the abundance of undisturbed habitat available in the immediate vicinity for any displaced individuals. Furthermore, construction will be short-term and intermittent. The majority of land disturbance due to onshore pipeline construction will be restored and land will return to its former function, resulting in temporary impacts to suitable habitat. Any inadvertent leaks and spills potentially resulting in contamination will be contained and remedied on-site as soon as practicable, and in compliance with the SPAR Plan. Therefore, potential construction impacts are anticipated to be negligible and temporary.

During operations, the risk of a pipeline crude oil release is low due to safety mechanisms built into the pipeline system which will prevent a continuous release of oil and implementation of remediations measures outlined in the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP.

In conclusion, with implementation of the avoidance and mitigation measures (i.e., Onshore Construction BMP Plan, Revegetation Plan, HDD Contingency Plan and SPAR Plan) listed in **Table 5-5** and discussed in Section 5.5, potential impacts are anticipated to be insignificant and the Project is ***not likely to jeopardize*** the continued existence of the Eastern black rail.

Piping Plover

The piping plover (*Charadrius melodus*) is federally listed as threatened. Piping plovers' breed in the northern Great Plains, the shorelines of the Great Lakes, and the Atlantic Coast. Wintering habitat consists of intertidal beaches and mudflats with sparse to no vegetation along the GOM shoreline and southern Atlantic coasts of the U.S. (USFWS, 2001a; USFWS, 2020d). Piping plover are generally observed along the Louisiana and Texas coastline and have been sighted along the Sabine Neches Waterway and the western shore of Sabine Lake at Pleasure Island (eBird, 2020).

Designated critical habitat, including critical foraging and wintering habitat, for the piping plover occurs along the Louisiana coast. The Project will not directly impact piping plover designated critical habitat because the existing Stingray pipeline is currently installed underground in this habitat and no part of construction of the Project is located in this habitat. The closest proposed construction activity at Station 701 is located approximately 1,900 feet (0.35 mile) north of the designated critical habitat (**Figure 5-3**).

Piping plovers were not observed during field surveys of the Project area and do not breed in the region. Therefore, impacts to nesting are not anticipated. As discussed in detail in Section 5.3 (Environmental Consequences), potential effects from construction and operation (i.e., maintenance) of the Project on wildlife include temporary habitat removal or displacement of individuals within the construction workspaces, disturbances from construction noise, vehicle traffic, spills of hazardous materials, and inadvertent returns of drilling mud. While piping plover may be in proximity to the onshore pipeline near the coast during foraging/wintering, their risk of impacts from construction is expected to be negligible because of their mobile and migratory nature and the limited suitable habitat within workspaces. Piping plover will likely easily avoid areas of on-going construction activity (e.g., noise, traffic, presence of workers) due to their mobile nature and the abundance of undisturbed habitats available in the immediate

vicinity. Furthermore, construction will be short-term and intermittent. The majority of land disturbance due to onshore pipeline construction will be restored and land will return to its former function. Any inadvertent leaks and spills potentially resulting in contamination will be contained and remedied on-site as soon as practicable, and in compliance with the SPAR Plan. Disturbance of piping plovers on their wintering grounds will be temporary and will not result in the permanent loss of suitable habitat. There would be ***no effect*** on piping plover designated critical habitat because no part of the Project is located in this habitat.

During operations, the risk of a pipeline crude oil release is low due to safety mechanisms built into the pipeline system which will prevent a continuous release of oil and implementation of remediations measures outlined in the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP.

In conclusion, with implementation of the avoidance and mitigation measures (i.e., Onshore Construction BMP Plan, Revegetation Plan, HDD Contingency Plan and SPAR Plan) listed in **Table 5-5** and discussed in Section 5.5, potential impacts are anticipated to be insignificant and the Project ***may affect, but is not likely to adversely affect*** the piping plover. There will be ***no effect*** on piping plover designated critical habitat.

Red Knot

The red knot (*Calidris canutus rufa*) is federally listed as threatened. Red knots are migratory shorebirds and one of the longest-distance migrants in the world (USFWS, 2019a). The red knot is currently protected under the MBTA (Section 5.2.4). They are known to utilize wintering grounds along the Gulf coast (USFWS, 2013). Red knots use similar habitats during migration and in wintering areas which include coastal marine and estuarine habitats with large areas of exposed intertidal sediments (USFWS, 2013). During winter, red knots are often found in flocks of hundreds of birds (USFWS, 2013). No critical habitat has been designated for the red knot. Red knots are generally observed along the Louisiana and Texas coastline and have been sighted along the Sabine Neches waterway and the western shore of Sabine Lake at Pleasure Island (eBird, 2020).

Red knots were not observed during field surveys of the Project area. Because the red knot does not breed in the GOM region, construction-related potential impacts on this species will primarily be limited to temporary displacement from areas of active construction. As discussed in detail in Section 5.3 (Environmental Consequences), potential effects from construction and operation (i.e., maintenance) of the Project on wildlife include temporary habitat removal or displacement of individuals within the construction workspaces, disturbances from construction noise, vehicle traffic, and inadvertent spills of hazardous materials or returns of drilling mud.

The risk of impacts from construction is expected to be negligible because red knots will likely easily avoid areas of on-going construction activity (e.g., noise, traffic, presence of workers) due to their mobile nature and the abundance of undisturbed habitat available in the immediate vicinity for any displaced individuals. Furthermore, construction will be short-term and intermittent. The majority of land disturbance due to onshore pipeline construction will be restored and land will return to its former function, resulting in temporary impacts to suitable habitat. All inadvertent leaks and spills potentially resulting in contamination will be contained and remedied on-site as soon as practicable, and in compliance with the SPAR Plan. Therefore, potential construction impacts are anticipated to be negligible and temporary.

During operations, the risk of a pipeline crude oil release is low due to safety mechanisms built into the pipeline system which will prevent a continuous release of oil and implementation of remediations measures outlined in the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP.

In conclusion, with implementation of the avoidance and mitigation measures (i.e., Onshore Construction BMP Plan, Revegetation Plan, HDD Contingency Plan and SPAR Plan) listed in **Table 5-5** and discussed in Section 5.5, potential impacts are anticipated to be insignificant and the Project ***may affect, but is not likely to adversely affect*** the red knot.

Whooping Crane

Although the whooping crane (*Grus americana*) was not included on the USFWS IPaC list as a potential species in the Project area, it was discussed during the pre-application meeting with the USFWS, Texas Coastal Ecological Services Field Office on March 5, 2020 and therefore was included in this analysis (see Agency Meeting Minutes in Volume IIa, Appendix B).

Whooping cranes (*Grus americana*) were listed as threatened in 1967 and endangered in 1970. They are only found in North America. A wild population nests in Canada and winters in Texas. A wild population nests and breeds in Canada during the summer months, and migrates to Texas' coastal plains near Rockport, Texas in and around Aransas NWR, from November through March. During migration, whooping cranes use cropland and emergent wetlands for feeding, and shallow seasonal or semi-permanently flooded wetlands for roosting, along with some riverine habitats (Canadian Wildlife Service and USFWS, 2007).

For 60 years whooping cranes were absent from Louisiana until their reintroduction in 2011 at the White Lake Wetlands Conservation Area located in Vermilion Parish (LDWF, 2016). The Louisiana whooping crane population is designated as a Non-Essential Experimental Population.

As of 2019, there were approximately 700 whooping cranes in three separate wild populations and about 150 individuals in captivity in North America. The naturally occurring wild flock was estimated at 504 individuals during the 2019 annual winter survey conducted along the Texas Gulf Coast and continues to slowly increase (LDWF, 2016; USFWS, 2019b).

In the Project area, whooping crane habitat consists of marsh, open water, and chenier habitat in southwestern coastal Louisiana. There are no known records of whooping cranes observations within the vicinity of the Project area (eBird, 2020) and no whooping cranes were observed during field surveys. Because the whooping crane does not breed in the Project area, potential construction-related impacts on this species would primarily be limited to temporary displacement from areas of active construction.

While whooping cranes may be in proximity to the onshore pipeline near the coast during migration, their risk of impacts from construction is expected to be negligible because of their mobile and migratory nature and the limited suitable habitat within workspaces. Furthermore, construction will be short-term and intermittent. The majority of land disturbance due to onshore pipeline construction will be restored and land will return to its former function, resulting in temporary impacts, if any, to this species.

Construction noise, vehicle traffic, and inadvertent spills could also affect the whooping crane during construction and operation (i.e., maintenance), but impacts are anticipated to be negligible and temporary. Whooping cranes will likely easily avoid areas of on-going construction activity (e.g., noise, traffic, presence of workers) due to their mobile nature and the abundance of undisturbed habitats available in the immediate vicinity. All inadvertent leaks and spills potentially resulting in contamination will be contained and remedied on-site as soon as practicable, and in compliance with the SPAR Plan.

During operations, the risk of a pipeline crude oil release is low due to safety mechanisms built into the pipeline system which will prevent a continuous release of oil and implementation of remediations measures outlined in the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP.

With implementation of the avoidance and mitigation measures (i.e., Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan) listed in **Table 5-5** and discussed in Section 5.5., it is anticipated that construction and operation of the Project ***may affect, but is not likely to adversely affect*** the whooping crane.

West Indian Manatee

The West Indian manatee is a federally listed threatened and state-listed endangered species that is protected under Marine Mammal Protection Act (MMPA). Manatees utilize nearshore habitats where they feed on submerged aquatic vegetation such as eelgrass and seagrass. They typically feed along the edges of grass beds with access to deep water channels. Manatees cannot tolerate water temperatures below 68 degrees Fahrenheit (°F) for extended periods and are often found congregating around warm water from natural springs and power plant discharges during winter months. Their range expands during summer months as water temperatures increase (USFWS, 2020e). They occur mainly in larger rivers and brackish bays.

West Indian manatees are uncommon off the coast of Louisiana and Texas but do occasionally occur during the warmer summer months (USFWS, 2001b). The Pearl, Pontchartrain, Barataria, Mermentau, Calcasieu, and Sabine River basins are included as part of the manatee's range in Louisiana (LDWF, 2009a). Historic records have included specimens from Cow Bayou, near Sabine Lake (Fertl et al., 2005). Trends in sighting data suggest recent increases in use by manatees of near-shore coastal areas of western Florida, Alabama, Mississippi, Louisiana, and Texas.

The West Indian manatee was identified by the USFWS IPaC tool as potentially occurring in Jefferson and Orange Counties, Texas and Cameron Parish, Louisiana (USFWS, 2020a). Although their presence within the Project area is unlikely, increased vessel traffic and in-water work required to install the Sabine Lake portion of the pipeline could pose a risk to manatees from vessel strikes. The Neches River would be crossed by using the HDD method avoiding in water construction and potential impacts to manatees. The potential effects of construction and operation (i.e., maintenance) of the Project also include spills, inadvertent returns, and construction noise. Of these, construction vessels in transit in shallow waters pose the greatest threat to manatees, but manatees are rarely found in the Project area, making potential impacts unlikely. To avoid and minimize potential impacts to manatees during construction and operation of the Project, the Applicant will implement BMPs (i.e., Onshore Construction BMP Plan, HDD Contingency Plan, and SPAR Plan) listed in **Table 5-5** and will comply with USFWS' Standard Manatee Conditions for In-Water Work (USFWS, 2011). Furthermore, the risk of a pipeline crude oil release is low during operations due to safety mechanisms built into the pipeline system which will prevent a continuous release of oil and implementation of remediations measures outlined in the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP. Therefore, it is anticipated that the construction and operation of the Project ***may affect but is not likely to adversely affect*** the West Indian manatee.

Sea Turtles

Five species of sea turtles federally listed as endangered or threatened possibly occur in the waters near the onshore Project area, including the green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles. The USFWS has jurisdiction over nesting beaches and NOAA Fisheries has jurisdiction over the marine environment. A discussion of sea turtles in marine waters in the offshore Project area is included in Volume IIa, Topic Report 6.

Suitable nesting habitat for sea turtles is not available near the onshore Project area. During site surveys, no suitable sea turtle nesting habitat, individual sea turtles, or sea turtle nests were observed. The existing Stingray Mainline is currently installed underground along the Louisiana shoreline and no new construction activities will be required along the shoreline. Therefore, no impacts on nesting habitat or nesting behavior

are anticipated to occur from the Project. Potential onshore construction-related impacts include increased turbidity due to dredging, increased vessel traffic, inadvertent release of drilling mud, and inadvertent spills of hazardous materials. These potential impacts are further discussed in Section 5.3.

Potential impacts to sea turtles from construction and installation of the offshore components (i.e., dredging activities, vessel strikes, and pile driving) are discussed in Volume IIa, Topic Report 6, Wildlife and Protected Species. To avoid and minimize potential impacts to sea turtles during construction and operation of the Project, the Applicant will implement BMPs (i.e., Onshore Construction BMP Plan, HDD Contingency Plan, and SPAR Plan) listed in **Table 5-5** and will comply with the NOAA Fisheries Sea Turtle and Smalltooth Sawfish Construction Conditions (NOAA Fisheries, 2006) and Vessel Strike Avoidance Measures and Reporting for Mariners (NOAA Fisheries, 2008). With adherence to the mitigation measures outlined in Section 5.5, it is anticipated that construction and operation of the Project ***may affect but is not likely to adversely affect*** the federally listed sea turtles described below.

Green Sea Turtle

The Green sea turtle (*Chelonia mydas*) is federally listed as threatened. Green turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting. Green turtles have strong nesting site fidelity and often make long distance migrations between feeding grounds and nesting beaches. Hatchlings have been observed to seek refuge and food in Sargassum rafts (USFWS, 2015).

Green sea turtles are found in all temperate and tropical waters throughout the world. In the GOM this species has been primarily documented in Texas embayments where they frequent shallow water areas where marine grasses and algae occur. In Louisiana, this species is relatively rare, with most sightings from the eastern coast.

During site surveys, no suitable sea turtle nesting habitat, individual sea turtles, or sea turtle nests were observed. Although suitable nesting habitat for this species is not available near the Project area (LDWF, 2004), green sea turtles could potentially occur within Sabine Neches Waterway and Sabine Lake during foraging and along the vessel transit routes in the GOM. The Neches River will be crossed by using the HDD method avoiding in water construction and potential impacts to sea turtles. Additionally, the existing Stingray Mainline is currently installed underground along the Louisiana shoreline and no new construction activities will be required along the shoreline.

Hawksbill Sea Turtle

Hawksbill sea turtles are a federally and state-listed endangered species. They frequent warm, shallow water habitats such as bays, shoals, seagrass beds, estuaries, and coral reefs where sponges, their primary food source, are abundant. They are found in warm water regions worldwide. In Louisiana and other coastal regions of the GOM, this is one of the most infrequently encountered sea turtles and is considered one of the most endangered sea turtles. Threats to this species include harvesting of eggs and adults for food or tortoise shell; loss of coral reefs; and erosion of barrier islands and other factors that decrease available seagrass beds (LDWF, 2004; NOAA Fisheries, 2020a).

Female hawksbills are solitary nesters and return to the beaches where they were born every 2 to 3 years to nest. Nesting habitat includes exposed sandy beaches. Because of its inclination to nest in small isolated areas, there are no reliable estimates of history or current abundance (LDWF, 2004). The most significant nesting within the U.S. occurs in Puerto Rico and the U.S. Virgin Islands; nesting also occurs on other beaches in the Caribbean islands. Within the continental U.S., nesting is restricted to the southeast coast of Florida and the Florida Keys, but nesting is rare in these areas (NOAA Fisheries, 2020a).

During site surveys, no suitable sea turtle nesting habitat, individual sea turtles, or sea turtle nests were observed. Although suitable nesting habitat for this species is not available near the Project area; however, Hawksbill sea turtles could potentially occur within the Sabine Neches Waterway and Sabine Lake during foraging and along the vessel transit routes in the GOM. The Neches River would be crossed by using the HDD method avoiding in water construction and potential impacts to sea turtles. Additionally, the existing Stingray Mainline is currently installed underground along the Louisiana shoreline and no new construction activities will be required along the shoreline.

Kemp's Ridley Sea Turtle

Kemp's ridley sea turtles are federally and state listed as endangered. The Kemp's ridley sea turtle is the smallest of the sea turtles found in the GOM and is federally listed as endangered. Adult and sub-adult habitat consists primarily of neritic zones, which typically contain muddy or sandy bottoms where prey can be found. Their diet consists mainly of swimming crabs, but may also include fish, jellyfish, and an array of mollusks. Newly emerged hatchlings inhabit a much different environment than adult turtles. After emerging from the nest, hatchlings enter the water and must swim quickly to escape nearshore predators. Juveniles of many species of sea turtles have been known to associate with floating Sargassum seaweed, using the Sargassum as an area of refuge, rest, and/or food (NOAA Fisheries, 2020b).

In a study conducted between 2004 and 2007, immature Kemp's ridley sea turtles were tracked to document their movement patterns, primarily during warmer months. The results showed the turtles exhibited preferences for tidal passes, bays, coastal lakes, and nearshore waters, including documentation of an immature Kemp's ridley sea turtle in Sabine Lake in 2007 (Seney and Landry, 2011). Although nesting occurs mainly in Mexico from May to July, Kemp's ridley sea turtles also nest in small numbers along the Gulf Coast, mostly in southern Texas (NOAA Fisheries, 2020b). Although this species does not nest in Louisiana, the estuarine and offshore waters of Louisiana may provide key feeding and developmental sites. In addition, some of the deepwater channels and estuaries in Louisiana may provide important hibernation sites (LDWF, 2009b).

During site surveys, no suitable sea turtle nesting habitat, individual sea turtles, or sea turtle nests were observed. Although suitable nesting habitat for this species is not available near the Project area, Kemps' ridley sea turtles could potentially occur within the Sabine Neches Waterway and Sabine Lake during foraging, and along the vessel transit routes in the GOM. The Neches River will be crossed by using the HDD method avoiding in water construction and potential impacts to sea turtles. Additionally, the existing Stingray Mainline is currently installed underground along the Louisiana shoreline and no new construction activities will be required along the shoreline.

Loggerhead Sea Turtle

Loggerhead sea turtles are a federally and state-listed threatened species. Loggerheads nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Immediately after hatchlings emerge from the nest, they move to the surf, swim, and are swept through the surf zone, and continue swimming away from land for up to several days (NMFS, 2020b). Post-hatchling loggerheads take up residence in areas where surface waters converge to form local downwellings. These areas are often characterized by accumulations of floating material, such as seaweed (*Sargassum* sp.). Loggerheads feed on hard-shelled prey such as whelks and conch. Oceanic juveniles (between 7 to 12 years old), migrate to nearshore coastal areas (neritic zone) and continue maturing until adulthood. To a large extent, these habitats overlap with the juvenile stage, the exception being most of the bays, sounds, and estuaries along the Atlantic and GOM coasts of the U.S. from Massachusetts to Texas, which are infrequently used by adults. (NOAA Fisheries, 2020c).

During site surveys, no suitable sea turtle nesting habitat, individual sea turtles, or sea turtle nests were observed. Although suitable nesting habitat for this species is not available near the Project area, loggerhead sea turtles could potentially occur within Sabine Neches Waterway and Sabine Lake during foraging and along the vessel transit routes in the GOM. The Neches River will be crossed by using the HDD method avoiding in water construction and potential impacts to sea turtles. Additionally, the existing Stingray Mainline is currently installed underground along the Louisiana shoreline and no new construction activities will be required along the shoreline.

5.2.3.4 *State Listed Species*

The LDWF and TPWD manage state listed threatened and endangered species, as well as species of concern, with regulations that prohibit the unauthorized take, possession, transportation, or sale of any protected species. Some species protected under state law are also listed under federal regulations and, thus, are provided additional protection by federal resource agencies. Discussions in this section are limited to species that are not federally listed under the ESA as threatened or endangered based on the USFWS IPaC report (USFWS, 2020a) for the onshore components.

State listed species with the potential to occur in counties/parishes crossed by the onshore pipeline were determined based on review of the LDWF Rare Species and Natural Communities by Parish (LDWF, 2020c) and TPWD's Annotated County Lists of Rare Species (TPWD, 2020b). **Table 5-3** includes 18 state listed species with a threatened or endangered status within Jefferson and Orange County, Texas and Cameron Parish, Louisiana. There are no state listed threatened or endangered plant species that have the potential to occur in the Project area (LDWF, 2020c; TPWD, 2020b).

The assessment of the potential to occur for each state listed species was based on a combination of factors, including the species current and historical range, availability of the species preferred habitat within the onshore Project area, and the biological characteristics of each species. Included for discussion are only those species with a likelihood to occur designation of potential or likely, as indicated in **Table 5-3**.

TABLE 5-3
Onshore State-Listed Species Potentially Occurring Within the Project Area

Common Name/ Scientific Name	Listing County/ Parish	State Status	Habitat	Potential to Occur in Project Area	Effects Determination[a]
Birds					
Bachman's sparrow (*Peucaea aestivalis*)	Jefferson and Orange County, Texas	T	Open pine woods with scattered bushes and grassy understory in Pineywoods region, brushy or overgrown grassy hillsides, overgrown fields with thickets and brambles, grassy orchards; remnant grasslands in Post Oak Savannah region; nests on ground against grass tuft or under low shrub.	***Unlikely to Occur***	***No effect***
Bald eagle (*Haliaeetus leucocephalus*)	Jefferson and Orange County, Texas	T	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds.	***Known to Occur***	***No significant impact*** Project will comply with the USFWS National Bald Eagle

TABLE 5-3
Onshore State-Listed Species Potentially Occurring Within the Project Area

Common Name/ Scientific Name	Listing County/ Parish	State Status	Habitat	Potential to Occur in Project Area	Effects Determination[a]
					Management Guidelines
Interior least tern (*Sternula antillarum athalassos)*	Jefferson and Orange County, Texas	E	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc.); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	***May Occur***	***No significant impact***
Reddish egret *(Egretta rufescens)*	Jefferson County, Texas	T	Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear.	***May Occur***	***No significant impact***
Swallow-tailed kite (*Elanoides forficatus)*	Jefferson and Orange County, Texas	T	Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.	***May Occur***	***No significant impact***
White-faced ibis (*Plegadis chihi)*	Jefferson and Orange County, Texas	T	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	***May Occur***	***No significant impact***
Wood stork (*Mycteria Americana*)	Jefferson and Orange County, Texas	T	Prefers to nest in large tracts of bald cypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water,	***May Occur***	***No significant impact***

TABLE 5-3
Onshore State-Listed Species Potentially Occurring Within the Project Area

Common Name/ Scientific Name	Listing County/ Parish	State Status	Habitat	Potential to Occur in Project Area	Effects Determination[a]
			including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.		
Mammals					
Louisiana black bear (*Ursus americanus luteolus*)	Jefferson and Orange County, Texas	T	Bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas.	***Unlikely to Occur***	***No effect***
Rafinesque's big-eared bat *(Corynorhinus rafinesquii)*	Jefferson and Orange County, Texas	T	Historically, lowland pine and hardwood forests with large hollow trees. roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures.	***Unlikely to Occur***	***No effect***
Reptiles					
Alligator snapping turtle *(Macrochelys temminckii)*	Jefferson and Orange County, Texas	T	Perennial water bodies; deep water of rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near deep running water; sometimes enters brackish coastal waters; usually in water with mud bottom and abundant aquatic vegetation; may migrate several miles along rivers; active March-October; breeds April-October.	***May Occur***	***No significant impact***
Northern scarlet snake *(Cemophora coccinea copei)*	Jefferson and Orange County, Texas	T	Along Gulf Coast, known from mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September.	***Unlikely to Occur***	***No effect***
Texas horned lizard	Jefferson and Orange County, Texas	T	Occurs in open, arid and semi-arid regions characterized by sparse vegetation consisting of	***Unlikely to Occur***	***No effect***

TABLE 5-3
Onshore State-Listed Species Potentially Occurring Within the Project Area

Common Name/ Scientific Name	Listing County/ Parish	State Status	Habitat	Potential to Occur in Project Area	Effects Determination[a]
(Phrynosoma cornutum)			cactus, grass, brush, and scrubby trees. May be found in sandy or rocky soils. This species burrows into soil, hides under rock, or enters rodent burrows when inactive. Breeds March to September.		
Timber (canebrake) rattlesnake *(Crotalus horridus)*	Jefferson County, Texas	T	Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.	***May Occur***	***No significant impact***
Mullusks					
Louisiana pigtoe *(Pleurobema riddellii)*	Jefferson and Orange County, Texas	T	Streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins.	***May Occur***	***No significant impact*** Proposed crossing method to cross Neches River is HDD
Sandbank pocketbook *(Lampsilis satura)*	Jefferson and Orange County, Texas	T	Small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms; east Texas, Sulfur south through San Jacinto River basins; Neches River.	***May Occur***	***No significant impact*** Proposed crossing method to cross Neches River is HDD
Southern hickorynut *(Obovaria arkansasensis)*	Jefferson and Orange County, Texas	T	If the species still occurs in Texas at all, it may only persist on Village Creek. Observed in the Neches, Sabine, and Cypress River basins. Inhabits waterways with low to moderate currents atop medium sized gravel substrates.	***May Occur***	***No significant impact*** Proposed crossing method to cross Neches River is HDD
Texas heelsplitter (*Potamilus amphichaenus*)	Jefferson and Orange County, Texas	T	Restricted to the Sabine, Neches, and Trinity rivers of Texas. Inhabits waterways with low to moderate currents atop medium sized gravel substrates.	***May Occur***	***No significant impact*** Proposed crossing method to cross Neches River is HDD
Texas pigtoe *(Fusconaia askewi)*	Jefferson and Orange County, Texas	T	A regional endemic limited to a relatively small area in Texas and Louisiana, including the Trinity River above Lake Livingston, a tributary of the	***Unlikely to Occur***	***No effect***

TABLE 5-3 Onshore State-Listed Species Potentially Occurring Within the Project Area					
Common Name/ Scientific Name	**Listing County/ Parish**	**State Status**	**Habitat**	**Potential to Occur in Project Area**	**Effects Determination[a]**
			West Branch San Jacinto River, and the Sabine River above Toledo Bend Reservoir. Inhabits rivers with mixed mud, sand, and fine gravel substrate. This species is associated with protected areas that have fallen trees or other structures.		

Notes:
T = Threatened; E = Endangered
Sources: LDWF, 2020c; TPWD, 2020b; TPWD, 2009
[a] Based on the potential for the species to occur within or in proximity to the Project footprint. Determination based on agency database information and field survey results as defined in Section 5.2.3.3 of this report.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted by the USFWS but is listed as threatened in Texas (but is not listed in Louisiana) and has the potential to occur throughout the Projects area. Although delisted under the ESA, the bald eagle is still afforded protection under the Bald and Golden Eagle Act and MBTA. Bald eagles are present year-round in the Project area as spring and fall migrants, breeders, or winter residents. Bald eagles are most commonly found near large lakes and rivers (TPWD, 2020c). Several bald eagles are documented in the Lower Neches WMAs near Sabine Lake in the vicinity of the onshore Project area (eBird, 2018). Golden Eagles are not known to be present in the Project area.

During field surveys one adult bald eagle was observed within the proposed Project area in Orange County, Texas. However, no nests or nesting activities were observed. Based on this information, this species has the potential to occur as there is suitable habitat within in the vicinity of the onshore pipeline Project area. If bald eagle nests are observed within the Project area during the construction phase, the Applicant would comply with the USFWS National Bald Eagle Management Guidelines (USFWS, 2007).

Interior Least Tern

The interior least tern (*Sternula antillarum athalassos)* is listed endangered by the TPWD within Jefferson County, Texas but is not listed in Louisiana. The interior least tern is migratory, breeding along inland river systems in the U.S. and wintering along the Central American coast and the northern coast of South America from Venezuela to northeastern Brazil. The TPWD classifies Jefferson and Orange counties as wintering range.

Nesting habitat of the interior least tern includes bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs. The birds prefer open habitat and tend to avoid thick vegetation and narrow beaches. Sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs, provide favorable nesting habitat. Nesting locations are often at the higher elevations away from the water's edge, since nesting usually starts when river levels are high and relatively small amounts of sand are exposed. For feeding, interior least terns need shallow water with an abundance of small fish. Shallow water areas of lakes, ponds, and rivers located close to nesting areas are preferred (TPWD, 2020c)

While suitable habitat does occur in the onshore Project area, no individuals or nests were observed during field surveys. Furthermore, although colonial waterbird rookeries are documented within the study area, no rookeries were observed during the field survey. It is expected that birds will easily avoid active construction workspaces due to their mobile nature. Based on the lack of known occurrences, the species mobility, the abundance of suitable habitat in the vicinity of the Project, and implementation of the wildlife mitigation measures listed in Section 5.5, the Project is not likely to significantly affect the interior least tern.

Reddish Egret

The reddish egret (*Egretta rufescens*) is listed as threatened by the TPWD within Jefferson County, Texas but is not listed in Louisiana. This species is a medium sized heron, denoted by a grey body with a rusty neck and head. This species inhabits brackish marshes, tidal flats, and shallow salt ponds. The reddish egret is a year-round resident of the Texas Gulf Coast (TPWD, 2020c). Reddish egrets are generally observed along the Texas coastline and have been sighted in the vicinity of Sabine Lake (eBird, 2020). This species has the potential to occur as there is suitable nesting and foraging habitat within the vicinity of the onshore pipeline Project area.

While suitable habitat does occur in the onshore Project area, no nests or individuals were observed during field surveys and there are no known occurrences in the immediate vicinity of the Project. It is expected that birds will easily avoid active construction workspaces due to their mobile nature. Based on the lack of known occurrences, the species mobility, the abundance of suitable habitat in the vicinity of the Project, and implementation of the wildlife mitigation measures listed in Section 5.5, the Project is not likely to significantly affect the reddish egret.

Swallow-tailed kite

The swallow-tailed kite (*Elanoides forficatus*) is listed as threatened by the TPWD within Jefferson and Orange County, Texas but is not listed in Louisiana. The swallow-tailed kite is a migratory species that nests near large rivers such as the Trinity and Sabine rivers and associated bottomland forests (Texas A&M AgriLife Extension, 2009). Breeding occurs from March to June in the southeastern part of Texas. In fall, they migrate to coastal prairies and into South America.

Suitable foraging and nesting habitat potentially occur in the vicinity of the onshore Project area. Swallow-tailed kites are generally observed along the Texas coastline and have been sighted in the vicinity of Sabine Lake (eBird, 2020). However, no sightings occurred during field surveys and there are no known occurrences in the vicinity of the Project. It is expected that birds will easily avoid active construction workspaces due to their mobile nature. Based on the lack of known occurrences, the species mobility, the abundance of suitable habitat in the vicinity of the Project, and implementation of the wildlife mitigation measures listed in Section 5.5, the Project is not likely to significantly affect the swallow-tailed kite.

White-faced Ibis

The white-faced ibis (*Plegadis chihi*) is listed as threatened by the TPWD within Jefferson and Orange County, Texas but is not listed in Louisiana. This species is found throughout central and western North America, but it seems to be in great abundance in Texas, Utah, and Louisiana. In Texas, this species breeds and winters along the Gulf Coast. The species prefers freshwater marshes, sloughs, and irrigated rice fields, and can also be found in saltwater or brackish habitats. It is known to nest in low trees, marshes, and on the ground in reeds or bulrushes, as well as on floating mats (TPWD, 2020c). White-faced ibis are generally observed along the Texas coastline and have been sighted in the vicinity of Sabine Lake (eBird, 2020). This species has the potential to occur as there is suitable foraging and nesting habitat within in the vicinity of the onshore pipeline Project area.

While suitable habitat does occur in the onshore Project area, no nests were observed during field surveys, and there are no known occurrences in the immediate vicinity of the Project. Based on the lack of known occurrences, the species mobility to be able to avoid the construction work area, and the abundance of suitable habitat in the vicinity of the Project, and implementation of the wildlife mitigation measures listed in Section 5.5, the Project is not anticipated to significantly affect the white-faced ibis.

Wood Stork

The wood stork (*Mycteria Americana*) is listed as threatened by the TPWD within Jefferson and Orange County, Texas but is not listed in Louisiana. The wood stork breeds in Mexico and migrates to the Gulf states for foraging; there have been no breeding records in Texas since 1960 (Texas A&M AgriLife Extension, 2007). They prefer prairie ponds, flooded pastures, and other shallow water, including salt flats, for foraging. Wood storks are generally observed along the Texas coastline and have been sighted in the vicinity of Sabine Lake (eBird, 2020). This species has the potential to occur as there is suitable foraging and nesting habitat within in the vicinity of the onshore pipeline Project area.

While suitable habitat does occur in the onshore Project area, no nests were observed during field surveys, and there are no known occurrences in the immediate vicinity of the Project. Based on the lack of sightings, the species mobility to be able to avoid the construction work area, and the abundance of suitable habitat in adjacent areas, the Project is not anticipated to significantly affect the wood stork.

Alligator Snapping Turtle

The alligator snapping turtle *(Macrochelys temminckii)* is listed as threatened by the TPWD within Jefferson and Orange County, Texas but is not listed in Louisiana. Alligator snapping turtles usually are found in slow moving rivers, lakes, or oxbows but also can be found in freshwater marsh areas with nearby rivers (Herps of Texas, 2020). Nesting season is May to July. Nests are laid during the day with incubation lasting 70-105 days. Except for egg-laying females, the alligator snapping turtle almost never comes on land. The alligator snapping turtle is found in the Trinity and Sabine river watersheds and is found close to large water bodies when found in stable populations (Klym, 2008).

While suitable habitat does occur in the onshore Project area, there are no known occurrences of alligator snapping turtles in the immediate vicinity of the Project. If alligator snapping turtles are observed during Project activities, they will not be disturbed and will be allowed to leave the project area on their own. Based on the lack of sightings, the abundance of suitable habitat upstream and in adjacent areas, and the species mobility to be able to avoid the construction work areas, the Project is not anticipated to significantly affect the alligator snapping turtle.

Timber/Canebrake Rattlesnake

The timber/canebrake rattlesnake is state listed in Texas as threatened but is not listed in Louisiana. Timber/canebrake rattlesnake habitat includes upland pine and deciduous woodlands, riparian zones, moist bottomland forests, and swamps near permanent water sources (TPWD, 2020c). This species prefers areas with dense ground cover, such as grapevines or palmetto, and may seek refuge in tree stumps, logs, and branches (TPWD, 2014k). Suitable foraging and nesting habitat are available in the vicinity of the Project area; however, no sightings occurred during field surveys. Based on the lack of sightings, the abundance of suitable habitat in adjacent areas, and the ability to avoid the active work areas during construction, the Project is not anticipated to significantly affect the timber/canebrake rattlesnake.

Mollusks

Four species of mullusks (Louisiana pigtoe, Sandbank pocketbook, Southern hickorynut, and Texas heelsplitter) potentially occur in the Project area. In the Project area, suitable habitat includes the Neches River which is crossed by the proposed pipeline route. The Project will utilize the HDD construction method to cross Neches River which will minimize potential impacts on state-listed mussel species. Potential construction-related impacts would include inadvertent release of drilling mud. The Applicant prepared an HDD Contingency Plan that describes measures that will be implemented in the event that the HDD is unsuccessful (**Appendix C-5**). Therefore, the Project is not anticipated to significantly affect state-listed mussel species.

5.2.4 Migratory Birds

Migratory birds are protected under the MBTA and Executive Order 13186, including bald and golden eagles, which are also protected under the Bald and Golden Eagle Protection Act. Migratory birds follow broad routes called "flyways" between breeding grounds in Canada and the U.S. and wintering grounds in Central and South America, and the Caribbean. The Project components are located within the western edge of the Mississippi Flyway and the eastern edge of the Central Flyway. The Gulf Coast provides wintering and migration habitat for significant numbers of continental duck and goose populations that use both the Central and Mississippi Flyways. The Gulf Coast is considered one of the most important waterfowl areas in North America, specifically for Nearctic-neotropical migrating birds (Shackelford et al., 2005)

While the MBTA protects all native migratory bird species, some species are given priority when considering impacts on migratory birds and are referred to as birds of conservation concern (BCC). The basic geographic unit for identifying BCCs is the Bird Conservation Region (BCR), and it is the most useful to federal agencies and others attempting to comply with the principles of the MBTA (USFWS, 2008). The onshore components of the Project are located within BCR 37 (Gulf Coastal Prairie). While the majority of birds prefer inland terrestrial habitat, some species such as gulls, terns, petrels, shearwaters, plovers, and sandpipers prefer coastal areas and open marine waters (BOEM, 2016). **Table 5-4** lists the 42 BCCs that could occur in BCR 37.

TABLE 5-4
Birds of Conservation Concern in Region 37 Potentially Occurring in the Vicinity of the Project

Common Name	Scientific Name	Seasonal Occurrence	Habitat in the Project Area	Breeding Dates
Audubon's Shearwater	*Puffinus lherminieri*	Nonbreeding	Offshore, oceanic waters	N/A
Band-rumped Storm- Petrel	*Oceanodroma castro*	Fall Migration	Rocky shorelines, offshore	N/A
American Bittern	*Botaurus lentiginosus*	Nonbreeding	Freshwater marshes with tall vegetation	Early April–late August
Least Bittern	*Ixobrychus exilis*	Breeding, rarely year-round	Freshwater and brackish marshes with tall, dense, aquatic vegetation	Late March–mid August
Reddish Egret	*Egretta rufescens*	Year-round	Shorelines, salt marshes, tidal flats, lagoons	March 1–September 15
Swallow-tailed Kite	*Elanoides forficatus*	Fall migration (scarce)	River swamps, pine forests	March 10–June 30
Bald Eagle [a]	*Haliaeetus leucocephalus*	Year-round	Shorelines, rivers, swarms	October 20–May 10

TABLE 5-4
Birds of Conservation Concern in Region 37 Potentially Occurring in the Vicinity of the Project

Common Name	Scientific Name	Seasonal Occurrence	Habitat in the Project Area	Breeding Dates
Black White-tailed Hawk	*Geranoaetus albicaudatus*	Year-round	Grassland or savanna with short trees and shrubs	Late January–July
Peregrine Falcon[a]	*Falco peregrinus*	Winter	Coastal prairie near bays and estuaries	N/A
Yellow Rail	*Coturnicops noveboracensis*	Nonbreeding	Coastal salt marshes, damp meadows	N/A
Eastern Black Rail	*Laterallus jamaicensis*	Year-round (scarce)	Marshes with Spartina	May–June
Snowy Plover[b]	*Charadrius nivosus*	Nonbreeding	Shorelines, bare upper beaches and sandy flats	Breeds elsewhere
Wilson's Plover	*Charadrius wilsonia*	Breeding, year-round	Shorelines, tidal flats, estuaries	April 1 - August 20
American Oystercatcher	*Haematopus palliatus*	Year-round	Shorelines, tidal flats, mudflats, salt marshes	April 15 - August 31
Solitary Sandpiper	*Tringa solitaria*	Nonbreeding	Freshwater ponds, stream edges, temporary pools; favors wooded areas.	N/A
Lesser Yellowlegs	*Tringa flavipes*	Nonbreeding	Marshes, mudflats, shorelines	N/A
Upland Sandpiper	*Bartramia longicauda*	Fall migration	Flat, open grasslands	N/A
Whimbrel	*Numenius phaeopus*	Nonbreeding	Shorelines, mudflats, marshes	N/A
Long-billed Curlew	*Numenius americanus*	Nonbreeding	Tide flats, salt marshes	N/A
Hudsonian Godwit	*Limosa haemastica*	Spring migration	Mudflats, marshes, tidal flats	N/A
Marbled Godwit	*Limosa fedoa*	Nonbreeding	Shorelines, tidal flats, mudflats	N/A
Red Knot (*roselaari* spp.)	*Calidris canutus roselaari*	Nonbreeding	Shorelines, intertidal marine habitats, coastal inlets, estuaries, bays	N/A
Red Knot (*rufa* spp.)[c]	*Calidris canutus rufa*	Nonbreeding	Shorelines, intertidal marine habitats, coastal inlets, estuaries, bays	N/A
Buff-breasted Sandpiper	*Tryngites subruficollis*	Fall migration	Plowed fields, pastures	N/A
Short-billed Dowitcher	*Limnodromus griseus*	Fall migration, Nonbreeding	Shorelines, mudflats, marshes, tidal flats	N/A
Least Tern[b]	*Sternula antillarum*	Breeding	Shorelines	April 20 - September 10

TABLE 5-4
Birds of Conservation Concern in Region 37 Potentially Occurring in the Vicinity of the Project

Common Name	Scientific Name	Seasonal Occurrence	Habitat in the Project Area	Breeding Dates
Gull-billed Tern	*Gelochelidon nilotica*	Year-round	Shorelines, marshes, plowed fields	April 1 - July 15
Sandwich Tern	*Thalasseus sandvicensis*	Year-round	Shorelines, coastal waters	April 15 - July 15
Black Skimmer	*Rynchops niger*	Year-round	Shorelines, mudflats	May 20 - September 15
Short-eared Owl	*Asio flammeus*	Nonbreeding	Farmland, coastal dunes	N/A
Loggerhead Shrike	*Lanius ludovicianus*	Year-round	Farmland	March 1 - September 15
Sedge Wren	*Cistothorus platensis*	Nonbreeding	Shorelines, marshes, meadows	N/A
Sprague's Pipit	*Anthus spragueii*	Wintering	Farmland	N/A
Prothonotary Warbler	*Protonotaria citrea*	Breeding, migration	Forested wetlands	April 1 - July 31
Swainson's Warbler	*Limnothlypis swainsonii*	Breeding	Swamps, coastal plains, floodplain forests	April 15 - July 15
Grasshopper Sparrow	*Ammodramus savannarum*	Nonbreeding	Farmland	N/A
Henslow's Sparrow	*Ammodramus henslowii*	Nonbreeding	Farmland	N/A
LeConte's Sparrow	*Ammodramus leconteii*	Nonbreeding	Marshes, farmland, coastal prairies	N/A
Nelson's Sharp-tailed Sparrow	*Ammodramus nelsoni*	Nonbreeding	Coastal marshes	N/A
Seaside Sparrow[b]	*Ammodramus maritimus*	Year-round	Coastal marshes with spartina, rushes, saltgrass	May 10 - August 20
Painted Bunting	*Passerina ciris*	Breeding	Forest edges, developed land	March 20 - August 19
Dickcissel	*Spiza americana*	Breeding (scarce)	Grasslands, farmland	April 1 - May 15

Source: USFWS, 2008
N/A = not applicable (species does not breed in BCR 37)
[a] Endangered Species Act Delisted
[b] Non-listed subspecies or population of Threatened or Endangered species
[c] Current ESA Threatened species, 79 Fed. Reg. 238 (December 11, 2014)

5.3 ENVIRONMENTAL CONSEQUENCES

This section includes a discussion of the impacts that could result from the construction and operation of the offshore components of the Project. The study area within which potential impacts were assessed includes the area that would be affected physically by Project activities during construction and operation. As described in Table 1-10 in Section 1.10.2 (Evaluation Criteria) of Topic Report 1 (Volume IIb), the Project's potential effects on wildlife and protected species have been evaluated based on their potential to:

- Violate a legal standard for protection of a species or its critical habitat;
- Degrade the commercial, recreational, ecological, or scientific viability or significance of a biological resource or its critical habitat;
- Measurably change the population size (density) or change the distribution of an important species in the region; and/or
- Directly affect nesting migratory birds protected under the MBTA.

Activities associated with the construction, operation, and decommissioning of the onshore pipeline components with the potential to have environmental consequences on wildlife and protected species are included in **Table 5-5**. The following sections provide further information and discussion of potential environmental consequences.

5.3.1 Wildlife Resources

5.3.1.1 *Construction and Installation*

Onshore Pipeline

The extent and duration of potential impacts to wildlife from Project construction will vary depending on the species present in each affected habitat type and their individual life history. To minimize potential impacts to wildlife and promote the rapid stabilization and revegetation of disturbed areas, the Applicant will implement construction BMPs thereby minimizing disturbance to vegetation and providing for stabilization of affected areas to mitigate direct and indirect effects to wildlife. Following construction, temporarily disturbed areas will be allowed to revegetate via natural succession.

TABLE 5-5
Potential Impacts on Wildlife and Protected Species

Activity		Details	Duration of Impact	Mitigation Measures	Anticipated Level of Impact
Construction					
Installation of Onshore Pipeline	Open Cut	• Habitat disruption, fragmentation, modification, and/or loss • Wildlife displacement, stress, and direct mortality • Increased competition and predation • Inadvertent spills • Increased noise and traffic • Use of HDD to cross the Neches River, Lower Neches WMA Bessie Height Unit,	Short-term to Long-term	• Collocation of pipeline ROW • Onshore Construction BMPs • Revegetation Plan • SPAR Plan • Compliance with USACE and State Permit Conditions • Preconstruction field surveys	Minor and localized

TABLE 5-5
Potential Impacts on Wildlife and Protected Species

Activity		Details	Duration of Impact	Mitigation Measures	Anticipated Level of Impact
		and partially cross the Lower Neches WMA Old River Unit			
	Sabine Lake	• Inadvertent spill resulting in decreased water quality • Habitat modification • Wildlife displacement, stress, and direct mortality • Vessel strikes • Increased noise and traffic	Short-term	• Onshore Construction BMPs • SPAR Plan • HDD Contingency Plan • Compliance with USACE and State Permit conditions • USFWS Standard Manatee Conditions for In-water Work • NOAA Fisheries Sea Turtle And Smalltooth Sawfish Construction Conditions • NOAA Fisheries Vessel Strike Avoidance Measures and Reporting for Mariners	Negligible to minor and localized
	HDD	• Inadvertent spill resulting in decreased water quality • Habitat modification • Wildlife displacement, stress, and direct mortality • Increased noise and traffic	Short-term	• HDD Contingency Plan • Onshore Construction BMPs • SPAR Plan • Compliance with USACE and State Permit conditions	Negligible to minor and localized
Installation of Aboveground Facilities		• Habitat disruption, fragmentation, modification, and/or loss • Wildlife displacement, stress, and direct mortality • Increased competition and predation • Inadvertent spills • Increased noise and traffic	Short-term	• Use of existing disturbed footprint for conversion of existing facilities (i.e., Mainline, Station 501, and Station 701) • Onshore Construction BMPs • Revegetation Plan • SPAR Plan • Compliance with USACE and State Permit Conditions • Preconstruction field surveys	Negligible to minor and localized
Hydrostatic Testing		• Transport sediments and pollutants into wetlands or waterbodies • Increased turbidity and scour affecting water quality and habitat	Short-term	• Onshore Pipeline Construction BMPs • Compliance with National Pollutant Discharge Elimination System (NPDES)	Negligible to minor and localized

TABLE 5-5
Potential Impacts on Wildlife and Protected Species

Activity	Details	Duration of Impact	Mitigation Measures	Anticipated Level of Impact
	• Wildlife displacement, stress, and direct mortality • Increased noise and traffic		Discharge Permit Conditions	
Operations				
Onshore Pipeline and Aboveground Facility Operations	• Temporary disruption due to maintenance activities. • Periodic maintenance could involve ground-disturbing activities or result in a release of hazardous material • Wildlife displacement, stress, and direct mortality • Increased noise and traffic • Disruption of migratory bird nesting during maintenance (i.e., mowing)	Lifetime of Project	• Onshore Construction BMPs during maintenance activities • SPAR Plan • Compliance with Applicant's Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP • Compliance with MARAD license conditions	Negligible and localized
Upsets and Accidents				
Onshore Pipeline and Aboveground Facility Operations	• Accidental spills • Water quality impacts resulting in habitat modification • Wildlife displacement, stress, and direct mortality	Short-term to Long-term	• Compliance with Applicant's Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202), modified to include BMOP • Continuous monitoring of pipeline operations, SCADA, early detection of abnormal operations, and remote shutdown	Minor to major and localized, depending on the volume of oil released and the exposure of species to the release
Decommissioning				
Onshore Pipeline Decommissioning (Abandonment in Place)	• Onshore pipeline will be abandoned in-place and maintenance of the ROW will stop • Additional habitat for wildlife	Short-term	• Onshore Construction BMPs • SPAR Plan • Comply with MARAD license conditions	Beneficial to negligible and localized
Aboveground Facility Decommissioning	• All Station components and impervious surfaces will be removed, and the impacts involved with removal of the facility would be similar to those described for construction • Restoration to pre-construction conditions will	Short-term	• Onshore Construction BMPs • SPAR Plan • Comply with MARAD license conditions	Beneficial to negligible and localized

TABLE 5-5 Potential Impacts on Wildlife and Protected Species				
Activity	**Details**	**Duration of Impact**	**Mitigation Measures**	**Anticipated Level of Impact**
	provide additional habitat for wildlife • Increased noise and traffic			

Construction of the onshore pipeline may impact the habitat types as described in Topic Report 3, *Land Cover and Vegetation*, Volume IIb. Construction of the Project may result in both short-term (or temporary) and long-term impacts to wildlife habitat. Non-forested habitats (i.e., open land and PEM wetlands) are expected to recover quickly (i.e., 1 to 3 years) and PSS wetlands would reestablish in about 3 to 5 years after construction is completed.

Therefore, any temporary disturbance of these habitats is anticipated to have little or no impact on individual wildlife species or wildlife populations. In forested areas, the duration of effects is anticipated to be long-term because it could take decades (i.e., 30 years) for forest habitat to return to pre-construction conditions, and because some forested habitat would be permanently converted to herbaceous cover due to routine vegetation management during Project operations. Some wildlife species that rely on shrub-scrub or forested habitat for foraging, breeding, and nesting could be adversely affected by the long-term loss of these cover types. Other species that prefer open land would benefit from the permanent or temporary habitat conversion.

Impacts on wildlife from the construction of onshore pipeline could include displacement, stress, and direct mortality of some individuals. Direct impacts to wildlife could occur during clearing and grading activities during construction resulting in mortality to small mammals, reptiles, and amphibians that are less mobile. During construction there is a potential for wildlife to be injured or trapped by falling into the open trench. Construction vehicle traffic could also result in wildlife mortality from collisions. Indirect wildlife impacts associated with construction noise and increased human activity could cause wildlife to disperse to adjacent habitats with fewer construction activities. Displacement of wildlife could include increased predation and conflict among predators. The stresses associated with wildlife dispersal are not anticipated to result in any measurable effects on the population level. Potential impacts within any one area will be temporary and localized as construction progresses along the ROW.

Disturbance from construction of the Project could also affect nesting, foraging, and habitat for birds. The increased human presence, as well as noise and vibration associated with Project activities could cause sensory disturbances of migratory and coastal birds. The resulting effects will be intermittent and short-term, occurring during work hours and ceasing when construction activities move from a given area. Birds could be injured or suffer mortality due to fleeing an area of disturbance. Additionally, disturbance during the breeding season could result in nest abandonment. Potential impacts to bird habitat are anticipated to be minimal given the abundance of undisturbed habitats available in the immediate vicinity. It would be expected that birds would easily avoid active construction workspaces due to their mobile nature. Because construction activities will be short-term and episodic, sensory disturbance effects associated with construction activities may affect individuals but is not likely to have notable effects on any local populations of birds, including migratory birds (see Section 5.2.4).

Lighting and noise from construction activities could impact wildlife in areas adjacent to the onshore pipeline by causing behavioral changes in foraging and breeding activities. Artificial lighting used for construction activities between sunset and sunrise may disorient migratory birds as some birds use natural light sources and patterns for navigation or other critical biological behaviors. However, 24-hour

construction will be conducted for a limited number of locations (e.g., HDDs). During nocturnal HDD work, light will be directed downward or toward active construction to minimize impacts on wildlife and birds in adjacent habitats. Noise could cause wildlife to disperse to adjacent habitats with fewer construction activities. The stresses associated with wildlife dispersal are not anticipated to result in any measurable effects on any species at the individual or population level.

Construction of the pipeline could cause habitat degradation and fragmentation. The potential effects of Project construction to forested habitat have been minimized by collocating the pipeline to the extent possible. The majority of forested areas along the proposed pipeline route already exist as edge habitat, not interior forested habitat. Further, many species of resident and migratory wildlife within the Project area use existing utility corridors as preferred habitat. The permanent, maintained ROW may function as a travel corridor for some wildlife species and may provide food, cover, and breeding habitat for those species that use open and emergent habitats. Therefore, although some conversion of forested vegetation will occur, effects on habitat for forest-dwelling wildlife are anticipated to be minimal. Wildlife would gradually return to the disturbed areas for travel, refuge, nesting, and foraging, though there may be a shift in species utilization due to the conversion of scrub-shrub and forested habitats to herbaceous cover in some areas.

In the open water of Sabine Lake, the Project will be constructed using a variety of construction methods including barge lay method (to cross open water), HDD method (to cross the northern shoreline and a foreign pipeline), and the push/pull technique (at the enter and exit shoreline locations). Project construction will require dredging and excavation operations necessary to install the pipeline through Sabine Lake. The primary impacts associated with the installation of the project across Sabine Lake could be resuspension of sediment in the water column. Wildlife species that use the open water habitat of Sabine Lake may be affected by resuspended sediments and turbidity, temporarily limiting their ability to forage and/or utilize cover within submerged aquatic vegetation, if present. Aquatic wildlife could also be harmed by vessel strikes during construction.

An accidental spill or release of hazardous materials (e.g., fuels, lubricants, solvents) during construction could have a negative effect on wildlife and the surrounding environment. The effects could be indirect due to habitat degradation or have direct effects on some individuals. Direct contact with hazardous material could damage the thermal insulation and buoyancy of their feathers, leading to hypothermia, stress, injury, and/or mortality. Potential impacts from accidental hazardous materials spills and releases will be avoided or minimized through implementation of the Project-specific SPAR Plan. The Applicant's SPAR Plan includes BMPs to avoid and minimize the potential for accidental releases and contains measures that will be implemented to clean up any releases.

An inadvertent return of drilling mud could coat the ground surface and alter existing vegetation, thereby affecting wildlife habitat in the area if not cleaned up. To minimize potential impacts of an inadvertent return, the Applicant will implement measures outlined in the HDD Contingency Plan **(Appendix C-5),** such as establishing containment structures where necessary and working with regulatory agencies to determine the necessary course of action. With these measures in place, potential impacts on wildlife habitat due to an inadvertent release of HDD drilling mud would be direct or indirect, adverse, short-term, and minor.

Before the pipeline will be placed into service, hydrostatic testing will be conducted to verify the structural integrity of all pipelines and terminal facilities. Hydrostatic testing will be conducted in accordance with PHMSA requirements (49 CFR §§ 195.505 and 195.588) to ensure the system is capable of withstanding the appropriate test pressure for 8 hours. Hydrostatic testing of the integrity of the pipeline will occur before final restoration and placing the Project into service. As discussed in Resource Report No. 2, hydrostatic test water will be obtained from surface water sources (i.e., Neches River and Sabine Lake) or a commercial open water supply source.

Following satisfactory completion of hydrostatic testing, the test water will typically be discharged into the original source (see Volume IIb, Topic Report 1, Table 1-6). If discharging directly to receiving waters, the Applicant will use diffusers (energy diverters) to minimize the potential for stream scour. All testing activities will be conducted within the parameter of the applicable water withdrawal and discharge permits. The Applicant will not add any chemicals to the hydrostatic test water, and the discharged water will be tested in accordance with discharge permit requirements. In addition, the Applicant will implement the measures outlined in its Onshore Construction BMP Plan, which include screening intakes to avoid entrainment of fish; maintaining adequate stream flow rates to protect aquatic life and to provide for all waterbody uses and downstream withdrawals of water by existing users; siting hydrostatic test manifolds outside of wetlands and riparian areas to the maximum extent practicable; regulating discharge rates; using energy dissipation devices; and installing sediment barriers as necessary to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow. Therefore, hydrostatic testing of the onshore pipeline is not anticipated to adversely impact aquatic or wildlife resources.

Hydrostatic testing of the existing Stingray Mainline from Station 501 to the DWP is discussed in Volume IIa, Topic Report 3 (Water and Sediment Quality) and the effects to offshore wildlife is discussed in Topic Report 6 (Wildlife and Protected Species).

Overall, the impacts associated with pipeline construction could result in increases in wildlife and bird mortality, disturbance due to noise and lighting, and habitat fragmentation and degradation. While these potential impacts could have direct and indirect adverse impacts on some wildlife, the Project will not likely have any population-level impacts on any particular species. Construction of the pipeline facilities is not expected to adversely affect the distribution or regional abundance of wildlife species given the short duration of the disturbance and the amount and distribution of similar habitat types available in the immediate Project area. Further, potential impacts to wildlife will be minimized by collocating approximately 32 percent of the Project with existing ROW and implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan. Therefore, potential impacts on wildlife is anticipated to be short-term (in emergent or scrub-shrub habitat types) to long-term (in forested habitat types) and minor.

Aboveground Facilities

Mainline Valves

MLV sites are small, each approximately 0.1 acre in size, with aboveground piping and valves enclosed within a fenced gravel or platform area. The habitat within the fenceline of the MLV sites will be permanently converted to industrial use. Construction of the MLVs will result in permanent loss of wildlife habitat within the facility fencelines and could cause direct injury or mortality to terrestrial wildlife during clearing and grading activities. Additional impacts on terrestrial wildlife due to construction of the MLV sites could result from construction-related noise, vehicle traffic, runoff, and inadvertent spills.

Potential impacts to wildlife will be similar to the pipeline construction but at a smaller scale. Any impacts will not likely cause population level effects. Although areas will be permanently converted to industrial land use due to placement of MLVs, these facilities are small in size, interspersed and will occur within the pipeline permanent ROW. Given the small size and placement of MLVs, it is expected that wildlife will find adjacent suitable habitat and no direct impacts will occur. It is expected that wildlife will avoid active construction workspaces due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Potential impacts to wildlife habitat will be minimized by implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan. Therefore, potential impacts to wildlife due to construction of the MLVs are anticipated to be long-term and negligible.

BMOP Pump Station

The BMOP Pump Station site is proposed to be developed as part of the Nederland Terminal Buildout Project, which is anticipated to be completed in January 2021, prior to construction of the BMOP Project. Wildlife and birds in this area, are likely already acclimated to the permanent noise and lighting associated with terminal operations. Therefore, construction of the facility will result in negligible impacts on wildlife as the site will be developed industrial land at the time of construction.

Station 501

Station 501 is an existing fenced and graveled facility that will be converted and expanded to accommodate new equipment. Expansion of the site will result in permanent loss of emergent wetland wildlife habitat (E2EM). During construction, ATWS in estuarine emergent wetland (E2EM) areas adjacent to the facility will be required and will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate.

Potential impacts to wildlife at Station 501 will be similar to the pipeline construction. Potential impacts on wildlife due to construction of Station 501 could result from land disturbance, noise, vehicle traffic, and inadvertent spills. Any impacts will not likely cause population level effects. It is expected that wildlife will easily avoid active construction workspaces due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Due to current industrial activities at Station 501, wildlife is expected to be acclimated to the occasional noise related to maintenance activities. Potential impacts to wildlife habitat will be minimized by implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan. Therefore, potential impacts to terrestrial wildlife due to construction at the existing Station 501 site is anticipated to be direct, highly localized, short-term to long-term, and negligible.

Station 701

Station 701 is an existing fenced and graveled compressor station facility that will be converted for the Project. Existing natural gas equipment will be partially removed from the station and new equipment and pipe will be installed within the existing facility boundaries. ATWS areas along the existing Mainline north and south of the facility boundary will be required during construction and will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate.

Potential impacts on terrestrial wildlife due to construction of Station 701 could result from land disturbance, noise, vehicle traffic, runoff, and inadvertent spills. It is expected that wildlife will avoid active construction workspaces due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Due to current industrial activities at Station 701, wildlife is expected to be acclimated to occasional noise associated with maintenance activities. Potential impacts to wildlife habitat will be minimized by implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan. Therefore, potential impacts to wildlife due to construction at the existing Station 701 site is anticipated to be direct, highly localized, short-term, and negligible.

Stingray Tap Removal Site

The Applicant will install a pre-tested pipeline segment following removal of the tap by others. ATWS within and adjacent to the existing Mainline permanent ROW will be required during construction and will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate.

Potential impacts on terrestrial wildlife due to construction of Station 701 could result from construction-related land disturbance, noise, vehicle traffic, runoff, and inadvertent spills. It is expected that wildlife will avoid active construction workspaces due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Due to current industrial activities at Station 701, wildlife is expected to be acclimated to occasional noise associated with maintenance activities. Potential impacts to wildlife habitat will be minimized by implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan, and SPAR Plan. Therefore, potential impacts to wildlife due to construction at the existing Station 701 site is anticipated to be direct, highly localized, short-term, and negligible.

Pipe and Contractor Yards/Staging Areas

The Applicant anticipates using existing pipe and contractor yards during onshore construction. Use of these yards will not result in impacts on wildlife resources, as they will continue to be used for their current purpose.

The Applicant is proposing to use staging areas during onshore construction. Use of these staging areas may result in temporary impacts similar to pipeline construction.

Access Roads and Canals

The Applicant intends to utilize existing public roads, highways, and canals to access the sites during construction. Limited improvements (i.e., grading and gravel refresh) are planned for some existing private roads to support Project construction; however, widening of access roads is not anticipated to be required. One new temporary access road (TAR-05-A) and four new PARs will be required to extend existing roads to MLV sites (i.e., PAR-03, PAR-05, PAR-13, and PAR-15). The temporary access road will be returned to pre-construction conditions following construction. The PARs will require permanent gravel and fill resulting in a small loss of habitat. The Applicant will implement the measures outlined in its Onshore Construction BMP Plan to minimize erosion during construction. To minimize potential impacts from inadvertent spills, the Applicant will adhere to the SPAR Plan. Construction vehicle traffic could result in increased wildlife mortality from collisions. To minimize potential impacts to wildlife, the Applicant will enforce speed limits within, to, and from all construction workspaces. Therefore, potential impacts to wildlife due to construction of new permanent and temporary access roads and use of existing access roads during construction is anticipated to be direct, highly localized, long-term, and minor.

Existing canals to be used for construction equipment are necessary for HDD equipment, mats, and other materials necessary for pipeline construction to be brought to the work site. The access canals will not require improvements (i.e., dredging) for channel deepening or widening. Furthermore, Sabine Lake, the Neches River, and the Intracoastal Waterway (ICWW) were specifically created to provide deepwater access for maritime commerce, and as such, the use of waterways by vessels to accommodate pipeline construction is consistent with the planned purpose and use of these active shipping channels. During construction, barges will only remain when necessary or to facilitate delivery of construction materials.

Boat movements and the movements of support vessels and other supply vessels are not expected to substantially increase shoreline erosion, benthic sediment disturbance, or prop scarring in the immediate area, primarily because the vessels are slow moving and would not create substantial wakes which will also minimize the potential for aquatic wildlife to be harmed by vessel strikes during construction. In addition, although the likelihood of a fuel spill or release of hazardous materials would be extremely remote, the vessel captain will implement spill prevention procedures and clean-up measures outlined in the Applicant's SPAR Plan. Overall, the increase in vessel traffic in the access canals in the Project area during construction will be short-term and potential impacts on aquatic wildlife is anticipated to be negligible.

5.3.1.2 *Operations*

Onshore Pipeline

Following installation of the onshore pipeline and successful restoration of temporarily disturbed areas, the operational easement will be maintained in an herbaceous state (i.e., woody and shrub-scrub vegetation would not be allowed to mature). Routine maintenance is required to allow for onshore pipeline inspection (i.e., routine mowing, vegetation removal). Routine vegetation management will occur over the full width of the 50-foot-wide permanent ROW of the onshore pipelines on an annual basis or as needed. In areas where the permanent (operational) ROW is adjacent to existing ROWs or existing habitat is dominated by herbaceous cover, there will be no permanent change in habitat; however, permanent habitat conversion will occur in areas within the permanent maintained ROW where forested or shrub-scrub vegetation occur, thereby reducing the extent of existing natural communities for these vegetation types. Due to routine maintenance, forested vegetation will not be allowed to mature within the permanent ROW. The permanent conversion of habitat will displace some wildlife, especially those dependent upon dense shrub-scrub and forested habitats and could lead to increased competition in adjacent habitats. Some terrestrial wildlife species that rely on shrub-scrub and forested habitats could be impacted by the slow restoration of these habitats where these habitats are allowed to be restored within temporary workspaces, while other species that prefer herbaceous habitats, such as open land and grassland, will temporarily benefit from the habitat conversion. Maintenance of the operational ROW will also create a linear space of open land within areas that were previously shrub-scrub and forested vegetation. During operation of the onshore pipeline, normal operation and maintenance activities may result in temporary, negligible to minor impacts on wildlife habitat due to clearing. Any temporary impacts on wildlife habitat will be localized to the specific areas where maintenance activities occur.

Impacts associated with planned and unplanned maintenance may occur during the life of the Project. Periodic maintenance could involve ground-disturbing activities or result in a release of hazardous material. Potential impacts would be similar to those described for construction. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs, Revegetation Plan, and Coastal Louisiana Pipeline Facility Response Plan. Therefore, potential impacts associated with planned or unplanned maintenance is anticipated to be direct, adverse, short-term, and negligible to minor, depending on the activity.

Aboveground Facilities

Mainline Valves

The habitat within the fenceline of the MLV sites will be permanently converted to industrial use. Lighting and noise are not associated with MLVs during operation; therefore, no additional impacts due to lighting and noise associated with operation would occur to terrestrial wildlife. Periodic maintenance could involve ground-disturbing activities or result in a release of hazardous material. Potential impacts will be similar to those described for construction. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to minimize potential impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, it is anticipated that operation of the MLV sites may result in localized long-term, negligible impacts on terrestrial wildlife.

BMOP Pump Station

The BMOP Pump Station site is proposed to be developed as part of the Nederland Terminal Buildout Project, which is anticipated to be completed in January 2021, prior to construction of the BMOP Project. Due to current industrial activities at the Nederland oil terminal adjacent to the site, wildlife species in the

area are expected to be acclimated to the noise and artificial lighting associated with operation activities. No additional impacts due to lighting and noise associated with operation are anticipated to occur to terrestrial wildlife because the pump station is located adjacent to the NT. Periodic maintenance could involve ground-disturbing activities or result in a release of hazardous material. Potential impacts will be similar to those described for construction. During maintenance activities, the Applicant will adhere to the Onshore Construction BMP Plan and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to minimize potential impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, it is anticipated that operation of the BMOP Pump Station site may result in localized long-term, negligible impacts on terrestrial wildlife.

Station 501

Operation effects to wildlife at the Station 501 will be negligible, if any, given that the site is an existing fenced and graveled station located along the existing Stingray Mainline. Station 501 does not include any new facilities which will generate significant operational noise or lighting that could disturb wildlife. No additional impacts due to lighting and noise associated with operation are anticipated to occur to terrestrial wildlife because the Station 501 is an existing facility. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to potential minimize impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, it is anticipated that operation of Station 501 may result in localized long-term, negligible impacts on terrestrial wildlife.

Station 701

Operation effects to wildlife at the Station 701 will be negligible, if any, given that the site is an existing fenced and graveled station located along the existing Stingray Mainline. Station 701 does not include any new facilities which will generate significant operational noise or lighting that could disturb wildlife. No additional impacts due to lighting and noise associated with operation are anticipated to occur to terrestrial wildlife because the Station 701 is an existing facility. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to minimize potential impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, it is anticipated that operation of the Station 701 may result in localized long-term, negligible impacts on wildlife.

Stingray Tap Removal Site

Potential impacts to wildlife due to operation (i.e., planned and unplanned maintenance) are anticipated to be similar to pipeline operation (i.e., direct, adverse, short-term, and negligible to minor, depending on the activity.

Access Roads and Canals

The Applicant intends to utilize existing public roads, highways, and canals to access the sites during operations. The increase in vehicles and vessel traffic in the access roads canals in the Project area during operation will be similar to construction and is anticipated to be long-term, intermittent and negligible.

5.3.1.3 *Upsets and Accidents*

Onshore Pipeline

Potential operational impacts on wildlife include temporary impacts on habitat due to maintenance activities, as required. Potential impacts will be localized, temporary and negligible, and are not anticipated

to require large areas of ground disturbance. Minor spills during maintenance activities could occur and potentially reach local wetlands or waterbodies, but on-site spill response methods would result in these impacts being temporary and negligible. the Applicant will implement its Coastal Louisiana Pipeline Facility Response Plan which includes BMPs to avoid and minimize the potential for accidental releases and contains measures that will be implemented to clean up any releases. All inadvertent leaks and spills potentially resulting in contamination would be contained and remedied onsite as soon as practicable, and in compliance with the Coastal Louisiana Pipeline Facility Response Plan.

Impacts would be more substantial if an oil spill occurred during Project operations due to a ruptured pipeline. Most oil spills, including large spills, would result in a limited impact on most of the terrestrial mammals utilizing the area affected by the spill. The extent of potential impacts would depend on the type and amount of oil spilled; the location and terrain of the spill; the type of habitat affected; wildlife distribution, abundance, and behavior at the time of the spill; and the effectiveness of the spill response. Typically, the proportion of habitat affected would be very small relative to the area of habitat available for most wildlife.

A large spill could affect terrestrial wildlife directly or indirectly through impacts to their habitat, prey, or forage. At a minimum, oil could adhere to vegetation along its flow path, which could directly or indirectly affect wildlife that rely on those vegetation communities. Some to most of these animals probably would not ingest oiled vegetation, because they tend to be selective grazers and are particular about the plants they consume.

Many predators and scavengers (e.g., bears, foxes, and raccoons) could experience toxic effects through feeding on birds, other mammals, reptiles, and fish killed or injured by an oil spill. However, these effects would not generally be life threatening or long term for the predator or scavenger (White et al., 1995). Spill response activities would typically frighten most large mammals away from the spill, thus reducing the possibility of mammal ingestion of oiled vegetation. The vegetation affected by spilled oil could temporarily reduce local forage availability, although it is unlikely that the overall abundance of food for large herbivorous mammals would be substantively reduced.

Small mammals and furbearers could be affected directly by spills due to oiling or indirectly through ingestion of contaminated forage or prey items. Furbearers, especially river otters, mink, muskrat, raccoons, and beavers that are dependent on or frequently use aquatic habitats could be exposed to oil if spills reached aquatic habitats within their range. Oiled furbearers could be susceptible to hypothermia and oil toxicity from ingestion during grooming. Potential impacts to small mammals and furbearers would likely be localized around the spill area and would not cause population-level impacts.

Birds and waterfowl could also be affected directly by spills due to oiling which could damage the thermal insulation and buoyancy of their feathers, leading to hypothermia, stress, injury, and/or mortality. Potential indirect effects would be associated with habitat degradation, decline in food resources, and sub-lethal effects that decrease survival, future reproduction, and growth of the affected individuals. In addition, birds may suffer both acute and chronic toxicological effects. Birds may ingest oil as they preen their feathers in an attempt to remove the oil. The ingested oil may cause systemic impacts resulting in mortality, reduced reproductive capacity, loss of weight, inability to feed, and similar effects. Oiled birds that are nesting or incubating eggs may coat the eggs or young with oil and injure or kill them. Dead oiled birds may be scavenged by other birds as well as mammals.

A spill within wetlands, adjacent riparian habitats, or open water habitats (i.e., Sabine Lake) along the ROW, could adversely affect waterfowl species that breed, stage, or congregate in these areas during migration. Spills within aquatic habitats could affect fish, macroinvertebrates (e.g., mussels, crustaceans, insects, and worms), algae and other aquatic plants, amphibians, and reptiles; many of which are prey for mammals and birds. If the spilled material entered wetlands or waterbodies, water-dependent birds such as

waders, seabirds, shorebirds, and waterfowl could be exposed. The numbers of individuals oiled would depend primarily on wind conditions and the numbers of birds within and proximate to the area affected by the spill.

The potential effects of an onshore oil spill on terrestrial wildlife during Project operations would depend on their level of exposure. Volume IIa, Appendix F details the potential for an oil spill from the DWP or pipeline and the potential impacts that could result from the Project.

To minimize the potential impacts associated with an accidental release of oil or other hazardous materials during operations (i.e., maintenance), the Applicant will implement its Coastal Louisiana Pipeline Facility Response Plan which includes BMPs to avoid and minimize the potential for accidental releases and contains response and mitigation measures that will be implemented to clean up any releases.

To minimize the potential occurrence of a large spill, the pipeline will be constructed with MLVs (i.e., shut-off valves) to allow sections of the pipeline to be isolated remotely. The volume of oil that could be released due to a leak would be limited to the amount of oil that leaked prior to detection and the volume remaining in the isolatable section. Overall, the risk of a pipeline crude oil release is low due to safety mechanisms built into the pipeline system which detect potential releases and prevent a continuous release of oil.

With implementation of the safety design features for onshore facilities, the Coastal Louisiana Pipeline Facility Response Plan and the appropriate mitigation measures, potential impacts on wildlife due to an oil spill are anticipated to be direct and adverse, and depending on the size of the spill, could be short-term or long-term and minor to major.

Aboveground Facilities

Potential impacts on terrestrial wildlife due to inadvertent spills at the aboveground facility sites (MLVs, BMOP Pump Station, Station 501, Station 701, and the Stingray Tap Removal Site) will be similar to those described for the onshore pipeline. The 10,000-barrel storage tanks at Station 701 will be located within a secondary containment berm designed per National Fire Protection Act (NFPA) requirements and will be capable of containing 110 percent of the capacity of one storage tank. With implementation of the safety design features for onshore facilities, the Louisiana Coastal Pipeline Facility Response Plan and the appropriate mitigation measures, potential impacts on terrestrial wildlife due to an oil spill are anticipated to be direct and adverse, and depending on the size of the spill, could be short-term or long-term and minor to major.

5.3.1.4 *Decommissioning*

The onshore pipeline components are expected to have a lifespan of 25 years. At the time of decommissioning, the Applicant will seek to abandon the pipeline in place and restore the aboveground facilities to pre-construction conditions.

Onshore Pipeline

At the time of decommissioning, the onshore pipeline will be abandoned in place. Cleaning of the pipeline may cause temporary impacts on terrestrial wildlife due to decommissioning activities along the pipeline which may disturb terrestrial wildlife. However, maintenance along the pipeline would cease within the operational easement, and vegetation within the operational easement would be allowed to grow and mature, including preexisting shrub-scrub and forested vegetation within the applicable habitat types. Therefore, decommissioning of the pipeline will allow for the return of forested and shrub-scrub habitat for terrestrial wildlife compared to construction and operation of the onshore pipeline, and would result in a negligible, beneficial impact on terrestrial wildlife.

Aboveground Facilities

At the time of decommissioning, the Applicant will remove the industrial facilities within the fenceline of the aboveground facility sites (MLVs, BMOP Pump Station, Station 501, and Station 701), including all artificial land covering such as asphalt and gravel. The cleaned sites will be allowed to revegetate and revert to vegetation communities similar to adjacent conditions. Therefore, decommissioning of aboveground facility sites will allow for the return of habitat compared to construction and operation of the facilities and would result in a beneficial impact on terrestrial wildlife.

5.3.2 Managed and Sensitive Wildlife Habitat

The proposed pipeline will cross the Lower Neches WMA, Bessie Height and Old River Units. The Lower Neches WMA Bessie Height and Old River Units are owned and managed by TPWD for research, demonstration, and/or public hunting. The Applicant is consulting with the TPWD in the selection of the proposed route through the Lower Neches WMAs. The entire route across the Lower Neches WMA Bessie Height Unit will be crossed by the HDD method to avoid impacts. Approximately 3,720 feet (0.7 mile) of the northern portion of the Lower Neches WMA Old River Unit will be crossed using the HDD method at the State Highway (SH) 73/87 crossing. The remainder of the route, collocated along an existing canal system, will be crossed by the push/pull technique. The Applicant will continue to consult with the TPWD in the selection of the proposed route through the Lower Neches WMAs and plans to request an easement to cross the Bessie Height and Old River Units. It is anticipated that pipeline construction, operation, and decommissioning activities across managed lands will be similar to those as described above for wildlife resources.

5.3.3 Federal and State Listed Species

5.3.3.1 *Construction and Installation*

Construction of the Project is not anticipated to adversely affect any federal or state listed species. Approximately 32 percent of the pipeline route will be collocated with existing ROW thereby minimizing potential impacts of clearing, especially through forested areas. Furthermore, the Project will repurpose existing facilities (Stingray pipeline, Station 501 and Station 701) avoiding impacts to new habitat.

A summary of species-specific effects determinations for federal and state listed species is presented in **Table 5-2** and **Table 5-3,** respectively. As summarized in Section 5.2.3.3 (Listed Species Assessment), the Project ***may affect, but is not likely to adversely*** affect nine federally listed threatened or endangered species and would not likely jeopardize the continued existence of one candidate (proposed threatened) species. Furthermore, it is anticipated that the Project will have no significant adverse effects to the state-listed species included in **Table 5-3**.

Biologists conducted field surveys of the Project area in March, May, and June of 2020. The results of the biological field surveys are included in **Appendix D-2**. Based on the results of the field surveys, the Project is not anticipated to significantly affect the population of any protected species. To avoid and minimize potential impacts to wildlife and habitats during construction and operation of the Project, the Applicant will implement construction and operation BMPs listed in **Table 5-5** and discussed in Section 5.5.

5.3.3.2 *Operations*

Operation and maintenance of the facilities will have no additional impact to protected species after construction is complete. The Project does not include any new aboveground facilities which will generate significant operational noise or lighting that could disturb wildlife, including federal or state listed species. the Applicant's maintenance of the permanent ROW will include routine mowing and clearing activities

using mechanical equipment. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs, Revegetation Plan, and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to minimize impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, potential impacts associated with planned or unplanned maintenance would be direct, adverse, short-term, and negligible to minor, depending on the activity.

5.3.3.3 *Upsets and Accidents*

As discussed in Section 5.3.1.3, potential impacts on wildlife from an onshore oil spill would be direct or indirect, adverse, short-term to long-term, and minor to major, depending on the volume of oil released and the exposure of species to the release. An important additional consideration for protected species is that, by definition, they have limited distribution and/or population sizes. Although exposure to oil may adversely affect only a few individuals or a small, localized population of individuals, such a loss could represent a significant portion of the population and its gene pool. Consequently, even a very small or small spill could substantively affect a threatened or endangered species.

Spilled oil is more likely to affect species that heavily use or completely depend on aquatic and wetland habitats than those in terrestrial habitats. The oil could be transported into Sabine Lake or other waterbodies, especially with substantive to very large spills, and thus affect a substantive portion of some populations of aquatic species (i.e., freshwater mussels, fish, reptiles, and water birds).

The likelihood of impacts on threatened, endangered, and protected species would be low because the majority of spills would likely occur at construction yards, on roads, at the pump station, or at MLV sites that have been sited to avoid or minimize any potential impacts on these habitats and species. Furthermore, the Applicant's existing Coastal Louisiana Pipeline Facility Response Plan (PHMSA Sequence No. 3202) will be modified to include BMOP for use during operations. With implementation of the safety design features for onshore facilities and the mitigation measures, potential impacts on wildlife, including protected species, due to an oil spill would be direct and adverse, and depending on the size of the spill, could be short-term or long-term and minor to major.

5.3.3.4 *Decommissioning*

Onshore Pipeline

The onshore pipeline will be cleaned and abandoned in place. Cleaning of the pipeline may cause temporary impacts to some wildlife habitat, but there would be no effect on federally listed species. Maintenance along the pipeline will cease within the operational easement, and vegetation within the operational easement will be allowed to grow and mature, including pre-existing shrub-scrub and forested vegetation within the applicable habitat types. Therefore, decommissioning of the pipeline will allow for the return of some wildlife habitat (a beneficial affect), but there would be no effect on federally listed species.

Aboveground Facilities

Decommissioning of the aboveground facilities (MLVs, BMOP Pump Station, Station 501, and Station 701) will allow for the return of some wildlife habitat, but there would be no effect on federally listed species.

5.3.4 Migratory Birds

5.3.4.1 *Construction and Installation*

Onshore Pipeline

Potential impacts on migratory birds due to installation and commissioning of the onshore pipeline will be similar to those described for terrestrial wildlife in Section 5.3.1.1. Disturbance from construction of the Project could affect nesting, foraging, and stopover habitat for migratory birds. The increased human presence, as well as noise and vibration associated with Project activities could cause sensory disturbances of migratory and coastal birds. Birds could be injured or suffer mortality due to fleeing an area of disturbance. Additionally, disturbance during the breeding season could result in nest abandonment. To mitigate the potential impacts associated with construction clearing, the Applicant will conduct pre-construction field surveys and either clear outside the nesting season or coordinate with USFWS to develop measures to minimize potential impacts on migratory birds. The Applicant will continue to consult with the USFWS, the TPWD, and the LDWF regarding potential impacts on migratory birds in the Project area.

Potential impacts to migratory bird habitat are anticipated to be minimal given the abundance of undisturbed habitats available in the immediate vicinity. It is expected that migratory birds will easily avoid active construction workspaces due to their mobile nature. While potential impacts could have direct and indirect adverse impacts on some wildlife, the Project would not likely have any population-level impacts on any particular species; therefore, potential impacts on migratory birds due to construction of the onshore pipeline is anticipated to be short-term (i.e., emergent and scrub-shrub habitats) to long-term (i.e., forested habitats) and minor.

Aboveground Facilities

Mainline Valves

Construction of the MLVs will result in permanent loss of wildlife habitat within the facility fencelines and could cause direct injury or mortality to migratory birds during clearing and grading activities. Additional impacts on migratory birds due to construction of the MLV sites could result from construction-related noise, vehicle traffic, runoff, and inadvertent spills. Potential impacts to migratory birds will be similar to the pipeline construction but at a smaller scale. Any impacts will not likely cause population level effects.

Although areas will be permanently converted due to placement of MLVs, these facilities are small in size, interspersed, and occur within the pipeline permanent ROW. Given the small size and placement of MLVs, it is expected that migratory birds will find adjacent suitable habitat and no direct impacts will occur. Potential impacts due to construction traffic will be negligible given migratory birds will easily avoid traffic due to their mobile nature. Any impacts will not likely cause population level effects. Potential impacts to migratory bird habitat will be minimized by implementing BMPs and restoration methods outlined in the Applicant's Onshore Construction BMP Plan, Revegetation Plan and SPAR Plan. Therefore, potential impacts to migratory birds due to construction of the MLVs is anticipated to be long-term and negligible.

BMOP Pump Station

Potential impacts on migratory birds due to construction of the BMOP Pump Station will be negligible given that the BMOP Pump Station is proposed to be developed as part of the Nederland Terminal Buildout Project, which is anticipated to be completed in January 2021, prior to construction of the BMOP Project. Due to current industrial activities at the Nederland oil terminal adjacent to the site, migratory birds are expected to be acclimated to the noise and artificial lighting associated with operational activities at the terminal.

Station 501

Station 501 is an existing facility that will be converted and expanded to accommodate new equipment for the Project. Potential effects to migratory birds at the Station 501 will be negligible, if any, given that the site is an existing fenced and graveled station located along the existing Stingray Mainline. Similar to onshore pipeline construction, potential impacts on migratory bird species due to construction activities at Station 501 could result from construction-related noise, vehicle traffic, runoff, and inadvertent spills. It is expected that migratory birds will easily avoid active construction workspaces and traffic due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Due to current industrial activities at Station 501, wildlife is expected to be acclimated to the occasional noise related to maintenance activities. Therefore, potential impacts to migratory birds due to construction at the existing Station 501 site is anticipated to be long-term and negligible.

Station 701

Station 701 is an existing facility that will be converted for the Project. Existing natural gas equipment will be partially removed from the station and new equipment and pipe will be installed within the existing facility boundaries. ATWS areas along the existing Mainline north and south of the facility boundary will be required during construction and will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate.

Similar to onshore pipeline construction, potential impacts on migratory bird species due to construction activities at Station 701 could result from construction-related land disturbance, noise, vehicle traffic, runoff, and inadvertent spills. It is expected that migratory birds will easily avoid active construction workspaces and traffic due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Due to current industrial activities at Station 701, wildlife is expected to be acclimated to the occasional noise related to maintenance activities. Therefore, potential impacts to migratory birds due to construction at the existing Station 701 site is anticipated to be long-term and negligible.

Stingray Tap Removal Site

The Applicant will install a pre-tested pipeline segment following removal of the tap by TC. ATWS within and adjacent to the existing Mainline permanent ROW will be required during construction and will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate. It is expected that migratory birds will easily avoid active construction workspaces and traffic due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Potential impacts to migratory birds due to construction of the Stingray Tap Removal Site is anticipated to be similar to pipeline construction and are anticipated to be short-term and negligible.

Pipe and Contractor Yards/Staging Areas

The Applicant anticipates using existing pipe and contractor yards during onshore construction. Use of these yards will not result in impacts on wildlife habitat (or migratory birds), as they will continue to be used for their current purpose.

The Applicant is proposing to use staging areas during onshore construction. Staging areas will be returned, as closely as possible, to pre-construction contours and allowed to naturally revegetate. It is expected that migratory birds will easily avoid active construction workspaces and traffic due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Potential impact on migratory birds from construction of the staging areas is anticipated to be short-term and negligible.

Access Roads and Canals

Construction and use of new and existing access roads and canals in the Project area during construction is discussed in Section 5.3.1.1 for wildlife resources. It is expected that migratory birds will easily avoid active construction workspaces and traffic due to their mobile nature and abundance of undisturbed habitats available in the immediate vicinity. Therefore, construction and use of new and existing access roads and canals during construction are not anticipated to adversely impact migratory birds.

5.3.4.2 *Operations*

Onshore Pipeline

Potential operational impacts on migratory birds due to operation of the onshore pipeline will be similar to those described for terrestrial wildlife in Section 5.3.1.2. Some migratory bird species that rely on shrub-scrub and forested habitats may be impacted by the slow restoration of these habitats where these habitats are allowed to be restored within temporary workspaces, while other migratory bird species that prefer herbaceous habitats, such as open land and grassland, would temporarily benefit from the habitat conversion. Maintenance of the operational easement will create a linear space of open land within areas that were previously shrub-scrub and forested vegetation.

During Project operations, routine vegetation management will occur over the full width of the 50-foot-wide permanent ROW of the onshore pipelines on an annual basis or as needed. Maintenance of the permanent ROW will include routine mowing and clearing activities using mechanical equipment. If vegetation management occurred during the breeding season between April 15 and August 1, migratory birds could suffer disturbance or mortality. Birds may flee the area of disturbance or may abandon their nest. Nest destruction could occur for low or ground nesting species. Additionally, fledgling mortality could occur if they were not be able to clear the area and avoid vegetation management equipment. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs and Coastal Louisiana Pipeline Facility Response Plan. Therefore, operation of the onshore pipeline is anticipated to result in long-term, negligible to minor impacts on migratory birds.

Aboveground Facilities

Potential impacts on migratory birds due to operation of the aboveground facilities (MLVs, BMOP Pump Station, Station 501, and Station 701) will be similar to those described for terrestrial wildlife in Section 5.3.1.2. During maintenance activities, the Applicant will adhere to the Onshore Construction BMPs and Coastal Louisiana Pipeline Facility Response Plan. Furthermore, to minimize potential impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies. Therefore, it is anticipated that operation of the aboveground facilities will result in localized long-term, negligible impacts to migratory birds.

Access Roads and Canals

The Applicant intends to utilize existing public roads, highways, and canals to access the sites during operations. The increase in vehicles and vessel traffic in the access roads canals in the Project area during operation will be similar to construction and is not anticipated to adversely impact migratory birds.

5.3.4.3 *Upsets and Accidents*

Potential impacts on migratory bird species due to inadvertent spills will be similar to those described for the onshore pipeline.

5.3.4.4 *Decommissioning*

Potential impacts on migratory bird species due to decommissioning of onshore and aboveground facilities will be similar to those described for the onshore pipeline. Therefore, decommissioning of the pipeline will result in the addition of habitat for migratory birds compared to construction and operation of the onshore pipeline and may result in long-term negligible to beneficial impacts on migratory birds.

5.4 CUMULATIVE IMPACTS

A complete discussion of cumulative impacts is included in Volume IIa, Appendix C "Framework for Cumulative Impacts Analysis."

5.5 MITIGATION MEASURES

Construction, operation, and maintenance of the Project facilities will be in accordance with all applicable rules and regulations, permits, and approvals. To avoid and minimize potential impacts to wildlife and vegetation communities during construction and operation of the Project, the Applicant has:

- Minimized the footprint of the proposed work activities and the duration of disturbances to the extent practicable to reduce impacts on wildlife resources and habitat;
- Repurposed existing facilities (Stingray Mainline, Station 501 and Station 701) to minimize impacts to new habitat;
- Collocated the onshore pipeline to the extent possible (approximately 30 percent) with existing ROW to minimize impacts on vegetation communities during construction and operation of the pipeline system; and
- Crossed sensitive environmental land (i.e., Lower Neches WMA Bessie Height Unit) and waterbodies (i.e., Neches River) by using the HDD construction method.

The Applicant will implement the following plans (included in **Appendix C**) to ensure adequate protection of wildlife and environmental resources during onshore construction. Offshore threatened and endangered species mitigation measures are fully discussed in Volume IIa, Topic Report 6.

- Project's Onshore Construction BMP Plan to avoid, minimize, and mitigate environmental impacts as they relate to the construction and operation of the Project (**Appendix C-1**).
- Revegetation Plan to avoid and minimize introduction of invasive species and promote rapid revegetation (**Appendix C-2**).
- SPAR Plan to avoid and minimize inadvertent spills and releases of oil and hazardous materials (**Appendix C-3**).
- HDD Contingency Plan to reduce the likelihood of inadvertent releases of drilling fluid/mud and will follow cleanup procedures should an inadvertent release occur (**Appendix C-5)**.

In addition to these plans, the Applicant will adhere to the following agency (i.e., USFWS and NOAA Fisheries) plans to facilitate protection to manatees and sea turtles during construction and operation of the onshore facilities:

- USFWS Standard Manatee Conditions for In-water Work (USFWS, 2011);
- USFWS National Bald Eagle Management Guidelines (USFWS, 2007);
- NOAA Fisheries Sea Turtle And Smalltooth Sawfish Construction Conditions (NOAA Fisheries, 2006); and
- NOAA Fisheries Vessel Strike Avoidance Measures and Reporting for Mariners (NOAA Fisheries, 2008).

Specific measures included in these plans to minimize potential impacts to wildlife due to pipeline construction, include the following BMPs:

- Conduct pre-construction field surveys and either clear outside the nesting season or coordinate with USFWS to develop measures to minimize potential impacts on migratory birds during construction clearing;
- Restrict construction activity within 1,000 feet of an active nesting colony to the non-nesting season (September 1 to February 15) to minimize disturbance to nesting waterbirds. For colonies containing nesting gulls, terns, or black skimmers, all activity occurring within 60 feet (2,000 feet for Brown pelicans) of an active nesting colony will be restricted to the non-nesting period (i.e., September 16 through April 1) unless specifically approved in writing by LDWF and/or TPWD;
- Minimize unnecessary lighting; lighting will only be utilized for safety and security purposes. Light will be directed downward or toward active construction to minimize impacts on wildlife and birds in adjacent habitats;
- Limit nighttime construction traffic, noise, and lighting;
- At HDD locations, direct lighting downward or directly at active construction, where feasible, while maintaining safety;
- Inspect open trenches for wildlife each morning before commencing construction activities.
- Limit access on the ROW with use of signs, fences, and/or gates;
- Enforce a reduced speed limit within, to, and from all construction workspaces; and
- Prohibit unnecessary idling of internal combustion engines and require that all equipment be shut off when not in use to minimize noise.

To minimize potential impacts due to pipeline operation, the Applicant will prohibit the use of herbicides or pesticides within 100 feet of wetlands or waterbodies.

5.6 SUMMARY OF POTENTIAL IMPACTS

The Project's potential effects on wildlife and protected species have been evaluated based on the criteria listed in Table 1-10 in Section 1.10.2 (Evaluation Criteria) of Topic Report 1 (Volume IIb). The Project is NOT expected to:

- Violate a legal standard for protection of a species or its critical habitat;
- Degrade the commercial, recreational, ecological, or scientific viability or significance of a biological resource or its critical habitat;
- Measurably change the population size (density) or change the distribution of an important species in the region; and/or
- Directly affect nesting migratory birds protected under the MBTA.

Potential impacts on wildlife from construction, operation, and decommissioning of the onshore pipeline and aboveground facilities are expected to be negligible to minor based on the proposed activities and the application of mitigation measures as listed in Section 5.5. Conversion of the Stingray Mainline, Station 501, and Station 701 will result in a reduction in amount of potential impacts that would occur from Project construction.

Potential construction impacts include impacts on habitat, including disruption, fragmentation, modification, and loss; displacement of wildlife; increased competition and predation between wildlife species; behavioral changes; wildlife mortality; and impacts on wildlife from construction noise, lighting, and traffic. In addition, accidental fluid release from installation of the pipeline via HDD could occur. The overall level of magnitude for these potential impacts is outlined in **Table 5-5**.

Operational impacts could include temporary disruption of wildlife species due to maintenance activities, loss of habitat due to routine mowing of the permanent easement, and operational noise, lighting and traffic.

Potential decommissioning impacts could have a negligible to beneficial impact on wildlife. Habitat within the onshore pipeline permanent ROW will be restored, and maintenance of the permanent ROW will cease. In addition, removal of the aboveground facilities will allow revegetation within these site footprints similar to adjacent vegetation communities, providing additional habitat for wildlife.

Overall, potential impacts on onshore wildlife and protected species from Project construction installation, operation, and decommissioning of the Project would be expected to be negligible to minor with most impacts short-term (**Table 5-5**). None of the potential impacts to wildlife and protected species are expected to be significant or irreversible.

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