WBI ENERGY TRANSMISSION, INC.

North Bakken Expansion Project

Resource Report 3
Fish, Wildlife, and Vegetation

Final

Docket No.
CP20-52-000

February 2020

WBI ENERGY TRANSMISSION, INC.
NORTH BAKKEN EXPANSION PROJECT
RESOURCE REPORT 3 – FISH, WILDLIFE, AND VEGETATION

Minimum Filing Requirements for Environmental Reports:	**Addressed in:**
1. Classify the fishery type of each surface waterbody that would be crossed, including fisheries of special concern - Title 18 of the Code of Federal Regulations (CFR) Part (§) 380.12(e)(1)	Sections 3.1.1 and 3.1.2
2. Describe terrestrial and wetland wildlife and habitats that would be affected by the project - 18 CFR § 380.12(e)(2)	Section 3.2 and 3.5
3. Describe the major vegetative cover types that would be crossed and provide the acreage of each vegetative cover type that would be affected by construction - 18 CFR § 380.12(e)(3)	Section 3.5.1
4. Describe the effects of construction and operation procedures on the fishery resources and proposed mitigation measures - 18 CFR § 380.12(e)(4)	Section 3.1.3
5. Evaluate the potential for short-term, long-term, and permanent impact on the wildlife resources and state-listed endangered or threatened species caused by construction and operation of the project and proposed mitigation measures - 18 CFR § 380.12(e)(4)	Sections 3.2 and 3.6
6. Identify all federally listed or proposed endangered or threatened species that potentially occur in the vicinity of the project and discuss the results of the consultations with other agencies. Include survey reports as specified in 18 CFR § 380.12(e)(5)	Section 3.6
7. Identify all federally listed essential fish habitat that potentially occurs in the vicinity of the project and the results of abbreviated consultations with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and any resulting essential fish habitat assessment - 18 CFR § 380.12(e)(6)	Section 3.1
8. Describe any significant biological resources that would be affected. Describe impact and any mitigation proposed to avoid or minimize that impact - 18 CFR § 380.12(e)(4,7)	Sections 3.2, 3.3, and 3.5

Additional Information:	**Addressed in:**
Provide copies of correspondence from federal and state fish and wildlife agencies along with responses to their recommendations to avoid or limit impact on wildlife, fisheries, and vegetation	Appendix 1G of Resource Report 1
Provide a list of significant wildlife habitats crossed by the project. Specify locations by milepost, and include length and width of crossing at each significant wildlife habitat	Section 3.2.2
Provide a description of project-specific measures that would be implemented during construction and operation of the project to avoid or minimize impacts on migratory birds. Include comments from the U.S. Fish and Wildlife Service on the proposed measures.	Section 3.3.1
For aquatic and marine species, be sure to include effects of sedimentation, changes to substrate, effects of blasting, etc. This information may be needed on a location-specific (i.e., milepost) basis and may require geophysical and other surveys. Results of such surveys and analyses should be included in the application.	Section 3.1.3

Federal Energy Regulatory Commission's January 17, 2020 Environmental Information Request:	**Addressed in:**
1. Clarify the distance used for raptor surveys, and if the surveys covered lands that would be impacted by potential horizontal directional drill noise.	Section 3.4
2. Clarify if WBI Energy Transmission, Inc. (WBI Energy) would use a pollinator-friendly seed mix to revegetate upland areas.	Sections 3.2.3 and 3.5.3; Resource Report 7, section 7.3.1
3. Clarify how WBI Energy would remove wildlife from trenches, and if trench wildlife ramps would be installed overnight, and the spacing between trench wildlife ramps.	Section 3.2.3.1

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ACRONYMS AND ABBREVIATIONS

ACEP	Agricultural Conservation Easement Program
ATWS	additional temporary workspace
BCC	Birds of conservation concern
BCR	Bird Conservation Region
BGEPA	Bald and Golden Eagle Protection Act
COE	U.S. Army Corps of Engineers
CRP	Conservation Reserve Program
CUI//PRIV	*Controlled Unclassified Information/Privileged and Confidential*
DASK	Dakota skipper
DCH	designated critical habitat
EO	Executive Order
ESA	Endangered Species Act of 1973
EI	environmental inspector
FERC	Federal Energy Regulatory Commission
FR	Federal Register
FSA	Farm Service Agency
FWS	U.S. Fish and Wildlife Service
HDD	horizontal directional drill
HUC	Hydrologic Unit Code
IPaC	Information, Planning and Conservation
LMNG	Little Missouri National Grassland
MP	milepost
NDCC	North Dakota Century Code
NDDA	North Dakota Department of Agriculture
NDGFD	North Dakota Game and Fish Department
NLEB	northern long-eared bat
NRCS	Natural Resources Conservation Service
Plan	*Upland Erosion Control, Revegetation, and Maintenance Plan*
Procedures	*Wetland and Waterbody Construction and Mitigation Procedures*
Project	North Bakken Expansion Project
RFFA	reasonably foreseeable future action
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
USC	U.S. Code
USFS	U.S. Forest Service
WAWSP	Western Area Water Supply Project
WBI Energy	WBI Energy Transmission, Inc.
WPA	Waterfowl Production Area

WBI ENERGY TRANSMISSION, INC.
NORTH BAKKEN EXPANSION PROJECT

3.0 RESOURCE REPORT 3 – FISH, WILDLIFE, AND VEGETATION

WBI Energy Transmission, Inc. (WBI Energy) proposes to construct and operate the North Bakken Expansion Project (or Project), which consists of an approximately 61.9-mile-long, new 24-inch-diameter natural gas pipeline from new facilities at WBI Energy's Tioga Compressor Station near Tioga, North Dakota, to a new compressor station (Elkhorn Creek Compressor Station) southeast of Watford City, North Dakota.

The Project also involves construction of approximately 0.3 mile of new 24-inch-diameter natural gas pipeline between the proposed Elkhorn Creek Compressor Station to a new interconnect with Northern Border Pipeline Company, approximately 20.4 miles of new 12-inch-diameter natural gas pipeline looping along WBI Energy's Line Section 25, approximately 9.4 miles of new 12-inch-diameter natural gas pipeline looping along WBI Energy's Line Section 30, approximately 0.5 mile of new 20-inch-diameter receipt lateral to the Tioga Compressor Station, and uprating of WBI Energy's Line Section 25. The Project includes additional horsepower at the Tioga Compressor Station; the installation of new and modifications to existing delivery, receipt, and transfer stations along WBI Energy's pipeline routes; the replacement of small segments of pipeline facilities; and the installation of block valves, pig launcher/receiver stations, and other associated appurtenances. Figure 1.1-1 of Resource Report 1 provides an overview of the proposed pipeline system and associated facilities.

In accordance with Title 18 of the Code of Federal Regulations Part 380.12(e), Resource Report 3 provides information regarding fisheries, wildlife, and vegetation that may be within WBI Energy's proposed Project. This information was developed through literature reviews, consultation with agency personnel, and field surveys. Resource Report 3 describes how the Project may affect these resources and outlines proposed measures to avoid, minimize, or mitigate impacts.

3.1 FISHERIES AND OTHER AQUATIC RESOURCES

As described in section 2.2.1 of Resource Report 2, the Project will require 26 waterbody crossings, including 11 perennial streams, 10 intermittent streams, 2 ephemeral stream, and 3 open water ponds. Of the 26 waterbody crossings, 2 waterbodies (s-wm-ea-001p and s-wm-ea-002) are crossed by both the Tioga-Elkhorn Creek pipeline and the Line Section 30 Loop at the same location. None of these waterbodies contains or has the potential to contain species managed by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, nor do they support essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265 as amended through October 11, 1996). Therefore, the Project will not affect any essential fish habitat.

The Project lies within the Missouri River watershed and crosses two sub-basins: the Lower Little Missouri River and Lake Sakakawea sub-basins. WBI Energy proposes to cross one waterbody (Lake Sakakawea [s-wm-eb-003p]) and one natural pond via the horizontal directional drill (HDD) crossing method and six waterbodies (Beaver Creek [s-wm-eb-002], Tobacco Garden

Creek [s-mk-eb-002 and s-mk-ea-003][1], Northfork Creek [s-mk-eb-005], Cherry Creek [DSK_NHD_4], and White Earth Creek [s-bk-eb-001p]) via the guided bore method. WBI Energy currently plans to cross the remaining waterbodies via the open-cut crossing method; however, the exact crossing method will be determined based on site-specific flow conditions at the time of construction. Waterbodies with no perceptible flow at the time of construction will be crossed using the open-cut method. If the waterbody has perceivable flow at the time of construction, the waterbody will be crossed using either the guided bore crossing method or a dry crossing method (flume or dam-and-pump) based on site-specific conditions. Table 2.2.1-1 of Resource Report 2 lists the names, locations, and proposed crossing methods for each waterbody crossed by the by the Project by pipeline facilities. The waterbody crossing methods are discussed in more detail in section 1.3.2.1 of Resource Report 1. WBI Energy proposes to source water for use during construction of the Project from local water depots or surface waters as described in section 2.2.4 of Resource Report 2.[2]

3.1.1 Existing Fisheries Resources

Fisheries are typically classified according to water temperature (warmwater or coldwater), type of use (commercial or recreational/sport fishing), salinity (marine, freshwater, or estuarine), and use by open water marine fishes that require freshwater upstream areas to spawn (anadromous) or freshwater species that migrate to marine waters for reproduction (catadromous). The North Dakota Game and Fish Department (NDGFD) website indicates that all fishery types in the state are warmwater with the exception of portions of the Missouri River system. None of the waterbodies in the Project area is classified as marine or estuarine waters, and none has the potential to contain anadromous or catadromous species.

The NDGFD confirmed that there are no significant spawning aggregations for commercial and recreational fisheries, and no commercial fishery operations in any waterbodies crossed by the Project (NDGFD, 2019). However, the NDGFD will require its standardized April 15 to June 1 spawning restriction timeframe for in-water construction activities. During this timeframe, any in-water work will require a waiver issued based on the specific location, timing, or permitted activity. Additionally, the NDGFD will require a 72-hour notice for any required equipment inspections in accordance with its Aquatic Nuisance Species regulations.

Section 2.2.2 of Resource Report 2 describes the water quality classification systems for streams (Class I, IA, II, and III) and lakes/reservoirs (Class 1 through 5) in North Dakota. Both of these systems indicate if a waterbody can support aquatic life. As shown in table 2.2.1-1 of Resource Report 2, the proposed Project has 22 individual crossings of Class III streams, 1 Class I stream (Missouri River/Lake Sakakawea), and 3 Class 4 open water ponds (North Dakota Department of Environmental Quality, 2019). The Project does not cross any Category 3 waterbodies designated as Outstanding State Resource Waters.

[1] Tobacco Garden Creek will be crossed via the guided bore method at two locations along the Tioga-Elkhorn Creek pipeline (mileposts [MP] 30.0 and 36.2).

[2] If WBI Energy later determines it is necessary to obtain water from surface water sources for Project-related purposes, it will obtain any required permits or approvals in accordance with state regulations and Federal Energy Regulatory Commission requirements.

Generally, the quality of a fishery, including the composition of its species, is influenced by the water quality of the waterbody. Where water quality has been degraded because of the surrounding activities, the fishery typically contains more tolerant fish species, such as common carp, creek chub, and various forage species. Conversely, a more diverse fishery (e.g., a sport fishery) will be supported in larger streams or lakes with good water quality and suitable habitat. Small populations of sport fish may also occur in medium to small streams dependent upon water flow, but populations large enough to support a sport fishery are generally restricted to large, perennial rivers and/or lakes/reservoirs with more diverse habitats. Intermittent waterbodies may provide nursery habitat for forage fish and some recreational species; however, the lack of permanent water allows these waterbodies to support only very limited fishery and aquatic resources. Table 3.1.1-1 provides a list of representative fish species (including fisheries classifications) that may be found in the perennial waterbodies crossed by the Project.

No federally listed mussel species have been identified in the Project area. Invasive species such as the zebra mussel are only known to occur within the Red River Valley Basin in the eastern portion of North Dakota; therefore, the species' known range is outside of the Project area.

3.1.2 Fisheries of Special Concern

Fisheries of special concern may include waterbodies such as those that contain fisheries of exceptional recreational value, support commercial fishing, or provide habitat for fish species listed for protection at the federal, state, or local level. One federally listed endangered fish species, the pallid sturgeon, occurs in waters within McKenzie County, but only in the Missouri and Yellowstone Rivers (NDGFD, 2015b). Pallid sturgeon habitat is fragmented by dams on the Missouri River and only scarce populations remain. As of 2008, an estimated 125 pallid sturgeon remained in the Missouri and Yellowstone Rivers between Fort Peck Dam (west of the Project) and the headwaters of Lake Sakakawea (The Pallid Sturgeon Recovery Program, 2013). While pallid sturgeon have been documented in Lake Sakakawea upstream of the action area (U.S. Fish and Wildlife Service [FWS], 2019d), reservoirs are not considered to be suitable pallid sturgeon habitat due to the alteration of natural flow regimes (Guy et al., 2015). The closest known habitat is the Missouri River, approximately 66 miles east of the Project. WBI Energy has consulted with the FWS on potential impacts on species of concern. Pallid sturgeon are discussed in more detail in section 3.5.

The U.S. Forest Service (USFS) lists the northern redbelly dace as a sensitive wildlife species for the Little Missouri National Grassland (LMNG) (USFS, 2019a). This is an uncommon species in North Dakota where suitable habitat including cold, clear headwater streams are found. Key areas for this species in North Dakota include stretches of the Sheyenne River through the Sheyenne National Grasslands, which is located in the southeast corner of North Dakota. Populations have historically been found within the Missouri River drainage as well as the northeastern and east-central counties of North Dakota (NDGFD, 2016a). Currently, the proposed Project area will overlap with the secondary range for the northern redbelly dace (NDGFD, 2016a).

TABLE 3.1.1-1

North Bakken Expansion Project
Representative Fish Species Found in Perennial Waterbodies Crossed by the Project

Species	Classification [a]
Catfish	
Bullhead catfish (*Ameiurus* spp.)	Warmwater
Channel catfish (*Ictalurus punctatus*)	Warmwater
Flathead catfish (*Pylodictis olivaris*)	Warmwater
Cod	
Burbot (*Lota lota*)	Coldwater
Drum	
Freshwater drum (*Aplodinotus grunniens*)	Warmwater
Minnow	
Common carp (*Cyprinus carpio*)	Warmwater
Creek chub (*Semotilus atromaculatus*)	Warmwater
Northern redbelly dace (*Chrosomus* [*Phoxinus*] *eos*) [b]	Warmwater
Mooneye	
Goldeye (*Hiodon alosoides*)	Warmwater
Paddlefish	
Paddlefish (*Polyodon spathula*)	Warmwater
Perch	
Johnny darter (*Etheostoma nigrum*)	Warmwater
Sauger (*Stizostedion canadense)*	Warmwater
Walleye (*Stizostedion vitreum*)	Cool-warmwater
Yellow perch (*Perca flavescens*)	Cool-warmwater
Pike	
Northern pike (*Esox lucius*)	Coldwater
Salmon	
Chinook salmon	Coldwater
Stickleback	
Brook stickleback (*Culaea inconstans*)	Warmwater
Sunfish	
Bigmouth buffalo (*Ictiobus cyprinellus*)	Warmwater
Bluegill (*Lepomis macrochirus*)	Warmwater
Crappie (*Pomoxis* spp.)	Warmwater
Largemouth bass (*Micropterus salmoides)*	Warmwater
Smallmouth bass (*Micropterus dolomieu*)	Warmwater
Spotted sunfish (*Lepomis punctatus*)	Warmwater

TABLE 3.1.1-1 (cont'd)

North Bakken Expansion Project
Representative Fish Species Found in Perennial Waterbodies Crossed by the Project

Species	Classification [a]
Sucker	
Carpsucker (*Carpoides* spp.)	Warmwater
White sucker (*Catostomus commersonii*)	Warmwater
Trout	
Brown trout (*Salmo trutta*)	Coldwater
Cutthroat trout (*Oncorhynchus clarki)*	Coldwater
Rainbow trout (*Oncorhynchus mykiss*)	Coldwater

Sources: All About Fishing, 2019; U.S. Geological Survey, 2019; NDGFD, 2015a
[a] All of these listed fish species are recreational species in North Dakota.
[b] The U.S. Forest Service lists this species as a sensitive for the Little Missouri National Grassland.

3.1.3 Construction and Operation Impacts and Mitigation

WBI Energy's proposed spring-to-fall construction schedule will occur during the wet season in North Dakota; however, WBI Energy anticipates that most of the intermittent and ephemeral streams crossed by the Project are not likely to be flowing at the time of construction.

For perennial waterbodies or those with flow at the time of construction, short-term impacts associated with construction activities have the potential to cause increased sedimentation and turbidity, temperature changes due to removal of vegetation cover over streams, introduction of water pollutants, or entrainment of fish. With the implementation of the construction and mitigation measures described below, however, impacts on fisheries and other aquatic life are expected to be minor, localized, and limited to the construction period. WBI Energy does not anticipate any long-term or population-level impacts on fisheries or aquatic life. No long-term effects on water temperature, dissolved oxygen, pH, benthic invertebrates, or fish communities are expected to occur due to construction or operation of the pipelines or aboveground facilities.

To minimize impacts on aquatic resources within the Project area, construction activities for the Project will be conducted in accordance with the Federal Energy Regulatory Commission's (FERC) *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). In addition, WBI Energy will implement the measures specified in its *Spill Prevention, Control, and Countermeasure Plan* (SPCC Plan) and *Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan*. Copies of WBI Energy's construction, restoration, and mitigation plans are provided in appendix 1F of Resource Report 1. Each of these documents is designed to minimize construction impacts on environmental resources, including aquatic resources. Specific construction procedures that will be used to protect surface water resources are discussed in sections 2.2.7 and 2.2.8 of Resource Report 2. With the implementation of the FERC Procedures and WBI Energy's other construction and mitigation plans, the Project is not expected to result in any permanent changes to the water quality or water quality classifications of the waterbodies crossed.

As discussed in section 2.2.1 of Resource Report 2, fish and wildlife is one of the congressionally authorized purposes of the U.S. Army Corps of Engineers (COE) Garrison Project. Use of the HDD crossing method at Lake Sakakawea and the guided bore crossing method at Beaver Creek, Tobacco Garden Creek, Northfork Creek, Cherry Creek, and White Earth Creek will minimize impacts on fisheries and other aquatic life at these waterbodies. These methods also will minimize impacts on grassland habitat. A travel lane/bridge will be required at these waterbodies (with the exception of White Earth Creek), which will require some vegetation clearing. Impacts on riparian vegetation are expected to be minimal due to the bridge connecting bank to bank. WBI Energy will implement the measures described in its *Horizontal Directional Drill/Guided Bore Fluid Monitoring and Operations Plan* to minimize any potential impacts on waterbodies resulting from an inadvertent release of drilling fluid during the HDD process. Additional information regarding the HDD and guided bore crossing methods is provided in section 1.3.2.1 of Resource Report 1.

Other waterbodies with perceptible flow at the time of construction will be crossed using either the guided bore crossing method or a dry open-cut crossing method (flume or dam-and-pump) based on site-specific conditions. In-stream construction and removal of riparian vegetation may cause a temporary increase in turbidity levels at these crossings, which can increase the sedimentation rate immediately downstream of the construction work area. To minimize such impacts, temporary erosion and sedimentation controls will be installed and maintained throughout construction in accordance with the FERC Plan or Procedures, as appropriate. Following completion of each crossing, streambeds and banks will be restored to their preconstruction conditions to the extent practicable and revegetated in accordance with the FERC Procedures, which will help minimize erosion and reduce long-term impacts on fisheries.

The majority of small waterbodies crossed by the Project are not expected to contain fish at the time of construction. At waterbodies with no perceptible flow at the time of crossing, WBI Energy will use the open-cut method to install the crossing. In streams with fish, most effects of the open-cut crossing method will be localized and of short duration and will not have a significant impact on resident fish populations. In-stream construction activities typically take place in less than 24 hours for minor streams and less than 48 hours for intermediate streams. The rapid pace of construction along with implementation of the other measures identified in the FERC Plan or Procedures will reduce the impacts of sedimentation and turbidity on aquatic life. Additionally, it is expected that individual fish, where present, will temporarily relocate upstream or downstream of the crossing locations to avoid the most turbid water.

Implementation of the measures specified in WBI Energy's SPCC Plan will minimize potential impacts on aquatic resources due to inadvertent releases of fuel or mechanical fluids. As specified in the SPCC Plan, hazardous materials, chemicals, fuels, and lubricating oils will not be stored, nor will concrete coating activities be performed, within 100 feet of stream banks. In most cases, refueling or hydraulic fluid servicing of construction equipment also will not be conducted within 100 feet of stream banks. If the equipment cannot be reasonably moved beyond 100 feet of the stream banks, refueling or hydraulic servicing may be conducted under the supervision of WBI Energy's environmental inspectors (EI) in accordance with the SPCC Plan.

Entrainment of fish and other aquatic organisms during withdrawals is sometimes a concern during pipeline construction projects. If surface waters are required for hydrostatic test water sources, intake screens will be implemented sized to eliminate the entrainment of fingerling and small fish during water withdrawal. Additionally, the majority of smaller waterbodies crossed

by the Project are not expected to contain fish at the time of the crossing; therefore, the Project is not anticipated to significantly affect fishery resources within the Project area.

3.2 WILDLIFE RESOURCES

Wildlife habitat characterizations were obtained from available literature, agency websites (e.g., NDGFD), review of aerial photographs of the right-of-way, and field surveys. The suitability of an area as habitat for wildlife is closely related to the surrounding vegetation. A description of major vegetation classes and their associated cover types within the Project area is provided below. Additional detail regarding vegetation resources in the Project area is provided in section 3.5. Endangered and threatened species are discussed in section 3.6.

3.2.1 Existing Wildlife Resources

The Project will cross three broad vegetation classes comprising several distinct cover types as well as developed open space and open water (NDGFD, 2015a, 2016b). The vegetation classes and their associated habitats include:

- agricultural land (cultivated crops, hayfields, and pastureland);
- open land or grasslands (short- and mixed-grass prairie, shrubland, and non-forested wetlands); and
- forested land (hedgerows, upland wooded areas, and deciduous forests).

These vegetation classes provide food, protective cover, and young-rearing habitat for wildlife and are further discussed in section 3.5.1. Developed open spaces in the Project area include road and utility corridors. While these areas may be used by wildlife for foraging, most wildlife occurring in developed land are transient.

Table 3.2.1-1 lists the characteristic wildlife species present in the Project area that are not classified as species of conservation concern. Species currently listed as threatened, endangered, or special concern species are discussed in section 3.6 of this report.

Numerous species of mammals with diverse life histories and habitat needs are found in North Dakota and may occur within the Project area. Some of these species are rare for this region, are on the periphery of their range, or are valued for their economic and recreational importance (e.g., trapping and hunting). The NDGFD divides these mammalian groups into broad categories including bats, carnivores, rodents and shrews, and ungulates (NDGFD, 2016d).

TABLE 3.2.1-1

North Bakken Expansion Project
Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands	Developed Lands
Mammals			
American Badger (*Taxidea taxus*)		X	
American beaver (*Castor canadensis*)		X	
American mink (*Neovision vision*)		X	
Common muskrat (*Ondatra zibethicus*)		X	
Coyote (*Canis latrans*)	X	X	X
Deer mouse (*Peromyscus maniculatus*)		X	
Eastern cottontail (*Sylvilagus floridanus*)		X	
Eastern fox squirrel (*Sciurus niger*)		X	X
Elk (*Cervus elaphus*)		X	
Long-tailed weasel (*Mustela frenata*)		X	
Meadow vole (*Microtus pennsylvanicus*)		X	
Mule deer (*Odocoileus hemionus*)	X	X	
Pronghorn (*Antilocaptra americana*)	X	X	
Raccoon (*Procyon lotor*)	X	X	X
Red fox (*Vulpes vulpes*)		X	
Striped skunk (*Mephitis mephitis*)	X	X	
White-footed mouse (*Peromyscus leucopus*)		X	
White-tailed deer (*Odocoileus virginianus*)	X	X	X
White-tailed jackrabbit (*Lepus townsendii*)	X	X	
Birds			
American wigeon (*Anas americana*)		X	
Blue-winged teal (*Anas discors*)		X	
Canada goose (*Branta canadensis*)	X	X	
Clay-colored sparrow (*Spizella pallida*)		X	
Gadwall (*Anas strepera*)		X	
Greater white-fronted goose (*Anser albifrons*)	X	X	
Gray Partridge (*Perdix perdix*)	X	X	
Least flycatcher (*Empidonax minimus*)		X	
Magpie (*Pica hudsonia*)	X	X	
Mallard (*Anas platyrhynchos*)	X	X	
Mourning dove (*Zenaida macroura*)	X	X	X
Northern harrier (*Circus cyaneus*)	X	X	
Northern shoveler (*Anas clypeata*)		X	
Prairie falcon (*Falco mexicanus*)	X	X	
Red-eyed vireo (*Vireo olivaceus*)		X	

TABLE 3.2.1-1 (cont'd)

North Bakken Expansion Project
Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands	Developed Lands
Redhead (*Aythya americana*)		X	
Red-tailed hawk (*Buteo jamaicensis*)	X	X	
Ring-necked pheasant (*Phasianus colchicus*)	X	X	
Sandhill crane (*Grus canadensis*)	X	X	
Sedge wren (*Cistothorus platensis*)		X	
Snow goose (*Chen caerulescens*)	X	X	
Western kingbird (*Tyrannus verticalis*)		X	
Yellow warbler (*Dendroica petechial*)		X	
Reptiles and Amphibians			
Boreal chorus frog (*Pseudacris maculate*)	X	X	X
Bullsnake (*Pituophis catenifer*)		X	
Common gartersnake (*Thamnophis sirtalis*)		X	
Eastern yellow-bellied racer (*Coluber constrictor*)		X	
Great Plains toad (*Bufo cognatus*)		X	
Northern leopard frog (*Rana pipiens*)		X	
Plains gartersnake (*Thamnophis radix*)		X	
Plains spadefoot toad (*Spea bombifrons*)	X	X	
Prairie rattlesnake (*Crotalus viridis*)		X	
Sharp-tailed grouse (*Tympanuchus phasianellus*)		X	
Short-horned lizard (*Phrynosoma douglassi*)		X	
Tiger salamander (*Ambystoma tigrinum*)		X	
Western painted turtle (*Chrysemys picta*)		X	
Woodhouse's toad (*Anaxyrus woodhousii*)		X	X

Sources: NDGFD, 2015b, 2015c, 2016c, 2016d

3.2.1.1 Agricultural Land

Agricultural land comprises about 859.7 acres (61 percent) impacted by the construction of the Project (based on acres affected as described in section 8.2 and table 8.2-1 of Resource Report 8). Despite the conversion of native vegetation to cropland in these areas, many game and non-game wildlife species inhabit the grassy and wooded edges of farmland and adjacent riparian and wetland habitat. Agricultural areas bordered by shrubland or hedgerows tend to have greater species diversity due to the proximity of a variety of foraging, nesting, roosting, and cover habitats.

In general, monocultures in cultivated cropland provide poor quality wildlife habitat in the Project area. While these areas tend to support relatively low wildlife diversity, croplands may provide a food source for opportunistic species such as deer, ring-necked pheasant, and migrating waterfowl. In addition, land modified by agriculture but left fallow can serve as surrogate

habitat for bird species typically found in grasslands (Natural Resources Conservation Service [NRCS], 1999).

3.2.1.2 Open Land

Open land comprises about 434.6 acres (31 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). Open areas, which include non-forested areas such as grassland, shrubland, and emergent wetlands, provide wildlife with a variety of protective cover and forage food sources such as seed, foliage, roots, and insects. Game animals that inhabit open land include mule deer, pronghorn, gray partridge, and white-tailed jackrabbit. Non-game grassland mammals include coyote, badger, and several types of voles and mice. In addition, several reptiles and amphibians inhabit grasslands such as the bullsnake, plains garter snake, prairie rattlesnake, short-horned lizard, Great Plains toad, and plains spadefoot toad. Many of these species are prey animals for raptors that may be found in grasslands such as red-tailed hawk, northern harrier, and prairie falcon. Mixed-grass prairie is also important breeding habitat for sharp-tailed grouse.

Several neotropical migratory songbirds prefer to nest in open herbaceous vegetation including the western meadowlark, chestnut-collared longspur, grasshopper sparrow, and lark bunting. The low-lying vegetation in grasslands provides necessary habitat structure for protection from predators and brood-rearing activities. Grasslands provide a variety of forage food sources to migrating songbirds such as insects and other invertebrates, fruits, and native grass seeds.

Wetlands (emergent wetlands and shrub/scrub) are included in the open land cover type. A variety of amphibian species, such as the tiger salamander and northern leopard frog use these habitats as breeding locations because of a lack of fish and other aquatic predators. Wetlands also provide year-round habitat for mammals such as muskrats and American mink. The wetlands are often located next to upland habitats increasing the diversity of wildlife within a small area. Impacts on wetlands are dependent on the duration and the type of localized disturbance. WBI Energy will follow the FERC Procedures for wetland crossings, and will restore wetlands accordingly, resulting in only temporary impacts.

3.2.1.3 Forested Land

Forested land, which includes primarily small stands of deciduous trees in riparian areas or along wetland edges and hedgerows along roads or fields, comprises about 2.1 acres (less than 1 percent) of the Project area affected by construction (see section 3.5.1 for additional information). Forested lands provide food, cover, and young-rearing habitat for a wide variety of wildlife species. Secondary canopy shrubs and saplings, brush piles, and fallen logs provide cover for a number of small- to medium-sized mammals. Standing dead trees may provide nesting or roosting sites for a variety of birds and mammal species as well as foraging opportunities for birds. The most conspicuous mammals that utilize the forested habitats in the Project region include deer, red fox, eastern fox squirrel, raccoon, and bats.

3.2.1.4 Developed Land

Developed land, which includes roads, railroads, and utility corridors, comprises about 93.3 acres (7 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). These areas generally provide poor habitat for wildlife. Typical wildlife species that may be found in developed land include squirrels, mice, skunks, raccoons, and mourning doves. Many species found in developed areas are considered opportunistic species that inhabit a number of the other habitat types found along the Project. These species have adapted to developed areas.

3.2.1.5 Open Water

Open water comprises 15.3 acres (1 percent) of the Project area affected by construction (based on acres affected as described in Resource Report 8). In addition to fish, a number of mammal species, waterfowl, and a variety of reptiles and amphibians utilize open water habitat. Some mammal and bird species are dependent on aquatic habitats for food and cover, while other species, such as the raccoon, are less restricted, but prefer to be close to water.

3.2.2 Significant Wildlife Habitats

There are no National Park Service Wilderness Areas, National Wild and Scenic Rivers, or state-designated high quality or outstanding natural resource waters crossed by the Project (Wild and Scenic Rivers Council, 2014). The Project crosses about 1.8 miles of USFS property through the LMNG. The LMNG is the largest grassland in the country and was once considered part of the Custer National Forest, but is now part of the Dakota Prairie Grasslands (USFS, 2019b). Table 3.2.2-1 provides the USFS Region 1 sensitive and watch list wildlife species of interest for the LMNG that may occur within the Project area.[3]

Several FWS conservation easements or management areas are within the Project area, including wetland and grassland easements (FWS, 2019b). These areas include wetland easements within the Crosby and Lostwood Wetland Management Districts and grassland conservation easements held by the FWS. Specifically, 15 Waterfowl Production Areas (WPA) or wetland easements will be crossed by the proposed pipeline routes (see table 3.2.2-2). WPAs provide habitat for a variety of waterfowl, shorebirds, grassland birds, plants, insects, and wildlife. These WPAs are acquired as public lands, or protected through easements within the FWS National Wildlife Refuge System (FWS, 2012). WPAs are primarily located within the prairie wetlands or potholes of the Dakotas, Minnesota, and Montana. North Dakota has more than one-third of the nationals WPAs (FWS, 2007a). WBI Energy is continuing to consult with the FWS regarding these easements and working to adjust the route and workspaces as needed to minimize or avoid impacts where feasible.

[3] The USFS wildlife biologist at the LMNG identified two additional avian species, the peregrine falcon (*Falco peregrinus*) and sharp-tailed grouse (*Tympanuchus phasianellus*), that warrant further consideration (USFS, 2019f). These species will be addressed in a separate Biological Evaluation prepared for the USFS (provided in appendix 3b).

TABLE 3.2.2-1

North Bakken Expansion Project
Sensitive and Watch List Species for the Little Missouri National Grassland that May Occur in the Project Area

Species	USFS Status	Habitat
Mammals		
Bighorn sheep (*Ovis canadensis*)	Sensitive	Dependent on open grasslands that are adjacent to rugged terrain.
Black-tailed prairie dog (*Cynomys ludovicianus*)	Sensitive	Inhabit short and mixed grasslands; prefers well-grazed lands.
Sagebrush vole (*Lemmiscus curtatus*)	Watch List	Prefers semi-arid areas with loose soil and a combination of grass and sagebrush habitats.
Birds		
American bittern (*Botaurus lentiginosus*)	Watch List	Freshwater wetlands dominated by tall, emergent vegetation.
Baird's sparrow (*Centronyx bairdii*)	Sensitive	Mixed-grass and fescue prairie with scattered low shrubs and vegetation from previous year's growing season. Associated with club moss (*Lycopodium* spp.), pasture sage (*Artemisia frigida*), prairie junegrass (*Koeleria macrantha*), and green needlegrass (*Nassella viridula*) in North Dakota.
Bald eagle (*Haliaeetus leucocephalus*)	Sensitive	Typically breeds in forested areas adjacent to large bodies of water. Nests in trees, and will occasionally nest on cliff faces and ground nest in treeless areas. Stopover habitat during migration includes roosting sites with deciduous trees that are in or near riparian areas, protected from human disturbance, and in proximity to foraging habitat.
Black-billed cuckoo (*Coccyzus erythropthalmus*)	Watch List	Groves of trees, forest edges, and thickets that are associated with water. Found in beech (*Fagus* spp.)-oak (*Quercus* spp.) forests and wooded wetlands within drier landscapes in the prairie hardwood transition of the Upper Midwest.
Brewer's sparrow (*Spizella breweri*)	Watch List	Uncommon in North Dakota. Habitat dominantly big sagebrush mixed within shortgrass prairie.
Burrowing owl (*Athene cunicularia*)	Sensitive	Uncommon in North Dakota. Habitat includes shortgrass or grazed mixed-grass prairie with mammals burrows present.
Chestnut-collared longspur (*Calcarius ornatus*)	Watch List	Primarily found in grazed or hayed mixed-grassed prairie and/or shortgrass prairie.
Dickcissel (*Spiza americana*)	Watch List	Found in open grassland habitats with dense cover; suitable habitat found in native prairies, restored grasslands, hayfields, lightly grazed pastures, and agricultural landscapes.
Grasshopper sparrow (*Ammodramus savannarum*)	Watch List	Lightly grazed tall or mixed-grass prairie, shrub prairie meadows, and hayfields.
Lark bunting (*Calamospiza melanocorys*)	Watch List	Prefers sagebrush (*Artemisia* spp.) communities or mixed-grass prairie that is interspersed with shrubs, roadsides, and retired cropland.
Loggerhead shrike (*Lanius ludovicianus*)	Sensitive	Associated with open country including thickets of small trees and shrubs.
Long-billed curlew (*Numenius americanus*)	Sensitive	Uncommon in North Dakota. Habitat includes shortgrass or shrub steppe prairie and gently rolling terrain.
McCown's longspur (*Rhynchophanes mccownii*)	Watch List	Uncommon in North Dakota. Primary habitat includes arid, shortgrass prairie, or heavily grazed mixed-grass prairie.

TABLE 3.2.2-1 (cont'd)

North Bakken Expansion Project
Sensitive and Watch List Species for the Little Missouri National Grassland that May Occur in the Project Area

Species	USFS Status	Habitat
Red-headed woodpecker (*Melanerpes erythrocephalus*)	Watch List	Occurs in stands of mature deciduous trees along river bottoms, shelterbelts, and wooded areas of towns.
Sage thrasher (*Oreoscoptes montanus*)	Watch List	Prefers big sagebrush habitat.
Sprague's pipit [a] (*Anthus spragueii*)	Sensitive	Habitat includes grazed native prairie with few shrubs. Preferred habitat species include blue grama (*Bouteloua gracilis*), threadleaf sedge (*Carex filifolia*), prairie junegrass, and plains muhly (*Muhlenbergia cuspidate*).
Fish		
Redbelly dace (*Chrosomus* (*Phoxinus*) *eos*)	Sensitive	Uncommon in North Dakota. Prefers slow-moving stretches of rivers with clear water over silt bottom and near vegetation. Historically found in northeastern and east-central North Dakota.
Reptiles and Amphibians		
Great plains toad (*Bufo cognatus*)	Watch List	Inhabit prairie, grasslands, and agricultural landscapes. Will use ephemeral waterbodies during reproduction (e.g., flooded fields).
Northern leopard frog (*Rana pipiens*)	Watch List	Common frog in North Dakota found along ponds and lakes.
Plains hog-nosed snake (*Heterodon nasicus*)	Watch List	Preferred habitat includes dry grasslands with sandy or gravelly soil. Found in open sand prairies or sand dunes. Occasionally found in mixed forest habitats and croplands.
Plains spadefoot (*Spea bombifrons*)	Watch List	These toads inhabit dry grasslands, with sandy or loose soil generally south and west of the Missouri River. Some scattered populations have been found in central and northern North Dakota.
Sagebrush lizard (*Sceloporus graciosus*)	Watch List	Prefer rocky areas near water and adjacent to sandy soil and sagebrush in the badlands.
Short-horned lizard (*Phrynosoma hernandesi*)	Watch List	Found in the badlands in sagebrush habitats; rocky or sparsely vegetation areas where there is an abundance of prey (e.g., ants, spiders, and sowbugs).
Smooth green snake (*Opheodrys vernalis*)	Watch List	Found statewide in North Dakota; prefer to be in close proximity to wetlands surrounded by grassy uplands.
Insects		
Monarch butterfly (*Danaus plexippus*)	Watch List	Female monarchs depend on milkweed species (e.g., common milkweed [*Asclepias syriaca*] and showy milkweed [*Asclepias speciose*]); found in prairies and open grasslands.
Ottoe skipper (*Hesperia ottoe*)	Sensitive	Found in mixed-grass prairies such as those dominated by little bluestem (*Schizachyrium scoparium*) and sideoats grama (*Bouteloua curtipendula*); also found in dry-mesic tallgrass prairie with mixed grasses.
Regal fritillary (Speyeria idalia)	Sensitive	Preferred habitats include tallgrass prairie, wet meadows, and marshy areas.
Tawny crescent (*Phyciodes batessi*)	Sensitive	Often associated with moist meadows and stream bottoms near forest openings; mixed-grass prairies including big (*Andropogon gerardii*) and little bluestem grasses.

Sources: Cornell Lab of Ornithology, 2019; USFS, 2019a; Amphibians and Reptiles of North Dakota, 2018; NDGFD, 2016d; Selby, 2005 and 2007

[a] FWS published findings in the Federal Register (81 FR 19527 19542) in 2016 that their findings did not support federal listing of the Sprague's pipit at that time.

TABLE 3.2.2-2

North Bakken Expansion Project
U.S. Fish and Wildlife Service Waterfowl Production Areas that May Be Crossed by the Project

Production Area Name [a]/ Route Identifier	Milepost Range	Size (acres)	Impact (acres)
Burke County WPAs			
Line Section 25 Loop	17.7 [b]	239.7	< 0,1
Line Section 25 Loop	18.7–19.7	833.4	11.4
Line Section 25 Loop	19.8–20.3	481.7	4.4
Line Section 25 Loop	20.3–20.5	481.7	0.6
Line Section 25 Loop (Norse Plant Receipt Station)	20.3 [b]	850.0	< 0.1
Line Section 25 Loop (Norse Transfer Station)	20.3 [b]	850.0	< 0.1
Uprate Line Section 25 (Highway 40 Bore)	NA [b]	2,335.7	2.7
Uprate Line Section 25 (86th Street NW Bore)	NA [b]	481.7	1.3
Uprate Line Section 25 (86th Street NW Bore)	NA [b]	481.7	0.1
Uprate Line Section 25 (86th Street NW Bore)	NA [b]	850.0	3.5
Uprate Line Section 25 (89th Avenue NW/93rd Street NW Bore)	NA [b]	561.2	1.0
Williams County WPAs			
Line Section 25 Loop	NA [b]	239.7	5.7
Line Section 25 Loop	1.0–1.5	321.0	5.7
Line Section 25 Loop	0.3–1.0	642.6	7.8
Line Section 30 Loop	0.5–0.9	195.7	4.5

[a] All of the WPAs are associated with the FWS Crosby Wetland Management District.

[b] Milepost range was not designated because the area is a proposed guided bore site associated with the uprate to Line Section 25 or an access road near the Line Section 25 Loop.

3.2.3 Construction and Operation Impacts and Mitigation

Construction and operation of the Project may result in short- and long-term impacts on wildlife species and their existing habitat along the proposed pipeline routes and at aboveground facility sites. The extent and duration of impacts will vary depending on the species present in each affected habitat type and their individual life histories. After construction is complete, WBI Energy will restore the right-of-way as near as practicable to preconstruction conditions in accordance with the FERC Plan and Procedures. Cropland will be restored to active agricultural production, and other areas will be revegetated using methods and seed mixes appropriate to existing land uses and cover types, including use of some pollinator-friendly species, in accordance with NRCS and USFS recommendations (more information regarding seed mixes is provided in Resource Report 7, section 7.3.1). Because the Project will not permanently alter the characteristics of the majority of the available wildlife habitats, most Project-related impacts on wildlife are anticipated to be temporary.

As discussed in section 2.2.1 of Resource Report 2, fish and wildlife is one of the congressionally authorized purposes of the COE Garrison Project. All lands associated with the

Garrison Project are managed to benefit and enhance wildlife species. The Lake Audubon and Lake Sakakawea General Plans identify 51,000 acres at Lake Sakakawea to be used primarily for the conservation and management of wildlife. All Garrison Project lands would be crossed within the span of the proposed HDD crossing of Lake Sakakawea. Impacts associated with general wildlife species on COE lands would be similar in scale to those for the Project as a whole (COE, 2007).

3.2.3.1 Pipeline Facilities

Construction of the Project will require the use of a temporary construction right-of-way, and operation of the pipelines will require retention of a permanent easement. Except across USFS land,[4] WBI Energy proposes to use a 100-foot-wide temporary construction right-of-way through upland areas for the 24-inch-diameter Tioga-Elkhorn Creek and Elkhorn Creek-Northern Border pipelines. The temporary construction right-of-way will be 75 feet wide through wetland areas and during construction of all other pipeline facilities. The permanent easement will be 50 feet wide. Areas of additional temporary workspace (ATWS) will be required at wetland and waterbody crossings; road and railroad crossings; points of inflection along the route; areas where special construction methods will be implemented (e.g., the HDD or guided bore crossing methods); and areas where additional space is needed for storage of stripped topsoil. Resource Reports 1 and 8 provide more information regarding areas that will be affected by the construction and operation of the pipelines.

Until vegetation is reestablished, construction activities will temporarily reduce feeding, nesting, and cover options for wildlife and migratory birds in the immediate Project area. Mobile species may be temporarily disturbed or displaced from portions of their habitats, and mortality of individuals of less mobile species, such as some small mammals, reptiles, or amphibians, may occur. Indirect wildlife and migratory bird impacts associated with construction noise and increased human activity will be temporary and could include displacement and avoidance of work areas. Both direct and indirect impacts on wildlife along the proposed pipeline routes and in other work areas will generally be of short duration and limited to the period of construction activities.

Effects on most non-forested upland habitat disturbed by construction will be temporary, and these areas are expected to recover quickly once construction is completed. Similarly, project-related impacts on scrub/shrub and emergent wetland habitats will be relatively short term. Crossings on native prairie habitat will be temporary, and these areas will be re-seeded and allowed to revert to preconstruction conditions. The temporary effects on these habitats should have little or no significant impact on their importance to wildlife, and no changes to wildlife populations are anticipated.

WBI Energy avoided wooded areas to the extent possible when developing the proposed routes. However, while forested lands comprise less than 0.2 percent of the Project area impacted by construction (based on acres affected as described in Resource Report 8), these areas will be impacted to a greater extent than other vegetation types. This is due to the long-term conversion of wooded habitats to earlier successional stages in the temporary right-of-way, and the permanent conversion to scrub/shrub and/or non-woody herbaceous species in the permanent, maintained easement. Due to the very small percentage of forested land crossed, it

[4] The construction right-of-way width across USFS land will be reduced to 50 feet (with an additional 25 feet of ATWS).

is anticipated that the Project will not have significant impacts on wildlife associated with loss of forest habitat.

To avoid impacts on wildlife during construction, WBI Energy will minimize the length of the excavated pipeline trench left open overnight and leave breaks in the windrowed materials to facilitate wildlife movement across the construction right-of-way. In areas where the trench is left open overnight, WBI Energy will install earthen plugs or escape ramps at regular intervals, as directed by the EIs, to allow wildlife to escape the trench. Additionally, trenches, excavations, uncapped pipe segments, and idle equipment will be checked for wildlife before initiating construction activities each day. Any wildlife that has entered the work area will be allowed to exit the work area of its own volition.

Following construction, temporary workspace, including ATWS, as well as most areas within the permanent pipeline easements will be restored to preconstruction conditions and vegetative cover in accordance with the FERC Plan and Procedures and landowner agreements. In order to maintain accessibility of the right-of-way and to accommodate pipeline integrity surveys, however, vegetation along the pipeline rights-of-way may be cleared periodically in accordance with the FERC Plan and Procedures (except in areas crossed by HDD or guided bore where vegetation maintenance will not be conducted). Active cropland will be allowed to revert to preconstruction use across the full width of the right-of-way. In non-cultivated uplands, the entire 50-foot-wide permanent easement will be maintained in an herbaceous state. In wetlands, the FERC Procedures allow for a 10-foot-wide corridor centered over the pipelines to be permanently maintained in an herbaceous state, and trees greater than 15 feet in height within 15 feet of the pipelines may be cut and removed from the right-of-way. No maintenance will likely need to occur in wetlands that are seasonally or permanently flooded. Given the predominance of agricultural and open land along the proposed pipeline routes, WBI Energy anticipates that the need for routine vegetation maintenance will be infrequent and limited to specific locations such as areas around pipeline markers and road crossings.

WBI Energy has implemented several additional measures to avoid and minimize impacts. To the extent practicable, the proposed routes were selected and refined to avoid environmentally sensitive areas that may provide habitat and to parallel existing infrastructure. For example, the route minimizes areas crossed with tree stands to the extent practicable. WBI Energy also proposes to use the HDD or guided bore crossing method at select feature crossings. Because the Project will not permanently alter the characteristics of the majority of the available wildlife and/or migratory bird habitats, Project-related impacts on wildlife and migratory birds are anticipated to be temporary and limited to the period of construction activities. The temporary effects on these habitats should have little or no significant impact on their importance to wildlife and migratory birds, and no changes to populations are anticipated.

WBI Energy has incorporated reroutes to avoid and/or minimize potential impacts on many of the higher quality habitats crossed by the Project (as described below and in Resource Report 10). In addition, WBI Energy made route adjustments to avoid any protected wetland basins located within the FWS easements crossed by the Project.

The NDGFD expressed concern about impacts on native prairie habitats and wooded draws due to the longer recovery time for these habitats and, in the case of wooded areas, permanent conversion to herbaceous lands within the permanent right-of-way. In addition to avoiding these habitats to the extent practicable, WBI Energy will follow measures provided in its *Noxious Weed Management Plan* (see appendix 1F of Resource Report 1) and will restore the right-of-way as near as practical to preconstruction condition in accordance with the FERC Plan and Procedures. For more information on vegetation impacts, see section 3.5 below.

3.2.3.2 Aboveground Facilities

Minimal impacts on wildlife species and their habitats will result from construction and operation of the proposed aboveground facilities. Modifications to the Tioga Compressor Station will affect 8.5 acres of previously disturbed land, including 8.0 acres of open land, 0.5 acre of developed land, and 0.1 acre of open water (consisting of a manmade stormwater feature). Following construction of the modifications, 4.4 acres of open land and less than 0.1 acre of open water will be retained for operation of the facility. Construction of the proposed Elkhorn Creek Compressor Station will affect a combined 12.0 acres of land, including 9.6 acres of agricultural land, 2.2 acres of open land, and 0.2 acre of developed land. Following construction, 10.9 acres will be retained for operation within the fenced facility, resulting in the conversion of 8.6 acres of agricultural land and 2.2 acres of open land to developed land.

The Project will also require modifications to existing and construction of new delivery, receipt, and transfer stations. Additionally, three block valves and one pig launcher/receiver will extend outside the permanent right-of-way. Together these facilities will affect 9.1 acres of land, including 4.2 acres of agricultural land, 3.8 acres of open land, and 1.1 acres of developed land. Following construction, 5.6 acres of agricultural land, 3.8 acres of open land, and 0.8 acre of developed land will either be converted to or retained as developed land as part of the fenced facilities.

Construction and operation of these facilities will result in minimal impacts on wildlife because the existing wildlife in these areas can migrate to other, nearby locations with suitable habitat. Additionally, 47 percent of the land affected by construction of the aboveground facilities will be agricultural (cultivated) land, which tends to support low diversity species. Consequently, construction and operation of these facilities are not expected to have a significant effect on wildlife. Measures that will be implemented to minimize impacts during construction of aboveground facilities will be similar to those used during pipeline construction and will include erosion and sedimentation controls and other measures specified by the FERC Plan and Procedures, and SPCC Plan.

3.3 MIGRATORY BIRD TREATY ACT

Migratory birds are protected under the Migratory Bird Treaty Act (Title 16 U.S. Code [USC] Sections 703-711); bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 USC 668-668d). Executive Order (EO) 13186 (66 Federal Register [FR] 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the FWS. EO 13186 was issued in part to ensure that environmental analyses of federal actions assess the impacts

of these actions on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the direct take of any migratory bird without authorization from the FWS.

Although the Migratory Bird Treaty Act provides protection for all migratory birds and their nests, it is standard practice as noted in EO 13186 and a Memorandum of Understanding between the FERC and FWS (unless notified otherwise by the FWS) to use the Birds of Conservation Concern (BCC) list when evaluating the potential impact of a project on migratory birds (FWS, 2008). This list identifies "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing" under the Endangered Species Act of 1973 (ESA).

The FWS has an incentive to encourage proactive management of these BCC species by state agencies and other partners to prevent the need for listing them as endangered or threatened. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, recommends BCC lists be consulted as they are intended to stimulate coordinated and collaborative proactive conservation actions among federal, state, tribal, and private partners. The FWS adopted Bird Conservation Regions (BCR) as the smallest geographic scale of distinct regions in North America that share similar BCC, habitats, and resource management issues for conservation. The Project facilities will be located across two terrestrial BCRs (i.e., Prairie Potholes and Badlands and Prairies). As shown in table 3.3-1, 14 bird species and subspecies that may occur in the Project area are designated BCC in these regions (FWS, 2019b; Bird Studies Canada and North American Bird Conservation Initiative, 2014; North American Bird Conservation Initiative. 2000; and 2014; FWS, 2008).

A variety of migratory bird species may occur seasonally along the proposed pipeline routes. The Project is within the Central Flyway for waterfowl (FWS, 2019a; Dubovsky, 2018). Many species of migratory birds such as ducks, geese, doves, and pigeons, as well as sandhill and whooping cranes and tundra swans, use the flyway during spring and fall migration between the Gulf of Mexico and central Canada (Dubovsky, 2018). All of these species use open land and wetland areas and could be sensitive to Project construction activities.

WBI Energy has identified the vegetation types crossed by the Project in section 3.5 below. Although some emergent wetlands and small wooded windrows will be crossed by the Project, the predominant vegetation communities consist of agricultural and open land. These communities are used by migratory birds for nesting and during other life stages. Potential impacts on nesting migratory bird species include habitat fragmentation; loss of wooded habitat; temporary removal of vegetation in grasslands, which could cause nesting species to relocate to other suitable habitat; and noise generated during construction, which could disturb nesting birds, if present.

TABLE 3.3-1

North Bakken Expansion Project
Birds of Conservation Concern that May Occur in the Project Area

Species	Habitat Association	BCR [a]
Bald eagle [b, c] (*Haliaeetus leucocephalus*)	Typically breeds in forested areas adjacent to large bodies of water. Nests in trees, and will occasionally nest on cliff faces and ground nest in treeless areas. Stopover habitat during migration includes roosting sites with deciduous trees that are in or near riparian areas, protected from human disturbance, and in proximity to foraging habitat.	11, 17
Black tern (*Chlidonias niger*)	Shallow freshwater marshes with emergent vegetation, which includes prairie sloughs, margins of lakes, and river or island edges.	11
Bobolink (*Dolichonyx oryzivorus*)	Fields comprised of mixed grasses and broad-leaved forbs (e.g., red clover [*Trifolium pratense*] and dandelion [*Taraxacum officinale*]).	NA [d]
Dunlin (*Calidris alpine arcticola*) [e]	Migratory species through North Dakota. Found associated with seasonal wetlands, flooded fields, and agricultural lands.	NA [f]
Ferruginous hawk (*Buteo regalis*)	Breeds in flat and rolling terrain in grassland and shrub-steppe regions. Species typically avoids high elevation, forest interior, and narrow canyons. Occurs primarily in grasslands, sagebrush, shrubland, and the periphery of pinyon-juniper and other forest types. In North and South Dakota, species nest in grasslands and pastures, but avoid ground-based disturbance.	17
Franklin's gull (*Leucophaeus pipxcan*)	Habitat within breeding range includes freshwater marshes nesting over water, on floating mats built on water's surface, muskrat [*Ondatra zibethicus*] houses, or floating debris.	NA [f]
Golden eagle [c] (*Aquila chrysaetos*)	Primary habitat includes rugged portions of badlands, buttes overlooking native prairie, large trees, and frequently associated with prairie dog [*Cynomys ludovicianus*] colonies.	17
Lark bunting (*Calamospiza melanocorys*)	Breeds in grasslands, agriculture areas, and shrub-steppe regions of high plains.	NA [f]
Lesser yellowlegs (*Tringa flavipes*) [e]	Utilizes a variety of habitats during migration including fresh marshes and edges of lakes and ponds.	NA [f]
Marbled godwit (*Limosa fedoa*)	Associated with a variety of wetlands and nests frequently on grazed native prairie.	11, 17
Nelson's sparrow (*Ammodramus nelsoni*)	Breeds in freshwater marshes of prairie pothole region; particularly associated with cordgrass, sedges, and *Phragmites*.	11
Seimipalmated sandpiper (*Calidris pusilla*) [e]	Stopover at wetlands in the prairie pothole region during migration	NA [f]
Sprague's pipit (*Anthus spragueii*)	Habitat includes grazed native prairie with few shrubs. Preferred habitat species include blue grama [*Bouteloua gracilis*], threadleaf sedge [*Carex filifolia*], junegrass, and plains muhly [*Muhlenbergia cuspidate*].	11, 17
Willet (*Tringa semipalmata*)	Breeds in prairies comprised of short, sparse cover near wetlands and grasslands.	NA [f]

Sources: Cornell Lab of Ornithology, 2019; NDGF, 2016c; FWS, 2008 and 2019b; Bird Studies Canada and North American Bird Conservation Initiative, 2014

[a] BCRs overlapping the Project facilities include BCR 11 (i.e., Prairie Potholes) and BCR 17 (i.e., Badlands and Prairies).

[b] ESA delisted species

[c] Protected under the BGEPA

[d] Not identified within BCR 11 or 17, but identified within the FWS Information, Planning and Conservation (IPaC) System as a BCC species that could be found within the Project area. Bobolinks are found in BCR 23, which is the Prairie Hardwood Transition region located east/southeast of the Project.

[e] Non-breeding within North Dakota

[f] Not identified within BCR 11 or 17, but identified within IPaC as a BCC species that could be found within the Project area.

3.3.1 Construction and Operation Impacts and Mitigation

Migratory birds, particularly ground-nesting birds, could use grassland habitat present in the Project area. Impacts on habitat include the potential temporary disturbance of soils and vegetation during construction. Direct impacts on species include the potential for mortality or injury during construction from destruction of ground nests or vehicle collisions. Construction of the Project is planned to begin in the spring of 2021 (March 2021 for aboveground facilities and May 2021 for pipeline facilities) subject to receipt of necessary permits and regulatory approvals, which could overlap with the migratory bird nesting season. To minimize impacts in areas where clearing cannot occur prior to the migratory bird nesting season, WBI Energy will conduct surveys for nesting birds prior to clearing of the right-of-way. If nests are identified during surveys, depending on local topography and vegetative buffers, work will stop up to 0.1 mile from the nest. Construction activities in these areas could resume when the chicks have fledged or the nest has failed. In areas where clearing occurs prior to migratory bird nesting but construction does not occur right after clearing, the construction area will be maintained (as needed) to avoid the regrowth of potential nesting habitat.

After construction is complete, WBI Energy will restore the right-of-way as near as practical to preconstruction condition in accordance with the FERC Plan and Procedures. Cropland will be restored to active agricultural production, and other areas will be revegetated using methods and seed mixes appropriate to existing land uses and cover types. WBI Energy anticipates that the Project area will recover to pre-disturbance conditions over time. Consequently, the Project will not permanently alter the character of available habitats for migratory birds.

Regular maintenance of vegetation in the permanent right-of-way will be conducted in accordance with the FERC Plan and Procedures. The FERC Plan and Procedures do not allow routine vegetation maintenance clearing more frequently than every 3 years, with the exception of a 10-foot-wide corridor centered over the pipelines, which can be maintained annually in an herbaceous state to facilitate periodic corrosion and leak surveys. Routine maintenance clearing will occur outside of the migratory bird nesting season. The majority of the route has low growing vegetation, however, which allows for regular inspection without regular clearing. In wetlands, the FERC Procedures allow for selective cutting of trees greater than 15 feet in height within 15 feet of the pipelines. As noted above, WBI Energy anticipates that the need for routine vegetation maintenance will be infrequent and limited to specific locations such as areas around pipeline markers and at road crossings.

Based on the relatively limited extent of the proposed disturbance within the broader landscape, and with the implementation of the proposed mitigation and restoration measures, no substantial changes in migratory bird habitat availability or suitability are anticipated as a result of the Project. As such, the Project is not expected to result in adverse permanent or cumulative impacts on migratory birds.

3.4 BALD EAGLE AND GOLDEN EAGLE PROTECTION ACT

The BGEPA (16 USC 688), provides additional protection to bald and golden eagles. The BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, purchase, transport, export, or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. “Take” under this act is defined as “to pursue, shoot, shoot at, poison,

wound, kill, capture, trap, collect, or molest or disturb." Disturb is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles occur, then project proponents may need to take additional conservation measures to achieve compliance with the BGEPA. The BGEPA includes limited exceptions to its prohibitions through a permitting process, including exceptions to take bald or golden eagle nests that interfere with resource development or recovery operations.

WBI Energy reviewed golden eagle nest habitat range data available from the NDGFD (NDGF, 2017), which shows there is no nest habitat for golden eagles crossed by the Project. The nearest habitat is located approximately adjacent (less than 20 feet) to MP 19.3 of the Tioga –Elkhorn Creek pipeline. Incidental on-the-ground raptor nest surveys were conducted during wetland and waterbody surveys (limited to the 300-foot-wide wetland/waterbody survey corridor), during which no nesting activity for bald or golden eagles was observed. This survey corridor did not capture potential noise impacts associated with the HDD crossing of Lake Sakakawea and a natural pond. According to the NDGRD golden eagle nest habitat data, there is no known habitat within 0.5 mile of the HDD entry sites. Prior to the start of HDD construction at Lake Sakakawea and the natural pond, WBI Energy will complete surveys for eagle nests within 0.5 mile of the proposed entry sites. If an eagle nest is identified near the Project area, WBI Energy will implement the measures described in the FWS' 2007 National Bald Eagle Management Guidelines (FWS, 2007b) to avoid and minimize impacts on nesting eagles. The proposed Project is not expected to affect bald or golden eagles.

3.5 VEGETATION RESOURCES

This section describes the existing vegetation cover types that occur within the Project area, including vegetation communities of special concern and exotic or invasive species. Potential impacts on vegetation resources from construction and operation of the Project are also discussed. Wetland communities identified along the pipeline routes are identified in table 2.3.1-1 and described in section 2.3 of Resource Report 2. Information on vegetation types within the Project area was obtained from available literature, results of environmental field surveys, and review of recent (2011) digital aerial photography.

3.5.1 Existing Vegetation Resources

The Project area lies primarily within the Missouri Coteau and Missouri Slope geographic regions of North Dakota. The Missouri Coteau extends from the Missouri River to the western edge of the Drift Prairie Region. Characteristics of this region include numerous wetlands, particularly on the eastern edge, decreasing toward the Missouri River. Land use in this region is dominated with agricultural farming and livestock ranching. The Missouri Slope Region is characterized with irregular topography comprised of layers such as sandstone and shale. Livestock grazing is predominant in this region (NDGFD, 2016b). Vegetation cover types in the Project area are reflective of historical and current agricultural and pastoral land use practices in the area.

Forested land is limited in North Dakota and is primarily found in riparian zones, which are areas between waterbodies and adjacent upland (NDGFD, 2016b). In 2017, the land area of North Dakota included an estimated 1.8 percent, or 814,900 acres, of forested land dominated by hardwood types such as green ash (*Fraxinus pennsylvanica*), bur oak (*Quercus macrocarpa*), and hickory (*Carya* spp.) (USFS, 2018). In many areas, forests have experienced significant alterations over the past decades due to the spread of Dutch elm disease, overgrazing, altered water flows, and conversion of the land to other uses (LeBoldus et al., 2013; Kotchman, 2010). Invasion of the emerald ash borer (*Agrilus planipennis*) is also a top concern and potential threat for North Dakota ash species (USFS, 2018). In the Project area, the forested land predominantly consists of small stands of deciduous trees, primarily in wooded riparian areas and along the edges of wetlands, and hedgerows along roads and fields. Trees common in these areas include green ash and eastern cottonwood (*Populus deltoids*).

Most of the land in the Project area is agricultural land (primarily cropland) or open land (non-native and native grassland and emergent and scrub-shrub wetlands). Less than 0.2 percent of the affected area is classified as forested land. Developed land, which consists of existing roads, railroads, and utility lines, encompasses about 7 percent of the Project area affected by construction (see table 8.2-1 of Resource Report 8). Only limited vegetation communities, such as grasses or other maintained cover, are found in developed lands; therefore, developed lands are not further discussed in this section.

Table 3.5.1-1 summarizes the vegetation and cover types that will be affected by construction and operation of the proposed Project facilities. Land uses crossed by the Project were classified based on information obtained through biological field surveys and review of digital aerial photography including land use and land cover types. Surveys identified segments of native grassland (i.e., native prairie) within all vegetation classes. The acres of native grassland were subtracted from each of the vegetation class acreage totals accordingly. Therefore, the acres shown in table 3.5.1-1 may not match the acres listed in table 8.2-1 of Resource Report 8 for agricultural, open, and forested land.

3.5.1.1 Agricultural Land

The dominant vegetation type crossed by the Project is agricultural land, which includes permanent or rotated croplands, working areas of farms, hayfields, and pastureland. Small grains such as, durum wheat, barley, spring wheat, and oats, as well as canola, dry edible beans, corn, and sunflowers are crops grown in the region (USFS, 2019c).

Table 3.5.1-1

North Bakken Expansion Project
Vegetation Types Affected by Construction and Operation of the Project (acres)[a]

	Agricultural Land[b]		Open Land (Non-Native Grassland)[c]		Open Land (Native Grassland)[d]		Forested Land[e]		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline Facilities										
Tioga-Elkhorn Creek	466.8	233.9	125.8	66.9	43.2	26.0	2.0	1.1	606.4	308.1
Elkhorn Creek-Northern Border	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.8	1.4
Line Section 25 Loop	119.7	79.6	41.4	27.8	4.6	2.9	0.0	0.0	161.1	107.4
Line Section 30 Loop	71.1	47.4	9.0	5.9	0.0	0.0	0.0	0.0	80.1	53.3
Tioga Compressor Lateral	1.5	1.0	0.1	0.1	0.0	0.0	0.0	0.0	1.6	1.1
Uprate Line Section 25	0.7	0.5	1.5	1.3	0.0	0.0	0.0	0.0	2.2	1.8
Subtotal	**662.6**	**363.8**	**177.8**	**102.0**	**47.8**	**28.9**	**2.0**	**1.1**	**854.2**	**473.1**
Additional Temporary Workspace										
Tioga-Elkhorn Creek	52.0	0.0	11.4	0.0	5.7	0.0	0.1	0.0	63.5	0.0
Line Section 25 Loop	17.8	0.0	7.7	0.0	0.3	0.0	0.0	0.0	25.5	0.0
Line Section 30 Loop	8.3	0.0	0.7	0.0	0.0	0.0	0.0	0.0	9.0	0.0
Tioga Compressor Lateral	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Uprate Line Section 25	3.2	0.0	6.9	0.0	0.0	0.0	0.0	0.0	10.1	0.0
Subtotal	**81.4**	**0.0**	**26.8**	**0.0**	**6.0**	**0.0**	**0.1**	**0.0**	**108.3**	**0.0**
Staging Areas										
Boehm Staging Yard	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	5.9	0.0
Weflen Staging Yard	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0
68th Street Yard	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.2	0.0
CRS Yard	9.7	0.0	11.7	0.0	0.0	0.0	0.0	0.0	21.4	0.0
Delta Contractors Yard	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0
Enget Yard	0.0	0.0	38.7	0.0	0.0	0.0	0.0	0.0	38.7	0.0
Flatlands Yard 1	4.2	0.0	0.4	0.0	0.0	0.0	0.0	0.0	4.7	0.0
Flatlands Yard 2	0.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.7	0.0

Table 3.5.1-1 (cont'd)

North Bakken Expansion Project
Vegetation Types Affected by Construction and Operation of the Project (acres) [a]

	Agricultural Land [b]		Open Land (Non-Native Grassland) [c]		Open Land (Native Grassland) [d]		Forested Land [e]		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Lobell Yard	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0
Schmidt Yard	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0
Subtotal	**72.5**	**0.0**	**57.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**129.7**	**0.0**
Access Roads										
Access Roads	27.9	<0.1	13.8	0.0	0.1	0.0	0.0	0.0	41.7	<0.1
Subtotal	**27.9**	**<0.1**	**13.8**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**41.7**	**<0.1**
Aboveground Facilities										
Elkhorn Creek Compressor Station (new)	9.6	8.6	1.5	1.5	0.0	0.0	0.0	0.0	11.1	10.1
Tioga Compressor Station (existing)	0.0	0.0	8.0	4.4	0.0	0.0	0.0	0.0	8.0	4.4
Springbrook Plant Receipt Station (existing)	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4
Northern Border Interconnect (new)	0.6	0.2	0.2	<0.1	0.0	0.0	0.0	0.0	0.8	0.2
Norse Plant Receipt Station (existing)	< 0.1	< 0.1	0.3	0.3	0.0	0.0	0.0	0.0	0. 3	0.3
Norse Transfer Station (new)	< 0.1	< 0.1	1.1	0.3	0.0	0.0	0.0	0.0	1.1	0.3
Tioga Plant Receipt Station (existing)	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1
Robinson Lake Plant Receipt Station (existing)	1.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.6
Block valves (new)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Subtotal	**13.8**	**11.0**	**11.1**	**6.5**	**0.0**	**0.0**	**0.0**	**0.0**	**24.9**	**17.5**
Project Total	**858.2**	**374.8**	**286.7**	**108.5**	**53.9**	**28.9**	**2.1**	**1.1**	**1,158.8**	**490.6**

[a] The subtotals and totals in this table may not reflect the sum of the addends due to rounding. In addition, surveys identified segments of native grassland (i.e., native prairie) within all vegetation classes. The acres of native grassland were subtracted from each of the vegetation class acreage totals accordingly. Therefore, the acres shown in this table may not match the acres listed in table 8.2-1 of Resource Report 8 for agricultural, open, and forested land.

[b] Includes cultivated crops, hayfields, and pastureland.

[c] Includes herbaceous land, scrub/shrub, and non-forested wetlands.

[d] Includes surveyed segments of native grassland.

[e] Includes deciduous and mixed forestland (hedgerows, upland wooded areas, and deciduous forests).

3.5.1.2 Non-Native Grassland

Vegetation in the non-native grassland category consists of planted non-native grasses, including smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) as well as clovers such as alfalfa (*Medicago* spp.) (Sedivec et al., 2011). Non-native forbs, like Canada thistle (*Cirsium arvense*) and bindweed (*Convolvulos arvensis*), also are common throughout the area. Non-native grassland appears to have been tilled in the past, but is not currently used for agricultural purposes. Some of the land may be enrolled in the Conservation Reserve Program (CRP), which allows for payment to farmers to convert previously farmed lands to grasslands for wildlife habitat (see section 3.5.3.1 below).

3.5.1.3 Native Grasslands

Native prairie is generally divided into three categories including tallgrass, mixed-grass, and shortgrass communities. Each of these categories is comprised of a blend of grasses and forbs (NDGFD, 2016b). Tallgrass prairie is predominantly found in eastern North Dakota in the Red River Valley and is outside of the Project area. The Project area will primarily overlap mixed-grass and shortgrass communities.

Mixed-grass prairie in North Dakota is found within the Missouri Coteau region and includes surrounding wetlands. This region is characterized with hummocky, rolling hills and a high concentration of wetlands including alkaline lakes. Tracts of native prairie remain and cattle grazing is extensive on the landscape (NDGFD, 2016b). Mixed grass prairie includes a combination of tallgrass and shortgrass species and is dominated by warm and cool season grasses and sedges. Common grasses include prairie junegrass, western wheatgrass (*Pascopyrum smithii*), green needlegrass, needle and thread (*Hesperostipa comate*), blue grama, little bluestem, and needleleaf sedge (*Carex duriuscula*). Mixed-grass prairie includes a variety of forbs such as pasque flower (*Pulsatilla patens*), prairie smoke (*Geum triflorum*), Missouri milkvetch (*Astragalus missouriensis*), and purple prairie clover (*Dalea purpurea*) (USFS, 2019c; NDGFD, 2016b). Shortgrass prairie is primarily found in the higher elevations within the Missouri Slope region. Dominant species in shortgrass prairie include warm season grasses such as spikemoss (*Selaginella densa*), blue grama, needleleaf sedge, and buffalograss (*Bouteloua dactyloides*). A variety of forb species are often found in North Dakota shortgrass prairie and species may include purple locoweed (*Oxytropis lambertii*), white wild onion (*Allium* spp.), prickly pear (*Opuntia humifusa*), and white beardtongue (*Penstemon digitalis*) (USFS, 2019c; NDGFD, 2016b).

WBI Energy documented locations of native prairie in the Project area as part of its environmental field survey. Native prairie was distinguished from other grasslands based on the species diversity and the absence of indicators of previous agricultural activities (e.g., tillage patterns in soil, rock piles along margins of fields). Table 3.5.1-2 identifies by milepost the locations where surveys identified native prairie. The proposed pipelines will cross native prairie at 46 locations with a total crossing length of about 4.8 miles.

TABLE 3.5.1-2

North Bakken Expansion Project
Pipeline Facility Crossings of Native Prairie [a]

Pipeline Facility	Start Milepost	End Milepost [b]	Length (miles) [b]	Area Affected by Construction (acres)	Area Affected by Operations (acres)
Tioga-Elkhorn Creek					
	12.2 [b]	NA [c]	NA [c]	0.1	< 0.1
	14.9	14.9	0.1	0.7	0.3
	16.6	16.8	0.2	2.2	1.1
	16.8	16.9	0.1	1.3	0.7
	17.7	17.7	0.1	0.6	0.4
	17.9	18.0	0.2	2.1	1.0
	18.6	18.7	0.1	0.7	0.5
	18.8	18.8	< 0.1	0.3	0.2
	18.9	19.1	0.1	1.1	0.7
	21.4	21.4	< 0.1	0.1	< 0.1
	22.8	22.9	0.1	2.5	0.5
	22.9	23.0	0.1	0.7	0.7
	25.4	25.5	0.1	0.4	0.4
	25.6	25.7	0.1	0.6	0.6
	26.0 [b]	NA [c]	NA [c]	< 0.1	< 0.1
	27.1	27.2	0.1	0.9	0.6
	27.2	27.4	0.1	0.8	0.6
	28.1	28.1	< 0.1	0.4	0.3
	28.1	28.2	0.1	0.6	0.4
	28.3	28.6	0.3	2.3	1.5
	28.6	28.7	0.1	1.2	0.4
	28.7	28.8	< 0.1	0.3	0.3
	28.8	29.0	0.2	1.5	1.0
	28.9 [b]	NA [c]	NA [c]	< 0.1	< 0.1
	29.6	29.7	< 0.1	0.7	0.3
	31.1	31.2	< 0.1	0.4	0.2
	31.6	31.6	< 0.1	0.3	0.1
	31.8	32.2	0.4	5.0	2.4
	38.2	38.4	0.1	0.7	0.7
	49.9	49.9	< 0.1	0.2	0.1
	50.0	50.3	0.2	1.9	1.4
	50.3	50.5	0.2	1.2	1.0
	50.8 [b]	NA [c]	NA [c]	1.5	0.1
	51.7 [b]	NA [c]	NA [c]	0.1	0.1
	55.0	55.1	0.1	0.9	0.4

TABLE 3.5.1-2 (cont'd)

North Bakken Expansion Project
Pipeline Facility Crossings of Native Prairie [a]

Pipeline Facility	Start Milepost	End Milepost [b]	Length (miles) [b]	Area Affected by Construction (acres)	Area Affected by Operations (acres)
	56.7	56.8	0.2	2.8	1.0
	57.8	57.8	0.1	0.4	0.7
	57.8 [b]	NA [c]	NA [c]	< 0.1	< 0.1
	57.9	57.9	< 0.1	0.2	0.2
	58.1	58.9	0.8	9.6	4.7
	58.3 [b]	NA [c]	NA [c]	0.1	< 0.1
	59.3	59.3	< 0.1	0.1	0.1
	59.5	59.5	< 0.1	0.3	0.2
	60.3	60.4	0.1	0.9	0.4
Line Section 25 Loop					
	4.6	5.1	0.5	4.9	2.9
	10	NA [c]	NA [c]	< 0.1	< 0.1
TOTAL			**4.8**	**53.9**	**28.9**

[a] Totals may not match the sum of addends due to rounding.
[b] Mileposts are reference points and may not equal total length due to rounding.
[c] Native grassland habitat is not crossed by the proposed pipeline centerline; therefore, the ending milepost and length are not applicable (NA). The starting milepost indicates the approximate location of the native prairie within the workspace.

3.5.2 Unique, Sensitive, and Protected Vegetation Communities

As noted in section 3.2.2, the proposed Project will cross about 1.8 miles of the LMNG. Table 3.5.2-1 lists the LMNG sensitive plant species and habitat that may occur within the Project area.

In conjunction with Dakota skipper (DASK) habitat mapping, WBI Energy conducted sensitive plant surveys along approximately 1.8 miles where the Project crosses the USFS-managed lands within the LMNG. Prior to surveys, biologists reviewed the most recent *Biological Survey and Report Guidelines – Little Missouri National Grassland* (USFS, 2019a) and associated Geographic Information System data with known DASK locations. Biologists visited known and easily accessible reference plots prior to the survey to ensure habitat and plant characteristics. The survey area included a 300-foot-wide corridor along the pipeline routes and a short, 40-foot-wide corridor centered on a proposed access road that branches off Highway 1806 in McKenzie County. On June 20, 2019, qualified biologists surveyed the Project area on the USFS-managed land using meandering transects with an emphasis on areas having habitat features suitable to the USFS sensitive plant species listed in table 3.5.2-1. In addition to surveying for sensitive plant species, biologists also surveyed for any occurrence of USFS watch list plant species (see table 3.5.2-2). Botanical survey data for the Project is included in the Biological Assessment and Biological Evaluation (appendices 3A and 3B).

TABLE 3.5.2-1

North Bakken Expansion Project
Sensitive Plant Species and Habitat for the Little Missouri National Grassland that May Occur in the Project Area

Species	Habitat
Alkali sacaton (*Sporobolus airoides*)	Found in areas with clay outwash; tolerant of saline conditions; dry to moist sandy or gravely soil
Alyssum-leaved phlox (*Phlox alyssifolia*)	Sandy or gravely soil; found around Bullion Butte in North Dakota (about 69 miles southwest of the Project area) and on clay banks and limestone ridges of open prairie
Blue lips (*Collinsia parviflora*)	Found in wooded understories (e.g., green ash and elms); rocky mountain juniper, mesic shrub communities, and occasionally xeric shrub communities
Dakota buckwheat (*Eriogonum visheri*)	Found in clay and silty substrates with low plant cover (e.g., outwash zones, eroding buttes, saddles, steep slopes, and erosional breaks on prairie slopes); occasionally found in saltgrass communities
Dwarf mentzelia (*Mentzelia pumila*)	Found on slopes and sandy plains; occasionally on hard clays and rocky soils
Easter daisy (*Townsendia exscapa*)	Dry plains and hillsides typically with loamy or increased soil development
Hooker's townsendia (*Townsendia hookeri*)	Dry plains and hillsides; gravely beaches and weathered scoria, often in clay matrix subsoils
Lanceleaf cottonwood (*Populus x acuminate*)	Mesic, woody draws typically with springs and seeps; occasionally near springs on open hillsides; floodplains and stream banks
Limber pine (*Pinus flexillis*)	Semi-arid exposed rocky ridges and foothills
Nodding buckwheat (*Eriogonum cernuum*)	Exposed sand substrates with low plant cover typically in grasslands, hillsides, and sandstone outcrops
Sand lily (*Leucocrinum montanum*)	Found in a variety of habitats including shortgrass and crested wheatgrass communities; open coniferous woodlands and hillsides; and sagebrush scrub and sandy flats
Smooth goosefoot (*Chenopodium subglabrum*)	Found in a variety of habitats including sandbars, terraces, and dune complexes along rivers and creeks; exposed sandy substrates in uplands, and outcrops
Torrey's cryptantha (*Cryptantha torreyana*)	Two populations discovered and documented in 2013 along scoria ridgelines; found in dry plains, rock outcrops, escarpments, and pine slopes

Sources: USFS, 2019a and 2019c

TABLE 3.5.2-2

North Bakken Expansion Project
Watch List Plant Species for the Little Missouri National Grassland that May Occur in the Project Area

Species	Habitat
Balm-of-Gilead (*Populus x jackii)*	Roadsides, ditches, wet areas bordering swamps
Bentflower milkvetch (*Astragalus vexilliflexus)*	Mesic to dry scree slopes and gravelly banks and grassy knolls in subalpine and alpine zones
Bulrush sedge (*Carex scirpoidea* [*Carex scirpiformi*])	Calcareous soils in a variety of habitats including fens, mesic prairies, alvars, mountain cliffs, rocky riverbanks, and rocky lakeshores
Myosurus apetalus var. *montanus*	Wet meadows, vernal pools and sloughs, bogs, muddy shores of lakes and streams
Cutleaf evening primrose (*Oenothera laciniata)*	Disturbed ground, fields, and fencerows in well-drained sandy and limestone soils
Drummond's milkvetch (*Astragalus drummondii)*	Grasslands, sagebrush steppe, woodlands of plains and valleys
Dry spike sedge (*Carex siccata* [*Carex feonea*])	Dry meadows and alpine turf near the tree line, typically on stabilized fine talus slopes
Heartleaf buttercup (*Ranunculus cardiophyllus)*	Moist meadows and grasslands, wetlands in the foothill zone
Indian milkvetch (*Astragalus australis* [*Astragalus aboriginum*])	Sparsely vegetated rocky grassland soils, fellfields, exposed slopes of plains and valleys to alpine
Manyflowered broomrape (*Orobanche ludoviciana*, ssp. *Multiflora)*	Grasslands, sagebrush steppe of plains and valleys to montane
Mountain brome (*Bromus carinatus)*	Open understory and adjacent mountain meadows in rocky well-draining soil
Rorippa calycina	Sparsely vegetated, moist fine-grained soils on stream banks, stock ponds and man-made reservoirs
Pondweed (*Potamogeton diversifolius)*	Shallow ponds and lakes of plains, valleys and montane areas
Prairie fameflower (*Phemeranthus parviflorus* [*Talinum parviflorum*]*)*	Dry, sandy soils often near rocks
Rock clematis (*Clematis columbiana* var. *tenuiloba* [*Clematis tenuiloba*])	Rock faces and peaks in exposed areas or pine woodlands
Shrubby fivefingers (*Sibbaldiopsis tridentata* [*Potentilla tridentata*]*)*	Dry rocky to gravelly shores, rocky outcrops, montane balds, dry montane meadows
Smooth spike-primrose (*Epilobium pygmaeum* [*Boisduvalia glabella*]*)*	Mossy shores of shallow ponds, ephemeral wetlands of plains and valleys
Spike bentgrass (*Agrostis exarata)*	Most common in disturbed sites such as ditches, harvested forestland, and roadsides; also found in established meadow and riparian plant communities
Spreading fleabane (*Erigeron divergens)*	Grasslands, sagebrush steppe, open forest, roadsides of plains, valleys, and montane areas
Taproot fleabane (*Erigeron radicatus)*	Calcareous soils of dry, rocky sites in alpine and subalpine areas
Upright carrionflower (*Smilax ecirrhata)*	Moist soils with high organic content in woodland areas

TABLE 3.5.2-2 (cont'd)

North Bakken Expansion Project
Watch List Plant Species for the Little Missouri National Grassland that May Occur in the Project Area

Species	Habitat
Varileaf potentilla (*Potentilla diversifolia)*	Moist meadows and rocky soils of subalpine and alpine areas
White locoweed (*Oxytropis sericea)*	Grasslands and exposed ridges, slopes at all elevations
Yellow fritillary (*Fritillaria pudica)*	Grasslands, sagebrush steppe, and open forests of valleys to montane areas

Sources: USDA, 2019; Efloras, n.d.; Montana Field Guide, n.d.

3.5.2.1 Conservation Reserve Program

The CRP is a voluntary program that provides technical and financial assistance to farmers and ranchers to address soil, water, and related natural resource concerns on their lands. The program is administered by the Farm Service Agency (FSA), with the NRCS providing technical land eligibility determinations, conservation planning, and practice implementation.

The CRP reduces soil erosion, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources by encouraging conversion of highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. By establishing such vegetation cover, the CRP can create habitat for a variety of wildlife species, potentially including the species present in the Project area (USFS, 2019d).

As discussed in section 8.7 of Resource Report 8, WBI Energy consulted with the Farm Service Agency and interviewed landowners to determine if any CRP lands are crossed by the Project. Based on these landowner discussions, WBI Energy determined that and no CRP lands are crossed by the Project.

3.5.2.2 Agricultural Conservation Easement Program

The NRCS administers the Agricultural Conservation Easement Program (ACEP), which assists landowners, land trusts, and other entities in the protection, restoration, and enhancement of wetlands, grasslands, and working farms and ranches through conservation easements. There are two components to this program including the agricultural land easements and wetland reserve easements (USFS, 2019e). WBI Energy consulted with the NRCS on a preliminary version of the proposed pipeline routes. Based on this initial consultation, the Project did not cross any ACEP lands. WBI Energy has sent the current pipeline routes to the NRCS for a second round of review and will provide FERC with the results of these consultations once they are available. The Project is not expected to have any impacts on ACEP lands (see section 8.8 of Resource Report 8 for more detailed information.)

3.5.3 Construction and Operation Impacts and Mitigation

Table 3.5.1-1 summarizes the amount of vegetation by cover type that will be affected by construction and operation of the proposed facilities. Construction of the Project will affect 1,158.8 acres of vegetated land, including 854.2 acres for the construction right-of-way, 108.3 acres for the ATWS, 129.7 acres for the yards and staging areas, 24.9 acres for the aboveground facilities, and 41.7 acres for the temporary and permanent access roads. Approximately 490.6 acres will be retained for operation of the Project, including 473.1 acres for the permanent right-of-way, 17.5 acres for the aboveground facilities, and less than 0.1 acre for the permanent access roads.

Construction of the proposed pipelines will require clearing and grading of the temporary right-of-way, which will be conducted as described in Resource Report 1. The permanent right-of-way will be maintained as cropland or other pre-existing vegetation communities while the remaining temporary workspace along the construction right-of-way and any ATWS areas will be allowed to revert to preconstruction conditions. Implementation of the measures specified in the FERC Plan and Procedures will minimize Project-related impacts on affected vegetation communities.

The amount of time it will take for vegetation in disturbed areas to recover will vary by vegetation type; for example, tree communities take longer to reestablish than shrubs or herbaceous vegetation. Agricultural land and most open lands (e.g., non-native grassland) are expected to revert to preconstruction condition relatively quickly, generally within 1 or 2 years following construction. However, native grasslands may take considerably longer to restore (approximately 3 to 5 years based on previous experience in the Project area). WBI Energy has routed the proposed pipelines to avoid native grasslands to the extent practicable and will implement measures identified in the FERC Plan and Procedures to minimize and mitigate impacts on these areas where they cannot be avoided. Measures include consulting with the NRCS and USFS to determine appropriate seed mixes, including potential pollinator-friendly species, for revegetating these areas.

Following construction, WBI Energy will revegetate disturbed non-agricultural upland areas within the right-of-way and ATWS in accordance with the FERC Plan using seed mixes recommended by the NRCS, landowners, or other appropriate agencies. Revegetation will provide protection against erosion. In areas where final grade and cleanup is completed during active construction, WBI Energy will comply with the timelines for seeding identified in the FERC Plan (weather and soil conditions permitting) or as recommended by the NRCS or FSA (subject to approval by landowners). Timely restoration of the construction right-of-way, reseeding with the appropriate seed mixes, and the use of effective erosion control measures will minimize the duration of vegetation disturbance.

Following construction, small trees and shrubs (if present prior to construction) will be allowed to grow within the temporary construction right-of-way and ATWS areas. In the permanent right-of-way, however, a 10-foot-wide area over the pipelines may be maintained in an herbaceous state to facilitate pipeline inspection. Vegetation maintenance activities on the rest of the permanent right-of-way will be conducted no more than every 3 years. WBI Energy anticipates that the need for vegetation maintenance along the proposed pipeline routes will be infrequent due to the predominantly open and agricultural vegetation types.

Construction and operation impacts on wetland vegetation will be minimized by the implementation of the measures specified in the FERC Procedures. In addition, the use of the guided bore construction method will minimize and/or avoid impacts on several wetlands crossed by the Project. Additional information regarding impacts on wetlands is provided in section 2.3 of Resource Report 2.

Construction and operation of the proposed aboveground facilities will generally be similar to those described above for the pipeline rights-of-way and in the wildlife habitat discussion in section 3.2. At these locations, temporary workspace will be restored to preconstruction condition and cover types; areas within the permanent facility footprints at each site will be converted to developed lands. As noted in table 3.5.1-1, the Project will have 17.5 acres of permanent impacts on vegetation as a result of the proposed aboveground facilities.

3.5.4 Noxious Weeds and Other Invasive Plants

According to regulations in North Dakota law (North Dakota Century Code [NDCC] 4.1-47-01), noxious weeds are defined as any "plant propagated by either seed or vegetative parts and determined to be injurious to public health, crops, livestock, land or other property" as determined by NDCC sections 4.1-47-05, 4.1-47-10, or 4.1-47-21. The North Dakota Department of Agriculture (NDDA) has established and implemented a statewide network to manage noxious weeds. Under these regulations (NDCC 4.1-47-02), "each person shall do all things necessary and proper to control the spread of noxious weeds and no person may distribute, sell, or offer for sale" noxious weeds.

Noxious and invasive plant species include non-native, undesirable native, or introduced species that are able to exclude and/or out-compete desired native vegetation, thereby decreasing overall species diversity. The NDDA has a list of noxious weeds that are recognized and regulated by all cities and counties in North Dakota. Counties have the option to add additional weeds onto a list for enforcement in their jurisdictions. McKenzie, Williams, Burke, and Mountrail Counties list 19 noxious weed species potentially occurring in the area (see table 3.5.4-1).

WBI Energy conducted noxious weed surveys for state- and county-listed noxious weed species within a 300-foot-wide corridor centered on the proposed pipeline centerlines within grassland areas. These noxious weed surveys were conducted concurrently with wetland and waterbody surveys and were not timed to coincide with any specific morphological state. Data points and/or polygons were collected at observed noxious weed infestations, and percent cover was recorded (see the Wetland/Waterbody Delineation Report included as appendix 2A of Resource Report 2). Weed species identified include Absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula)*, purple loosestrife (*Lythrum salicaria L*., *Lythrum virgatum L*., and all cultivars), and Russian knapweed (*Centaurea repens)*. Table 3.5.4-2 summarizes noxious weeds observed in the Project area.

TABLE 3.5.4-1

North Bakken Expansion Project
Noxious Weed Species Potentially Occurring in the Project Area

Species	Counties			
	McKenzie	Williams	Burke	Mountrail
Absinth wormwood (*Artemisia absinthium L.*)	X			
Baby's breath (*Gypsophila paniculata*)	X			
Black henbane (*Hyoscyamus niger L.*)	X			
Common tansy (*Tanacetum vulgare*)			X	X
Common burdock (*Arctium minus*)	X			
Canada thistle (*Cirsium arvense* (*L.*) *Scop.*)	X			
Dalmatian toadflax (*Linaria genistifolia* spp. *dalmatica*)	X			
Diffuse knapweed (*Centaurea diffusa Lam.*)	X			
Halogeton (*Halogeton glomeratus*)	X			
Houndstongue (*Cynoglossum officinale L.*)	X			
Leafy spurge (*Euphorbia esula L.*)	X			
Musk thistle (*Carduus nutans L.*)	X			
Narrowleaf hawksbeard (*Crepis tectorum*)		X		
Palmer amaranth (*Amaranthus palmeri*)	X	X		
Purple loosestrife (*Lythrum salicaria L.*, *Lythrum virgatum L.*, and all cultivars)	X			
Russian knapweed (*Centaurea repens L.*)	X			
Saltcedar (*Tamarisk* spp.)	X			
Spotted knapweed (*Centaurea maculosa Lam.*)	X			
Yellow toadflax (*Linaria vulgaris*)	X			

Sources: NDDA, 2019

TABLE 3.5.4-2

North Bakken Expansion Project
Summary of Noxious Weeds Observed in the Project Area During Surveys

Species	Route Identifier	Start Milepost	End Milepost [a]	Length [b] (feet)	Acres [c]
Absinth wormwood (*Artemisia absinthium L.*)	Line Section 25 Loop	19.3	19.3	52.8	0.2
Canada thistle (*Cirsium arvense* (*L.*) *Scop.*)	Tioga-Elkhorn Creek	38.1	NA	NA	NA
Leafy spurge (*Euphorbia esula L.*)	Uprate Line Section 25 (89th Avenue NW/93rd Street NW Bore)	NA	NA	NA	NA
	Line Section 25 Loop	1.0	NA	NA	NA
	Line Section 25 Loop	4.9	5.0	NA	<0.1
	Line Section 25 Loop	5.0	NA	NA	<0.1
	Line Section 25 Loop	5.1	NA	NA	NA
	Tioga Compressor Lateral	0.3	NA	NA	NA
	Tioga-Elkhorn Creek	5.7	5.7	13.2	<0.1
	Tioga-Elkhorn Creek	13.1	NA	NA	NA
	Tioga-Elkhorn Creek	19.0	19.1	869.0	5.0
	Tioga-Elkhorn Creek	22.9	NA	NA	NA
	Tioga-Elkhorn Creek	25.6	NA	NA	NA
	Tioga-Elkhorn Creek	27.2	NA	NA	NA
	Tioga-Elkhorn Creek	30.0	NA	NA	NA
	Tioga-Elkhorn Creek	51.1	NA	NA	NA
Purple loosestrife (*Lythrum salicaria* [*L.*, *Lythrum vigatum L.*], and all cultivars)	Line Section 25 Loop	4.6	NA	NA	NA
Russian knapweed (*Centaurea repens L.*)	Line Section 30 Loop	3.4	3.4	30.3	0.1

[a] Points were taken for many of these noxious weed locations; however, end mileposts were not recorded. Therefore, not applicable (NA) was recorded.
[b] Length (feet) of proposed pipeline centerlines crossed. NA = Not applicable as the distance was minimal.
[c] Points were taken for many of these noxious weed locations, and acreages were not calculated; therefore, not applicable (NA) was recorded.

3.5.4.1 General Impacts and Mitigation

Vegetation removal and soil disturbance during construction of the pipeline facilities could create optimal conditions for the establishment of invasive, non-native plant and noxious weed species. Construction equipment traveling from weed- and invasive plant-infested areas into weed-free areas along the construction corridor could disperse invasive plant and noxious weed seeds and propagates, resulting in the establishment of undesirable vegetation in previously weed-free areas.

WBI Energy will implement the measures described in its *Noxious Weeds Management Plan* to prevent and control the introduction or spread of noxious weeds during and following construction of the project; the plan is provided in appendix 1F of Resource Report 1. The

measures contained in this plan are designed to identify areas supporting noxious weeds prior to construction; prevent the introduction and spread of weeds from construction equipment moving along the right-of-way; contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas or along the construction right-of-way; and address weed infestations that develop during operation of the Project. The following are examples of measures that are discussed in more detail in the *Noxious Weeds Management Plan*:

- As noted above, WBI Energy conducted surveys for noxious weed species within the Project area. These locations will be identified on construction alignment sheets. Additional areas supporting noxious species may be identified during preconstruction inspections by WBI Energy's EIs. Prior to construction, the EIs will mark areas of noxious weed infestation by using color-coded flagging, staking, and/or signs on the construction right-of-way. Identification of existing noxious weed locations will alert EIs and construction personnel to implement weed control measures during construction.

- Prior to clearing and grading operations, pre-treatment of noxious weed infestations (e.g., application of herbicide or mechanical measures) may be conducted if it is determined that pre-treatment will aid in controlling the spread of weeds during construction. The weed control measure chosen will be the best method available for the time, place, and species or weed.

- All equipment will be cleaned prior to arriving on the Project site and inspected to verify that it is adequately clean of soil and debris capable of transporting weed propagules prior to working on the Project.

- Material used for erosion control (e.g., hay bales or straw) will be certified as weed-free.

- Following construction, WBI Energy will monitor the Project area in accordance with the FERC Plan and Procedures. In the event that noxious weed species become established in the right-of-way, WBI Energy will make efforts to control the weeds within the right-of-way and to work with adjacent landowners to prevent the spread of noxious weed species to adjacent lands.

- WBI Energy will control noxious weed species at WBI Energy-managed aboveground facility sites to prevent the spread of weeds onto adjacent properties. This may include the use of approved herbicides, mechanical methods, and/or alternative methods as appropriate for the species and in accordance with applicable laws and regulations.

- WBI Energy operations staff will monitor and treat noxious weeds as part of its normal operations and maintenance activities in accordance with state regulations.

3.6 ENDANGERED AND THREATENED SPECIES

In accordance with the FERC guidelines and for purposes of complying with the requirements of section 7(a)(2) of the ESA, WBI Energy has initiated consultation with the FWS regarding federally listed species that may occur or potentially be affected by construction and operation of the Project. WBI Energy has evaluated the potential for the proposed Project to affect federally listed and threatened and endangered species as well as candidate species and designated critical habitat (DCH) as discussed below. As part of the consultation process with the FWS, WBI Energy has prepared a Biological Assessment to assess potential Project impacts on endangered and threatened species and critical habitat based on completed field surveys (see appendix 3A [filed separately in Volume IV as Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV])]).

3.6.1 Federally Listed Species

Eight species either federally listed as threatened or endangered or identified as candidate species have the potential to occur within the Project area. DCH for the federally threatened piping plover was also identified within the Project area. The FWS has designated critical habitat for the DASK in North Dakota, South Dakota and Minnesota. North Dakota Critical Habitat Units 11 and 12, which are the closest critical habitat to the Project, are located in McKenzie County approximately 5 and 12 miles southeast of the HDD crossing on the south shoreline of Lake Sakakawea. As not impacts on DASK DCH will occur from the Project, it is not discussed in this section.

The species lists were compiled from a review of the FWS Information, Planning and Conservation (IPaC) System (FWS, 2019b) and agency consultations (see appendix 1G of Resource Report 1). Table 3.6.1-1 provides a summary of the federally listed species that potentially occur in the Project area.

3.6.1.1 Gray Wolf

The gray wolf (*Canis lupus*) is rare in North Dakota where it occasionally transits through the state from the neighboring states of Minnesota and Montana, or the province of Manitoba, Canada. This species occurs in a variety of habitats including mixed-hardwood forests, taiga, tundra, and grasslands where ungulate prey (e.g., elk and deer) are abundant and human disturbance is limited. In North Dakota, preferred habitat is in forested areas in the north central and northeastern part of the state with low densities of roads and people; however, they may appear anywhere (NDGFD, 2016d).

After briefly being de-listed, the gray wolf was returned to an endangered species status after a Federal Ruling in December 2014. Populations have significantly declined throughout the historic range due to shooting, trapping, and poisoning (FWS, 2013b; NDGFD, 2016d).

TABLE 3.6.1-1

North Bakken Expansion Project
Federally Listed Species in the Project Area

Species	Federal Status	Habitat Notes
Mammals		
Gray wolf (*Canis lupus*)	Endangered	Rare to uncommon in North Dakota. Occasional sightings. No known breeding population. Occupy wide variety of habitats where large ungulates (e.g., elk and deer) are found. Is known to cross into North Dakota from neighboring states and Manitoba, Canada.
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Rare in North Dakota. Primarily found in woodland habitats. A significant loss of individuals to white-nose syndrome in eastern and Midwestern United States and Canada have cause population concern throughout this species' range.
Birds		
Interior least tern (*Sterna antillarum)*	Endangered	Inhabits sparsely vegetated sandbars on the Missouri and Yellowstone Rivers.
Piping plover (*Charadrius melodus*)	Threatened (DCH)	Inhabits barren sand and gravel shores or rivers, prairie alkali wetlands, natural lakes with salt-encrusted, white beaches, and rangeland with mid- or short-grass prairie during the non-winter season.
Red knot (*Calidris canutus rufa*)	Threatened	Migrant species occurring in North Dakota during the spring and fall seasons (mid-May and mid-September to October). Utilize alkaline and freshwater lakes in North Dakota during migration. Red knots have been observed in the Missouri River system as well as sewage lagoons and large permanent freshwater wetlands.
Whooping crane (*Grus americana*)	Endangered	Migrant species occurring in North Dakota during the spring and fall seasons (April to mid-May and September to early November). Utilize wetlands, lakes, riverine areas, and a variety of cropland for roosting and foraging.
Insects		
Dakota skipper (*Hesperia dacotae*)	Threatened	Dependent on high-quality tall-grass and mixed-grass prairie. Habitat includes wet prairie dominated by bluestem grasses, wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*), and smooth camas (Zygadenus elegans); dry prairie on ridges and hillsides dominated by bluestem grasses, green needlegrass, pale purple coneflower (*Echinacea* spp.), upright coneflower (*Ratibida columnaris*), and blanketflower (*Gaillaridia aristata*).
Fish		
Pallid sturgeon (*Scaphirhynchus albus*)	Endangered	Utilizes main channel areas with island or sandbars present within the upper Missouri River. Dams have substantially fragmented the pallid sturgeon's range in the upper Missouri River basin.

Sources: NDGFD, 2015b, 2016c, 2016d

3.6.1.2 Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) ranges across the eastern and north central United States, and all Canadian provinces west to the southern Yukon Territory and eastern British Columbia (78 FR 61046). NLEBs are considered common in only small portions of the western part of its range (i.e., Black Hills of South Dakota) and uncommon or rare in the western extremes of the range (78 FR 61046). NLEBs spend winter months hibernating in crevices or cracks of caves and mines. Summer months are spent roosting underneath bark, in cavities or crevices of live and dead trees. There are no known hibernacula within North Dakota;

however, there has been limited survey effort in the state (78 FR 61046). Estimated NLEB hibernation season in North Dakota is from October 1 through May 15 (FWS, 2014a).

The NLEB is a threatened species under the ESA. The species is very susceptible to white-nose syndrome, which has led to significant losses and caused a population concern range wide. Other sources of mortality for the NLEB include impacts on winter hibernation areas, loss or degradation of summer habitats, and wind farm operations (FWS, 2015a; NDGFD, 2016d).

3.6.1.3 Interior Least Tern

Interior least terns (*Sterna antillarum athalassos*) inhabit sparsely vegetated sandbars or shoreline salt flats of lakes along the Missouri River System for breeding purposes. Interior least terns are present in North Dakota from mid-May through August, with peak breeding season ending in mid-July (FWS, 2013a and 2019c). In McKenzie and Williams Counties, known breeding areas for the interior least tern occur on sandbars of the Missouri and Yellowstone Rivers (FWS, 2018a). In North Dakota, the interior least tern is found mainly on the Garrison reach of the Missouri River from the Garrison Dam south to Lake Oahe (southeast of the Project), and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (west of the Project). Available shoreline habitat can fluctuate depending on water levels in the reservoir, and releases from Garrison Dam are regulated during the nesting season to accommodate nesting terns (COE, 2018a).

The COE has monitored the interior least tern at Lake Sakakawea since at least 1993. Their data (years 1993 to 2018) show several observations of non-nesting birds within the Project area, the closest about 0.2 mile from one of the geotechnical bore locations, and nesting pairs documented near Tobacco Garden Bay located about 1 mile west of the HDD crossing on the south side of Lake Sakakawea (COE, 2018b).

The interior population of least tern is listed as an endangered species under the ESA. The U.S. population of the interior least tern was proposed for delisting on October 23, 2019, with a final determination to be made by the FWS within 1 year (FWS, 2018a). If delisted, the interior least tern would maintain protection under the Migratory Bird Treaty Act, but would no longer receive protection under the ESA. The population has declined due to loss of habitat from dam construction and river channelization on the major rivers they inhabit. Other factors inhibiting interior least tern populations include human disturbance and changes in water temperatures that may affect the quantity of forage fish available (FWS, 2013a; NDGFD, 2016d).

3.6.1.4 Piping Plover

Piping plovers (*Charadrius melodus*) of the Northern Great Plains breed along barren sand and gravel shores of prairie rivers and alkali wetlands (FWS, 2003, 2018b). North Dakota is the most important state within the Great Plains region for nesting piping plovers (FWS, 2018b. In North Dakota, the majority of piping plovers nest on prairie alkali lakes, while others select the free-flowing stretch of the Missouri River (FWS, 2018b. Piping plovers also use barren river sandbars typically along the Missouri and Yellowstone Rivers (FWS, 2018b). In North Dakota, piping plovers arrive in early to mid-April and remain until the end of August.

The COE has also been monitoring the piping plover at Lake Sakakawea since at least 1993. Their data (years 1993 to 2018) show occurrences of nesting plovers near the Project area

on the north shoreline of the proposed Tioga-Elkhorn Creek pipeline crossing at Lake Sakakawea and about 0.1 mile west of the south shoreline crossing (COE, 2018b).

The piping plover is a threatened species under the ESA. The recent decline in the Northern Great Plains piping plover population is attributed to the destruction of vegetated sandbars and river islands for flood control and navigation, water level regulation policies that endanger nesting habitat, direct disturbance by people, and poor breeding success, primarily because of an increase in predator abundance (FWS, 2018b).

Nineteen areas of critical habitat for the Northern Great Plains population of the piping plover have been designated by the FWS (67 FR 57638), totaling about 183,422 acres in Minnesota, Montana, Nebraska, North Dakota, and South Dakota. Within the Project area the entirety of Lake Sakakawea is designated piping plover critical habitat. The habitat features present at Lake Sakakawea that are essential to the conservation of the species include islands composed of sand, gravel, or shale, and the islands interface with water, sparsely vegetated shorelines, and peninsulas.

3.6.1.5 Rufa Red Knot

In North America, rufa red knots (*Calidris canutus rufa*) are commonly found in marine habitats and coastal areas along sandy, gravel, or cobble beaches, tidal mudflats, salt marshes, shallow coastal impoundments and lagoons, and peat banks (FWS, 2014b). Rufa red knots have been documented along the Northern Plains during their spring migration (FWS, 2014b) and they have been tracked along the central flyway with geolocators. The rufa red knot is considered a rare migrant in North Dakota, but may pass through in mid-May and mid-September to October during spring and fall migrations. There is a lack of information on the specific noncoastal habitats used by rufa red knots (FWS, 2014b); however, given their specialized molluscivore diet, it can be assumed they would use shallow wetlands, lake margins, and riverine habitats within North Dakota for foraging and/or roosting areas.

The rufa red knot is a threatened species under the ESA. Rufa red knot populations have declined due to degradation of wetland areas, reduced food availability, expanding oil and gas development that overlaps migration ranges, and contamination to alkali lakes and the Missouri River system (FWS, 2014b; NDGFD, 2016d).

3.6.1.6 Whooping Crane

The whooping crane (*Grus americana*) utilizes a variety of habitats along their migration route, including croplands, freshwater wetlands with shallow areas, and submerged sandbars in wide, unobstructed river channels isolated from human disturbance (Austin and Richert, 2005; Urbanek and Lewis, 2015). The Aransas-Wood Buffalo population of the whooping crane migrates in the spring and fall through the central portion of North Dakota. Spring migration occurs from late April to mid-June, with most sightings occurring in the western two-thirds of the state. During migration, preferred stopover sites include large shallow marshes with minimal to no emergent zones for roosting, and nearby upland cropland and pastures for foraging. Fall migration normally begins in mid-September, with most birds arriving at the Texas wintering grounds between late October and mid-November.

The whooping crane is listed as endangered under the ESA; only about 430 individuals remain in the Aransas-Wood Buffalo population (International Crane Foundation, 2018). Current

threats to whooping cranes include loss or deterioration of critical wetland habitat, low genetic diversity, utility line collisions, predation, disease, disturbance at nest sites, and illegal shooting (International Crane Foundation, 2018; Meine et al., 1996). Whooping crane populations have primarily declined due to loss of habitat and illegal shooting. The Aransas/Wood Buffalo whooping crane population has a restricted wintering distribution along the Gulf Intracoastal Waterway of Texas where the risk of contaminant spills is high based on the amount of barge traffic (Urbanek and Lewis, 2015). The status of the species in the wild is precarious because the birds concentrate during the winter, which makes the birds more vulnerable to contaminant spills. Delayed sexual maturity, small clutch sizes, and low recruitment rates have also affected recovery efforts.

3.6.1.7 Dakota Skipper

Historically, the DASK (*Hesperia dacotae*) were distributed throughout tallgrass prairie habitats of Illinois, Iowa, Minnesota, South Dakota, North Dakota, Manitoba, and Saskatchewan (Vaughan and Shepherd, 2005). Within the United States, DASK have been extirpated from Illinois and Iowa, and are now only present in scattered isolated sites in western Minnesota, northeastern South Dakota, and the northern half of North Dakota (FWS, 2016). There are three known sites in McKenzie County, North Dakota (FWS, 2016), and two sites in northern McKenzie County that have been DCH (80 FR 59248).

DASK inhabit two types of prairie habitat; low wet-mesic prairie with little topographic relief that occurs on near-shore glacial lake deposits (Type A) and dry-mesic mixed-grass prairie dominated by mixed bluestem and green needlegrasses occurring primarily on rolling terrain over gravelly glacial moraine deposits (Type B) (FWS, 2016). Both habitat types contain an abundance of flowering plants and alkaline soils (Vaughan and Shepherd, 2005). In dry mixed-grass prairie, DASK can be found along ridges and hillsides (Cochrane and Delphey, 2002).

DASK complete one generation per year (Cochrane and Delphey, 2002). The larvae overwinter at or below ground level. During the spring, the larvae emerge to complete their development. The larvae eventually pupate in June (Vaughan and Shepherd, 2005). Adults generally emerge in mid-June to early July, and mate during a 2- to 4-week flight period (Cochrane and Delphey, 2002; Vaughan and Shepherd, 2005). Females lay eggs on a range of broadleaf plants and grasses (Vaughan and Shepherd, 2005), which hatch after incubating for 7 to 20 days (Cochrane and Delphey, 2002). Little bluestem is often selected for both egg laying and as a food source for larvae (Vaughan and Shepherd, 2005). Nectar sources for adults vary regionally and include purple coneflower (*Echinacea* sp.), blanketflowers (*Gaillardia* sp.), black-eyed Susans (*Rudbeckia* sp.), and evening primrose (*Calypphus serrulatus*) (Cochrane and Delphey, 2002; Vaughan and Shepherd, 2005).

3.6.1.8 Pallid Sturgeon

The pallid sturgeon (*Scaphirhynchus albus*) is a prehistoric fish that can weigh up to 80 pounds, reach 6 feet in length, and live up to 60 years. Habitat for the pallid sturgeon includes large rivers with high turbidity, swift currents, and natural flow. Their preferred habitat has a diversity of depths and velocities formed by braided channels, islands, and mid-channel sandbars. Their habitat is fragmented by dams on the Missouri River; only scarce populations remain in the upper Missouri River above Fort Peck Reservoir, in the Missouri and lower Yellowstone Rivers. While pallid sturgeon have been documented in Lake Sakakawea upstream of the proposed

Tioga-Elkhorn Creek pipeline crossing, reservoirs are not considered to be suitable pallid sturgeon habitat due to the alteration of natural flow regimes (FWS, 2019d; Guy et al., 2015).

Factors contributing to their decline include habitat loss due to construction of dams, channelization of rivers, commercial fishing, and environmental contaminants (FWS, 2015b). Additionally, hybridization with the more common shovelnose sturgeon poses a threat to species stability (Tranah et al., 2004).

3.6.2 Construction and Operation Impacts and Mitigation

Effects on listed species will be reduced by returning the right-of-way as near as practicable to preconstruction condition in accordance with the FERC Plan and Procedures. WBI Energy is consulting with the FWS regarding potential impacts on listed species and will provide updates and relevant documentation to FERC when available.

3.6.2.1 Gray Wolf

The gray wolf is considered to be extirpated from North Dakota; however, there have been documented occurrences in the state during the 1900s. Gray wolf presence in North Dakota is considered incidental as a result of occasional dispersal from Minnesota or Manitoba. The most suitable wolf habitat in North Dakota exists in the north central and northeast portions of the state (FWS, 2013b). Human disturbance and activity along the Project route may prevent wolves from occupying the area during construction, except for the low potential for a transient to pass through. However, there is ample similar habitat outside of the Project area, and once construction is complete, the disturbed habitat will be restored to preconstruction conditions. Therefore, WBI Energy has determined that the Project will have no effect on gray wolves.

3.6.2.2 Northern Long-eared Bat

The Project site is within the probable range of NLEB; however, no documented hibernacula for the species are present in the Project area (NDGFD, 2016d). Direct effects could occur if roosting trees being actively used by NLEB were removed by construction activities during summer use (March through September). Construction of the Project is anticipated to occur from spring to late fall of 2021, which overlaps the active and breeding season of the NLEB. Although bats could potentially roost in small patches of trees, windrows, or shelterbelts, there are no large forested habitats in the vicinity of the proposed Project. In addition, there are no known caves or bat hibernacula within 50 miles of the proposed Project; therefore, the Project is not anticipated to have any direct impacts on NLEB.

Indirect effects could occur if construction activities were to displace roosting or foraging bats from nearby habitat due to the increase in noise and human activity in the area. Bats will likely move to surrounding undeveloped treed areas in the areas surrounding the Project and any indirect impacts are expected be insignificant. NLEB habitat is limited within the Project area, there are no documented occurrences of the species in the Project area, and the Project does not cross any forested areas where NLEB more commonly roost. WBI Energy completed a FWS IPaC submission for the Project and, based on that submission, the FWS determined the activities related to the Project are consistent with those analyzed in the agency's January 5, 2016, Programmatic Biological Opinion (FWS, 2019e; also see appendix 3A). Therefore, given the small amount of tree clearing that will occur, and the lack of documented occurrences of NLEB in the Project area, the Project may affect, but is not likely to adversely affect the northern long-

eared bat. As noted in the January 5, 2016 Programmatic Biological Opinion, any take that may occur as a result of the Project is not prohibited under the ESA section 4(d) rule adopted for this species at 50 CFR 17.40(o).

3.6.2.3 Interior Least Tern

Nesting and foraging habitat for interior least terns is present on Lake Sakakawea. However, WBI Energy proposes to cross Lake Sakakawea via the HDD method, which will minimize impacts on shoreline and open water foraging habitat. Project activity occurring within 0.5 mile of an active nest has the potential to adversely affect nesting terns. Pipeline construction is currently planned to begin in May of 2021. Prior to the start of HDD construction activities at Lake Sakakawea, surveys will be conducted by a trained biologist to ensure that no nesting is occurring within 0.5 mile of the proposed construction activities to minimize potential impacts on interior least terns. These surveys will occur on suitable nesting habitat within 0.5 mile of the proposed HDD entry sites. Therefore, WBI Energy has determined that the Project may affect, but is not likely to adversely affect the interior least tern.

3.6.2.4 Piping Plover

Piping plovers arrive in the Project area in April for mating and nesting and migrate south in August. Because construction of the Project is anticipated to occur from spring to late fall of 2021, which will overlap the end of the piping plover breeding and nesting season, it is possible that nesting birds will be present during construction. Activity occurring within 0.5 mile of an active nest has the potential to adversely affect nesting piping plovers. Therefore, noise, visual, and physical disturbances from Project activity may affect essential mating, nesting, and foraging behaviors of piping plovers at Lake Sakakawea. Pipeline construction is currently planned to begin in May of 2021. Prior to the start of HDD construction activities at Lake Sakakawea, surveys will be conducted by a qualified biologist to ensure that no nesting is occurring within 0.5 mile of the proposed construction activities to minimize potential impacts on piping plovers. These surveys will occur on suitable nesting habitat within 0.5 mile of the proposed HDD entry sites. Therefore, WBI Energy has determined that the Project may affect, but is not likely to adversely affect the piping plover.

3.6.2.5 Rufa Red Knot

The rufa red knot is considered a rare migrant in North Dakota, but may pass through the state in mid-May and mid-September to October during spring and fall migrations. There are no stopover sites in North Dakota that are consistently used by rufa red knots (FWS, 2014b); however, there is potential for them to be present in the Project vicinity during migration. Because of the rare incidence of the species and the probability that they will avoid areas of active construction during migration due to noise disturbance, WBI Energy has determined that the Project will have no effect on the rufa red knot.

3.6.2.6 Whooping Crane

Given the abundance of both wetlands and croplands in the Project vicinity, WBI Energy expects that migrant cranes will be able to find suitable feeding and roosting areas away from the Project during the temporary disturbance from construction and post-construction restoration. Project EIs will be trained in whooping crane identification prior to the start of construction. In the event that individual cranes are observed along the Project right-of-way during construction, they

will be left undisturbed and construction within 1 mile of the cranes will cease until they vacate the area, at which time construction activities will resume.

Whooping cranes that may occur along the pipeline routes or in the Project vicinity would be individual migrants preparing to fly south only, and the likelihood of occurrence of those individuals is reduced with the proposed spring to late fall 2021 construction schedule. Following restoration, the right-of-way will be returned to preconstruction condition in open lands. Therefore, WBI Energy has determined that the Project may affect, but is not likely to adversely affect the whooping crane or its habitat with the implementation of the proposed mitigation measures.

3.6.2.7 Dakota Skipper

The Project area is within DASK range and habitat; however, the Project has been designed to avoid and minimize impacts on the species to the greatest extent practicable. While DASK are not specifically known to occur within the Project area, they may be present within the reproductive and dispersal habitats located adjacent to the construction workspace.

Based on the results of DASK habitat surveys, the Project has undergone some route changes to minimize and/or avoid impacts on DASK habitat. The FWS DCH for the DASK in North Dakota, South Dakota, and Minnesota (80 FR 59248). North Dakota Critical Habitat Units 11 and 12, which are the closest critical habitat to the Project area, are located in McKenzie County approximately 5 and 12 miles southeast of the HDD crossing on the south shoreline of Lake Sakakawea. Due to the distance between the Project and the DCHs, the Project is not anticipated to have an effect on DASK critical habitat. Areas identified as potential reproductive habitat that are adjacent to or within the Project will be excluded from the Project area during construction using a combination of HDD and/or guided bore crossing methods and installation of orange construction exclusion fencing and/or silt fencing to demarcate avoidance areas. Implementation of these measures will prevent construction equipment and temporarily stockpiled soil from encroaching into the habitat. Areas identified as potential foraging habitat that are adjacent to or within the Project area will be excluded from construction activities using a combination of orange construction exclusion fencing and/or silt fencing to demarcate avoidance areas during the DASK annual flight period. DASK flight periods vary annually; however, the FWS confirmed that construction activities should be restricted in DASK foraging and reproductive habitat areas from June 10 through July 15 (FWS, 2020).

After soil is cleared in grassland areas, revegetation efforts will focus on establishing a native grass and forb plant community that provides foraging opportunities for the DASK and reducing habitat fragmentation along the Project alignment. Because noxious weeds and invasive plants can outcompete native forbs that are food sources for DASK (FWS, 2017), WBI Energy will implement weed control measures to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area (see section 3.5.4 for more information).

The Project will involve disturbances related to the physical presence of people, development activities, and moving vehicles and equipment within the Project area, which may be visually or physically disruptive to DASK. There is no evidence suggesting that acoustics from the construction and operation of the Project will elicit a disruptive (positive or negative) behavioral response or injurious physiological impairment to adults or larvae of the species (FWS, 2017). Human presence is expected to have no effect to the egg or larval stages, but adult DASK could be consistently disturbed during the adult flight period. The disturbance could cause individuals to move from resting/nectaring locations or alter the flight paths of adults. Adult DASK are

generally believed to avoid areas of active disturbance (FWS, 2017); however, they can traverse areas of disturbance or be driven by wind into disturbed areas. To reduce the likelihood of disrupting adult DASK during the flight period, clearing and grading activities will occur outside the flight period, the exact dates of which will be determined in coordination with the FWS. With implementation of the above mitigation measures, WBI Energy has determined the Project may affect, but is not likely to adversely affect DASK.

3.6.2.8 Pallid Sturgeon

In North Dakota, pallid sturgeon occur primarily in the Missouri and Yellowstone Rivers, but occasionally enter Lake Sakakawea. Potential impacts on pallid sturgeon will be reduced by use of the HDD method to cross Lake Sakakawea. However, the HDD method presents the potential for an inadvertent release of drilling mud during construction. WBI Energy will implement the measures in its SPCC Plan and Horizontal Directional Drill/Guided Bore Drilling Fluid Monitoring and Operations Plan to minimize impacts on water quality in Lake Sakakawea. Copies of WBI Energy's construction, restoration, and mitigation plans are provided in appendix 1F of Resource Report 1. Sedimentation of connected waterbodies could also affect water quality in Lake Sakakawea. WBI Energy will implement best management practices during construction and operation of the Project to minimize migration of sediment or fluids to waterbodies, including the use of appropriate erosion control devices. With implementation of the mitigation measures described above and because the nearest pallid sturgeon habitat is about 66 miles upstream from the Project area, WBI Energy has determined the Project may affect, but is not likely to adversely affect pallid sturgeon.

3.6.3 State Species of Concern

While North Dakota does not have a state endangered species program, it does track data regarding species identified as species of concern and other significant ecological communities.

Field surveys conducted by WBI Energy reported observations of short-eared owl *(Asio flammeus)* and Hooker's townsendia in the Project area. USFS sensitive species, including Hooker's townsendia, are addressed in the Biological Evaluation (appendix 3B) prepared for the USFS. Impacts on species of concern will be avoided or minimized through implementation of measures in the FERC Plan and Procedures. These measures are designed to decrease potential for erosion, restore preconstruction contours, increase the potential for successful revegetation of the right-of-way, minimize impacts on native grassland habitat, and prevent or control the spread of noxious weeds. Given the nature of the habitats crossed and the measures that will be implemented as part of the Project, impacts on state species of concern will be minimal.

3.7 CUMULATIVE IMPACTS

Section 1.10 of Resource Report 1 defines a cumulative impact and describes the general scope of the cumulative impact analysis. This section describes the potential cumulative impacts on fish, wildlife, and vegetation from the Project combined with the past, present, and reasonably foreseeable future actions (RFFA) identified in appendix 1J and figure 1.10-1 of Resource Report 1. The location, proposed schedule, and a description of each RFFA are provided in appendix 1J.

Consideration of impacts within a hydrologic unit code (HUC)-12 sub-watershed accounts for impacts on vegetation and wildlife that will be directly affected by construction activities and for indirect impacts such as changes in habitat availability and displacement of transient species. The temporal scope for these resources includes construction through restoration of the Project. Additionally, impacts on vegetation within the permanent right-of-way will occur throughout operation.

3.7.1.1 Fish

For perennial waterbodies or those with flow at the time of construction, temporary impacts on wetlands and waterbodies associated with construction of the proposed Project may include increased sedimentation and turbidity, temperature changes due to removal of vegetation cover over streams, introduction of water pollutants, or entrainment of fish. Impacts on fisheries and other aquatic life are expected to be minor, localized, and limited to the construction period.

The following RFFAs fall within the Project's geographic and temporal scope for fisheries.

- Several pipeline transmission projects that intersect the proposed Project could result in impacts on fish. These include the Bakken Pipeline and the Cenex pipeline projects. Limited information is available regarding these projects' potential impacts on fish; however, it is assumed that the impacts would be similar to those described above for the proposed Project.

- To minimize impacts on fish habitat in Spring Creek associated with the North Dakota Department of Transportation's expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass, construction will occur outside of the fish spawning period (April 15 to June 1) (North Dakota Department of Transportation, 2019).

- Impacts on state species of concern from the Aurora Wind Project could include degradation of aquatic habitat due to spills or sediment loading. Coordination with the FWS is ongoing regarding potential mitigation measures.

Due to the proposed timing for construction of the projects listed above, it is unlikely that construction impacts will occur simultaneous with construction of the Project; however, restoration activities for the RFFAs could be ongoing during Project construction. WBI Energy will implement the proposed mitigation measures described in section 3.1.3 to minimize impacts of the proposed Project on fish. It is anticipated that the RFFAs listed above would also implement similar measures. As a result, significant cumulative impacts on fish are not expected.

3.7.1.2 Wildlife

Construction and operation of the Project may result in short-term impacts on wildlife species and their habitat along the proposed pipeline routes and long-term impacts at aboveground facility sites. Until vegetation has become re-established, construction activities will temporarily reduce feeding, nesting, and cover options for wildlife and migratory birds in the immediate Project area. Additionally, wildlife and migratory birds could be temporarily displaced due to construction noise and increased human activity.

The following RFFAs fall within the Project's geographic and temporal scope for wildlife.

- Construction of the Aurora Wind electric transmission lines will temporarily affect potential habitat for ground-dwelling mammals and could potentially result in direct mortality or injury from collisions with construction equipment. Operation of the transmission line may increase the potential for bird or bat strikes with transmission line structures, conductors, or associated infrastructure. Aurora Wind will develop a Bird and Bat Conservation Strategy that will propose specific mitigation measures to minimize potential impacts on birds and bats. Anticipated impacts from a third project, the Montana-Dakota Utilities Transmission Line, are not currently available but could be similar to those described for the two electric transmission lines depending on the wildlife habitat present in the project area.

- The Aurora Wind Project will affect potential habitat for ground-dwelling mammals and avian species and will increase the potential for bird and bat strikes with turbine rotors. The project has been sited primarily within tilled and agricultural land to avoid impacts on habitat. Existing access roads will be used to the extent practical. Turbines and access roads have been sited to avoid wooded draws and shelterbelts and minimal tree removal is expected. Tree impacts will be mitigated on a 2:1 basis, as approved by the landowner and consistent with the North Dakota Public Service Commission's specifications. All collector lines will be buried to avoid potential for bird strikes. Temporarily disturbed areas will be revegetated, as appropriate, with vegetation consistent with the surrounding vegetation types. A bird and bat conservation plan will be prepared prior to operation. Coordination with the FWS is ongoing regarding potential mitigation measures for the project.

- The Cenex pipeline would result in short-term, adverse impacts on mammals during construction as well as long-term impacts on avian species due to wetland loss.

- Little information is publically available regarding the potential impacts of the Western Area Water Supply Project (WAWSP) and the 12-inch-diameter water transmission lines proposed to furnish water to "The Crossings at Watford City." It is possible that these projects could have similar impacts on wildlife as the proposed pipeline projects described above.

- Operation of roadways such as the proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass can result in habitat loss, degradation, and fragmentation; barriers to wildlife movement; and mortality from wildlife-vehicle collisions. To offset project impacts on wildlife mobility and habitat connectivity, three wildlife crossings (i.e., structures along roadways that provide wildlife habitat connections) have been incorporated into the project design. Proposed construction and operation activities would have the potential to contribute sound and visual stimuli at levels that could result in the temporary avoidance of habitat and behavioral effects (North Dakota Department of Transportation, 2019).

- Construction and operation of the Gunslinger Federal and Gladstone oil and gas well pads would not impact species or their habitat in such a way that would affect the long-term viability or continued existence of the species. No migratory birds or resident wildlife species in the area would be impacted in such a way that would

cause their populations to be listed or adversely affected. The project has been designed to minimize the acreage of disturbance to native habitat by having multi-well pads versus single-well pads and reduce habitat fragmentation by siting project features along existing roads and within previously disturbed areas. Approximately 40 acres of undisturbed habitat (e.g., grasslands, shrublands, wetlands, woodlands) would be affected during construction. Construction and operation of well pads and access roads would result in localized temporary disturbances as well as permanent conversion of potentially suitable habitat. Short-term, indirect impacts on wildlife, including noise and visual disturbances are anticipated. Some species of wildlife would relocate to adjacent habitat, while others would be temporarily displaced during construction and drilling operations.

The proposed utility line associated with the Gunslinger Federal and Gladstone project is collocated or overlapping with the proposed Project along Highway 1806 for approximately 0.7 mile between mileposts (MP) 28.2 and 28.9 and for a 0.2-mile section between MPs 27.6 and 27.3 of the Tioga-Elkhorn Creek pipeline. While the schedule for the Gunslinger Federal and Gladstone Project is unknown, it is unlikely that construction of the utility corridor would occur simultaneous to construction of the collocated or overlapping segments of the proposed project. Cumulative impacts will occur if construction of the Gunslinger Federal and Gladstone project occurs during or after construction of the Tioga-Elkhorn Creek pipeline, and prior to final restoration of wildlife habitat. The time during which impacts on wildlife habitat would occur in this area would be extended; however, due to the temporary and localized nature of impacts of these two utility corridors, significant cumulative impacts are not expected.

Additionally, there is potential for cumulative habitat loss within the Tioga Dam HUC-12 watershed resulting from temporary right-of-way clearing combined with permanent impacts from transmission structures, the Aurora Wind Project, and road projects. Impacts from construction of the proposed Project right-of-way within the Tioga Dam HUC 12 watershed would be limited to 0.6 acre of herbaceous land cover and 2.9 acres of agricultural lands. For the remainder of the projects listed above, it is unlikely that habitat disturbance would occur simultaneously with the proposed Project; however, restoration activities could be ongoing at the time of Project construction. With implementation of the mitigation measures described in sections 3.2.3 and 3.3.1, significant cumulative impacts on wildlife are not expected.

3.7.1.3 Vegetation

Construction and operation of the Project may result in short- and long-term impacts on vegetation associated with clearing and grading of the temporary right-of-way and routine clearing of permanent right-of-ways throughout operation. In the permanent right-of-way, a 10-foot-wide area over the pipelines may be maintained in an herbaceous state to facilitate pipeline inspection. Vegetation maintenance activities on the rest of the permanent right-of-way will be conducted no more than every 3 years. The remaining temporary workspace along the construction right-of-way and any ATWS areas will be allowed to revert to preconstruction conditions.

The following RFFAs fall within the Project's geographic and temporal scope for vegetation.

- Several electric transmission lines could result in temporary impacts on vegetation within the construction corridor and minor permanent impacts associated with

monopoles and guy wires. These include the Montana-Dakota Utilities Transmission Line and the Aurora Wind Electric transmission line. Following construction of the Aurora Wind electric transmission line, temporarily disturbed areas will be reclaimed with vegetation consistent with the surrounding vegetation types and in accordance with NRCS recommendations, unless otherwise specified by and approved by the landowner and jurisdictional agency. Seed mixtures will be free of noxious weeds.

- Areas that have been temporarily disturbed during construction of the Aurora Wind Project will be reclaimed following construction. Revegetation will be consistent with the surrounding vegetation types and in accordance with NRCS recommendations, unless otherwise specified by the landowner and approved by the jurisdictional agency. Seed mixtures will be free of noxious weeds.

- Arrow Bear Den Gas Processing Plant II comprises 51 acres of land currently classified as herbaceous upland/rangeland and cropland. A weed management plan for the Project will be required as part of the county's Conditional Use Permit.

- Future oil and gas exploration and development of a lease parcel could result in removal of vegetation and soil compaction. The magnitude of these impacts would depend largely on the specific activity. For new exploratory and development gas wells, the U.S. Bureau of Land Management estimates that each well pad could result in approximately 1.1 acres (0.6 acre for access roads and 0.5 acre for the well pad) of short-term surface disturbance. For new producing gas wells, each well pad could result in approximately 0.6 acre (0.3 acre for access roads and 0.3 acre for the well pad) of long-term surface disturbance.

- Construction and operation of the proposed Gunslinger Federal and Gladstone oil and gas well pads would disturb approximately 50.4 acres on USFS lands within the LMNG, of which approximately 9.7 acres would be within previously disturbed areas (developed and cultivated lands) and 40.7 acres would be within undisturbed areas (grassland, shrubland, wetlands, or woodlands land use classes). Interim reclamation of the road ditches and edges of the well pads would occur after drilling and completion of the wells (i.e., within a one-year timeframe); however, well pads would affect vegetation until final reclamation (20 to 40 years). Grading and permanent modification within areas of gravel fill (e.g., well pads and access road running surfaces) may result in temporary modification of potential suitable habitat or undiscovered individuals for 5 of the 14 LMNG-listed sensitive plant species including blue lips, Missouri foxtail cactus, sand lily, Easter daisy, and Hooker's townsendia. Minimizing soil and vegetation disturbance during construction to the maximum extent practicable reduces impacts on potential habitat for these species. Disturbance of vegetation in areas of noxious weed infestations may result in redistribution of invasive species to the Project area through equipment and vehicle use. Applicable Grassland-wide Standards and Guidelines would be applied to all resources potentially affected by the project. Mitigation measures include minimizing areas and widths of disturbance, cleaning vehicles and equipment to remove seeds and plant propagules prior to entering USFS lands, and controlling noxious weeds according to the 2007 *Noxious Weeds Management Environmental Impact Statement* (USFS, 2007). During construction, indirect

impacts would be expected from a temporary increase in fugitive dust. Fugitive dust impacts would be greatest during initial site-preparation and would vary from day to day, depending on the construction phase, level of activity, and prevailing weather conditions. Operators may reduce airborne dust during construction by using water on existing gravel roads in the Project area during dry periods; materials other than water would require approval from the USFS.

- Several pipeline transmission projects could result in impacts on vegetation. Construction of the Bakken Pipeline and the Cenex pipeline projects will require clearing and grading of the temporary right-of-way. Mitigation measures will includes cleaning of vehicles and equipment, topsoil segregation and revegetation of disturbed non-agricultural upland areas. Vegetation along the pipeline rights-of-way may be cleared periodically.

- Water transmission projects include the WAWSP, a proposed water transmission line in Watford City. These projects will likely temporarily affect roadside vegetation.

- Two road construction projects fall within the geographic scope for vegetation impacts. The proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass will permanently convert vegetated areas into a transportation corridor, and construction activities would have the potential to spread or introduce noxious weeds. Upon completion of construction activities, vehicles travelling along US Highway 85 would have the potential to spread or introduce noxious weeds along the project corridor. Disturbed, non-roadway areas will be re-seeded and a noxious weed management plan will be implemented during construction. The project would have no impact on ESA-listed plant species, as no such resources occur within the project corridor. With prompt reseeding throughout the corridor and cleaning of equipment prior to entering COE lands, the North Dakota Department of Transportation road improvements from Red Mike Area to County Road 42 are unlikely to introduce new or additional noxious weeds.

- Additionally, existing vegetation is likely to be permanently removed within the footprints of several proposed residential developments in Tioga and Watford City, as well as a new elementary school in Watford City.

WBI Energy will implement the mitigation measures described in section 3.5.3 to minimize impacts on vegetation during construction and operation of the Project. Timely restoration of the construction right-of-way, reseeding with the appropriate seed mixes, and the use of effective erosion control measures will minimize vegetation disturbance. The utility line associated with the Gunslinger Federal and Gladstone project will be collocated or overlapping with the proposed Project along Highway 1806 at two locations (see section 3.7.1.2). While the schedule for the Gunslinger Federal and Gladstone project is unknown, it is unlikely that construction of the utility corridor would occur simultaneous to construction of the collocated or overlapping segments of the proposed project. Cumulative impacts will occur if construction of the Gunslinger Federal and Gladstone project occurs during or after construction of the Tioga-Elkhorn Creek pipeline, and prior to final restoration. The time during which impacts on vegetation would occur in this area would be extended; however, due to the temporary and localized nature of impacts of these two

utility corridors, significant cumulative impacts on vegetation are not expected. Due to the proposed timing for construction of the remainder of the projects listed above, it is unlikely that vegetation disturbance would occur simultaneously with the proposed Project; however, restoration may be ongoing. Permanent impacts on vegetation from routine clearing within the permanent right-of-way and aboveground facilities are expected to be localized within the permanent project footprint and significant cumulative impacts on vegetation are not expected.

3.7.1.4 Threatened and Endangered Species

As described in section 3.6.1, the Project may affect, but is not likely to adversely affect NLEB, interior least terns, piping plovers, whooping cranes, DASK, pallid sturgeon, or their habitat. Because the Project will have no effect on the gray wolf and rufa red knot, potential cumulative impacts on these species are not further evaluated. Mitigation measures that WBI Energy would implement to avoid or minimize potential impacts on federally threatened and endangered species and state species of concern are described in section 3.6.1. *[Note: WBI Energy is in the process of consulting with the FWS regarding listed species and will file the FWS response with FERC upon receipt.]*

Two electric transmission line projects (the Montana-Dakota Utilities Transmission Line and the Aurora Wind Electric transmission line), the Aurora Wind Project, several pipeline projects (the Bakken Pipeline Project, the Watford City water transmission line, and the WAWSP), and two road construction projects (the Route 9 reconstruction and the U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass) fall within the Project's geographic and temporal scope for threatened and endangered species. Anticipated impacts on threatened and endangered species associated with the Montana-Dakota Utilities Transmission Line, the Watford City water transmission line, and the WAWSP are not currently available and would be dependent on whether the projects are sited within threatened and endangered species habitat.

The Aurora Wind Electric transmission line could potentially affect wetlands or waterbodies visited by piping plovers, is located within the whooping crane migration corridor, and is sited within potentially suitable habitat areas for the DASK. Although there is potential for piping plovers to utilize wetlands and waterbodies near the project corridor, the potential for habitat loss is unlikely as impacts on wetlands would be expected to be minimal (Burns and McDonnell, 2018). Because the transmission line is within the whooping crane migration corridor, collision and mortality risk exists associated with overhead transmission lines. However, all transmission lines within 1 mile of modeled suitable whooping crane habitat will be marked with bird flight diverters per Avian Power Line Interaction Committee recommendations and FWS guidance. Construction activities will not occur within identified potentially suitable habitat areas during the DASK active flight period; any temporary impacts occurring outside of the DASK's brief flight period are unlikely to affect the species' population; and affected areas would be reseeded with the appropriate native seed mix. Therefore, it is anticipated that any cumulative impacts associated with the construction and operation of the proposed Project in conjunction with the Aurora Wind Electric transmission line will be minor and temporary.

The NLEB, the piping plover, and the whooping crane can occur within the proposed project area for the Aurora Wind Project. Coordination with the FWS is currently ongoing for the project. However, impacts on threatened and endangered species associated with this project could include habitat fragmentation and increased likelihood of bird strikes with the turbine rotors. Impacts on state species of concern could include habitat loss and fragmentation, direct mortality

or injury due to collisions with vehicles, equipment, and turbines, and degradation of aquatic habitat due to spills or sediment loading. The project has been sited primarily within tilled and agricultural land to avoid impacts on habitat; turbines and access roads have been sited to avoid wooded draws and shelterbelts; and minimal tree removal is expected. Tree impacts would be mitigated on a 2:1 basis, as approved by the landowner and consistent with the North Dakota Public Service Commission's specifications. All collector lines would be buried to avoid potential for bird strikes. Temporarily disturbed areas would be revegetated, as appropriate, with vegetation species consistent with the surrounding area. In addition, a bird and bat conservation plan would be prepared prior to operation. The geographic scope for cumulative impacts from the Aurora Wind Project includes the area within the Tioga Dam HUC-12 watershed. However, direct impacts from construction of the proposed Project's right-of-way within the Tioga Dam HUC-12 watershed would be limited to 0.6 acre of herbaceous land cover and 2.9 acres of agricultural lands. Additionally, suitable wetlands exist directly adjacent to the proposed right-of-way in this area. For these reasons and with implementation of the proposed Project's mitigation measures described in section 3.6.2, the proposed Project is not anticipated to have significant cumulative impacts on these species when considered in conjunction with Aurora Wind Project.

The Bakken Pipeline Project has the potential to affect DASK; however, it would avoid or bore under DASK habitat or restrict construction during the DASK flight period. Therefore, significant cumulative impacts on DASK associated with the proposed Project and the Bakken Pipeline Project are not anticipated.

The Route 9 reconstruction road project has the potential to affect federally listed endangered or threatened species or their critical habitat. However, the COE would initiate consultation with the FWS, pursuant to section 7 of the ESA, as appropriate. The proposed expansion of U.S. Highway 85 from the Interstate 94 interchange to the Watford City Bypass may affect, but is not likely to adversely affect DASK due to suitable habitat occurring adjacent to the project corridor. For these reasons, significant cumulative impacts associated with the construction of these road projects and the proposed Project are not anticipated.

With implementation of the mitigation measures described above and the federally required protections for these species, significant cumulative impacts on threatened and endangered species or state species of concern are not anticipated from construction and operation of the proposed Project and the known reasonably foreseeable future actions.

3.8 REFERENCES

All About Fishing. 2019. North Dakota Fishing. Available online at https://www.aa-fishing.com/nd/north-dakota-fishing.html. Accessed August 2019.

Amphibians and Reptiles of North Dakota. 2018. Available online at http://www.ndherpatlas.org/. Accessed August 2019.

Austin, J.E. and A.L. Richert. 2005. Patterns of Habitat Use by Whooping Cranes During Migration: Summary from 1977-1999 Site Evaluation Data. Available online at http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1008&context=usgsnpwrc. Accessed August 2019.

Bird Studies Canada and North American Bird Conservation Initiative. 2014. Bird Conservation Regions. Published by Bird Studies Canada on behalf of the North American Bird

Conservation Initiative. Available online at http://www.birdscanada.org/research/gislab/index.jsp?targetpg=bcr. Accessed August 2019.

Burns & McDonnell Engineering Company, Inc. 2018. Application to the North Dakota Public Service Commission for a Certificate of Corridor Compatibility and Route Permit for the Aurora Wind Project Transmission Line. September 2018. Accessed August 2019.

Cochrane, J.F. and P. Delphey. 2002. Status Assessment and Conservation Guidelines; Dakota Skipper Hesperia dacotae (Skinner) (Lepidoptera: Hesperiidae); Iowa, Minnesota, North Dakota, South Dakota, Manitoba, Saskatchewan. U.S. Fish and Wildlife Service, Twin Cities Field Office, MN. 80.

Cornell Lab of Ornithology. 2019. Birds of North America. Available online at https://birdsna.org/Species-Account/bna/home. Accessed August 2019.

Dubovsky, J.A., compiler. 2018. Central Flyway harvest and population survey data book. U.S. Fish and Wildlife Service, Denver Available online at https://www.fws.gov/migratorybirds/pdf/surveys-and-data/DataBooks/CentralFlywayDatabook.pdf.

Efloras. No date. Flora of North America. Available online at http://www.efloras.org/flora_page.aspx?flora_id=1. Accessed October 2019

Guy, C., H. Treanor, K. Kappenman, E. Scholl, J. Ilgen, M. Webb. 2015. Broadening the regulated-river management paradigm: a case study of the forgotten dead zone hindering pallid sturgeon recovery. Fisheries 40(1): 6 – 14. Available online at https://doi.org/10.1080/03632415.2014.987236. Accessed October 2019.

International Crane Foundation. 2018. Whooping Crane (*Grus americana*). Available online at https://www.savingcranes.org/species-field-guide/whooping-crane/. Accessed August 2019.

Kotchman, L.A. 2010. Statewide Assessment of Forest Resources and Forest Resource Strategy. North Dakota Forest Service. Available online at https://www.ag.ndsu.edu/ndfs/documents/nd-state-assess-and-strat-final-doc.pdf. Accessed August 2019.

LeBoldus, J.M, A. Bergdahl, J. Knodel, and J. Zeleznik. 2013. North Dakota State University Extension Service, Fargo, North Dakota. Dutch Elm Disease in North Dakota: A New Look. Available online at https://www.ag.ndsu.edu/publications/lawns-gardens-trees/dutch-elm-disease-in-north-dakota-a-new-look/pp1635.pdf. Accessed August 2019.

Meine, Curt D. and Archibald, George W. (EDS). 1996. Status Survey and Conservation Action Plan, The Cranes. IUCN, Gland, Switzerland, and Cambridge, U.K. IUCN/SSC Crane Specialist Group. Available online at https://portals.iucn.org/library/efiles/documents/1996-022.pdf. Accessed August 2019.

Montana Field Guide. No date. Montana Natural Heritage Program. Available online at http://fieldguide.mt.gov/displayClasses.aspx?Kingdom=Plantae. Accessed October 2019.

North American Bird Conservation Initiative. 2000. Bird Conservation Region Descriptions. A Supplement to the North American Bird Conservation Initiative Bird Conservation Regions Map. Available online at http://www.birdscanada.org/research/gislab/download/bcrdescriptions_original.pdf. Accessed October 2019.

North Dakota Department of Agriculture. 2019. Noxious Weeds. Available online at https://www.nd.gov/ndda/plant-industries/noxious-weeds. Accessed August 2019.

North Dakota Department of Environmental Quality. 2019. Standards of Quality for Waters of the State. NDAC Chapter 33-16-02.1. Available online at https://www.legis.nd.gov/information/acdata/pdf/33.1-16-02.1.pdf. Accessed September 2019.

North Dakota Department of Transportation, 2019. U.S. Highway 85 I-94 Interchange to Watford City Bypass Record of Decision. February 2019.

North Dakota Game and Fish Department. 2015a. Common Fish of North Dakota. Available online at https://gf.nd.gov/sites/default/files/publications/fishes-of-nd.pdf. Accessed August 2019.

North Dakota Game and Fish Department. 2015b. North Dakota State Wildlife Action Plan. Available online at https://gf.nd.gov/wildlife/swap. Accessed August 2019.

North Dakota Game and Fish Department. 2015c. Reptiles and Amphibians of North Dakota. Available online at https://gf.nd.gov/gnf/conservation/docs/amphibian-reptile-brochure.pdf. Accessed August 2019.

North Dakota Game and Fish Department. 2016a. Northern Redbelly Dace. Available online at https://gf.nd.gov/wildlife/id/northern-redbelly-dace. Accessed August 2019.

North Dakota Game and Fish Department 2016b. North Dakota Habitats Overview. Available online at https://gf.nd.gov/wildlife/habitats. Accessed August 2019.

North Dakota Game and Fish Department 2016c.Checklist of North Dakota Birds. Available online at https://gf.nd.gov/sites/default/files/publications/nd-bird-checklist-2016.pdf. Accessed August 2019.

North Dakota Game and Fish Department. 2016d. Species Identification. Available online at https://gf.nd.gov/wildlife/id. Accessed August 2019.

North Dakota Game and Fish Department. 2019. Communication regarding commercial fisheries and spawning aggregations for commercial and recreational fisheries within the Project area. Email correspondence on January 15, 2020 from B. Kreft (NDGFD) to A. Bromberg (ERM).

Natural Resource Conservation Service. 1999. Grassland Birds. Available online at https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_009930.pdf.

Sedivec, K.K., D.A. Tober, W.L. Duckwitz, and J.R. Hendrickson. 2011. Grass Varieties for North Dakota. Available online at https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/ndpmcpu10625.pdf. Accessed August 2019.

Selby, G. (2005, November 17). Ottoe Skipper (*Hesperia ottoe* W.H. Edwards): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain. Available online at https://www.fs.usda.gov/detail/r2/landmanagement/?cid=stelprdb5177128. Accessed August 2019.

Selby, G. (2007, February 9). Regal Fritillary (*Speyeria idalia* Drury): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain. Available online at https://www.fs.usda.gov/detail/r2/landmanagement/?cid=stelprdb5177128. Accessed August 2019.

The Pallid Sturgeon Recovery Program. 2013. Population Status. Available online at http://www.pallidsturgeon.org/recovery/upper-basin/population-status/. Accessed July 2019.

Tranah, G., D. E. Campton, and B. May. 2004. Genetic Evidence for Hybridization of Pallid and Shovelnose Sturgeon. Journal of Heredity, Volume 95, Issue 6, Pgs. 474-480. Available online at https://academic.oup.com/jhered/article/95/6/474/2187579. Accessed August 2019.

Urbanek, R. P. and J. C. Lewis. 2015. Whooping Crane (*Grus americana*), version 2.0. In The Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. Available online at https://birdsna.org/Species-Account/bna/species/153/articles/introduction. Accessed August 2019.

U.S. Army Corps of Engineers. 2007. Garrison Lake/Lake Sakakawea Master Plan with Integrated Programmatic Environmental Assessment. Update of Design Memorandum MGR-107D. Available online at https://usace.contentdm.oclc.org/digital/collection/p16021coll7/id/2348/. Accessed: November 2019.

U.S. Army Corps of Engineers. 2018a. Garrison Dam Water Control Manual – Lake Sakakawea. Available online at http://www.nwd-mr.usace.army.mil/rcc/reports/pdfs/GarrisonDamWCM_Final_Dec2018.pdf. Accessed July 2019.

U.S. Army Corps of Engineers. 2018b. Least Tern and Piping Plover Data Management System (TPDMS). Available online at https://rsgisias.crrel.usace.army.mil/apex/f?p=259:1:14941896448737. Accessed June 2019.

U.S. Department of Agriculture. 2019. USDA NRCS PLANTS Database. Available online at https://plants.sc.egov.usda.gov/java/. Accessed October 2019.

U.S. Fish and Wildlife Service. 2003. Recovery Plan for the Great Lakes Piping Plover. Available online at https://ecos.fws.gov/docs/recovery_plans/2003/030916a.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2007a. Waterfowl Production Areas: Prairie Jewels of the National Wildlife Refuge System. Fact Sheet. Available online at https://www.fws.gov/refuges/smallwetlands/WPAs/FactSheetWPA-june2007.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2007b. National Bald Eagle Management Guidelines. May 2007. Available online at https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. U.S. Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. Available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php. Accessed August 2019.

U.S. Fish and Wildlife Service. 2012. Waterfowl Production Areas: Perpetual Prairie Potholes. Available online at https://www.fws.gov/refuges/whm/wpa.html. Accessed August 2019.

U.S. Fish and Wildlife Service. 2013a. Least Tern (*Sterna antillarum*). North Dakota Field Office, Mountain-Prairie Region. Available online at https://www.fws.gov/northdakotafieldoffice/endspecies/species/least_tern.htm. Accessed August 2019.

U.S. Fish and Wildlife Service. 2013b. Gray Wolf (*Canis lupus*). North Dakota Field Office, Mountain-Prairie Region. Available online at https://www.fws.gov/northdakotafieldoffice/endspecies/species/gray_wolf.htm. Accessed August 2019.

U.S. Fish and Wildlife Service. 2014a. Northern Long-eared Bat Interim Conference and Planning Guidance. January 2014. FWS Regions 2, 3, 4, 5, & 6. Available online at http://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2014b. Rufa Red Knot Background Information and Threats Assessment. Supplement to Endangered and Threatened Wildlife and Plants; Final Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). Available online at http://www.fws.gov/northeast/redknot/pdf/20141125_REKN_FL_supplemental_doc_FINAL.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2015a. Northern Long-Eared Bat (*Myotis septentrionalis*). Available online at https://www.fws.gov/midwest/endangered/mammals/nleb/pdf/NLEBFactSheet01April2015.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2015b. Pallid Sturgeon (*Scaphirhynchus albus*). U.S. Fish and Wildlife Service, Endangered Species, Fish, Mountain-Prairie Region. Available online at https://www.fws.gov/mountain-prairie/es/pallidSturgeon.php. Accessed August 2019.

U.S. Fish and Wildlife Service. 2016. Dakota skipper conservation guidelines. Available online at https://www.fws.gov/midwest/endangered/insects/dask/pdf/DakotaSkipperConservationGuidelines2016Update.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2017. Dakota Skipper Conservation Guidelines. https://www.fws.gov/midwest/endangered/insects/dask/pdf/DakotaSkipperConservationGuidelines2016Update.pdf.

U.S. Fish and Wildlife Service. 2018a. Least Tern (*Sterna antillarum*) – Interior population. U.S. Fish and Wildlife Service, Endangered Species, Midwest Region. Available online at

https://www.fws.gov/midwest/endangered/birds/leasttern/index.html. Accessed August 2019.

U.S. Fish and Wildlife Service. 2018b. Piping Plover (*Charadrius melodus*). U.S. Fish and Wildlife Service, Endangered Species, Birds, Mountain-Prairie Region. Available online at https://www.fws.gov/mountain-prairie/es/pipingPlover.php. Accessed October 2019.

U.S. Fish and Wildlife Service. 2019a. Flyways. Available online at https://www.fws.gov/birds/management/flyways.php. Accessed 2019.

U.S. Fish and Wildlife Service. 2019b. Information for Planning and Consultation (IPaC). Available online at https://ecos.fws.gov/ipac/. Accessed August 2019.

U.S. Fish and Wildlife Service. 2019c. Least Tern (Interior Population) (*Sterna antillarum*) Fact Sheet. Available online at August 2019.

U.S. Fish and Wildlife Service. 2019d. Personal communication between FWS (J. Reinisch) and ERM (A. Thornton; A. Bromberg; J. Moffett; and L. Rodman-Jaramillo) July 26, 2019.

U.S. Fish and Wildlife Service. 2019e. Verification letter for the 'WBI Energy North Bakken Expansion Geotechnical Investigation' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions. Consultation Code: 06E15000-2020-TA-0086.

U.S. Fish and Wildlife Service. 2020. Personal communication between FWS (J. Reinisch) and ERM (J. Moffett) January 14, 2020.

U.S. Forest Service. 2007. Dakota Prairie Grasslands Noxious Weed Management Project Final Environmental Impact Statement. March 2007. Available online at https://books.google.com/books?id=Uow2AQAAMAAJ&pg=PP3&lpg=PP3&dq=Dakota+Prairie+Grasslands+Noxious+Weeds+management+EIS&source=bl&ots=aYejuN4gvH&sig=ACfU3U1QlJgBDdMjVelTSsmdakjwlEYSkw&hl=en&sa=X&ved=2ahUKEwiq292N0vffAhUJnFkKHSsfCwsQ6AEwC3oECAYQAQ#v=onepage&q=Dakota%20Prairie%20Grasslands%20Noxious%20Weeds%20management%20EIS&f=false. Accessed August 2019.

U.S. Forest Service. 2018. Forests of North Dakota, 2017. Available online at https://www.fs.fed.us/nrs/pubs/ru/ru_fs149.pdf. Accessed August 2019.

U.S. Forest Service. 2019a. Biological Survey and Reporting Guidelines. Little Missouri National Grassland. McKenzie Ranger District & Medora Ranger District, Dakota Prairie Grasslands, U.S. Forest Service. Email correspondence on June 4, 2019 from M. Dinkins (USFS) to J. Moffett (ERM).

U.S. Forest Service. 2019b. Little Missouri National Grassland. Available online at https://www.fs.usda.gov/recarea/dpg/recarea/?recid=79469. Accessed August 2019.

U.S. Forest Service. 2019c. USDA Natural Resources Conservation Service. Plants Database. Available online at https://plants.sc.egov.usda.gov/java/. Accessed August 2019.

U.S. Forest Service. 2019d. Conservation Reserve Program. Available online at https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index. Accessed August 2019.

U.S. Forest Service. 2019e. Agricultural Conservation Easement Program. Natural Resources Conservation Service. Fact Sheet. Available online at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/?cid=stelprdb1242695. Accessed August 2019.

U.S. Forest Service. 2019f. Email communication dated December 19, 2019, between S. Bickerdyke (USFS Wildlife Biologist, Dakota Prairie Grasslands, McKenzie Ranger District) and J. Moffett (Environmental Resources Management).

U.S. Geological Survey. 2019. Nonindigenous Aquatic Species (NAS). Available online at https://nas.er.usgs.gov/queries/SpeciesList.aspx?group=Fishes&state=ND&Sortby=1. Accessed August 2019.

Vaughan, D. M., and M. D. Shepherd. 2005. Species Profile: *Hesperia dacotae*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation. Available online at https://xerces.org/dakota-skipper/. Accessed July 2019.

Wild and Scenic Rivers Council. 2014. Designated Wild & Scenic Rivers. Available online at http://www.rivers.gov/north-dakota.php. Accessed September 2019.

NORTH BAKKEN EXPANSION PROJECT

Resource Report 3

APPENDIX 3A
Biological Assessment

(Filed under separate cover as *Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV]* in Volume IV)

NORTH BAKKEN EXPANSION PROJECT

Resource Report 3

APPENDIX 3B
Biological Evaluation

(Filed under separate cover as *Controlled Unclassified Information/Privileged and Confidential [CUI//PRIV]* in Volume IV)