TECHNICAL REPORT

BIOLOGICAL EVALUATION
AND
WETLAND ASSESSMENT

WHITING PETROLEUM
ROBINSON LAKE PIPELINE PROJECTS
MOUNTRAIL COUNTY, ND

OCTOBER 20, 2008

STUDY REQUESTED BY:

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1.0 INTRODUCTION

Whiting Petroleum Corporation (Whiting) has proposed to construct a 17-mile long, 8-inch liquid petroleum pipeline in Mountrail County, North Dakota (the Project). Whiting has recently installed a 16-mile 6-inch natural gas pipeline originating at the Robinson Lake Natural Gas Processing Plant to an interconnection with Williston Basin Interstate (WBI) Pipeline's natural gas transmission pipeline located approximately two miles southeast of Stanley. The proposed 8-inch crude line will parallel the existing 6-inch gas pipeline for the initial 16 miles of the route, deviating near the WBI Pipeline connection and continuing west northwest on its final mile to a connection point adjacent to the Nexen Terminal tankage which connects to Enbridge Pipeline's crude pipeline south of Stanley, ND.

Whiting contracted Merjent Inc. to prepare a corridor and route siting application to the North Dakota Public Service Commission (PSC). Merjent Inc. contracted with Keitu Engineers & Consultants, Inc. (Keitu) on behalf of Whiting to conduct a biological evaluation and wetland assessment of the previous pipeline route and proposed pipeline corridor in support of the siting application(s). The biological and wetland assessment was to be conducted within a corridor width of 75 feet on either side of each pipeline, or proposed pipeline route (170 feet total corridor width).

The Project is situated within the northern prairie pothole region in the north central area of the state. Several wetlands occur within the construction zone and construction activities have/will temporarily disturb these areas. The purpose of the biological and wetland assessment was to provide a determination of the potential impacts of plants, wildlife, wetlands, and critical habitat associated within the study area as well as the impact of the proposed construction of the 8-inch crude line on the wetlands associated with the Project area. The analysis of effects may involve the development of alternatives and mitigation and consultation with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

2.0 SITE LOCATION AND DESCRIPTION

The proposed project area is located in Mountrail County, ND which consists of glacial till plains, glaciolacustrine deposits, kettle holes, kames, moraines, and glacial lake plains. The historical and current use of the property was/is agricultural with the exclusion of several wetlands which contain established plant communities. A significant quantity of the pipeline route will cross agricultural and pasture lands where crop and livestock production are the extensive economic activity. The primary crops cultivated in the area include wheat, grain, corn, and alfalfa.

3.0 METHODOLOGY

3.1 EXISTING DATA

Investigations were conducted on potential impacts the Project to plant & wildlife species as well as wetland habitats. Information was gathered from a variety of sources to compile the existing conditions of plant, wildlife, and wetlands within the proposed route. Sources included literature

reviews, field surveys, and person communications with the North Dakota Game and Fish Department (NDGF), the U.S. Fish and Wildlife Service (USFWS), the ND Parks and Recreational Department (The N.D. National Heritage Inventory), the National Wetlands Inventory (NWI) and the U.S. Army Corps of Engineers (USACE).

Construction activities from the proposed Project must comply with the following:

- The USFWS Endangered Species Act of 1973
- The Bald and Golden Eagle Protection Act of 1940
- The Migratory Bird Treaty Act of 1918
- The Clean Water Act of 1972
- North Dakota' s Noxious Weed Control Law

Compliance of these Acts is to ensure that any activity does not jeopardize the occurrence of any federally listed threatened or endangered species, critical habitat, and wetland habitat.

3.2 NOXIOUS WEEDS

The Project will generate temporary effects on agricultural land use such as landscape modifications and an introduction of noxious weeds and invasive species when agricultural areas are reclaimed. Species that are considered noxious weeds under North Dakota state law are provided in table 3.2, below. These noxious weeds will out-compete desirable forbs and grasses in pastures, fields, and native grasslands, reducing biodiversity. According to the ND, Department of Agriculture the noxious weeds that have been recorded in Mountrail County and/or within the Project area and are a concern on farm and pasture land are common tansy, leafy spurge, musk thistle, saltcedar, and yellow toadflax.

TABLE 3.2
NOXIOUS WEEDS LISTED UNDER NORTH DAKOTA STATE LAW

Species	Habitat	Impact
Absinth Wormwood ***(Artemisia absinthium)***	Generally found on dry soils in pastures, cropland, farmsteads, shelterbelts, roadsides, fence rows and waster areas. Infestation occurs on over-grazed or disturbed areas.	Reported to contaminate the milk produced by cattle. Species inhibits grow in desirable forage.
Dalmatian Toadflax ***(Linaria genistifolia)***	Most competitive in drought prone areas. Often found in soils varying from coarse gravels to sandy loams. Establishes on rangelands, pastures, disturbed areas, and roadsides.	Unpalatable to livestock and will flourish over native species.
Field Bindweed ***(Convolvulus arvensis)***	Species is drought tolerant and tends to invade cultivated fields, pastures, roadsides, and waste areas.	Extremely difficult to control. The extensive root system and twine-like growth disrupts harvesting operations and replaces desirable vegetation.

Information provided by the North Dakota Department of Agriculture

TABLE 3.2 (CONTINUED)
NOXIOUS WEEDS LISTED UNDER NORTH DAKOTA STATE LAW

Species	Habitat	Impact
Leafy Spurge ***(Euphorbia esula)***	Species adapts to a variety of habitats such as river banks, floodplains, slopes, open woodlands, roadsides, and grasslands. Species commonly associates itself with invasive such as Kentucky bluegrass and smooth brome.	Contains milky latex which causes oral and digestive irritation in cattle. The plant also replaces desirable forage.
Purple Loosestrife ***(Lythrum salicaria)***	Establishes in wetland habitats that have been disturbed or degraded.	Quickly displaces native wetland vegetation and has the potential to cause a severe impact on wildlife. Roots of the plant can cause obstruction of water flow in ditches in canals.
Saltcedar ***(Tamarix ramosissima)***	Occurs in moist areas, along lakes and waterways. Often associated with cottonwoods. Alkali, saline, and drought tolerant	Displaces native vegetation by releasing salts to inhibit the growth of vegetation.
Knapweed, Diffuse ***(Centaurea diffusa)***	Occurs in excessively grazed and disturbed areas.	May seriously reduce productive potential of infested rangelands.
Knapweed, Russian ***(Acroptilon repens)***	Occurs in poorly drained, saline, or alkaline soils. Establishes is cultivated land, alfalfa fields, pastures, waste sites, and along roadsides and ditches.	Most distributed knapweed and most difficult to control. Inhibits growth in crop plants and other desirable plant species.
Knapweed, Spotted ***(Centaurea maculosa)***	Establishes on roadsides, construction sites, overgrazed land, and waterways. Adapts best in semi-arid areas.	Reduces livestock and wildlife forage and increases surface water runoff, soil erosion, and stream sedimentation.
Thistle, Canada ***(Cirsium arvense)***	Occurs in stream banks, long ditches, roadsides, cultivated fields, pastures, construction sites, and other disturbed areas.	Displaces desirable plant species and is unpalatable to livestock. Infestations decreases land value for crop production and grazing.
Thistle, Musk ***(Carduus nutans)***	Occurs on pastures, rangelands, disturbed sites, grain fields, stream banks, and soils with high sand content.	Corrupt pastures and reduce grazing in the vicinity.
Yellow Starthistle ***(Centaurea solstitialis)***	Occurs on pastures, rangelands, grain fields, cultivated land, and roadsides.	Toxic to horses and can cause injury to livestock and wildlife when grazing upon. Reduces cropland yields.

Information provided by the North Dakota Department of Agriculture

3.3 PLANT SPECIES OF CONCERN

The Project will generate temporary effects on plant communities which could create an introduction of noxious weeds in and around the disturbed areas. Invasive species rapidly displace native or sensitive species. Construction activities may also disrupt sensitive plant habitat which could severely impact the species survival and establishment. Table 3.3 on the following page presents the sensitive plant species in North Dakota.

TABLE 3.3
NORTH DAKOTA SENSITIVE PLANT SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Plants				
Western Prairie Fringed Orchid *(Platanthera praeclara)*	G2	S2	Threatened	Moist tall grass prairies and sedge meadows.
Information provided by the USFWS, USFS, and ND National Heritage Inventory				

3.4 WILDLIFE SPECIES OF CONCERN

The Project will generate temporary effects on wildlife and their habitat within the area which could create an impact on the occurrence of certain species. Noise disruption caused by construction activities has the potential to disrupt raptor species in and around the Project area. The table below presents federal and state listed endangered, threatened, and candidate species and critical habitat.

TABLE 3.4
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Birds				
Baird's Sparrow *(Ammodramus bairdii)*	G4	SU		Upland prairies of mixed-grass or tall grass habitat. Avoid heavily grazed areas. May utilize agricultural fields although not preferred.
Greater Prairie Chicken *(Tympanuchus cupido)*		S2/MIS		Prefer native tall-grass prairie, but will establish in a variety of grasslands.
Greater Sage-Grouse *(Centrocercus urophasianus)*	G4	SU/MIS		Areas where there's an abundance of sagebrush communities for nesting and for feeding on during winter.
Interior Least Tern *(Sterna antillarum)*	G4	S1	Endangered	Sparsely vegetated sandbars on the Missouri and Yellowstone Rivers.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Birds				
Loggerhead Shrike *(Lanius ludovicianus)*	G5	SU		Open country with patches of trees and shrubs. Wooded coulees and shelterbelts are common habitat.
Long-Billed Curlew *(Numenius americanus)*	G5	S2		Short-grass prairie or grazed mixed-grass prairie, west of the Missouri River.
Piping Plover *(Charadrius melodus)*	G3	S1/S2	Threatened/ Designated Critical Habitat	Barren sand and gravel shores of rivers and lakes. Avoid areas with dense vegetation.
Sharp-Tailed Grouse *(Tympanuchus phasianellus)*		MIS		Mixed-grass prairie with patches of small woody vegetation
Sprague's Pipit *(Anthus spragueii)*	G4	S3		Prefers extensive tracts of ungrazed or lightly-grazed prairie.
Whooping Crane *(Grus americana)*	G1	SX	Endangered	Shallow wetlands that are characterized by cattails, bulrushes and sedges. During migration they can be found in upland areas.
Raptors				
American Peregrine Falcon *(Falco peregrinus anatum)*	G5	S1		Habitats with cliffs and areas that provide hunting opportunities.
Bald Eagle *(Haliaeetus leucocephalus)*	G4	S1		Forested habitats near bodies of water. Migrating eagles are found throughout North Dakota
Raptors				
Burrowing Owl *(Athene cunicularia)*	G4	SU		Heavily grazed areas of mixed-grass prairie, where burrows exist from other wildlife.
Ferruginous Hawk *(Buteo regalis)*	G4	SU		Undisturbed prairie with little cultivated land. Nesting areas include tall trees, cliffs, and ground level.
Golden Eagle *(Aquila chrysaetos)*	G5	S3		Open prairies and fields in hilly or mountainous regions. Nests on cliff ledges and trees.
Merlin *(Falco columbarius)*	G5	S2		Deciduous and coniferous forest along edges of lakes and ponds.
Prairie Falcon *(Falco mexicanus)*	G5	S3		Badlands, cliffs, and isolated buttes in western North Dakota.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Mammals				
Black-footed Ferret *(Mustela nigripes)*	G1	S1	Endangered	Short grass prairie where prairie dog towns occur.
Black-Tailed Prairie Dog *(Cynomys ludovicianus)*	G3/G4	SU/MIS		Prefers short grass of grazed rangeland in southwestern North Dakota.
Gray Wolf *(Canis lupus)*	G4	SX	Endangered	Forested areas in throughout North Dakota.
California Bighorn Sheep *(Ovis canadensis californiana)*	G4/T4	S2		Prefer areas with rugged terrain and rocky slopes, such as the badlands.
Fish				
Northern Redbelly Dace *(Phoxinus eos)*	G5	S4		Slower stretches of rivers with water and some vegetation.
Pallid Sturgeon *(Scaphirhynchus albus)*	G1	S2	Endangered	The bottoms of large, silty rivers with swift currents. Prefer sand flats and gravel bars.
Sturgeon Chub *(Macrhybopsis gelida)*	G3	S2		Gravel and rock rapids with high turbidity and swift currents. Mostly found in water depths of 3 feet or less.
Insects				
Arogos Skipper *(Atrytone arogos iowa)*	G3/G4 T3/T4	S?		Undisturbed grasslands and prairies. Associated with purple vetch, Canada thistle, dogbane, stiff coreopsis, purple coneflower, green milkweed, and ox-eye daisy.
Broad-Winged Skipper *(Poanes viator)*	G5	S2		Tall marsh grasses and ditches near marshes. Associated with hairy sedge and swamp milkweed.
Dakota Skipper *(Hesperia dacotae)*	G2	S2	Candidate	Undisturbed tall grass and mid-grass prairie. Associated with white camass.
Dion Skipper *(Euphyes dion)*	G4	S1		Rare, lush marshes with sedges, cattails, and swamp milkweed.
Mulberry Wing *(Poanes Massasoit)*	G4	S2		Woody hummock sedge meadows. Associated with upright sedge and dogwood.
Ottoe Skipper *(Hesperia ottoe)*	G3/G4	S?		Ungrazed or lightly grazed native prairie hilltops. Associated with coneflower.
Powesheik Skipper *(Oarisma powesheik)*	G2/G3	S?		Undisturbed, tall-grass meadows.
Regal Fritillary Butterfly *(Speyeria idalia)*	G3	S2		Open, tall, grassy areas. Also found in damp meadows and marshy areas. Associated with milkweed, thistle, and blazing star.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Insects (continued)				
Tawny Crescent Butterfly *(Phyciodes batesii)*	G4	S3		Coulee woodlands and woodlands that meet native prairie. Associated with dogbane, leafy spurge, hobomok skippers, silver-spotted skippers, and Canadian tiger swallowtails.

Information provided by the USFWS, USFS, and ND National Heritage Inventory

3.5 FIELD ASSESSMENT

Site conditions were evaluated during on-site visits in August of 2008 (plant and wildlife) and September of 2008 (wetlands) by Heather M. Jandt and Jaimee L. Meduna of Keitu. The project area was walked or via ATV to examine and determine the occurrence or nonoccurrence of plant and wildlife species, critical habitat, and jurisdictional water of the U.S.

The surveys were conducted along the 17-mile proposed pipeline route in Mountrail County. Keitu surveyors conducted a thorough inspection within the 170 foot corridor (75 feet on either side of the proposed right-of-ways), beginning at the Robinson Lake Processing Plant and terminating at the Nexen Crude Oil Terminal south of Stanley, ND.

Field data was collected with a Trimble GEOXT 2005 Series handheld GPS and photographs were taken along the entire length of the proposed route. The corridor boundaries were measured, identified, and marked by fluorescent flagging and recorded with the handheld GPS. Wetland boundaries were identified, measured, and mapped with the Trimble GPS.

Analysis within the corridor included a complete inspection for species of concern, habitat components required to support species of concern, noxious weeds, and wetlands. The survey area was expanded when nearby additional areas may be impacted by the proposed Project. Plant species, noxious weeds, and wildlife species were identified in the field and mapped. Any unknown species were collected and later identified using state-wide, literature, personal communications, and knowledge of species and species habitat were used to make a justified determination on the potential effects that may occur from the Project.

4.0 VEGETATION

The USDA MLRA Explorer Custom Report for the Northern Black Glaciated Plains of the Northern Great Plains Spring Wheat Region states the area supports natural prairie vegetation such as; western wheatgrass, green needlegrass, needleandthread, and blue grama. Little bluestem tends to establish on sloping and shallower soils. Prairie cordgrass, northern reedgrass, big bluestem, and slough sedge are primarily found on wet soils. Western snowberry, leadplant, and prairie rose are found spread throughout the area. Green ash, chokecherry, and buffaloberry occur in draws and valleys.

4.1 ROUTE DESCRIPTION

The Project route crosses predominantly crop and range land. Approximately 15.9 of the 17 miles of the proposed route are located on crop or rangeland. The remaining 1.1 miles of the proposed route are located on Conservation PLOTS (Private Land Open to Sportsmen). PLOTS within the Project corridor exist in Section 26 and Section 11 of Township 154 North and Range 91 West. Figure 2a displays PLOTS within the Project area. The primary crops cultivated in the area include wheat, alfalfa, and canola with the remaining cultivated land being utilized for hay. Rangeland contained mixed-grass prairie (Exhibit 4.1.a) and patches of snowberry. Denser woody vegetation occurred around wetlands that were scattered throughout the route.

Exhibit 4.1.a

4.1.1 Rangeland

Exhibit 4.1.b displays cattle grazing in rangeland adjacent to the right-of-way. Mix-grass prairie is the dominant classification within the survey corridor. Smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), and Kentucky bluegrass (*Poa pratensis*) were primarily found in abundance throughout the majority of the route. Other grasses that were commonly identified were annual brome (*Bromus* spp.), blue grama (*Bouteloua gracilis*), Canada wildrye (*Elymus canadensis*), green needlegrass (*Stipa viridula*), green foxtail (*Setaria viridis)*, foxtail barley (*Hordeum jubatum*), needle-and-thread (*Stipa comata*), and wheatgrass species. Little bluestem is found scattered along hillsides.

Exhibit 4.1.b

Herbaceous vegetation that was commonly observed on uplands consisted of alfalfa (*Medicago sativa*), blazing star (*Liatris punctata*), broom snakeweed (*Gutierrezia* sarothrae), curlycup gumweed (*Grindelia squarrosa*), fringed sage (*Artemisia frigid*), prairie sage (*Artemisia ludoviciana*), golden aster (*Chrysopsis villosa*), green milkweed (*Asclepias viridiflora*), groundplum milk-vetch (*Astragalus crassicarpus*), kochia (*Bassia scoparia*), prairie coneflower (*Ratibida columnifera*), purple coneflower (*Echinacea angustifolia*), Prairie rose (*Rosa arkansanas*), stiff goldenrod (*Oligoneuron rigidum*), skeletonweed (*Lygodesmia juncea*), sunflower (*Helianthus annuus*), wavy leaf thistle (*Cirsium undulatum*), white panicled aster (*Symphyotrichum lanceolatum*), white prairie aster (*Symphyotrichum falcatum*), wild licorice (*Glychrrhiza lepidota*), and yarrow (*Achillea millefolium*).

4.1.2 Wooded Areas

Woody vegetation is randomly established along the route and essentially affiliated with wetland habitat. Trees that were observed during the field survey include green ash (*Fraxinus pennsylvanica*), cottonwood (*Populus deltoids*), quaking aspen (*Populus tremuloides*), buffaloberry (*Sheperdia argentea*), and chokecherry (*Prunus virginiana*). Dominant common understory vegetation established were snowberry (*Symphoricarpos occidentalis*), smooth brome, foxtail barley, northern reedgrass (*Calamagrostis stricta*), sow thistle (*Sonchus arvensis),* and knotweed (*Polygonum* spp.).

Exhibit 4.1.b

Tree rows occur in limited amounts. The young tree rows that were observed within the survey corridor were associated with rangeland vegetation. Table 4.1.2 presents tree rows that were identified during the field investigation.

TABLE 4.1.2 TREE ROWS WITHIN THE PROPOSED CORRIDOR			
Number	**Location**	**Coordinates**	**Comments**
1.	Section 11 T153N R91W	48 5' 29.5" N 102 21' 9.9" W	Five tree rows were observed consisting of one row of buffaloberry and 4 rows of chokecherry.
2.	Section 10 T153N R91W	48 5' 29.8" N 102 21' 15.9" W	Four tree rows were observed consisting of lilacs and pine trees.
3.	Section 35 T155N R91 W	48 12' 1.6" N 102 21' 7.0" W	Tree row of elms was observed to be bored under.
4.	Section 26 T155N R91W	48 13' 4.8" N 102 21' 1.9" W	Tree row of elms was observed.

Exhibit 4.1.c

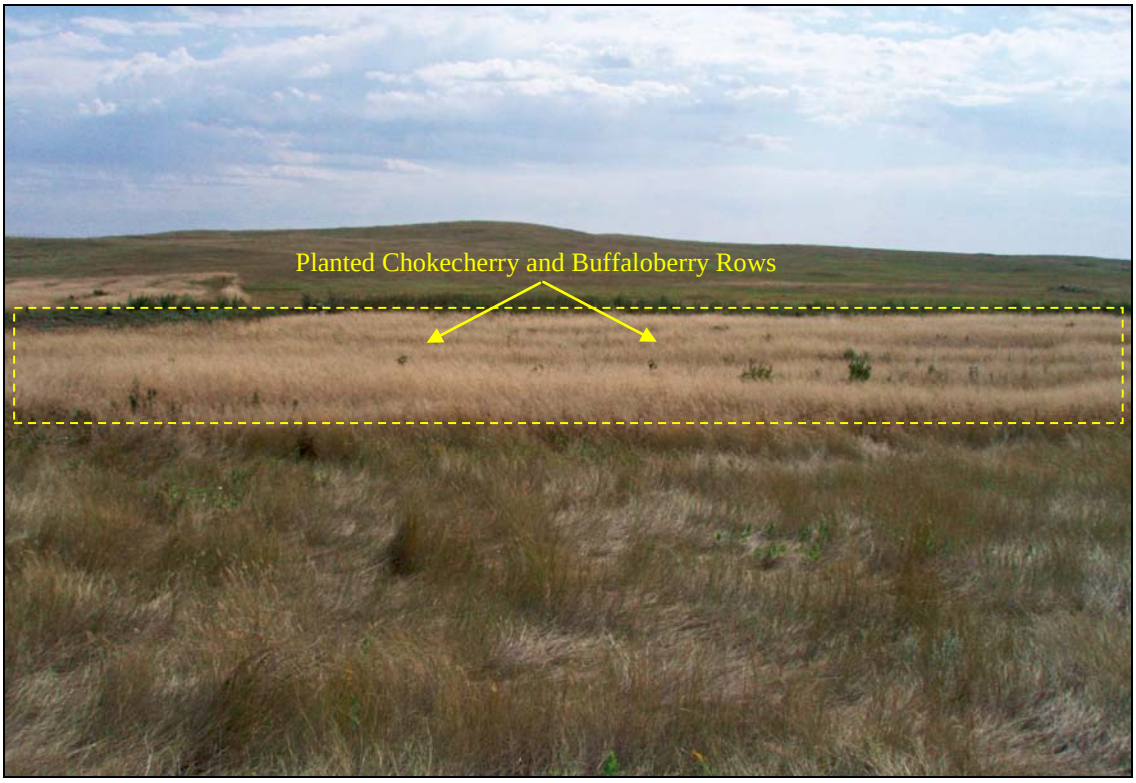


Exhibit 4.1.d displays tree rows located in Section 11 of Township 153 North and Range 91 West, in the construction corridor. Four of the five rows consist of chokecherries while the remaining row consists of buffaloberry. Each row contained tree matting and all species appeared young with approximate heights of 2 to 3 feet. Figure 5a displays the corridor in association with the tree row.

Exhibit 4.1.d

Exhibit 4.1.d displays tree rows located in Section 10 of Township 153 North and Range 91 West, along the south edge of an east to west segment in the construction corridor. The two inner rows consisted of pine trees while the two outer rows consisted of lilacs. Each row contained tree matting and all species appeared young. These trees may be avoided by narrowing the construction corridor or by moving the route and construction corridor 20 feet to the north.

4.1.3 Wetlands

Wetlands were an often occurrence within the survey corridor. Wetlands observed within the corridor were primarily characterized by sedges and rushes. Foxtail barley, sow thistle (*Sonchus arvensis*), and smooth brome were also commonly associated with wetlands (Exhibit 4.1.c).

Exhibit 4.1.c

Smooth brome, foxtail barley, snowberry, and sow thistle compromised the outer boundary of wetlands. Other associating vegetation consisted of Canada wildrye, quackgrass (*Elymus repens*), meadow anemone (*Anemone canadensis*), goldenrod (*Solidago altissima*), white aster, prairie sage, kochia (*Bassia scoparia*), showy milkweed (*Asclepias speciosa*), stinging nettle (*Urtica dioica*)

Exhibit 4.1.d

Dock (Rumex *crispus*) establishes a red boundary within the mid-section of wetlands (Exhibit 4.1.d). The associating species of this vegetated layer include northern reedgrass, prairie cordgrass (*Spartina pectinata*), buttercup (*Ranunculus cymbalaria*), goldenrod, meadow anemone, red samphire (*Salicornia rubra*), sedge (*Carex praegracilis*), silverweed (*Argentina anserina*), and snowberry.

The inner vegetated layer consisted primarily of cattails (*Typha* spp.), bulrush (*Schoenoplectus acutus*, and *S. pungens*), northern reedgrass (*Calamagrostis stricta*), and scattered dock.

Exhibit 4.1.e

Exhibit 4.1.e displays a wetland located on cultivated land, used for hay production. Several wetlands within the proposed route are currently disturbed by agricultural activity.

4.1.4 Noxious Weeds

Noxious weeds that were identified along the survey corridor consisted of field bindweed, absinth wormwood (*Artemisia absinthium*), and Canada thistle (*Cirsium arvense*). Field bindweed was established primarily along the area of disturbance within the right-of-way. Absinth wormwood was randomly established within wetland boundaries. Infestations of Canada thistle were observed bordering wetlands (Exhibit 4.1.f).

Exhibit 4.1.f

4.2 THREATENED SPECIES ASSESSMENT

TABLE 4.2
THREATENED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Western Prairie Fringed Orchid	X			

4.2.1 Western Prairie Fringed Orchid

Western prairie fringed orchids (*Platanthera praeclara*) inhabits moist tall-grass prairies and sedge meadows. This species is associated with sedges, reedgrass, and rushes or where those plants are intermixed with big bluestem, little bluestem, and switchgrass. Populations are currently established and restricted to the Sheyenne National Grasslands in southeastern North Dakota. The Project will have no effect on this species.

5.0 WILDLIFE

The USDA MLRA Explorer Custom Report for the Northern Black Glaciated Plains of the Northern Great Plains Spring Wheat Region states the area supports white-tailed deer, coyote, red fox, badger, beaver, raccoon, skunk, muskrat, mink, snowshoe hare, white-tailed jackrabbit, cottontail, fox squirrel, sharp-tailed grouse, gray partridge, ruffed grouse, mourning dove, ring-necked pheasant, geese, and ducks. Fish in this area include northern pike, walleye, perch, trout, and bullhead.

Common terrestrial wildlife identified within the Project area include ground squirrel, mole, badger, killdeer, pheasant, sharp-tailed grouse, Hungarian partridge, deer, turkey vulture, migratory waterfowl, mourning dove, and other numerous songbirds.

5.1 ENDANGERED SPECIES ASSESSMENT

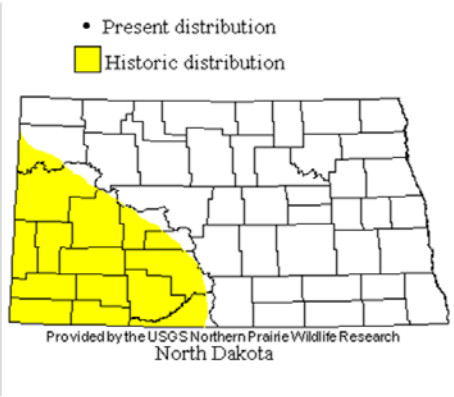
TABLE 5.1
ENDANGERED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Black-footed Ferret	X			
Gray Wolf	X			
Interior Least Tern	X			
Pallid Sturgeon	X			
Whooping Crane	X			

5.1.1 Black-footed Ferret

Historical records have identified the black-footed ferret (Mustela nigripes) to have occurred in the southwestern portion of North Dakota. However, there are no current records of occurrence in the N.D. This species inhabited short grass prairie, around nearby prairie dog towns. No prairie dog communities were identified along the survey corridor. The agricultural habitat of the Project area does not support this species. The proposed Project will have no effect on this species.

Exhibit 5.1.a
Black-Footed Ferret Distribution



5.1.2 Gray Wolf

Gray wolves (Canis lupus) are transient and move throughout North Dakota from Minnesota and Manitoba. Historical records have located the gray wolf in North Dakota in 195, 1990, and 1991 (Grondahl and Martin, 1997). The preferred habitat for this species is forested areas with low densities of roads and people. The route corridor is not heavily forested and located near a main highway, which does not support the appropriate habitat for gray wolves. The proposed Project will have no effect on this species.

Exhibit 5.1.b
Gray Wolf Distribution

5.1.3 Interior Least Tern

The interior least tern (Sterna antillarum) prefers to nest in sandbars and sandy islands. During breeding season, approximately 100 pairs are found along the Missouri and Yellowstone Rivers (Grondahl and Martin, 1997). Breeding season for this species is from May through August and high nesting potential occurring from June to mid-July. The proposed corridor does not support the appropriate nesting habitat. The Project will have no effect on this species.

Exhibit 5.1.c
Interior Least Tern Distribution

5.1.4 Pallid Sturgeon

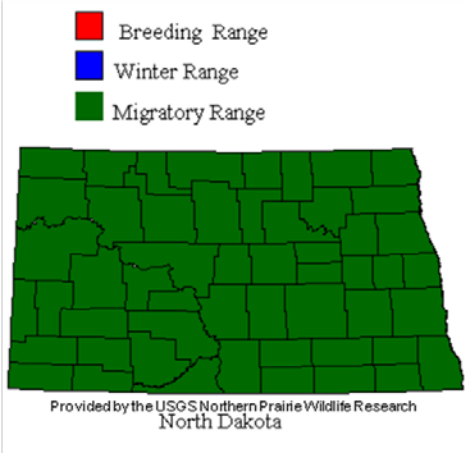
Pallid sturgeons (Scaphirhynchus albus) inhabit the bottoms of large, shallow, silty rivers with sand and gravel bars of the Missouri and Yellowstone Rivers in North Dakota. The proposed corridor does not support suitable habitat. The Project will have no effect on this species.

Exhibit 5.1.d
Pallid Sturgeon Distribution

5.1.5 Whooping Crane

The whooping crane (Grus americana) is a migratory species that inhabit in North Dakota during the spring during April through May and the fall during September through October. Primary breeding grounds are located at Wood Buffalo National Park in Canada's Northwest Territories and migrate to Aransas National Wildlife Refuge in Texas (Grondahl and Martin, 1997). Whooping cranes prefer shallow wetlands associated with cattails, bulrushes, and sedges and feed in cultivated fields. Several wetlands exist within the proposed corridor that would be deemed suitable habitat for this species. The whooping crane population that occurs in the state is slightly over 200, therefore, foraging and roosting stops during migration is unlikely to occur within the Project area. The Project is proposing to begin construction this winter which is out of the occurrence timeframe of this species. The Project will have no effect this species, providing construction activities occur during the winter season.

Exhibit 5.1.e
Whooping Crane Distribution



5.2 THREATENED SPECIES ASSESSMENT

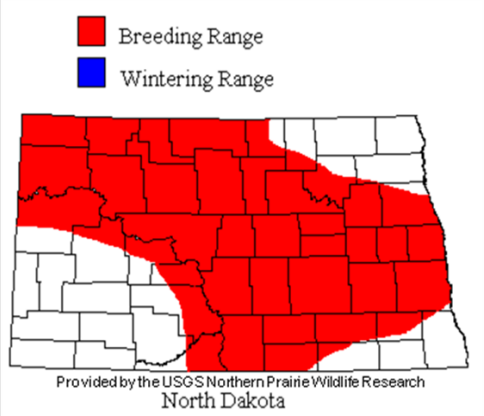
TABLE 5.2
THREATENED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Piping Plover	X			
Piping Plover Designated Critical Habitat	X			

5.2.1 Piping Plover

The piping plover (Charadrius melodus) is a small shore bird that inhabits barren sand and gravel shorelines of lakes and rivers and avoids dense vegetation. The breeding season is from late April to early August in areas in North Dakota that include the shores of the Missouri and Yellowstone Rivers and the prairie wetlands in the Missouri Coteau. More than three-fourths of piping plovers in North Dakota nest on prairie alkali lakes, while the remaining is found along the Missouri River. Piping Plover Designated Critical Habitat consists of prairie alkali wetlands and surrounding shoreline; river channels and associated sandbars and islands; reservoirs and inland lakes and their sparsely vegetated shorelines, peninsulas and islands (USFWS, 2002). All wetlands within the survey corridor were observed to contain a healthy establishment of vegetation that does not support suitable habitat for piping plovers. Furthermore, the Project construction is proposed to succeed the breeding season. The Project will have no effect this species or their critical habitat.

Exhibit 5.2.a
Piping Plover Distribution



5.3 CANDIDATE SPECIES ASSESSMENT

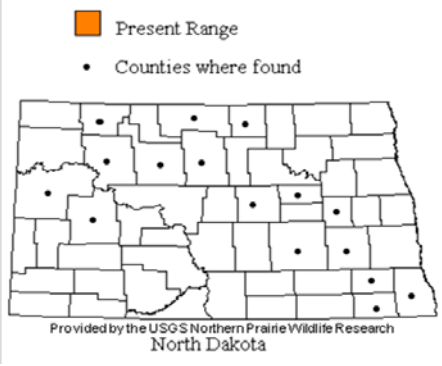
TABLE 5.2
CANDIDATE SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Dakota Skipper	X			

5.3.1 Dakota Skipper

Dakota Skippers (*Hesperia dacotae*) are located in areas with undisturbed native prairie containing a variety of wildflowers and grasses. These species can be found on both wetlands and uplands. The wetlands habitat is associated with plant species consisting of bluestem grasses, wood lily (*Lilium philadelphicum*), and harebell (*Campanula rotundifolia*). The preferred upland habitat contains bluestem grasses, needlegrass, purple coneflower (*Echinacea angustifolia*), and blanketflower (*Gaillardia aristata*). Dakota skippers do not thrive in heavily grazed or cultivate areas. The Project will have no effect on this species.

Exhibit 5.2.a
Dakota Skipper Distribution



5.4 SENSITIVE SPECIES ASSESSMENT

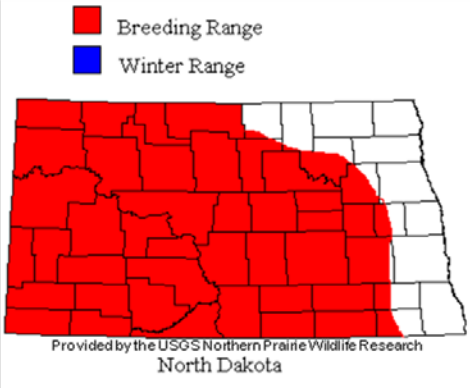
TABLE 5.4
ENDANGERED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Birds				
Baird's Sparrow	X			
Greater Prairie Chicken	X			
Greater Sage-Grouse	X			
Loggerhead Shrike	X			
Long-Billed Curlew	X			
Sharp-Tailed Grouse		X		
Sprague's Pipit	X			

5.4.1 Baird's Sparrow

Baird's sparrow (*Ammodramus bairdii*) prefers lightly grazed or undisturbed mixed-grass prairie where blue grama, needle-and-thread, and little blue stem communities are established. Other habitat that this species may be found in is areas that support alfalfa, weedy stubble fields, or other agricultural field. Breeding season occurs late May to mid-August. The agricultural habitat of the Project area does not support Baird's sparrows. However, plotland exists within the study corridor (Figure 2a) that does provide suitable habitat for this species. Although the proposed Project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During Construction, best management practices should be applied to minimize disturbance to the best extent possible.

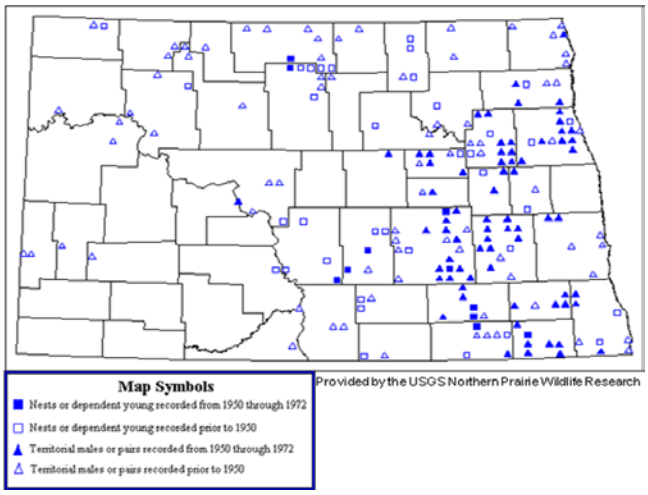
Exhibit 5.4.a
Baird's Sparrow Distribution



5.4.2 Greater Prairie Chicken

Greater prairie chickens (*Tympanuchus cupido*) inhabit large expanses of undisturbed tall-grass prairie. Breeding season commences in mid-April through late July. Greater prairie chicken lek areas consist of bare ground or short cover. They are currently occurring in the Sheyenne National Grasslands and Grand Forks County in eastern North Dakota. There is minor potential of occurrence for this species with the area. The survey corridor was primarily grazed and cultivated conditions and does not display the appropriate habitat for the greater prairie chicken. The Project will have no impact on this species.

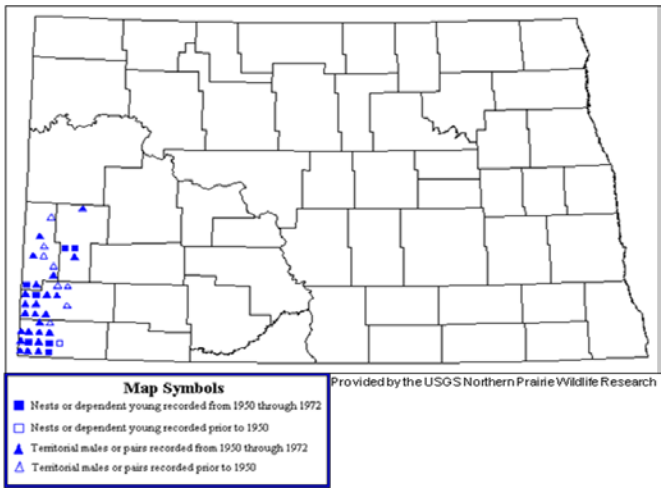
Exhibit 5.4.b
Greater Prairie Chicken Distribution



5.4.3 Greater Sage-Grouse

Greater sage-grouse *(Centrocercus urophasianus)* inhabit large, unbroken areas with an abundance of sagebrush or shrubs for nesting and for feeding in southwestern North Dakota. Lek grounds are utilized from mid-March through May and with the breeding seasons continuing until early August. Records state that the greater sage-grouse primarily occurs in the southwestern part of the state making a highly unlikely assumption that occurrence will be confirmed. Suitable habitat for the greater sage-grouse does not exist within the survey corridor. Therefore, the proposed Project will have no impact on this species.

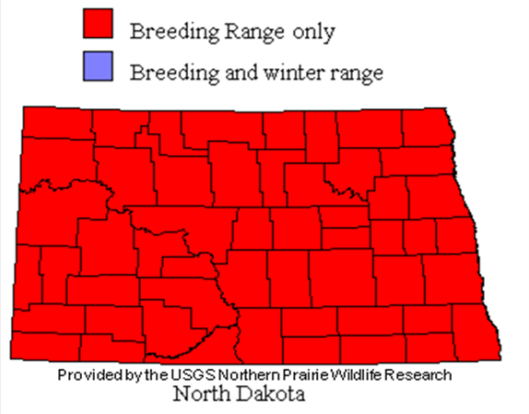
Exhibit 5.4.c
Greater Sage-Grouse Distribution



5.4.4 Loggerhead Shrike

Loggerhead shrikes *(Lanius ludovicianus)* occur in open country with trees and shrubs. The primarily inhabit wooded coulees and shelterbelts associated with native prairie or cropland. They are found in North Dakota during their breeding season which commences in early May and continues to mid-July. The survey corridor possesses the preferred habitat of loggerhead shrikes. However, the Project construction is proposed to succeed the breeding range. Although no loggerhead shrikes were observed during the field survey, the proposed Project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

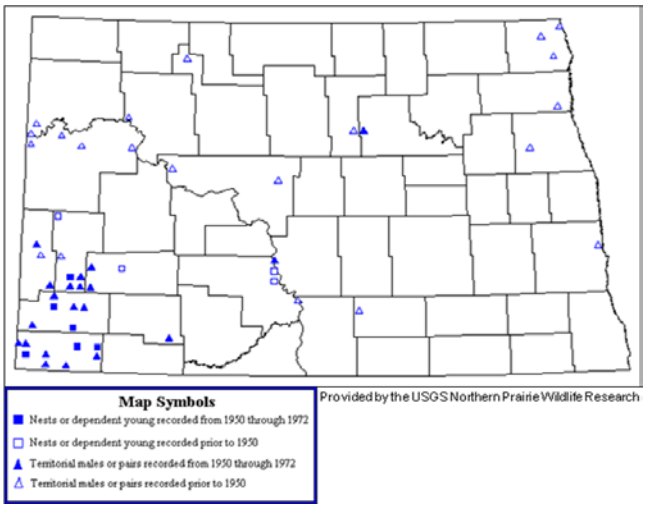
Exhibit 5.4.d
Loggerhead Shrike Distribution



5.4.5 Long-Billed Curlew

Long-billed Curlews (*Numenius americanus*) inhabit short-grass prairie or grazed mixed-grass prairie as their breeding grounds. They are found in North Dakota during their breeding season which ranges from late April through early August. The survey corridor possesses the appropriate habitat of this species. However, the Project construction is proposed to succeed the breeding range. Although no long-billed curlews were observed within the survey corridor, the proposed Project may temporarily impact this species' habitat. But, there appears to be sufficient amount of suitable habitat in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

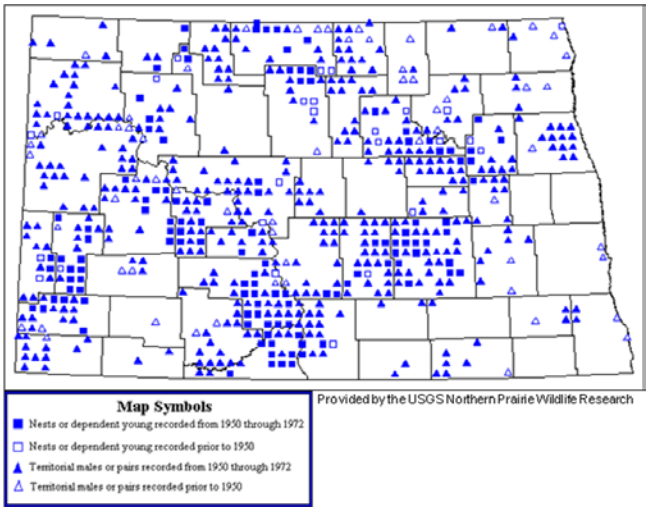
Exhibit 5.4.e
Long-Billed Curlew Distribution



5.4.6 Sharp-Tailed Grouse

Sharp-tailed grouse (*Tympanuchus phasianellus*) are found throughout North Dakota in areas of mixed-grass prairie associated with sagebrush and shrubs for nesting and for feeding. Grassy knolls or ridges of short-grass prairie are utilized for dancing grounds which are used annually. Lek grounds are utilized from mid-March to late May and with the breeding seasons beginning in late April through mid-September. Sharp-tailed grouse were observed within the survey corridor; however, no leks or nests were identified associated with the sightings. Although construction activity is proposed to succeed the sharp-tailed grouse breeding season, the Project may temporarily impact this species or their habitat. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

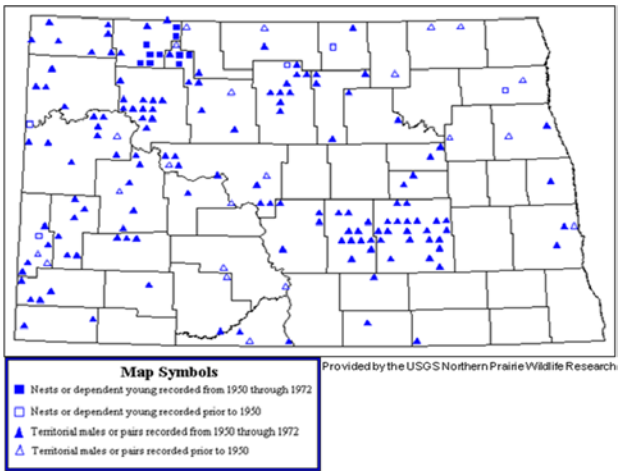
Exhibit 5.4.f
Sharp-Tailed Grouse Distribution



5.4.7 Sprague's Pipit

Sprague's Pipit (*Anthus spragueii*) prefers extensive tracts of ungrazed or lightly-grazed prairie associated with western wheatgrass, prairie junegrass (*Koeleria pyramidata*), needle-and-thread, green needlegrass, blue grama, needleleaf sedge, and threadleaf sedge. Breeding occurs from late April to early June and from mid-July to early September. The agricultural habitat of the Project area does not support Baird's sparrows. However, plotland exists within the survey corridor that provides suitable habitat for this species (Figure 2a). Although, Sprague's pipits were not observed, the survey corridor presents appropriate habitat for this species. The proposed project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

Exhibit 5.4.g
Sprague's Pipit Distribution



5.5 SENSITIVE RAPTOR SPECIES ASSESSMENT

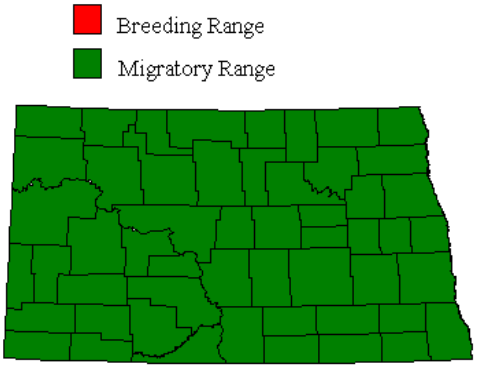
TABLE 5.5
SENSITIVE RAPTOR SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Raptors				
American Peregrine Falcon	X			
Bald Eagle	X			
Burrowing Owl	X			
Ferruginous Hawk	X			
Golden Eagle	X			
Merlin	X			
Prairie Falcon	X			

5.5.1 American Peregrine Falcon

Peregrine falcons inhabit a wide variety of habitat that provides hunting opportunities and nests on cliffs. Although the area provides potential hunting opportunities, the preferred nesting habitat of peregrine falcons does not exist within the Project area. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

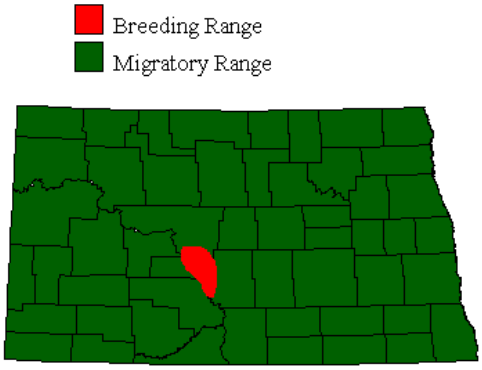
Exhibit 5.5.a
American Peregrine Distribution



5.5.2 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) utilizes forested habitats near waterbodies. Nesting areas occur around the Missouri River primarily in large cottonwood trees. Bald eagles are found throughout North Dakota during migration and along the Missouri River during the winter season. The preferred habitat for this species does not occur within the survey corridor. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

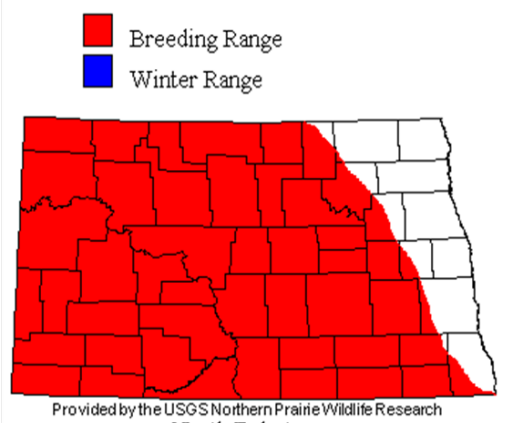
Exhibit 5.5.b
Bald Eagle Distribution



5.5.3 Burrowing Owl

The burrowing owl (*Athene cunicularia*) prefers open, dry grasslands and deserts. This species is commonly found in prairie dog towns and other abandoned burrows. Breeding season occurs from mid-May to early September. No prairie dog communities were identified along the survey corridor. Burrows were observed throughout the survey corridor however, they did not appear to be abandoned. The agricultural habitat of the Project area does not support this species. The proposed Project will have no effect on this species

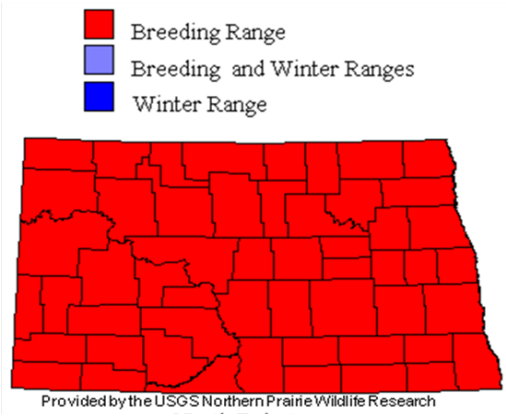
Exhibit 5.5.c
Burrowing Owl Distribution



5.5.4 Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) return to the state annually in March, with a breeding season from mid-April to late July. They prefer undisturbed prairie habitat with little cultivated land. Nesting areas include tall trees, cliffs, and ground level. This species is extremely sensitive to noise disturbance and prefer to be distant from human activity. No Ferruginous Hawks were observed during the field survey. The agricultural and industrial habitat of the Project area does not support this species. The proposed Project will have no effect on this species.

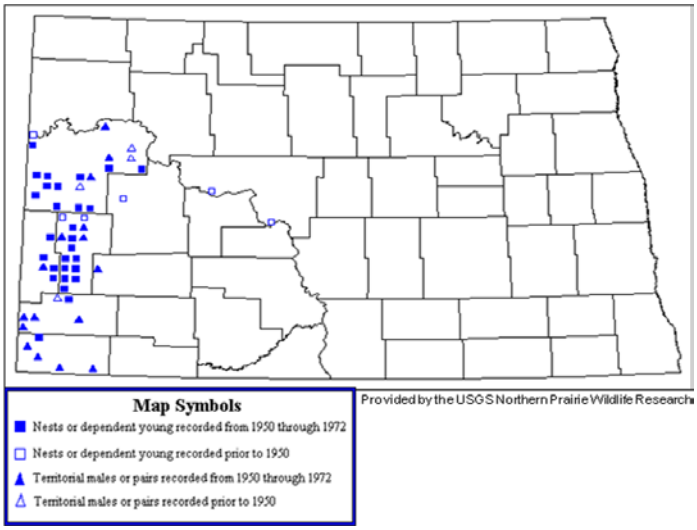
Exhibit 5.5.d
Ferruginous Hawk Distribution



5.5.5 Golden Eagle

The golden eagle (*Aquila chrysaetos*) breeding season in North Dakota is mid-March through late July and occurs in open mixed-grass prairies and grassland habitat in hilly or mountainous regions. Golden eagles inhabit cliff ledges or large trees for nesting. The area provides the preferred mix-grass prairie habitat; the preferred nesting habitat does not exist within the Project area. Construction activity is proposed to commence this winter, where activity will succeed the breeding season. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

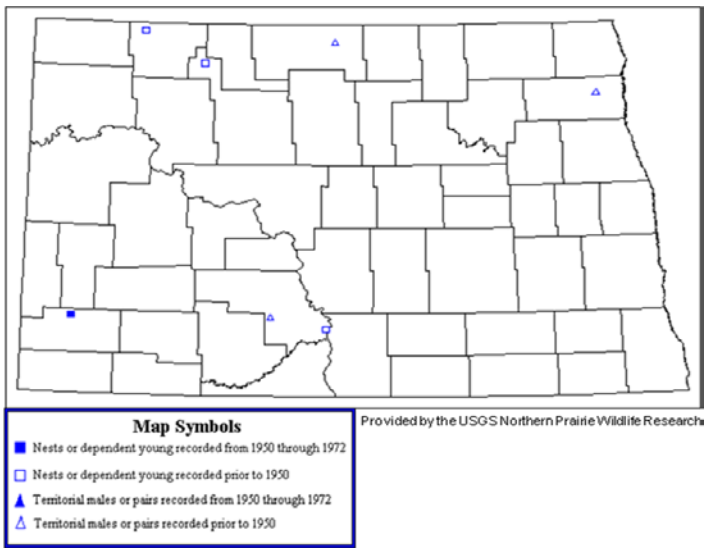
Exhibit 5.5.e
Golden Eagle Distribution



5.5.6 Merlin

Merlins (*Falco columbarius*) prefer forested areas and nearby tracts of brushland, grassland, and fields. Grasslands are the primary component of Merlin foraging habitat (Konrad, 2004). Breeding seasons occurs from mid-May through late July. No merlins were observed during the field survey. The agricultural habitat of the Project area does not support this species and construction activity is proposed to commence this winter, where activity will succeed the breeding season. . The proposed Project will have no effect on this species.

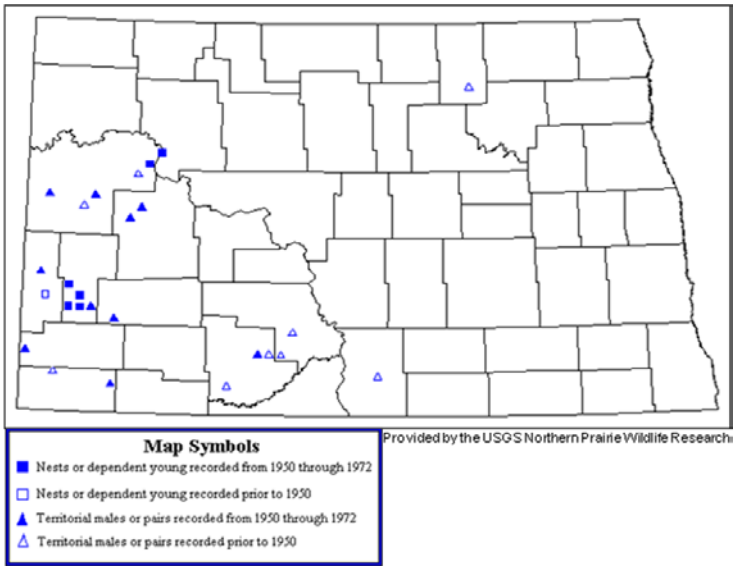
Exhibit 5.5.f
Merlin Distribution



5.5.7 Prairie Falcon

Prairie falcons (*Falco mexicanus*) can be found in the Badlands, along cliffs and isolated buttes in western ND. Their breeding season occurs in early April through mid-July. No prairie falcons were observed during the field survey. The agricultural habitat in the Project area does not support this species and construction activity is proposed to commence this winter, when activity will succeed the breeding season. The proposed Project will have no effect on this species.

Exhibit 5.5.f
Prairie Falcon Distribution



5.6 SENSITIVE MAMMAL SPECIES ASSESSMENT

TABLE 5.6 SENSITIVE MAMMAL SPECIES IMPACT ASSESSMENT				
Species	**No Impact**	**May Impact**	**Will impact**	**Will Impact Critical Habitat**
Mammals				
Black-Tailed Prairie Dog	X			
California Bighorn Sheep	X			

5.6.1 Black-Tailed Prairie Dog

Black-tailed prairie dogs (*Cynomys ludovicianus*) establish colonies in dry, heavily grazed, short-grass prairies in southwestern North Dakota. Although the survey corridor contains heavily grazed short-grass prairie the Project is located in "Prairie Pothole Country" creating a damper habitat than desired by black-tailed prairie dogs. The agricultural and wetland habitats of the Project do not support this species. The proposed Project will have no effect on this species.

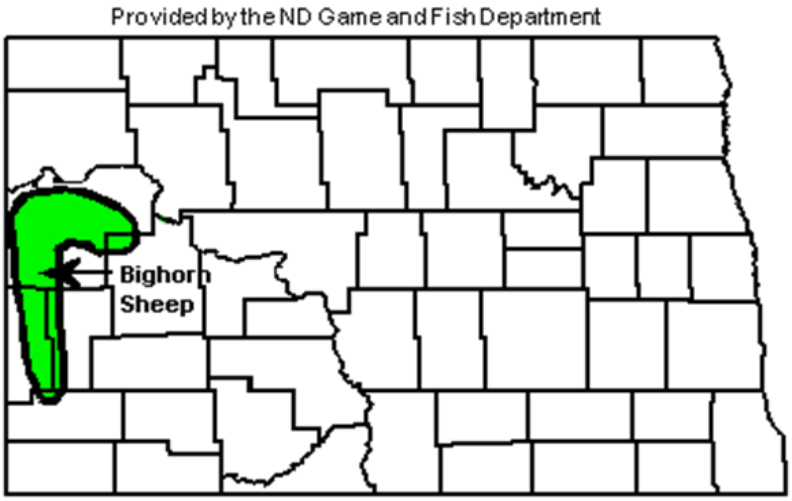
Exhibit 5.6.a
Black-Tailed Prairie Dog Distribution

Provided by the ND Game and Fish Department

5.6.2 California Bighorn Sheep

California bighorn sheep (*Ovis canadensis californiana*) prefer areas with rugged terrain and rocky slopes. Safe lambing grounds are an important factor for the bighorn sheep population. Expansive area of rough terrain and limited disturbance is needed for successful lambing (Leier, 2008). The Project is not located in an area that would provide suitable habitat for bighorn sheep and therefore the proposed Project will have no effect on this species.

Exhibit 5.6.b
California Bighorn Sheep Distribution



5.7 SENSITIVE FISH SPECIES ASSESSMENT

TABLE 5.7
SENSITIVE FISH SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Fish				
Northern Redbelly Dace		X		
Sturgeon Chub	X			

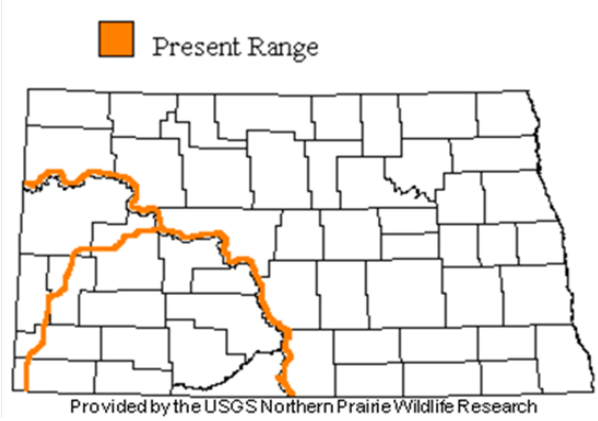
5.7.1 Northern Redbelly Dace

The northern redbelly dace (Phoxinus eos) is found in tributaries of the Missouri River including the Heart, Knife, and Cannonball Rivers (ND Game & Fish Department, Level II Species). This species prefers clear, cool, slow running waters. The Knife River is located in the northern portion of the Project area and supports suitable habitat for the northern redbelly dace. The Project may impact this species or their habitat. Crossing of the Knife River should be done by means of boring as well as implementing best management practices during construction activities to minimize disturbance to the best extent possible.

5.7.2 Sturgeon Chub

The sturgeon chub (*Macrhybopsis gelida*) prefers gravelly or sandy areas with shallow water and high turbidity and swift currents. The proposed corridor does not support suitable habitat. The Project will have no effect on this species.

Exhibit 5.7.b
Sturgeon Chub Distribution



5.8 Sensitive Insect Species Assessment

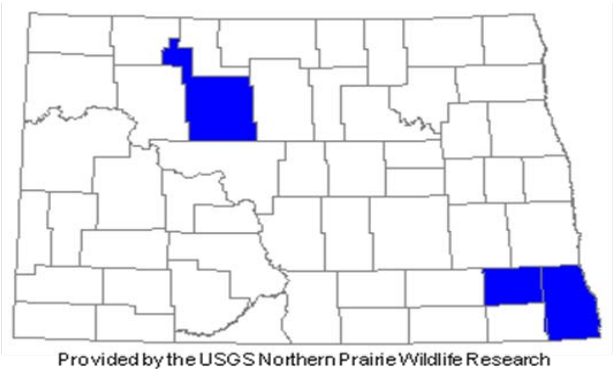
TABLE 5.8
SENSITIVE INSECT SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Insects				
Arogos Skipper	X			
Broad-winged Skipper	X			
Dion Skipper	X			
Mulberry Wing	X			
Ottoe Skipper	X			
Powesheik Skipper	X			
Regal Fritillary Butterfly		X		
Tawny Crescent Butterfly	X			

5.8.1 Arogos Skipper

Arogos skippers (*Atrytone arogos iowa*) occur in undisturbed grasslands and prairies that are associated with purple vetch, Canada thistle, dogbane, stiff coreopsis, purple coneflower, green milkweed, and ox-eye daisy in southeastern North Dakota. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

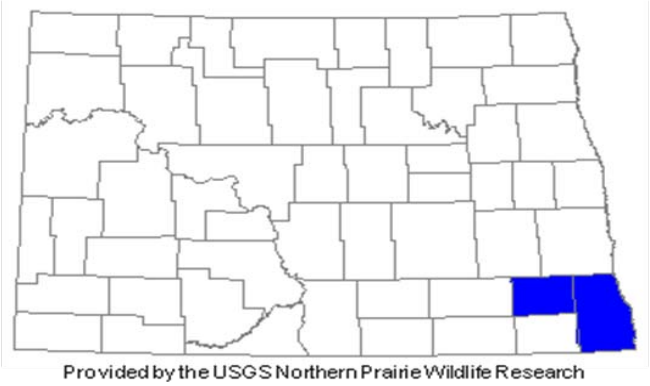
Exhibit 5.8.a
Arogos Distribution



5.8.2 Broad-Winged Skipper

The broad-winged skipper (*Poanes viator*) inhabits tall-grass marshes and ditches adjacent to wetlands associated with hairy sedge and swamp milkweed. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

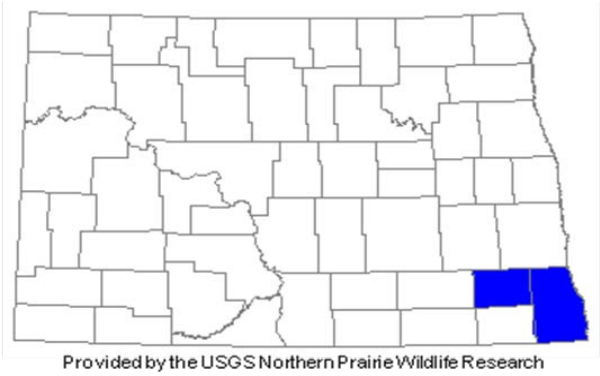
Exhibit 5.8.b
Broad-Winged Skipper Distribution



5.8.3 Dion Skipper

The Dion skipper (*Euphyes dion*) prefers undisturbed native prairies that are associated with white camass. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

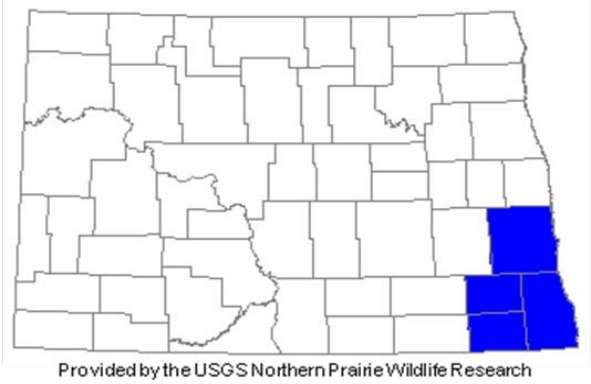
Exhibit 5.8.c
Dion Skipper Distribution



5.8.4 Mulberry Wing

Mulberry wings (*Poanes Massasoit*) inhabits meadows associated with upright sedge and dogwood. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

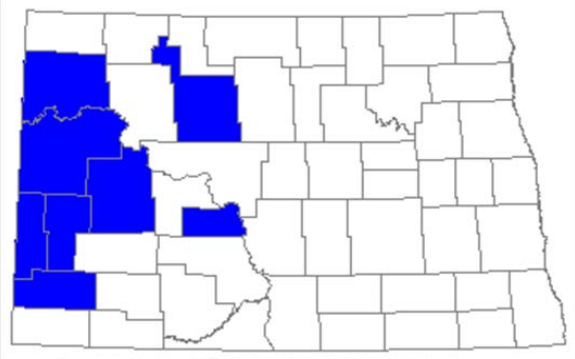
Exhibit 5.8.d
Mulberry Wing Distribution



5.8.5 Ottoe Skipper

Ottoe skippers (*Hesperia ottoe*) prefer ungrazed or lightly grazed native prairie hilltops associated with coneflowers. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

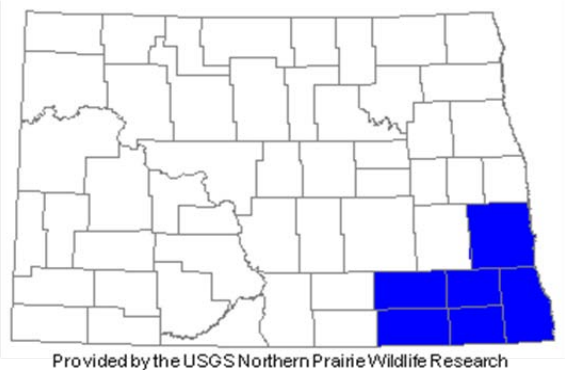
Exhibit 5.8.e
Ottoe Skipper Distribution



5.8.6 Powesheik Skipper

The powesheik skipper (*Oarisma powesheik*) inhabits undisturbed, tall-grass meadows. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

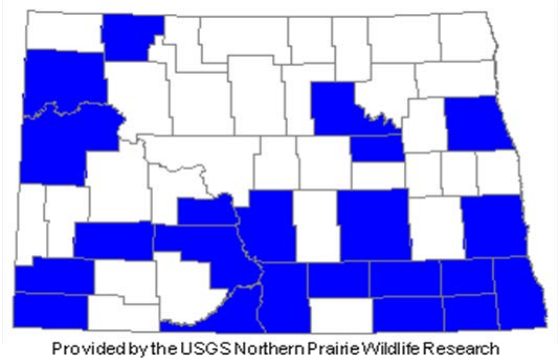
Exhibit 5.8.f
Powesheik Skipper Distribution



5.8.7 Regal Fritillary Butterfly

Regal fritillary butterflies (*Speyeria idalia*) inhabit native prairies that are associated with milkweeds, thistles, and blazing star. The Project area does support habitat theat would be deemed suitable for this species. Although no regal fritillary butterflies were observed during the field survey the Project may impact this species or their habitat. However, construction activity is proposed to commence this winter, where activity will succeed their inhabitance season. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

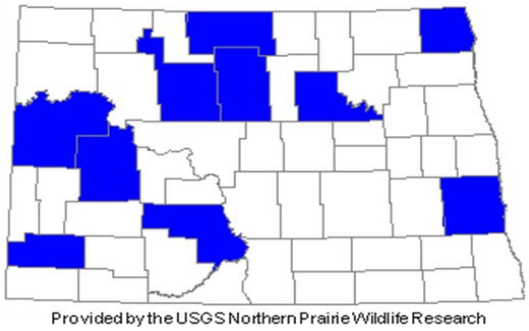
Exhibit 5.8.g
Regal Fritillary Butterfly Distribution



5.8.8 Tawny Crescent Butterfly

The tawny crescent butterfly (*Phyciodes batesii*) inhabits woodland roadsides and bluestem prairies associated with dogbane, leafy spurge, hobomok skippers, silver-spotted skippers, and Canadian tiger swallowtails. No tawny crescent butterflies were observed during the field survey. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

Exhibit 5.8.h
Tawny Crescent Butterfly Distribution



5.9 SPECIES OF CONSERVATION PRIORITY

North Dakota has deemed one hundred species in their Wildlife Action Plan for Species of Conservation Priority (Appendix A). These species are broken down into Level I, being the species in greatest need of conservation, Level II, being species that have support from other programs but remain in need of conservation, and Level II, being species in moderate need of conservation. Species of Conservation Priority observed during the field survey were sharp-tailed grouse.

6.0 WETLANDS

Table 6.1 below presents the wetlands that are located within the survey corridor.

TABLE 6.1
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
1.	**PEMA** Palustrine Emergent Temporarily Flooded	48 4' 4.83" N 102 21'20.10" W	10,235 ft²	Cultivated Field
2.	**PEMA** Palustrine Emergent Temporarily Flooded	48 4' 32.96" N 102 21'10.5" W	62,075 ft²	Cultivated Field
3.	**PEMC** Palustrine Emergent Seasonally Flooded	48 5' 12.98" N 102 21' 8.50" W	1,026,605 ft²	Cultivate Field – Killdeers observed
4.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 6' 16.42" N 102 21' 9.791" W	15,240 ft²	Cultivated Field
5.	**PEMC** Palustrine Emergent Seasonally Flooded	48 6' 37.81" N 102 21' 10.08" W	91,915 ft²	Cultivated Field
6.	**PEMA** Palustrine Emergent Temporarily Flooded	48 6' 51.70" N 102 21' 9.85" W	13,315 ft²	Cultivated Field
7.	**PEMA** Palustrine Emergent Temporarily Flooded	48 7' 2.85" N 102 21' 10.31" W	13,175 ft²	Cultivated Field
8.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 15.76" N 102 21' 9.84" W	23,875 ft²	Quaking Aspen and Killdeers observed
9.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 50.58" N 102 21' 5.87" W	18,460 ft²	Cultivated Field
10.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 54.40" N 102 21' 6.31" W	113,280 ft²	
11.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 57.65" N 102 21' 5.00" W	4,275 ft²	
12.	**PEMCd** Palustrine Emergent Seasonally Flooded Partially Drained/Ditched	48 8' 5.63" N 102 21' 8.48" W	23,508 ft²	Absinth Wormwood and Canada Thistle present
13.	**PEMC** Palustrine Emergent Seasonally Flooded	48 8' 21.93" N 102 21' 7.97" W	54,465 ft²	
14.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 8' 30.70" N 102 21' 8.42" W	7,815 ft²	Cultivated Field
15.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 8' 36.90" N 102 21' 7.95" W	67,834 ft²	
16.	**PEMA** Palustrine Emergent Temporarily Flooded	48 8' 41.39" N 102 21' 8.75" W	29,880 ft²	Cultivated Field

TABLE 6.1 (CONTINUED)
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
17.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 9' 4.24" N 102 21' 1.05" W	12,370 ft²	Cultivated Field
18.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 9.60" N 102 21' 0.25" W	8,785 ft²	15 ft west of the survey corridor
19.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 25.04" N 102 21' 2.67" W	12,650 ft²	Cultivated Field
20.	**Intermittent Stream** NDHUB Water 100K ID - 21788	48 9' 33.41" N 102 21' 4.73" W	N/A	Killdeers observed
21.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 48.10" N 102 21' 3.83" W	18,352 ft²	Cultivated Field
22.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 1.23" N 102 21' 2.26" W	81,483 ft²	Cultivate Field – Killdeers observed
23.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 11.27" N 102 21' 1.18" W	9,960 ft²	
24.	**PEMCd** Palustrine Emergent Seasonally Flooded Partially Drained/Ditched	48 10' 22.44" N 102 21' 4.18" W	24,230 ft²	
25.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 32.73" N 102 21' 10.23" W	190,705 ft²	Bored
26.	**PEMA** Palustrine Emergent Temporarily Flooded	48 10' 35.32" N 102 21' 9.68" W	6,985 ft²	Cultivated Field
27.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 47.68" N 102 21' 9.96" W	134,000 ft²	Bored
28.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 54.93" N 102 21' 9.75" W	28,795 ft²	Canada Thistle present
29.	**PEMC** Palustrine Emergent Seasonally Flooded	48 11' 47.67" N 102 21' 9.89" W	9,250 ft²	
30.	**PEMC** Palustrine Emergent Seasonally Flooded	48 11' 49.47" N 102 21' 9.00" W	18,255 ft²	
31.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 1.10" N 102 21' 8.27" W	18, 200 ft²	Bordering west side corridor
32.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 11' 56.76" N 102 21' 4.95" W	494,230 ft²	35 ft east of corridor
33.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 8.01" N 102 21' 7.50" W	26,940 ft²	15 ft east of corridor
34.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 12' 10.10" N 102 21' 9.05" W	7,675 ft²	Cultivated Field
35.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 27.82" N 102 21' 9.14" W	149,651 ft²	
36.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 37.23" N 102 21' 4.87" W	8,505 ft²	15 ft west of corridor
37.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 49.01" N 102 20' 56.62" W	204,140 ft²	
38.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 48.38" N 102 20' 54.45" W	4,273 ft²	Bordering east side corridor
39.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 2.95" N 102 20' 59.21" W	9,580 ft²	Cultivated Field
40.	**PEMA** Palustrine Emergent Temporarily Flooded	48 13' 20.67" N 102 21' 9.94" W	11,660 ft²	
41.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 39.70" N 102 21' 9.23" W	395,760 ft²	Cultivated Field

TABLE 6.1 (CONTINUED)
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
42.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 55.64" N 102 21' 10.71" W	94,012 ft²	Cultivated Field
43.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 8.50" N 102 21' 10.90" W	78,372 ft²	
44.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 14.21" N 102 21' 9.80" W	57,880 ft²	
45.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 14' 20.32" N 102 21' 10.86" W	157,122 ft²	
46.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 40.77" N 102 21' 10.85" W	4,230 ft²	
47.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 42.07" N 102 21' 11.50" W	5,415 ft²	
48.	**PEMA** Palustrine Emergent Temporarily Flooded	48 14' 51.23" N 102 21' 9.35" W	4,520 ft²	
49.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 8.63" N 102 21' 11.03" W	76715 ft²	Canada Thistle present
50.	**PABF** Palustrine Aquatic Bed Semipermanently Flooded	48 15' 23.90" N 102 21' 10.66" W	573,968 ft²	Canada Thistle present
51.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 46.26" N 102 21' 9.14" W	49,299 ft²	Cultivated Field
52.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 51.91" N 102 21' 11.35" W	4,500 ft²	20 ft west of corridor
53.	**PEMA** Palustrine Emergent Temporarily Flooded	48 16' 0.17" N 102 21' 10.41" W	4,920 ft²	
54.	**PEMC** Palustrine Emergent Seasonally Flooded	48 16' 13.90" N 102 21' 10.40" W	7,320 ft²	Canada Thistle present
55.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 16' 32.42" N 102 21' 9.25" W	1,417,392 ft²	Canada Thistle present Partridge observed
56.	**PEMC** Palustrine Emergent Seasonally Flooded	48 16' 41.72" N 102 21' 9.22" W	19,840 ft²	
57.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 16' 51.33" N 102 21' 9.11" W	970,320 ft²	Canada Thistle present
58.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 17' 2.95" N 102 21' 9.24" W	653,980 ft²	Canada Thistle present
59.	**PEMA** Palustrine Emergent Temporarily Flooded	48 17' 43.07" N 102 21' 8.85" W	4,705 ft²	
60.	**PEMA** Palustrine Emergent Temporarily Flooded	48 17' 45.11" N 102 21' 10.65" W	5,155 ft²	
61.	**Intermittent Stream** NDHUB Water 100K ID – Little Knife River	48 18' 14.26" N 102 21' 50.36" W	N/A	Boring

7.0 SUMMARY

The survey corridor contains a healthy establishment of vegetation that supplies wildlife with good cover. The proposed Project is not likely to adversely affect a population of species or their habitat if suitable mitigation including re-vegetation is employed. Implementation of best management practices during construction activity will assist in minimizing disturbance to any plant or wildlife species inhabiting the area.

8.0 REFERENCES CITED

Bryce, S. A., J. M. Omernik, D. E. Pater, M. Ulmer, J. Schaar, J. Freeouf, R. Johnson, P. Kuck, and S. H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota [Web Page]. Located at: http://www.npwrc.usgs.gov/resource/1998/ndsdeco/ndsdeco.htm. Accessed: January 22, 2004.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

Dechant, J. A., M. L. Sondreal, D. H. Johnson, L. D. Igl, C. M. Goldade, M. P. Nenneman, and B. R. Euliss. 2003. Effects of management practices on grassland birds: Baird's Sparrow. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/literatr/grasbird/bais/bais.htm (Version 12AUG2004).

Dirk, C. 2008. Species of Concern in Mountrail County, ND. Christine Dirk, Natural Resource Division, North Dakota Parks & Recreation Department – North Dakota Natural Heritage Program, Bismarck, personal communication with Heather M. Jandt, Biology Specialist, Keitu Engineers & Consultants, Inc.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Engineer Wetlands Research Program Technical Report Y–87–1. 169 pages.

Gomes, Scott. No Date. Hawks, eagles, and falcons of North Dakota. North Dakota Game and Fish Department, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/birds/hawks/index.htm (Version 16JUL97).

Grondahl, Chris. No Date. Small Mammals of North Dakota. North Dakota Game and Fish Department, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/mammals/mammals/index.htm (Version 15AUG97).

Grondahl, Chris and Kathy Martin. No Date. North Dakota's endangered and threatened species. North Dakota State Game and Fish Department's Nongame Program, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wildlife/endanger/index.htm (Version 16JUL97).

Natural Resources Conservation Service, U.S. Department of Agriculture, 2008. Hydric Soils [Web Page]. Located at http://soils.usda.gov/use/hydric/. Accessed: May 2008.

N.D. Game and Fish Department. No Date. 100 Species of Conservation Priority. Located at: http://gf.nd.gov/conservation.levels-listed.html

Reed, P. B., Jr. 1996. *National List of Plant Species That Occur in Wetlands*. National Ecology Research Center, National Wetlands Inventory, U.S. Fish and Wildlife Service, St. Petersburg, Florida

Royer, Ronald A. 2004. Atlas of North Dakota Butterflies. Jamestown ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/insects/bflynd/index.htm (Version 29MAR2004).

Stewart, Robert E. 1975. Breeding Birds of North Dakota. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/birds/bbofnd/index.htm

U.S. Department of Agriculture, Natural Resources Conservation Service. 2008. The PLANTS Database, Version 3.5 [Web Page]. Located at: http://plants.usda.gov. Accessed: May 2008.

U.S. Army Corps of Engineers. (2006). *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region*, J. S. Wakeley, R. W. Lichvar, and C. V. Noble, eds., Technical Report _____, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

U.S. Department of Agriculture, Natural Resources Conservation Service, 2006. *Field Indicators of Hydric Soil s in the United States*, Version 6.0 G.W. Hurt and L.M Vasilas (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

U.S. Department of Agriculture. 2008. Geospatial Data Gateway [Web Page]. Located at: http://datagateway.nrcs.usda.gov/GatewayHome.html. Accessed: May 2008

U.S. Department of Agriculture, Natural Resources Conservation Service, 2007. *Grasses for the Northern Plains*, Volume 1 D.D. Dewald, W.L. Duckwitz, J.L. Printz, K.K. Sedivec, and D.A. Tober. USDA, NRCS.

U.S. Department of Agriculture. 2006. *Land Resource Regions and Major Land Resources Areas of the United States, the Caribbean, and the Pacific Basin. MLRA Explorer Custom Report: Northern Great Plains Spring Wheat Region*, USDA Agriculture Handbook 296. http://soils.usda.gov/MLRAExplorer.

U.S. Department of Agriculture, Natural Resources Conservation Service, 2008. Keys to Classification [Online]. Located at http://soils.usda.gov/technical/classification/tax_keys/. Accessed: May 2008.

U.S. Department of Agriculture 2005. Noxious Weed County Maps. USDA Bismarck, ND: Located at: http://agdepartment.com/NoxiousWeedMaps/NoxiousWeedCountyMaps.htm.

U.S. Department of Agriculture, Natural Resources Conservation Service, 2008. Soil Taxonomy [Online]. Available: http://soils.usda.gov/technical/classification/taxonomy.

U.S. Department of Agriculture, Natural Resources Conservation Service, 2008. Web Soil Survey [Web Page]. Located at http://websoilsurvey.nrcs.usda.gov/app/. Accessed: May 2008.

U.S. Fish and Wildlife Service. 1995. North Dakota's federally listed endangered, threatened, and candidate species - 1995. U.S. Fish and Wildlife Service, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wildlife/nddanger/index.htm (Version 16JUL97).

U.S. Fish & Wildlife Service, National Wetlands Inventory, 2008. Wetlands Geodatabase [Web Page]. Located at http://wetlandsfws.er.usgs.gov/nwi/. Accessed: May 2008.

Zollinger, R.K. 2008. North Dakota Weed Control Guide. NDSU Extension Service. Fargo, ND: Located at: http://www.ag.ndsu.edu/weeds/w253/w253w.htm

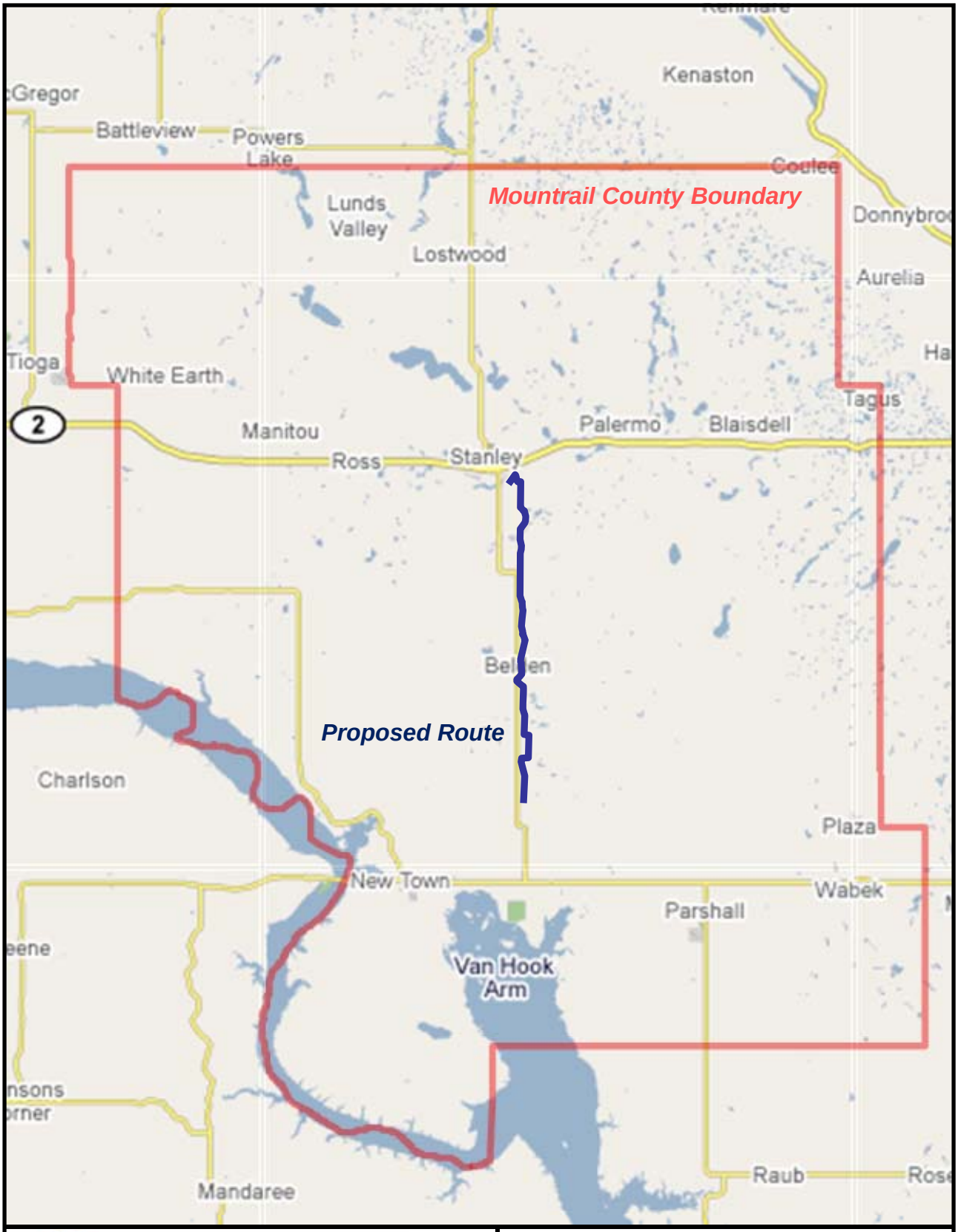


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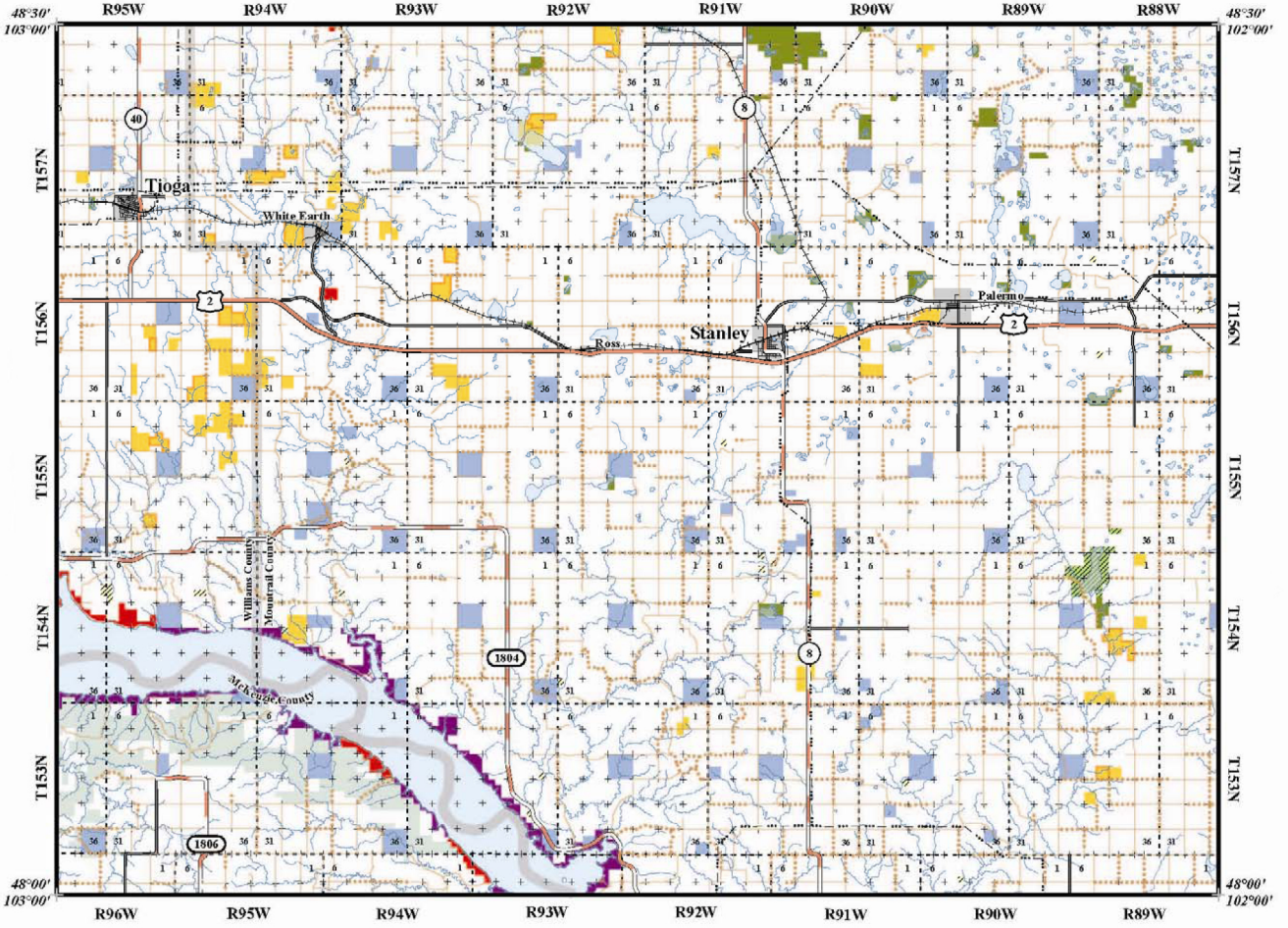
Figure 1 - Site Location Map
Robinson Lake Pipeline Projects
Mountrail County
October 2008

Figure 2a – PLOTS Land

N.D. Game & Fish Department



Scale 1:325,000

1 inch represents 5.13 miles

NDGF GIS a1_48102 BH

Figure 2b – PLOTS Map Legend

N.D. Game & Fish Department

Map Features


Interstate


Federal


State


Paved Road


Gravel or Graded & Maintained


Unimproved Roads & Trails


City Streets & Subdivisions


Township Boundary


County Boundary


Utility Lines


Section Corners


Water Body


River or Stream

ND Game & Fish PLOTS Locations

Marks the boundary of Private Lands Open To Sportsmen for walk-in hunting opportunities. Nontoxic shot is not required for upland game.
Community Match PLOTS are outlined in green
Working Lands are outlined in orange
Waterfowl Rest Area Access PLOTS are outlined in blue

ND State Land Department

Marks the boundary of lands open to walk-in hunting unless otherwise posted with official State Land Department signs. Nontoxic shot is not required for upland game.

Bureau of Reclamation

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

ND Game & Fish Wildlife Management Areas (WMA)

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

ND State Forest Service

Marks the boundary of lands open to walk-in hunting. Nontoxic shot is not required for upland game.

US Army Corps of Engineers

Marks the boundary of lands open to walk-in hunting unless otherwise posted as closed. Nontoxic shot is not required for upland game.

ND Department of Agriculture State Waterbank

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

US Fish & Wildlife Service Waterfowl Production Area (WPA)

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is required when hunting on these areas.

Bureau of Land Management

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

Ducks Unlimited

Marks the boundary of Ducks Unlimited property open for walk-in hunting opportunities. Nontoxic shot is not required for upland game.

US Fish & Wildlife Service National Wildlife Refuge (NWR)

Marks the boundary of National Wildlife Refuges. Consult Refuge manager for specific regulations.

US Forest Service

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

Waterfowl Rest Areas

Consult waterfowl proclamation for specific regulations.

The North Dakota Game and Fish Department compiled these maps according to conventional cartographic standards, using the most reliable information available. The Department does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from these maps, or decisions based thereon.

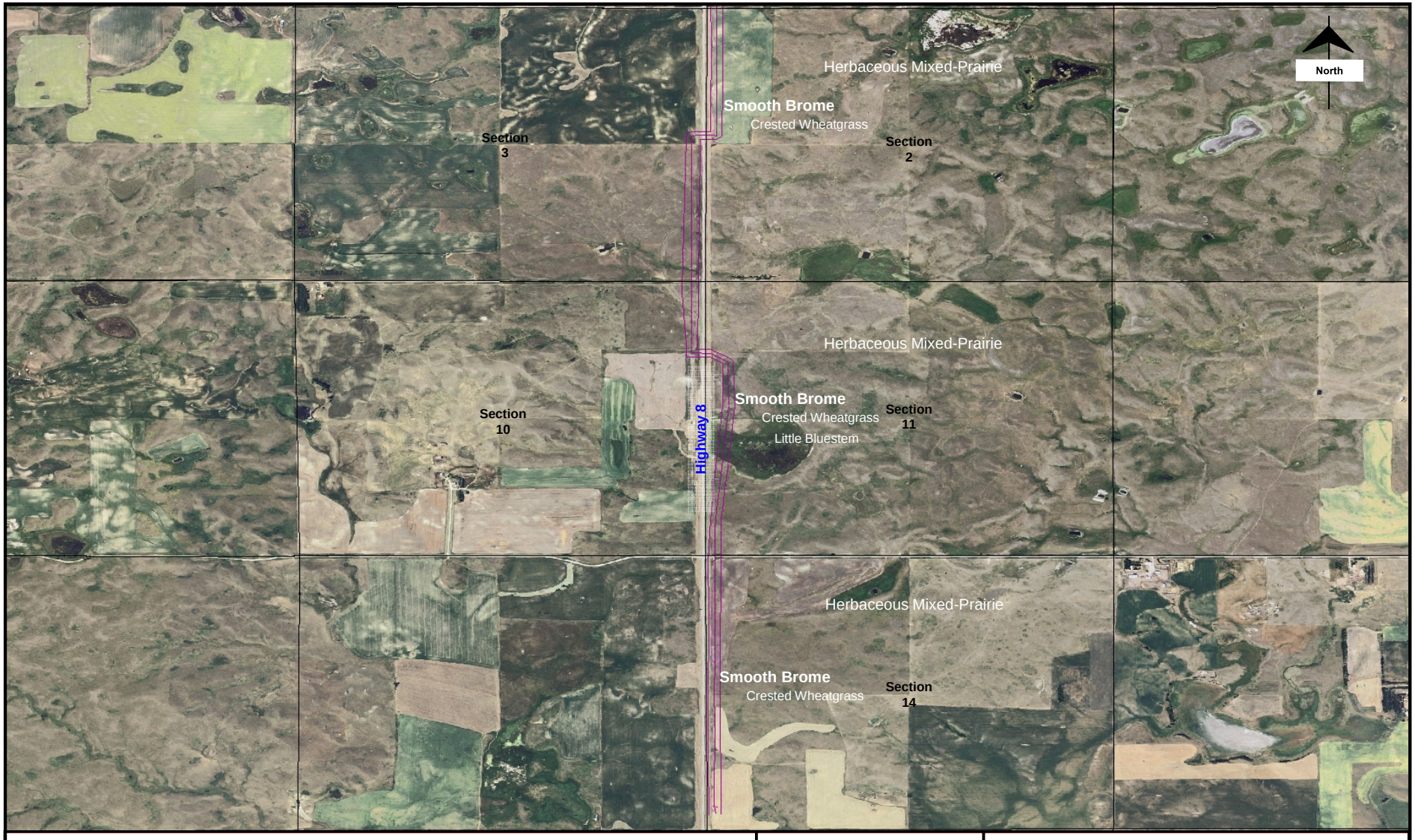


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Figure 3a - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
Not to Scale Revision: 1.0

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Figure 3b - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

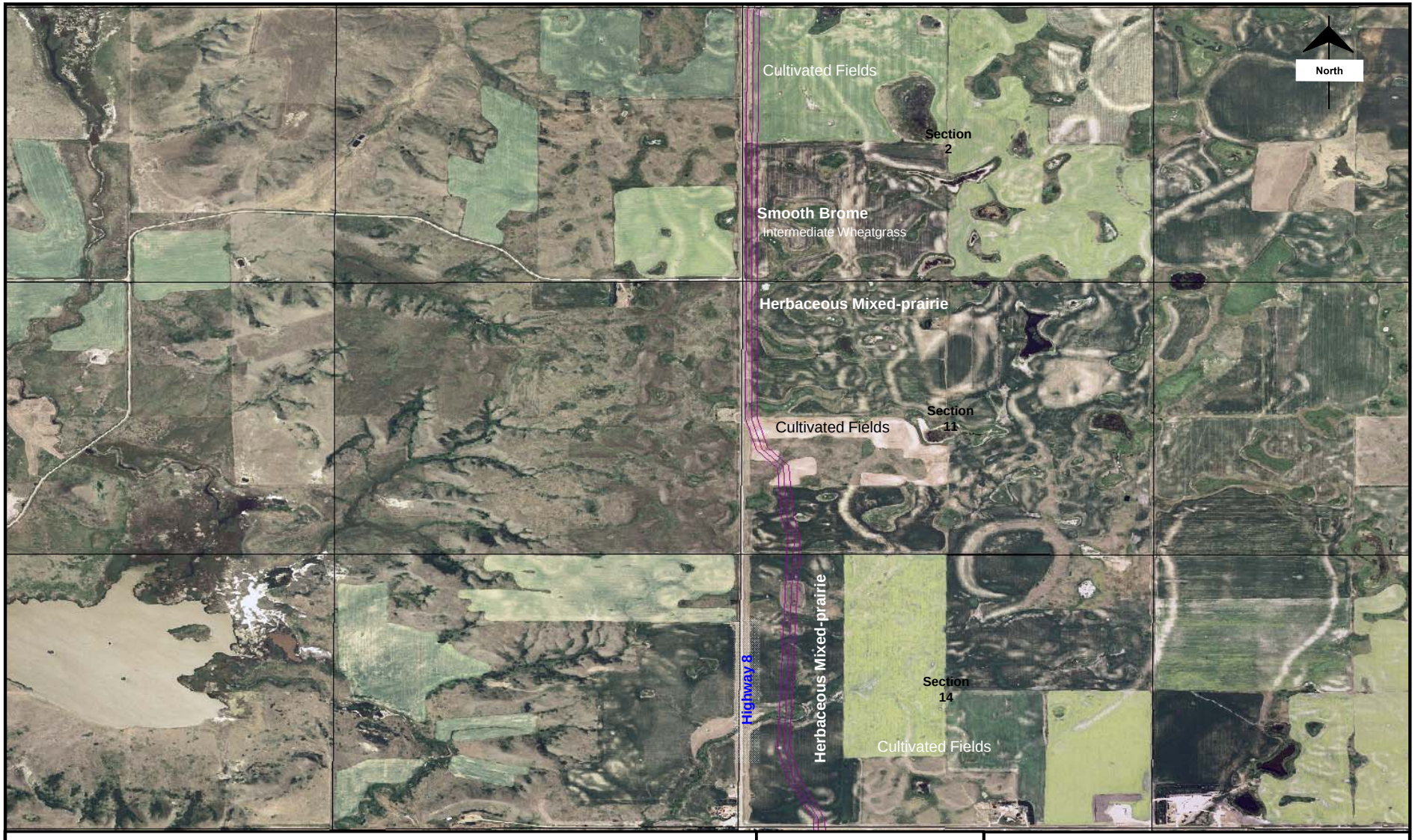

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Figure 3c - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0

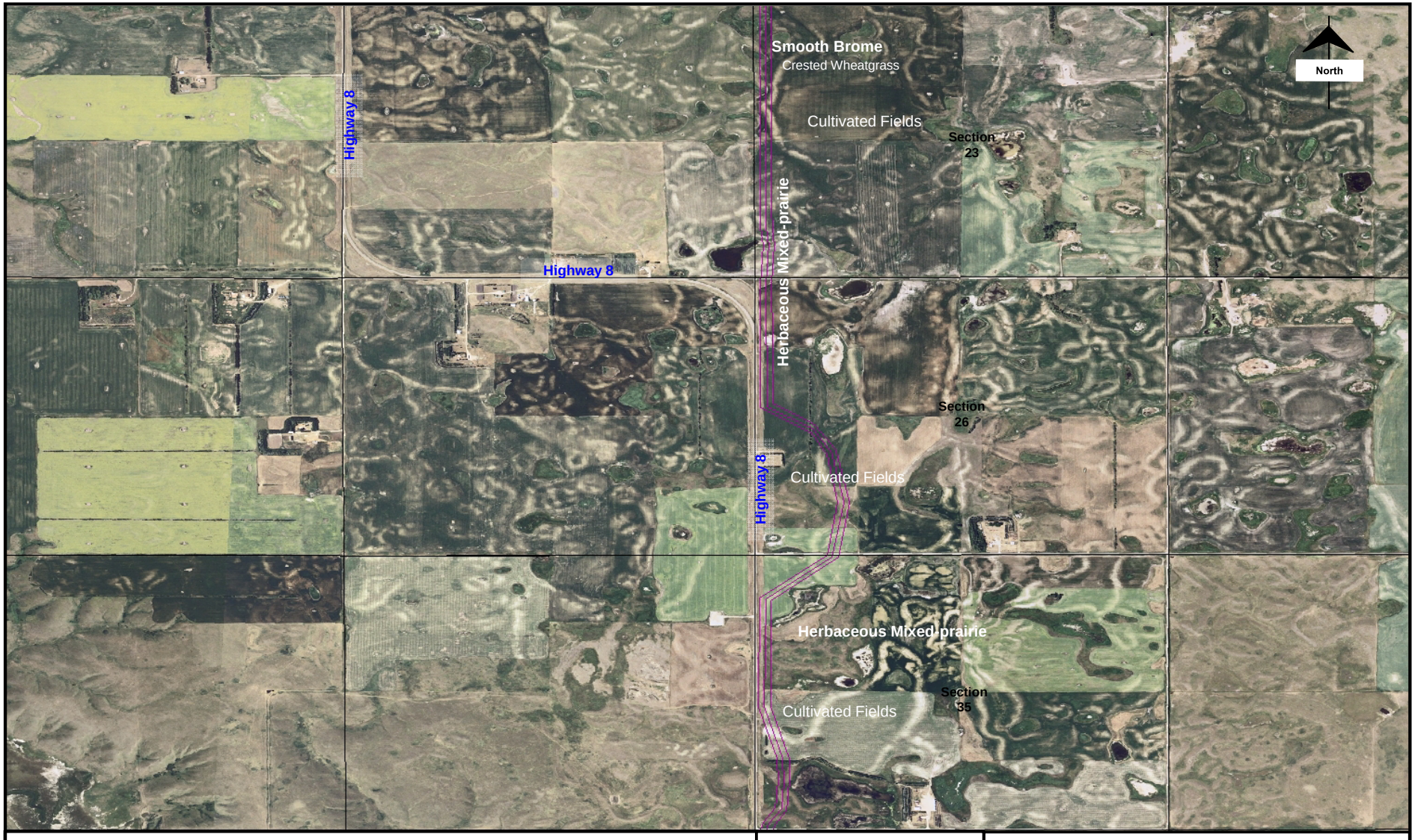

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Figure 3d - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 23,26,35
Not to Scale Revision: 1.0

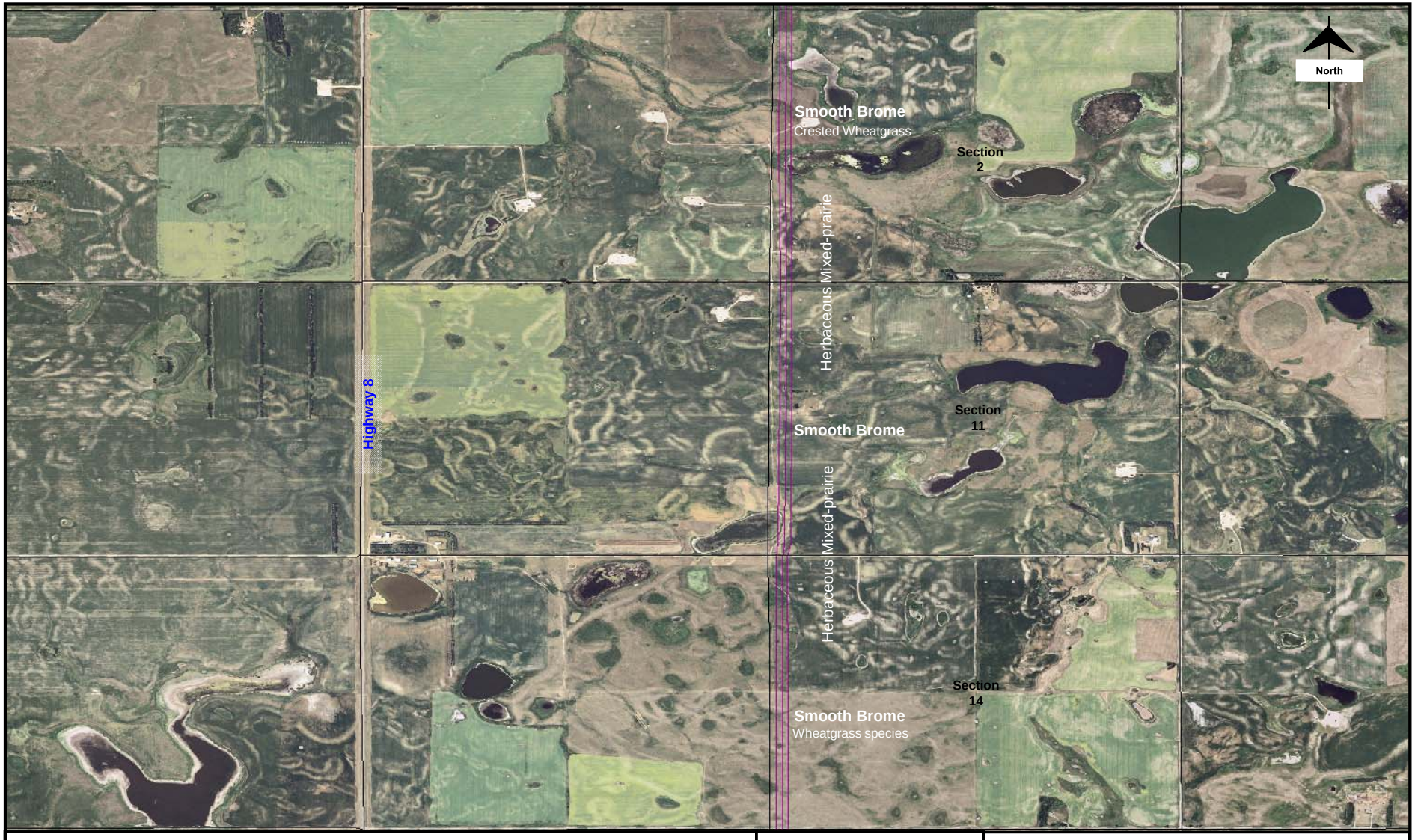

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Figure 3e - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

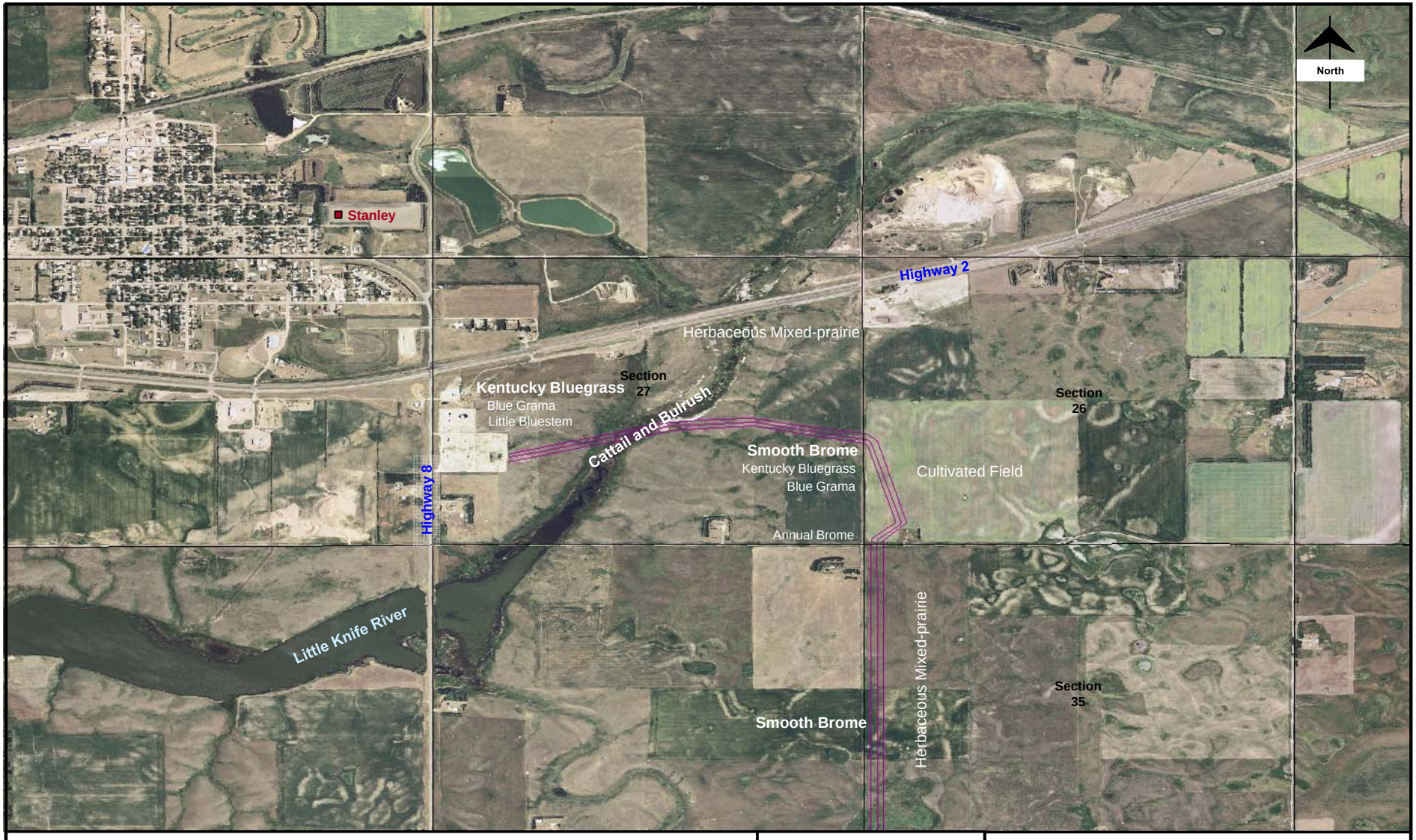

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Figure 3f - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 26,27,35
Not to Scale Revision: 1.0

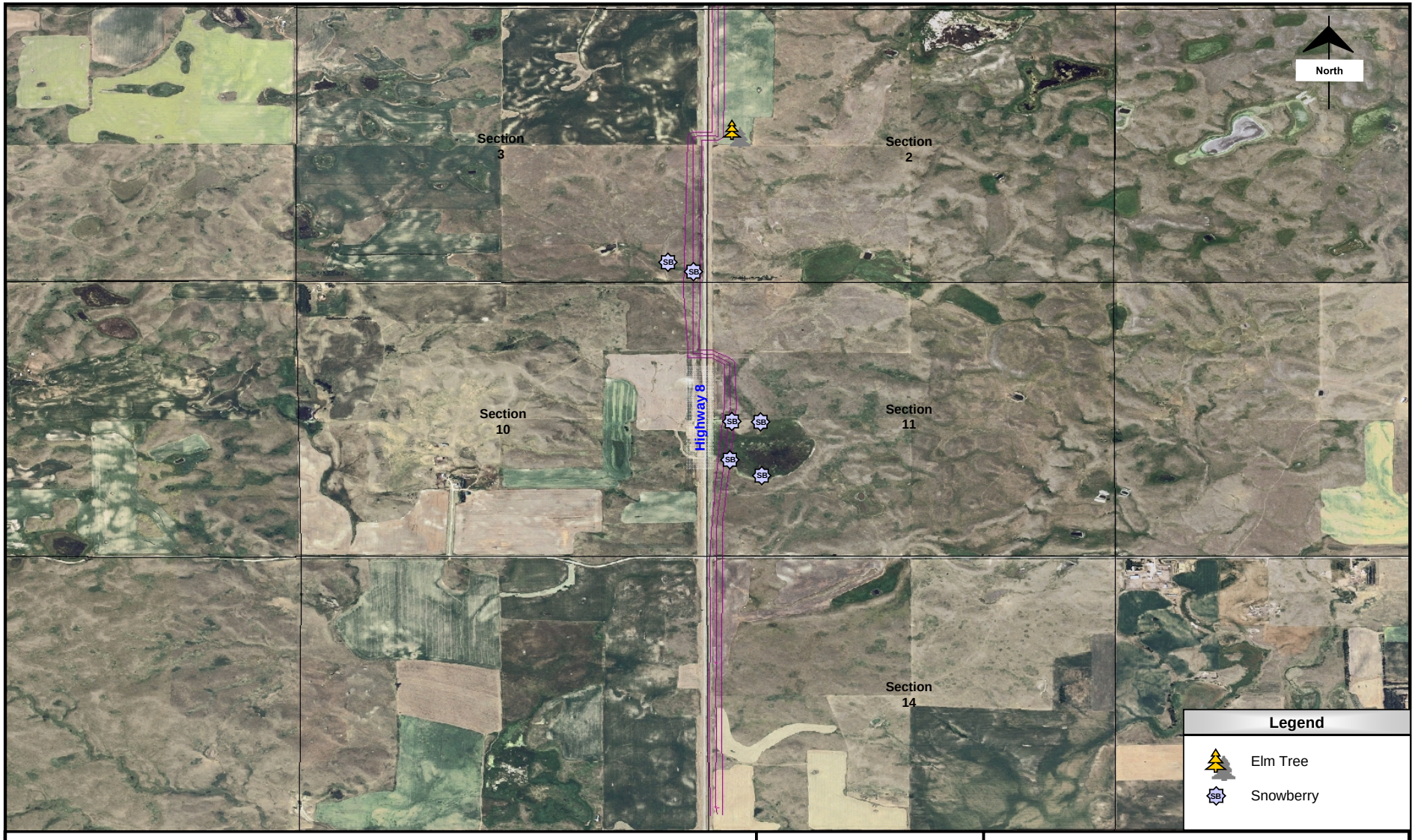

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Figure 4a – Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
Not to Scale Revision: 1.0

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Figure 4b - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

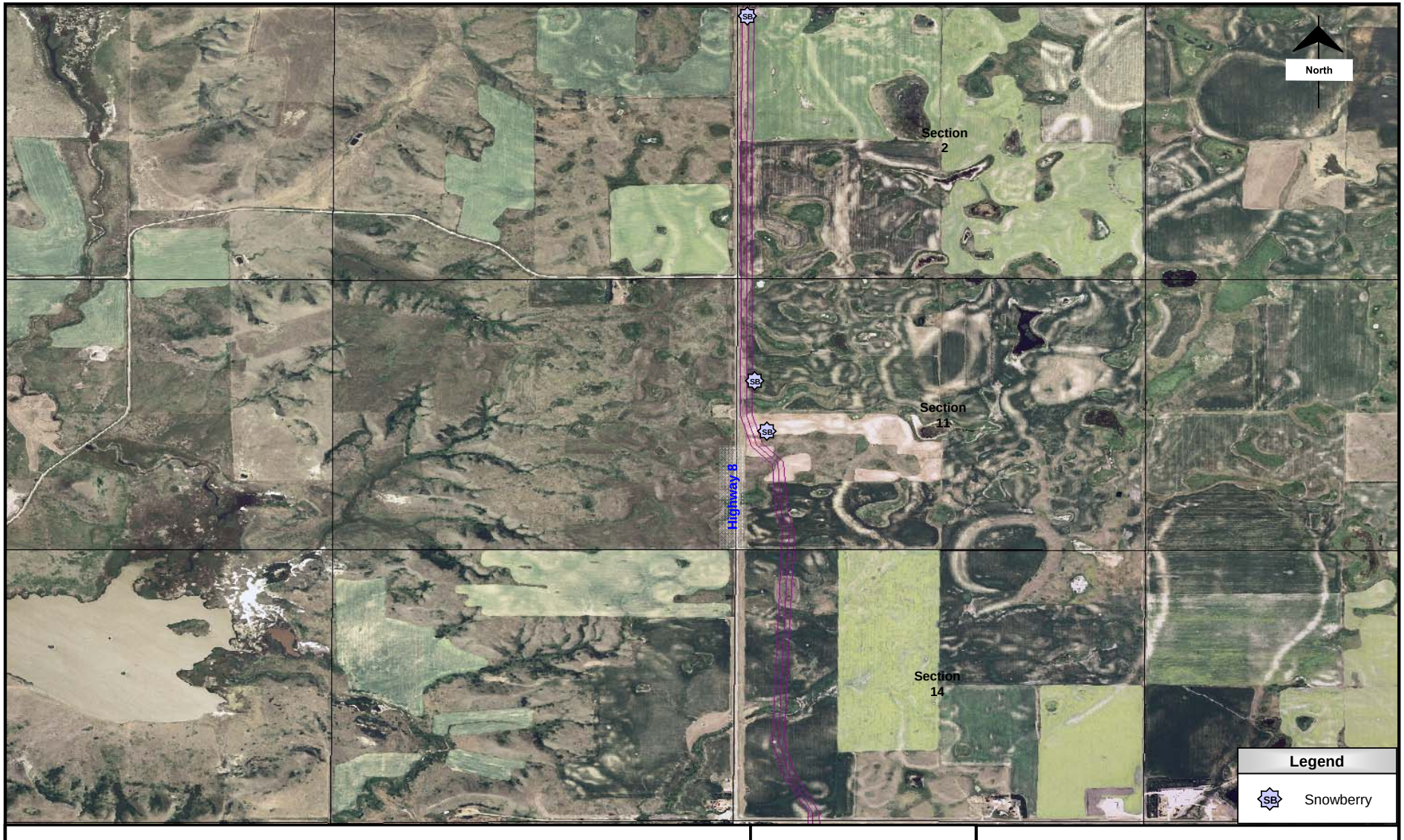

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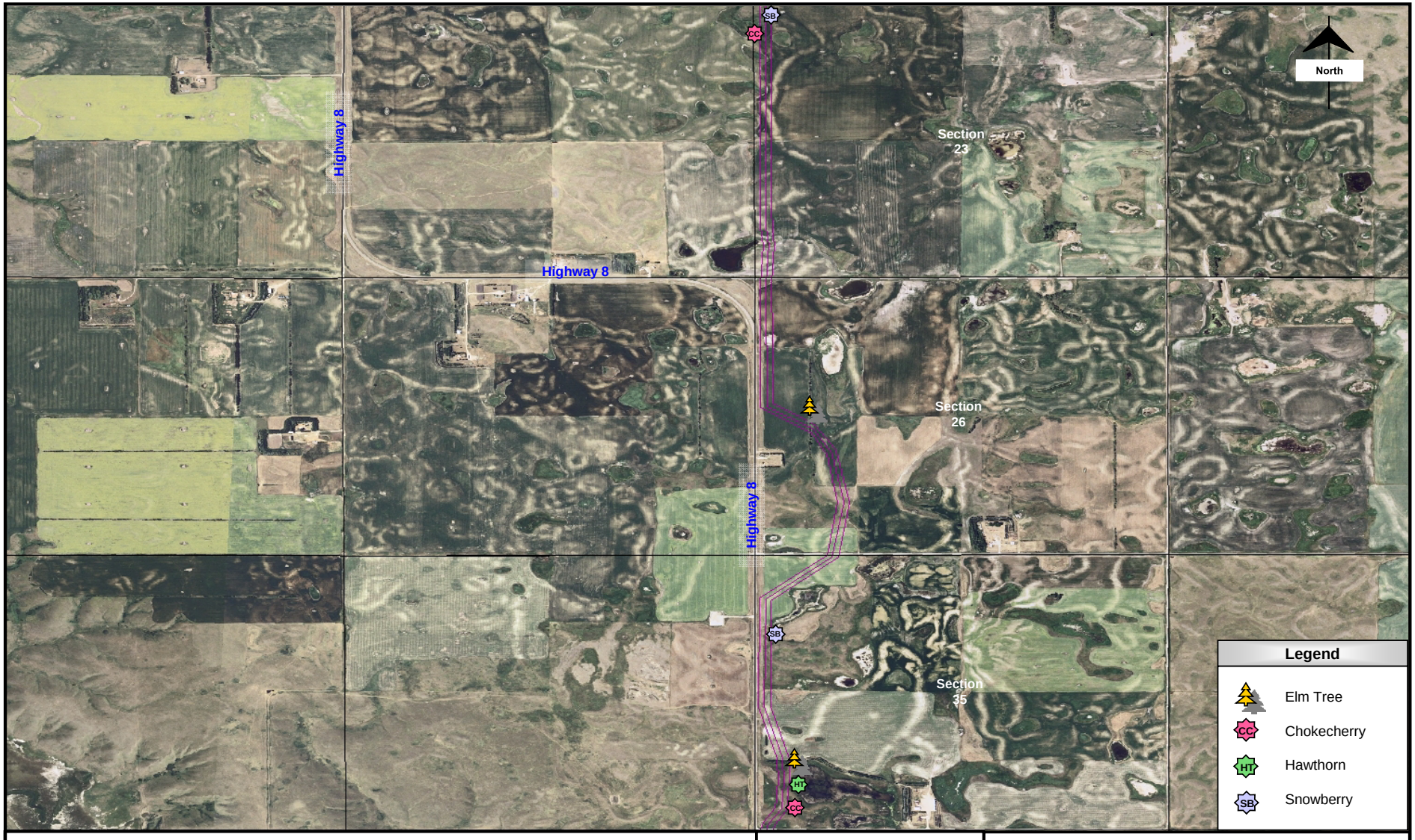
Figure 4c - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0



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Date:	15-October-2008
Prepared By:	J. Meduna
Reviewed By:	K. Spilman

Figure 4d - Woody Vegetation

Robinson Lake Pipeline Projects

Mountrail County

T155N R91W Sections 23,26,35

Not to Scale Revision: 1.0

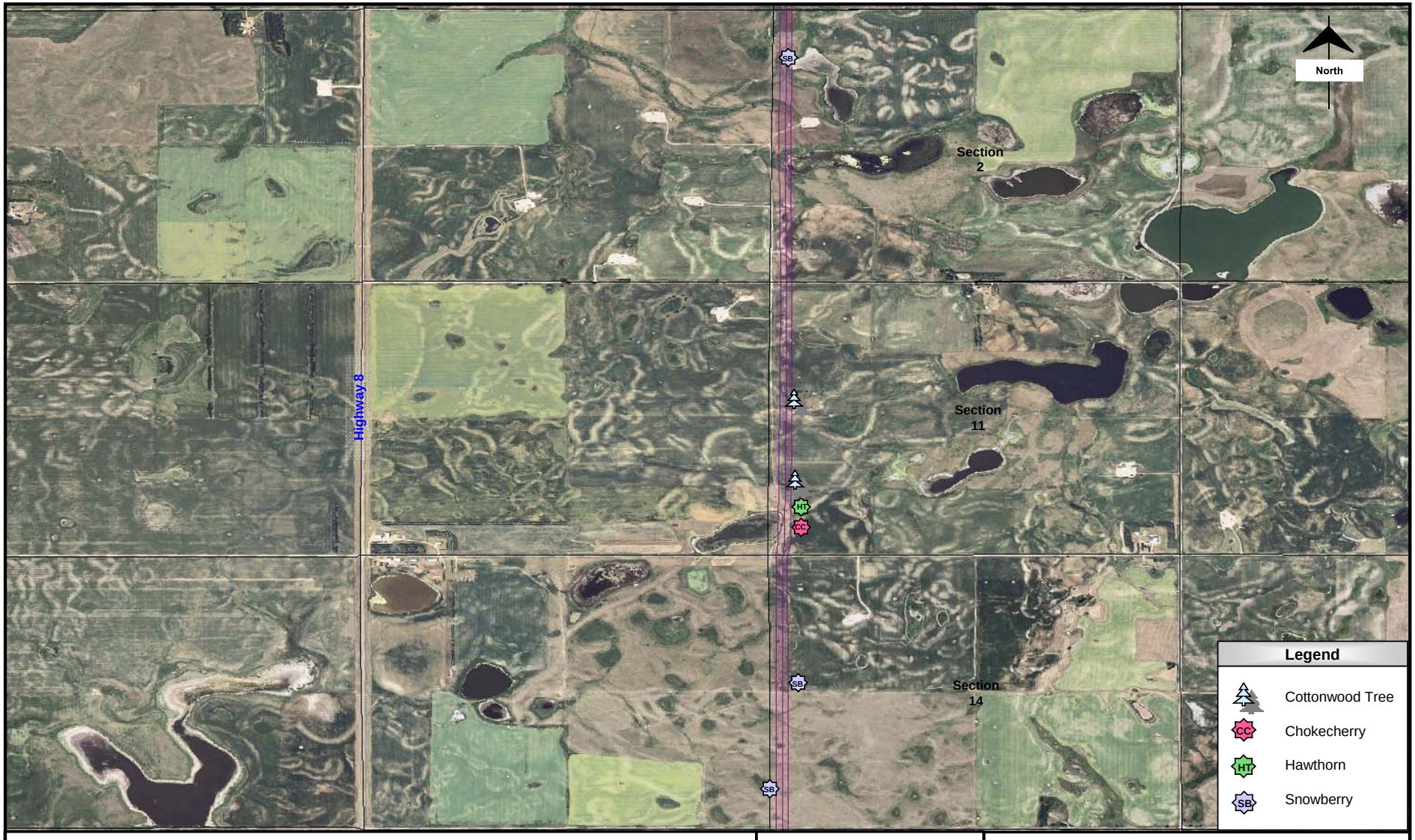

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Figure 4e - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

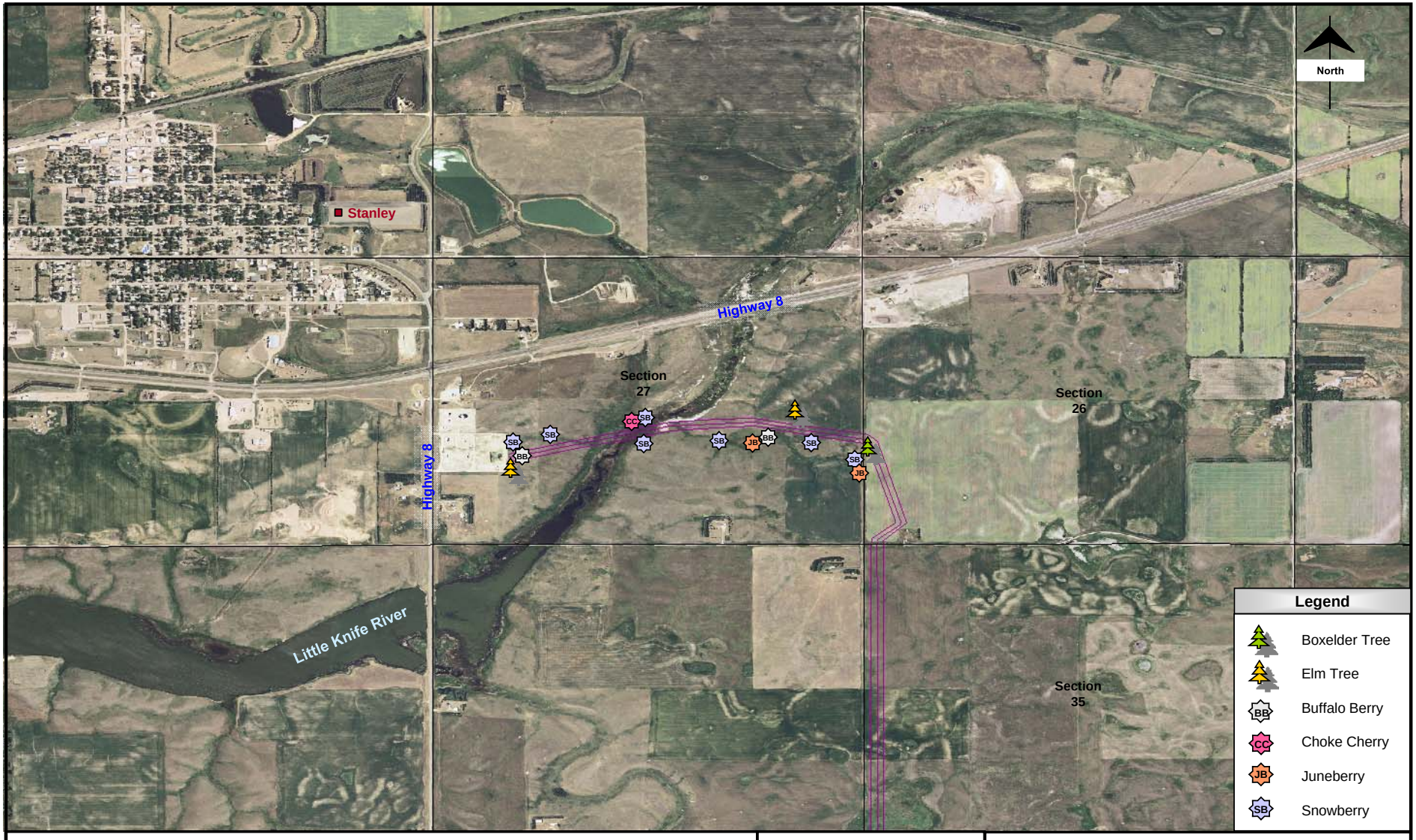

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Figure 4f - Woody Vegetation
Robinson Lake Pipeline Project
Mountrail County
T156N R91W Sections 26,27,35
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Figure 5a – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 10,11
Not to Scale Revision: 1.0

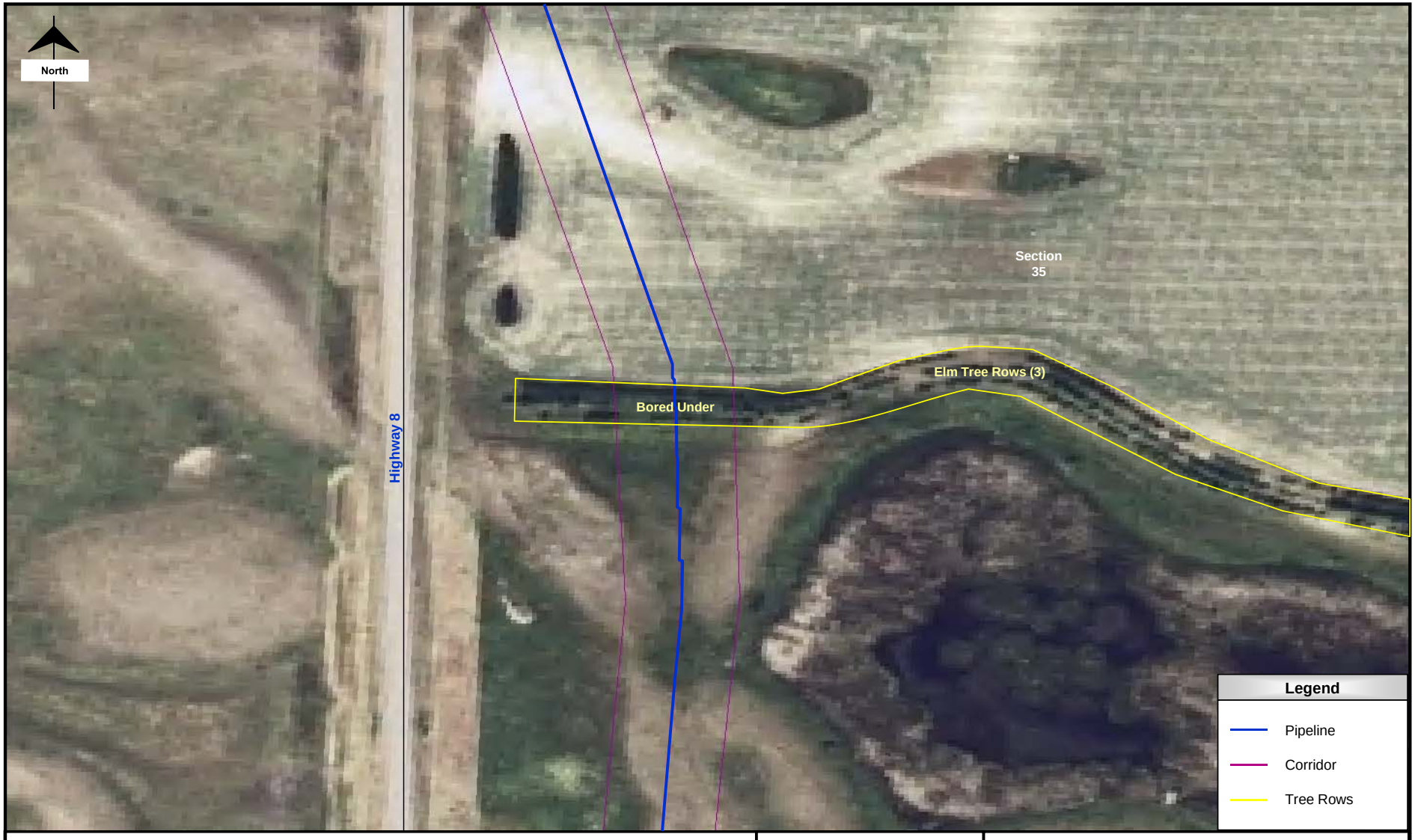

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Figure 5b – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 35
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Figure 5c – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

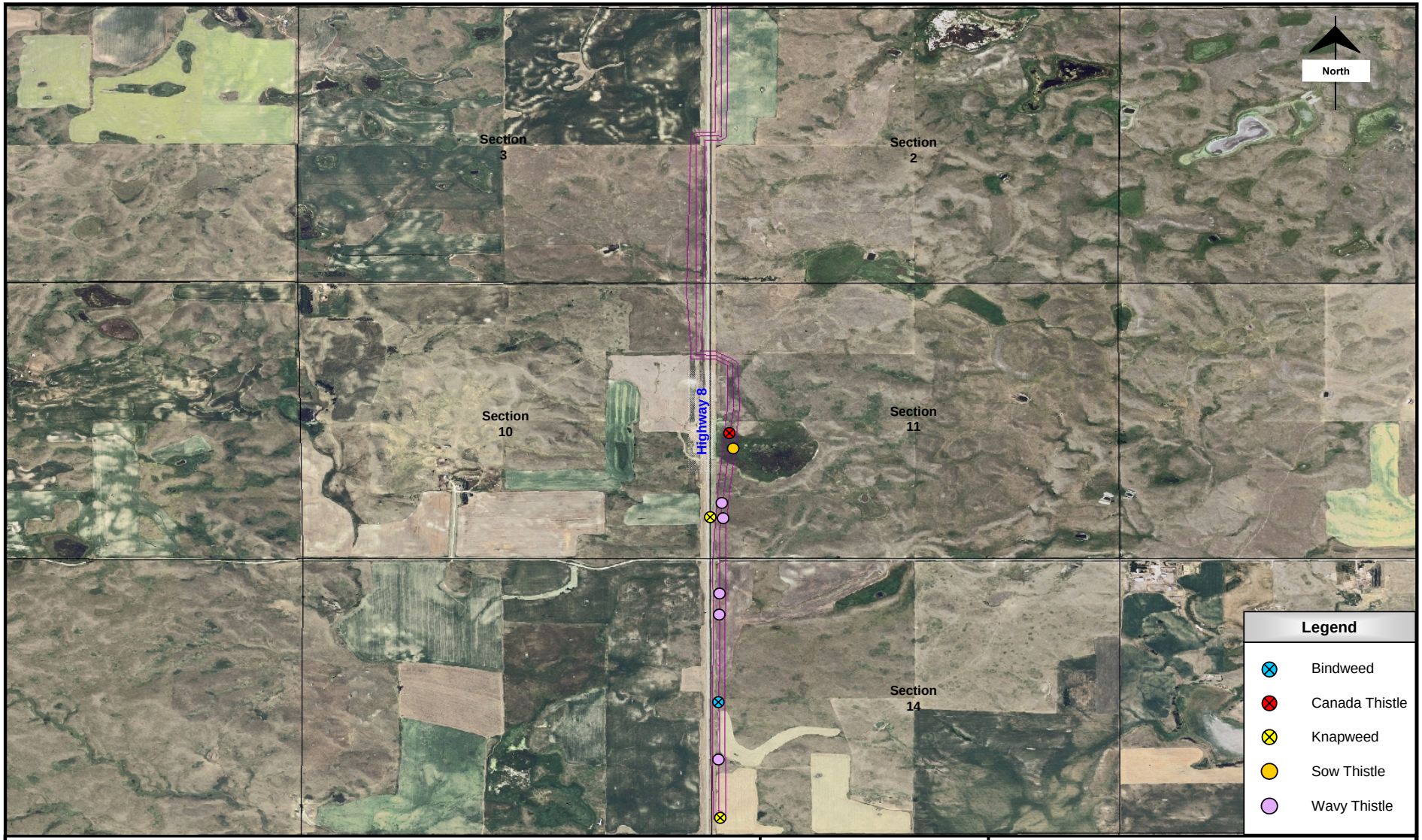

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Figure 6a – Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
Not to Scale Revision: 1.0

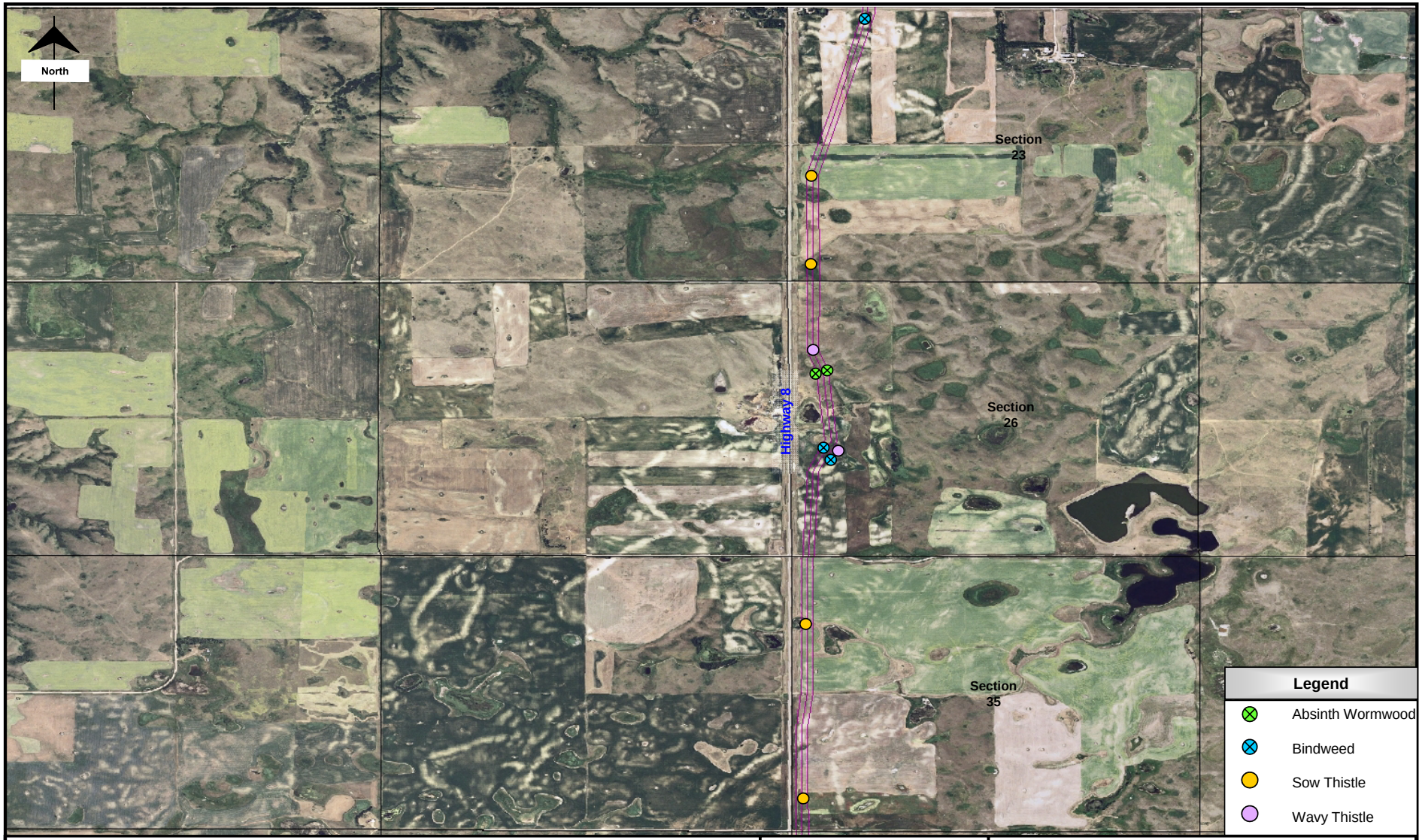

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Figure 6b – Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

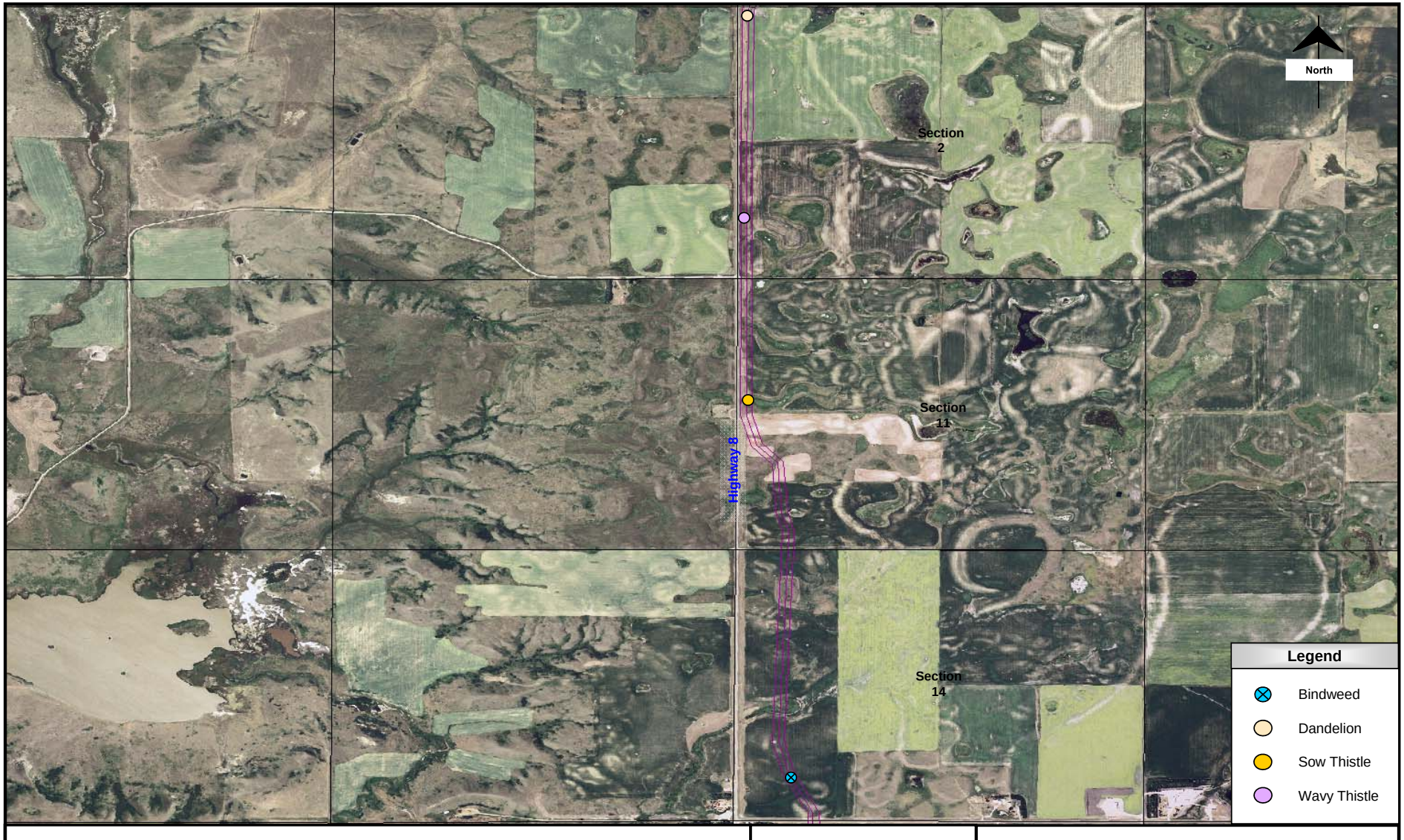

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Figure 6c - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0

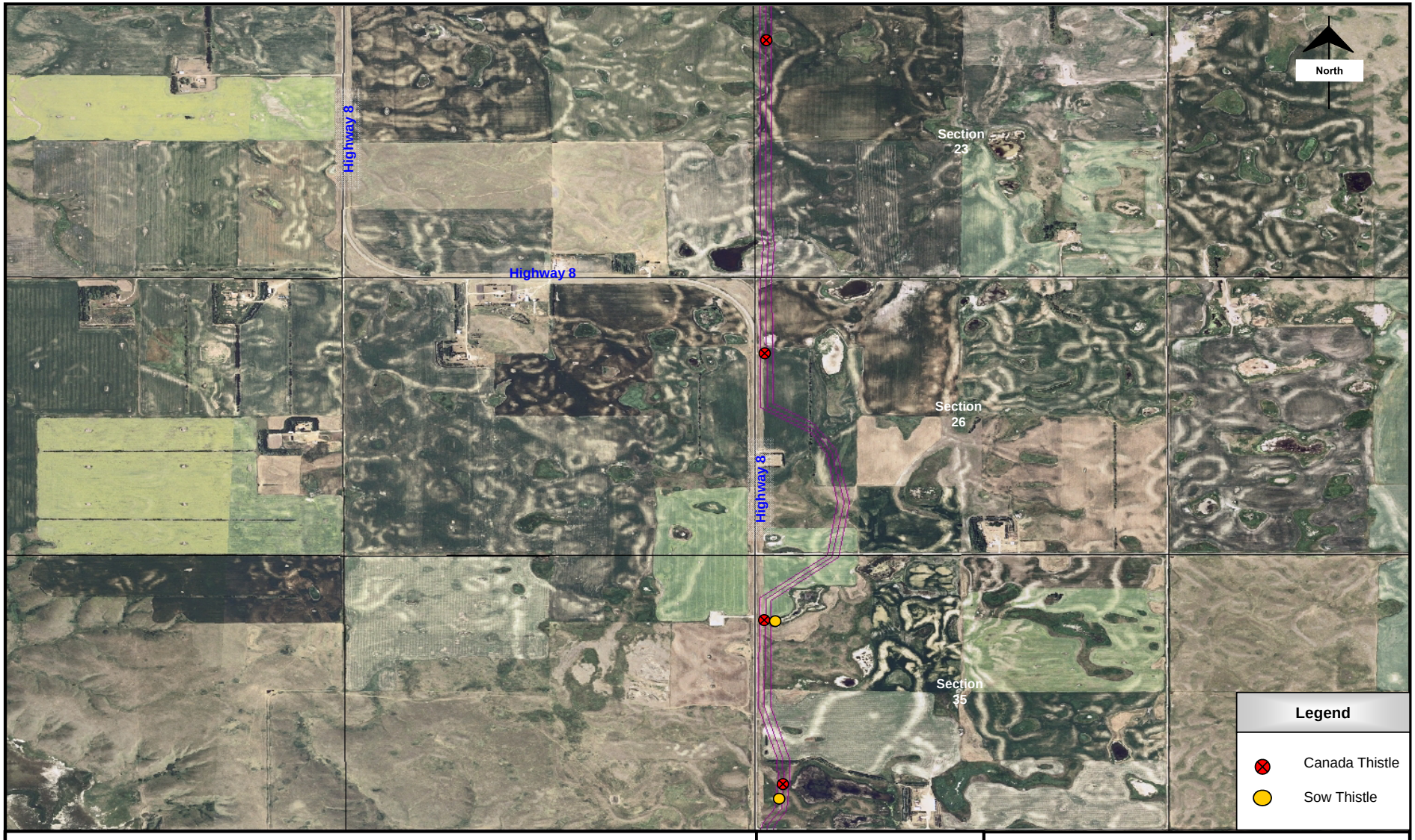

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Figure 6d - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 23,26,35
Not to Scale Revision: 1.0

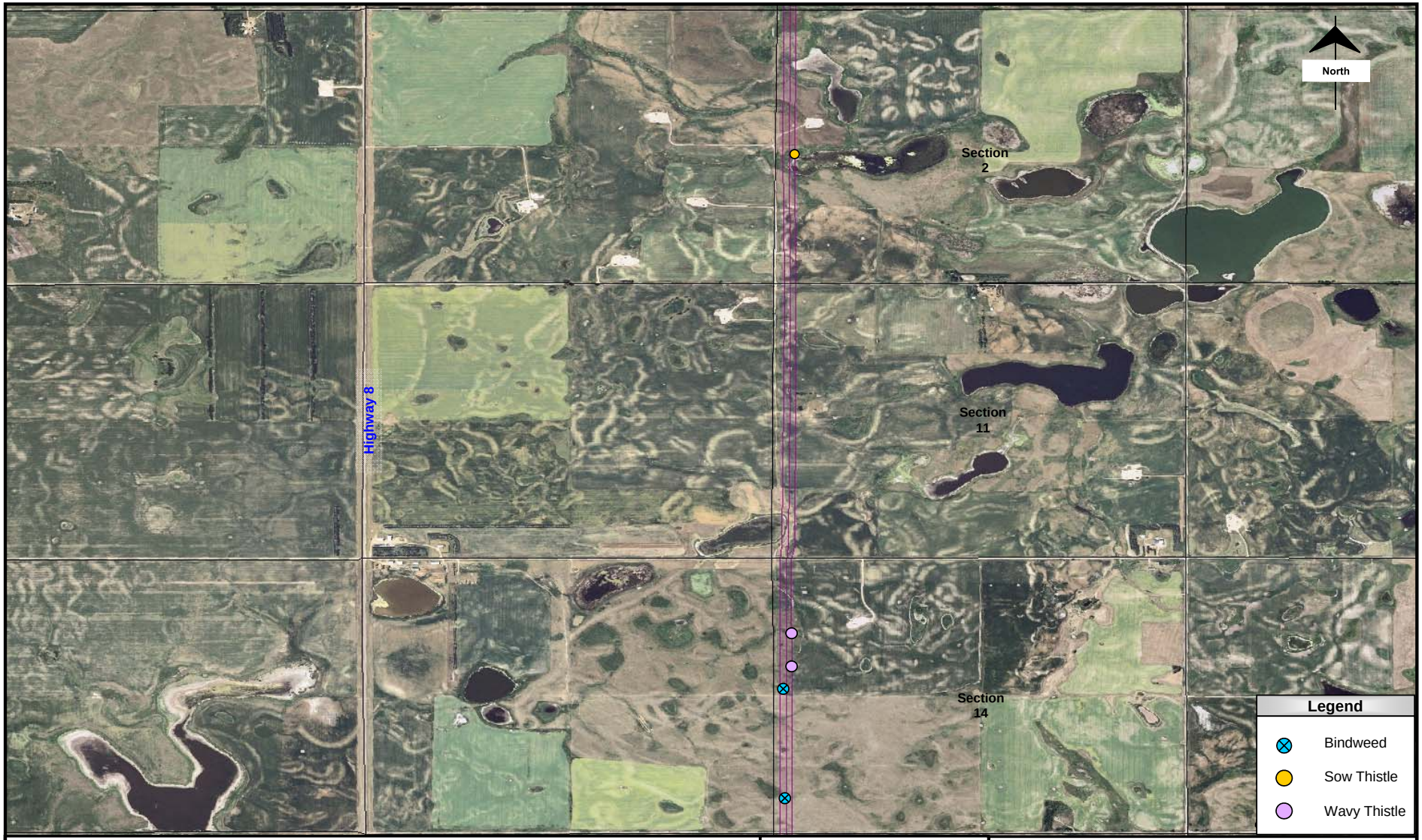

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Figure 6e - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

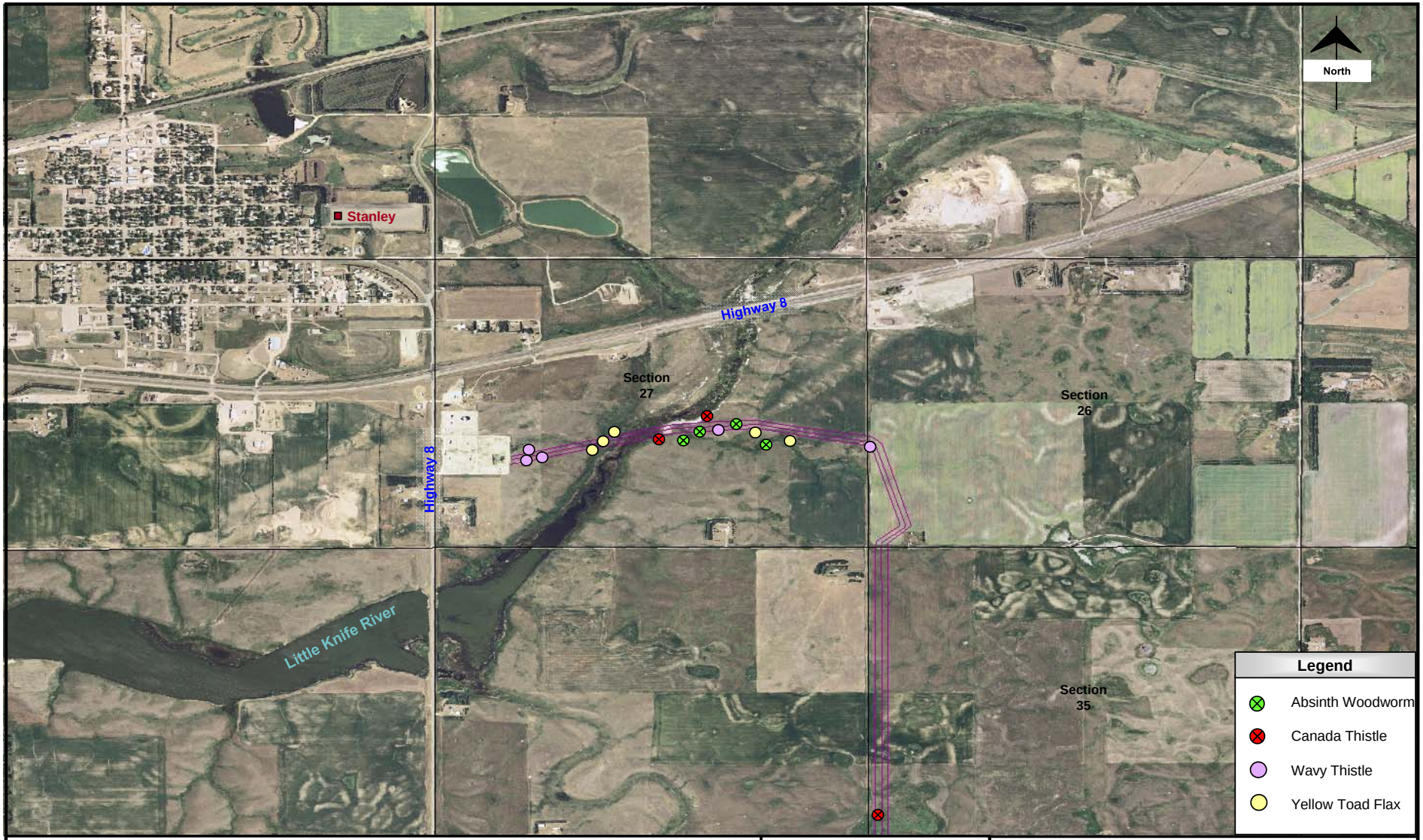

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Figure 6f - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 26,27,35
Not to Scale Revision: 1.0

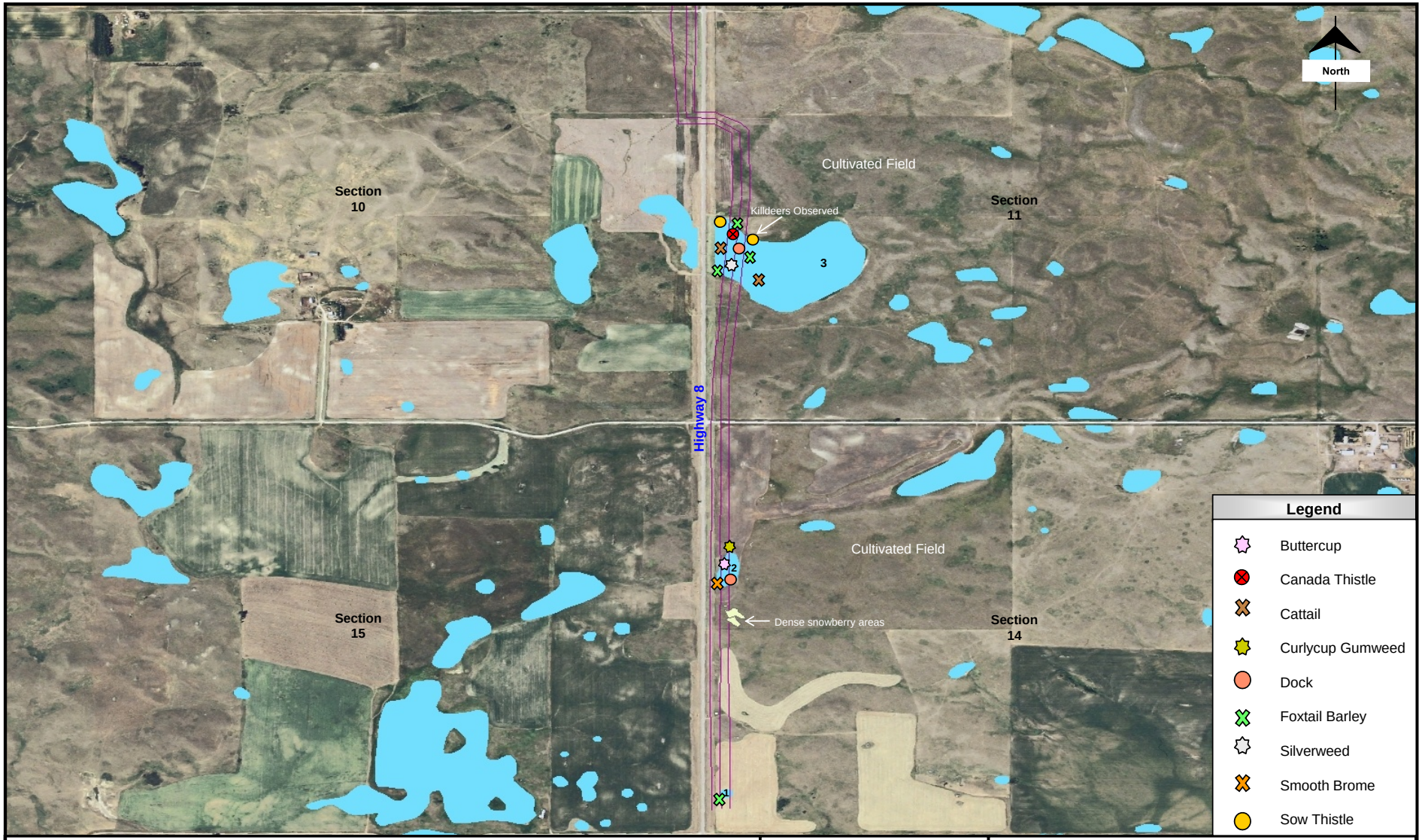

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Figure 7a – Wetlands
Whiting Oil & Gas
Mountrail County
T153N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0

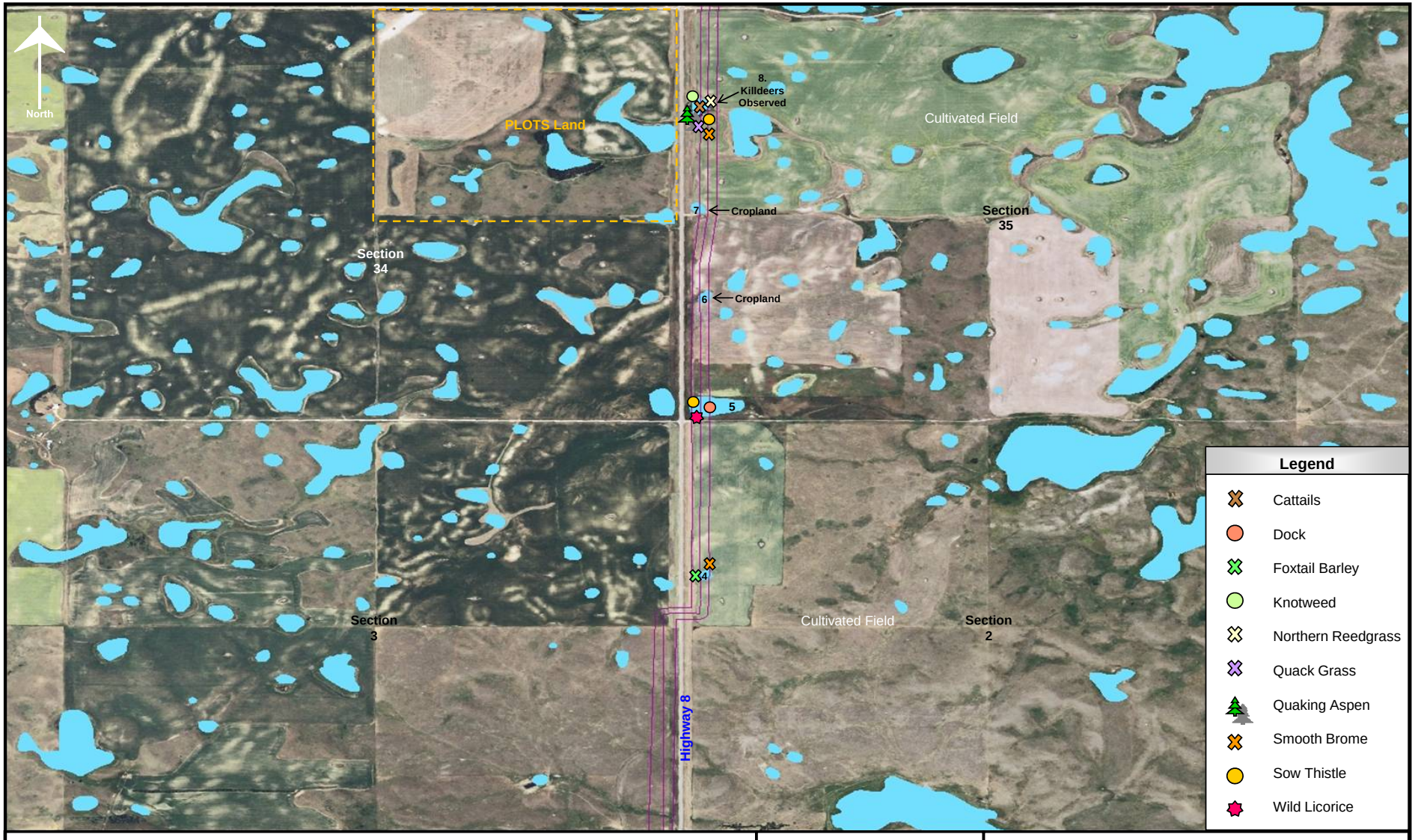

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Figure 7b – Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3 T154N R91W 34,35
Not to Scale Revision: 1.0

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Figure 7c - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0

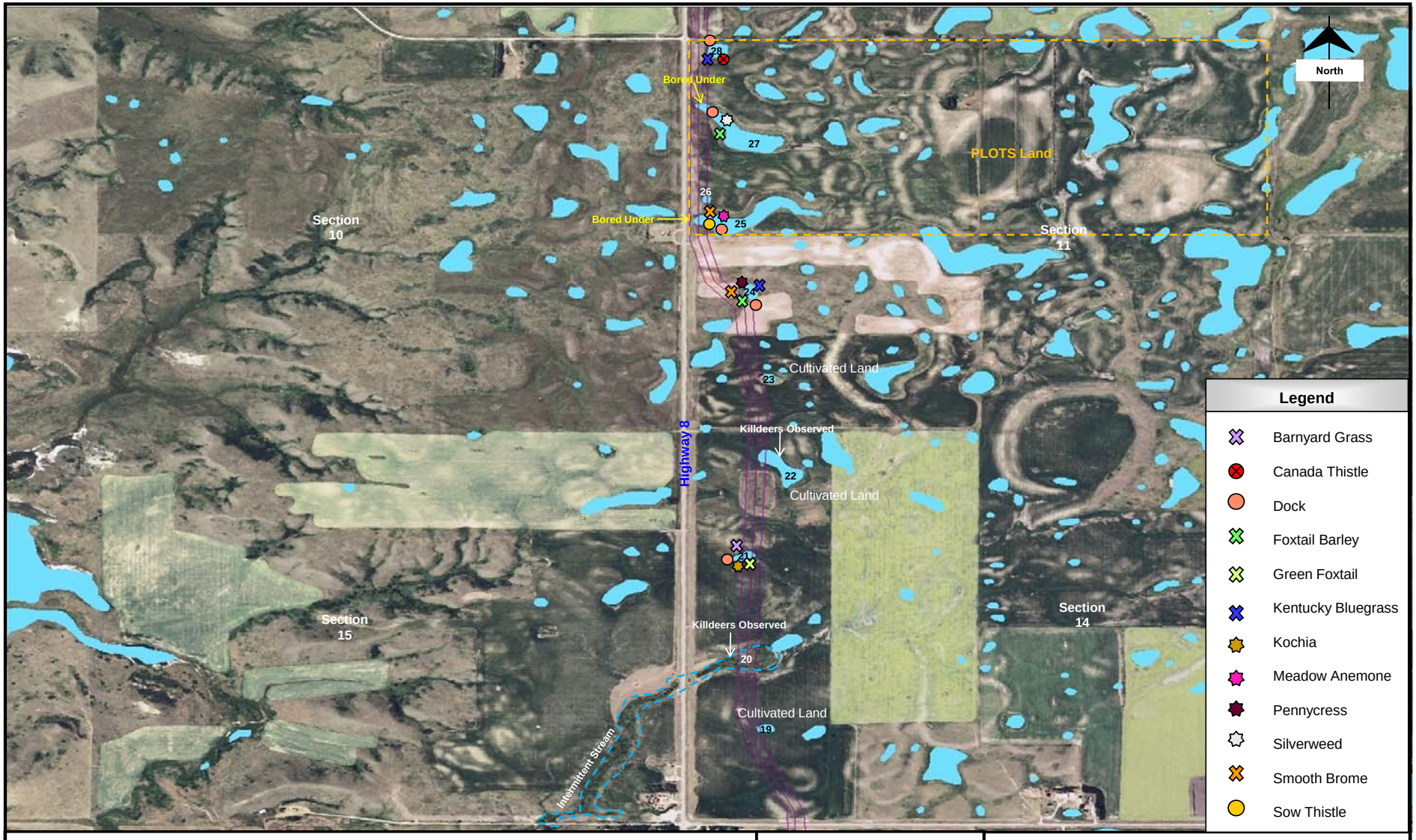

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Figure 7d - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0

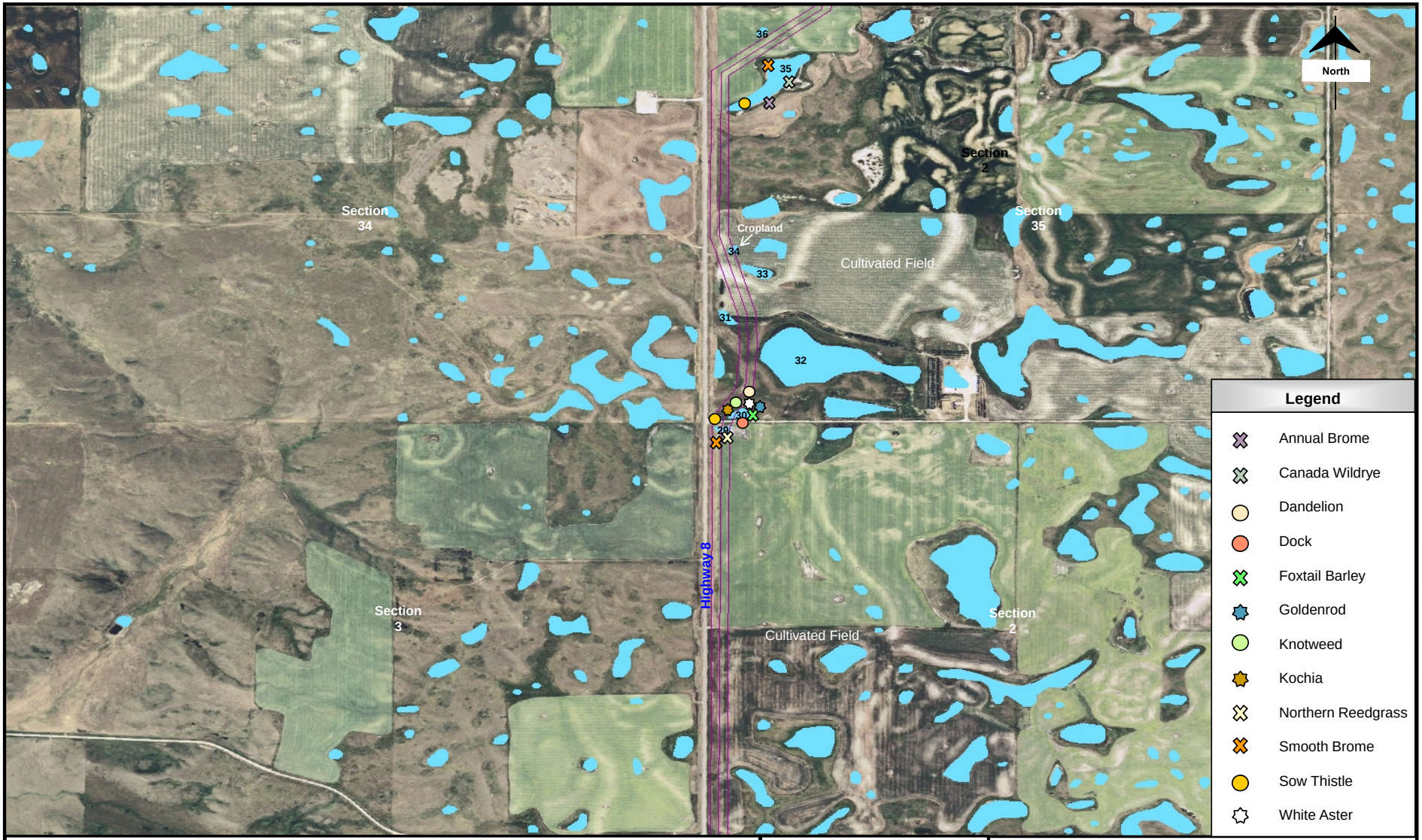

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Figure 7e - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 34,35 T154N R91W Sections 2,3
Not to Scale Revision: 1.0

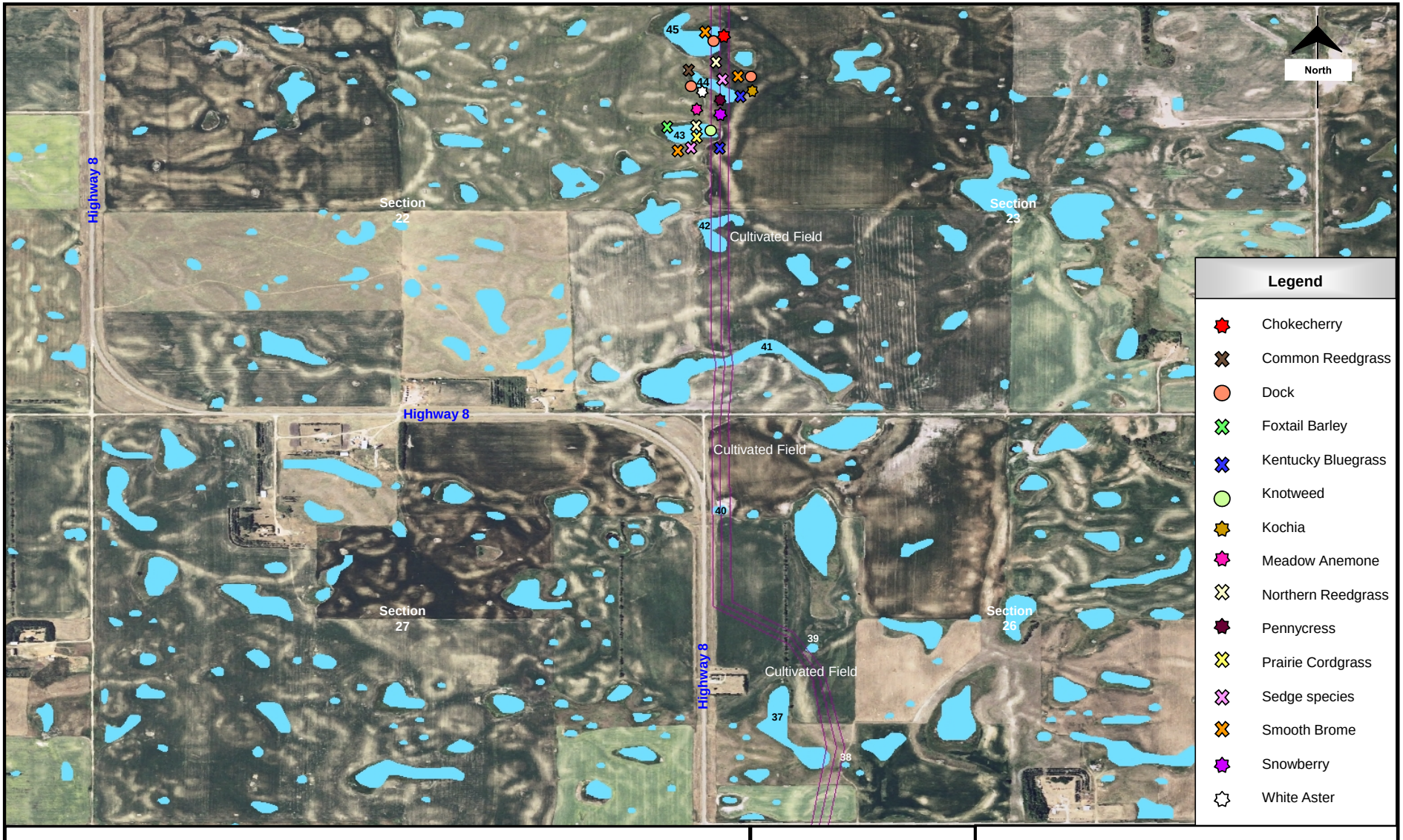

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Figure 7f – Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0

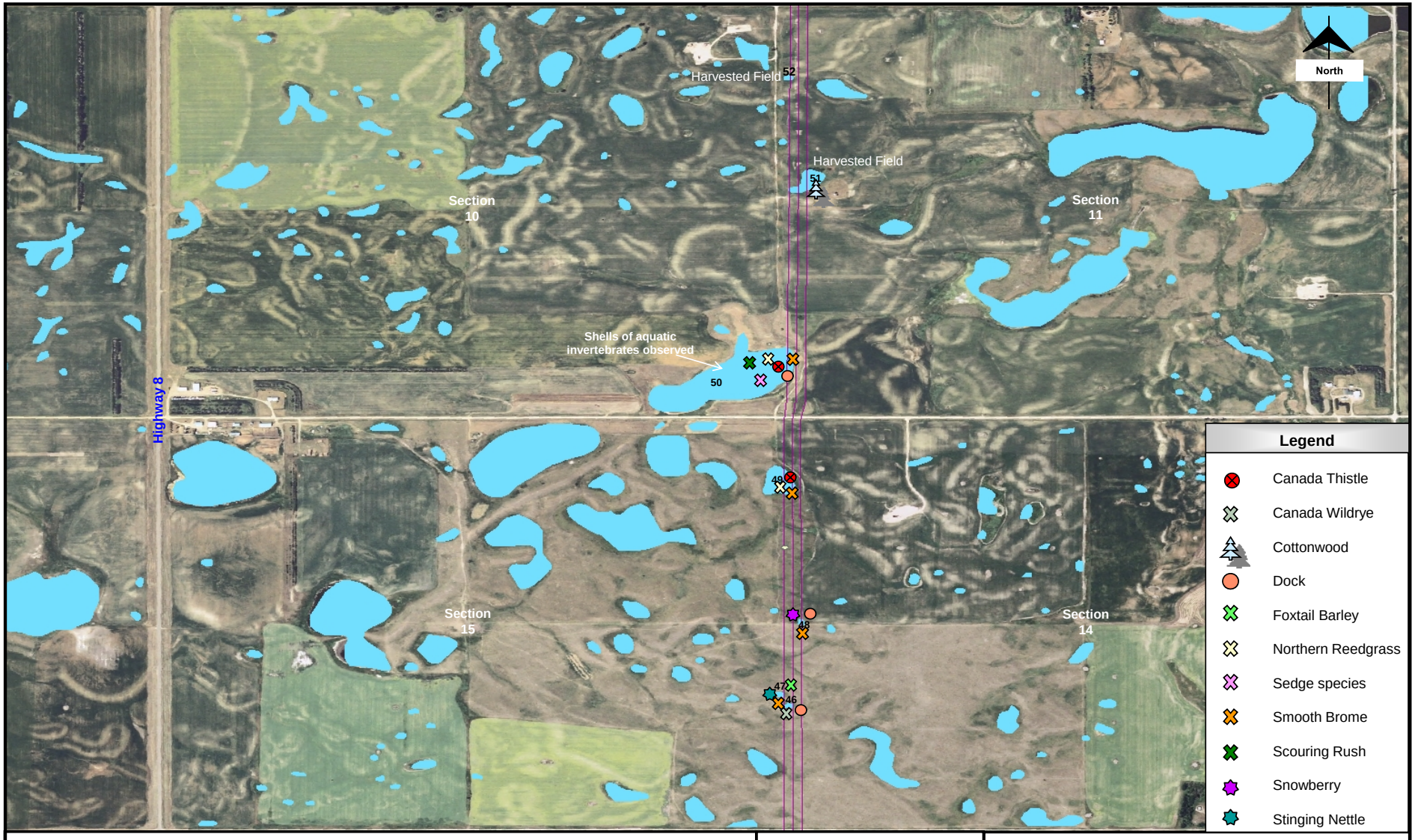

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Figure 7g - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0

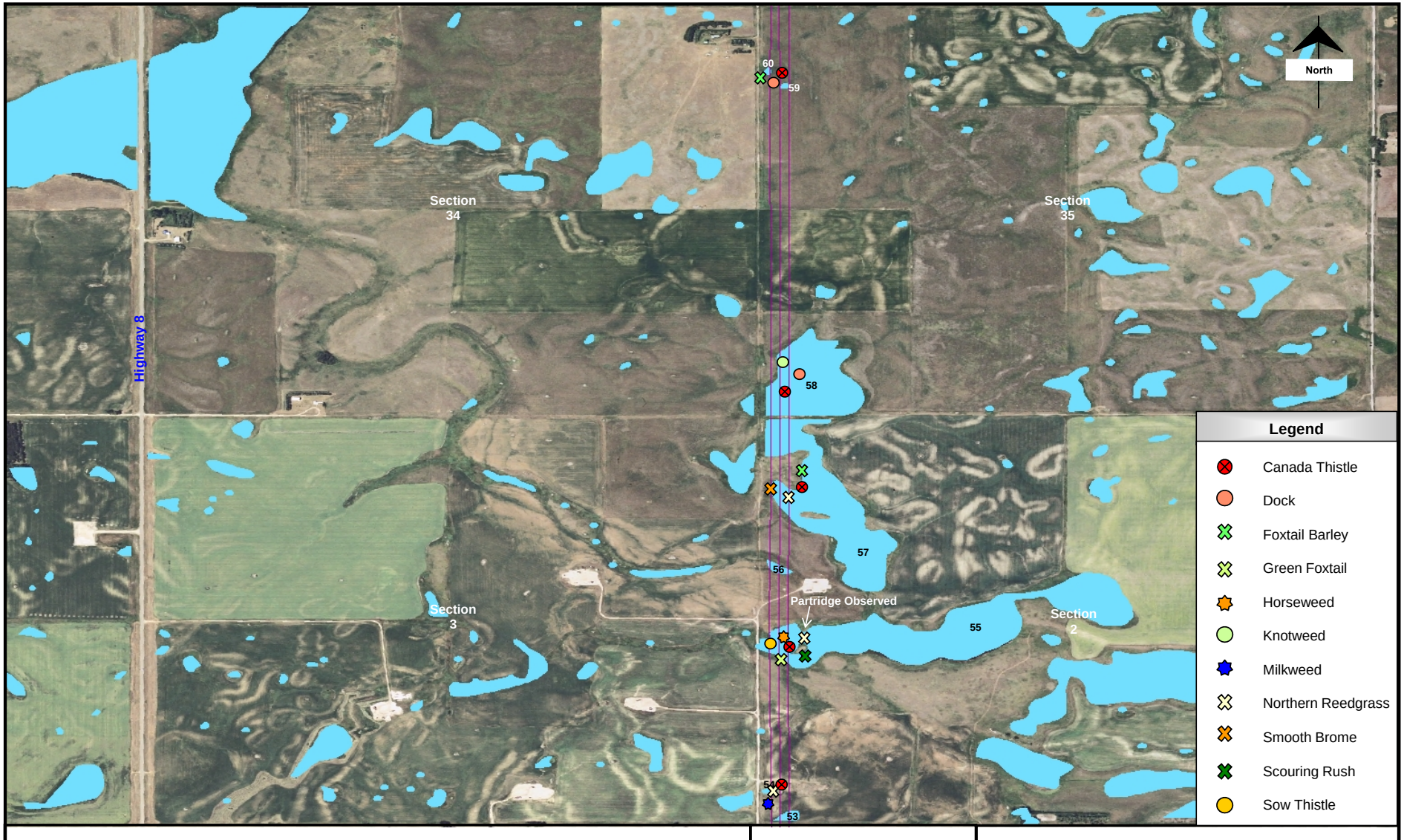

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Figure 7h - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 34,35 T155N R91W Sections 2,3
Not to Scale Revision: 1.0

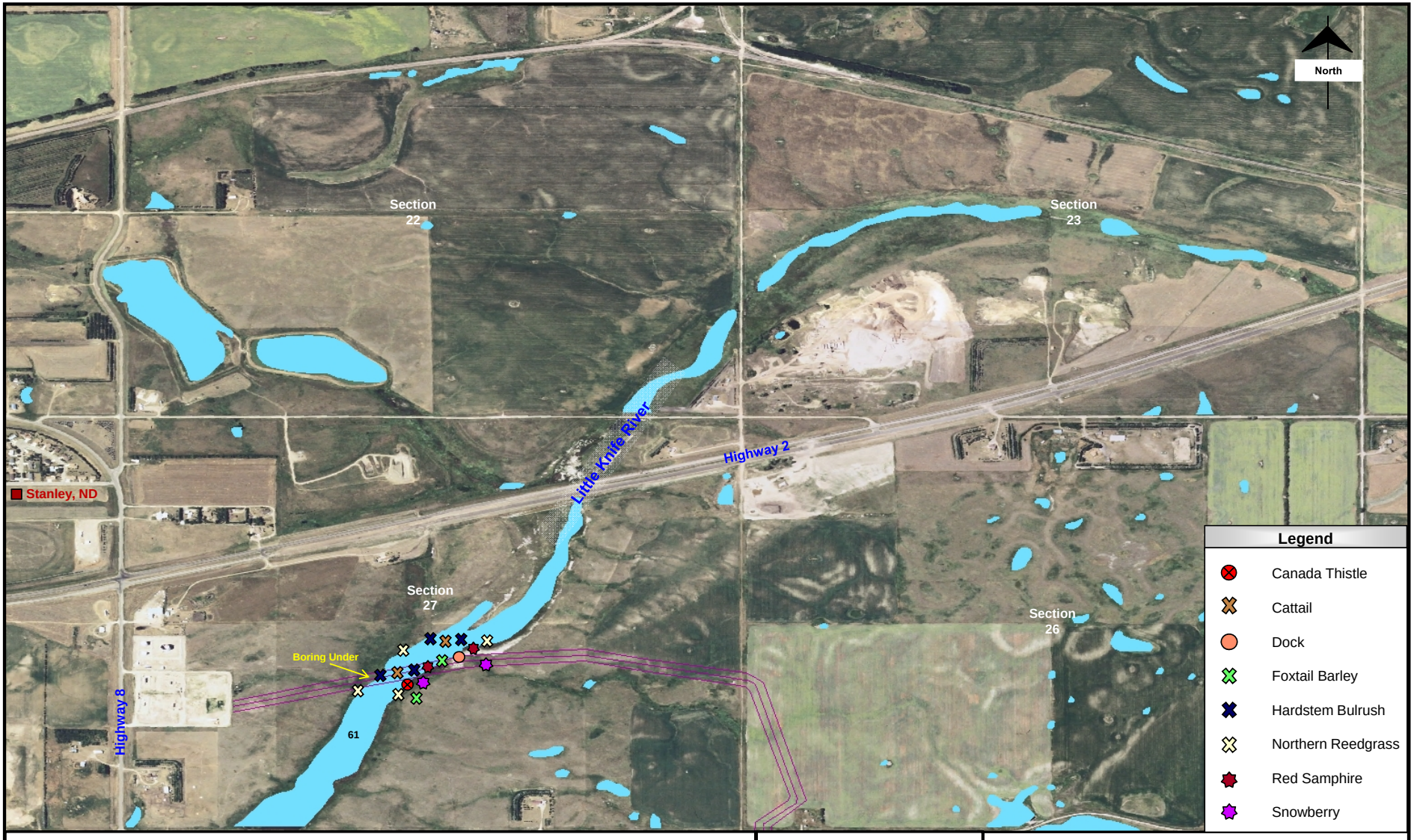

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Figure 7i - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0

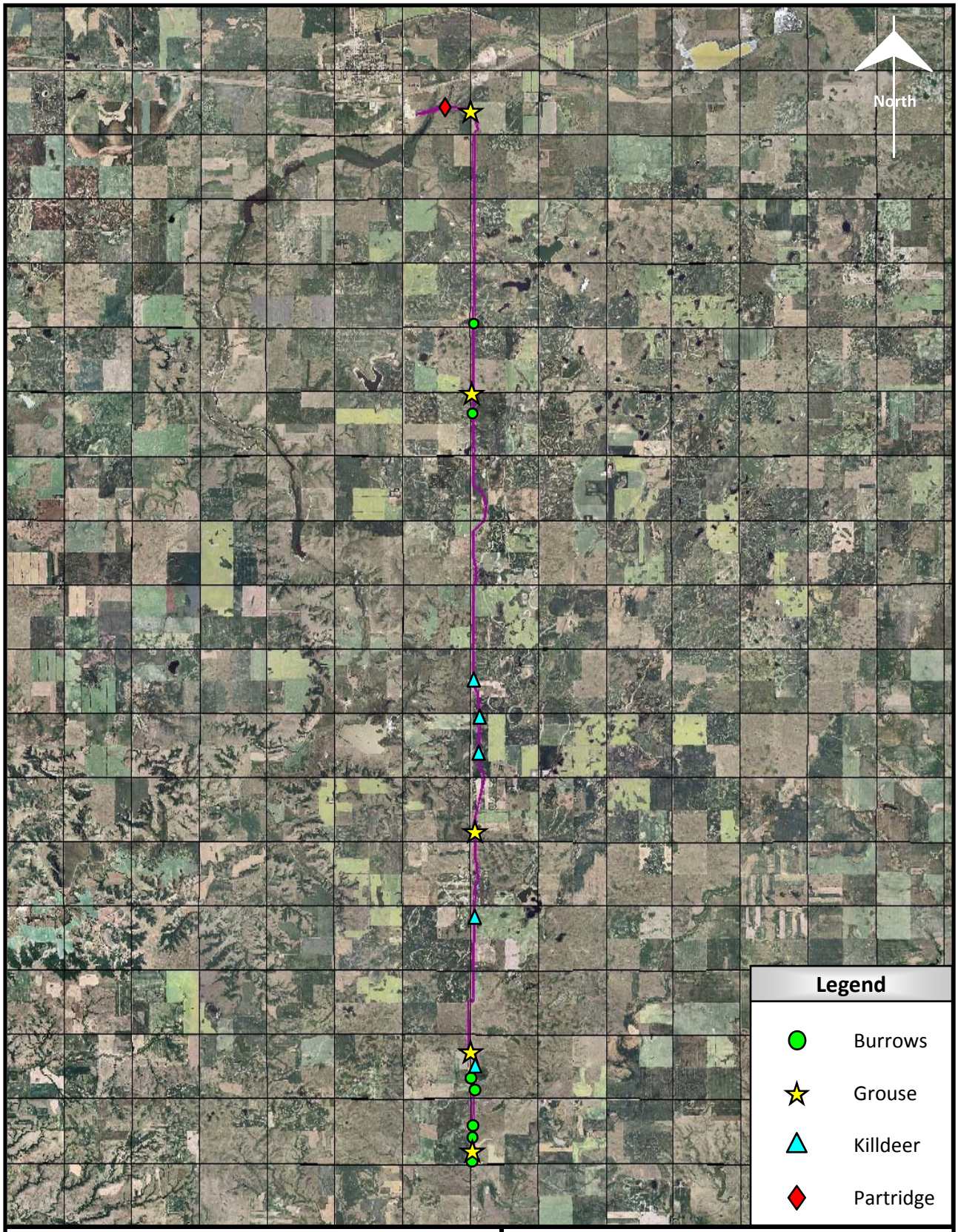

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Figure 8 -Wildlife Map
Whiting Petroleum
Robinson Lake Pipeline Projects
Mountrail County

APPENDIX A **SPECIES OF CONSERVATION PRIORITY** **LEVEL –I SPECIES**	
Common Name	**Scientific Name**
Horned Grebe	*Podiceps auritus*
American White Pelican	*Pelecanus erythrorhynchos*
American Bittern	*Botaurus lentiginosus*
Swainson's Hawk	*Buteo swainsoni*
Ferruginous Hawk	*Buteo regalis*
Yellow Rail	*Coturnicops noveboracensis*
Willet	*Catoptrophorus semipalmatus*
Upland Sandpiper	*Bartramia longicauda*
Long-billed Curlew	*Numenius americanus*
Marbled Godwit	*Limosa fedoa*
Wilson's Phalarope	*Phalaropus tricolor*
Franklin's Gull	*Larus pipixcan*
Black Tern	*Chlidonias niger*
Black-billed Cuckoo	*Coccyzus erythropthalmus*
Sprague's Pipit	*Anthus spragueii*
Grasshopper Sparrow	*Ammodramus savannarum*
Baird's Sparrow	*Ammodramus bairdii*
Nelson's Sharp-tailed Sparrow	*Ammodramus nelsonii*
Lark Bunting	*Calamospiza melanocorys*
Chestnut-collared Longspur	*Calcarius ornatus*
Canadian Toad	*Bufo hemiophrys*
Plains Spadefoot	*Spea bombifrons*
Smooth Green Snake	*Liochlorophis vernalis*
Western Hognose Snake	*Heterodon nasicus*
Black-tailed Prairie Dog	*Cynomys ludovicianus*
Sturgeon Chub	*Macrhybopsis gelida*
Sicklefin Chub	*Macrhybopsis meeki*
Pearl Dace	*Margariscus margarita*
Blue Sucker	*Cycleptus elongatus*
Information Provided by the ND Game and Fish Department	

APPENDIX A (CONTINUED) SPECIES OF CONSERVATION PRIORITY LEVEL –II SPECIES	
Common Name	**Scientific Name**
Northern Pintail	*Anas acuta*
Canvasback	*Aythya valisineria*
Redhead	*Aythya americana*
Northern Harrier	*Circus cyaneus*
Golden Eagle	*Aquila chrysaetos*
Bald Eagle	*Haliaeetus leucocephalus*
Prairie Falcon	*Falco mexicanus*
Sharp-tailed Grouse	*Tympanuchus phasianellus*
Greater Prairie Chicken	*Tympanuchus cupido*
Greater Sage-grouse	*Centrocercus urophasianus*
Piping Plover	*Charadrius melodus*
American Avocet	*Recurvirostra americana*
Least Tern	*Sterna antillarum*
Short-eared Owl	*Asio flammeus*
Burrowing Owl	*Athene cunicularia*
Red-headed Woodpecker	*Melanerpes erythrocephalus*
Loggerhead Shrike	*Lanius ludovicianus*
Sedge Wren	*Cistothorus platensis*
Dickcissel	*Spiza americana*
Le Conte's Sparrow	*Ammodramus leconteii*
Bobolink	*Dolichonyx oryzivorus*
Common Snapping Turtle	*Chelydra serpentina*
Short-horned Lizard	*Phrynosoma douglassi*
Northern Redbelly Snake	*Storeria occipitomaculata*
Pygmy Shrew	*Sorex hoyi*
Richardson's Ground Squirrel	*Spermophilus richardsonii*
Swift Fox	*Vulpes velox*
River Otter	*Lutra canadensis*
Black-footed Ferret	*Mustela nigripes*
Black-footed Ferret	*Mustela nigripes*
Paddlefish	*Polyodon spathula*
Pallid Sturgeon	*Scaphirhynchus albus*
Silver Chub	*Macrhybopsis storeriana*
Northern Redbelly Dace	*Phoxinus eos*
Flathead Chub	*Platygobio gracilis*
Trout-perch	*Percopsis omiscomaycus*
Threeridge	*Amblema plicata*
Wabash Pigtoe	*Fusconaia flava*
Mapleleaf	*Quadrula quadrula*
Black Sandshell	*Ligumia recta*
Creek Heelsplitter	*Lasmigona compressa*
Pink Heelsplitter	*Potamilus alatus*
Information Provided by the ND Game and Fish Department	

APPENDIX A (CONTINUED) SPECIES OF CONSERVATION PRIORITY LEVEL –III SPECIES	
Common Name	**Scientific Name**
Whooping Crane	*Grus americana*
Peregrine Falcon	*Falco peregrinus*
Brewer's Sparrow	*Spizella breweri*
McCown's Longspur	*Calcarius mccownii*
Smooth Softshell Turtle	*Apalone mutica*
False Map Turtle	*Graptemys pseudogeographica*
Northern Prairie Skink	*Eumeces septentrionalis*
Northern Sagebrush Lizard	*Sceloporus graciosus*
Arctic Shrew	*Sorex arcticus*
Western Small-footed Myotis	*Myotis ciliolabrum*
Long-eared Myotis	*Myotis evotis*
Long-legged Myotis	*Myotis volans*
Plains Pocket Mouse	*Perognathus flavescens*
Hispid Pocket Mouse	*Chaetodipus hispidus*
Sagebrush Vole	*Lemmiscus curtatus*
Eastern Spotted Skunk	*Spilogale putoris*
Gray Wolf	*Canis lupis*
Chestnut Lamprey	*Ichthyomyzon castaneus*
Silver Lamprey	*Ichthyomyzon unicuspis*
Central Stoneroller	*Campostoma anomalum*
Hornyhead Chub	*Nocomis biguttatus*
Pugnose Shiner	*Notropis anogenus*
Blacknose Shiner	*Notropis heterolepis*
Rosyface Shiner	*Notropis rubellus*
Finescale Dace	*Phoxinus neogaeus*
Yellow Bullhead	*Ameiurus natalis*
Flathead Catfish	*Pylodictis olivaris*
Logperch	*Percina caprodes*
River Darter	*Percina shumardi*
Pink Papershell	*Potamilus ohiensis*
Pink Heelsplitter	*Potamilus alatus*
Information Provided by the ND Game and Fish Department	