TONGUE RIVER WATERSHED PLAN

Appendix D-7: Biological Inventory Report

Spring 2021 Image of Tongue River Riparian Habitat

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Executive Summary

North Dakota Natural Resource Conservation Service (NRCS) completed a field investigation to identify and delineate biological resources for a Tongue River Watershed Restoration project plan on behalf of the Pembina Water Resource District on May 18th and 19th, 2021. The assessment area (AA) is approximately 135 acres located in Beaulieu Township (T161N, R 56W sections 28 and 29) near Cavalier, ND in Pembina County North Dakota. The AA is the land directly affected by project activities located almost entirely within the historic floodplain (Figure 1).

The AA contains five major habitat types following North Dakota Game and Fish Department (NDGFD) categories: tame grassland, upland deciduous forest, rivers and streams, wetlands, and riparian woodlands https://gf.nd.gov/sites/default/files/publications/swap-2015_0.pdf (NDGFD SWAP 2015). These communities are categorized as having quality conditions ranging from poor to good. The assessment team documented 67 vegetative species and direct observation or evidence of 47 animal species. Several noxious or troublesome weed species were found. No invasive animal species were found in the survey. Plant communities are thought to be impaired by downcutting of the Tongue River which has lowered the water table, favoring upland species particularly tame grass species.

The US Fish and Wildlife Service administered Endangered Species Act identifies the Northern Long-Eared Bat (Threatened) and the Whooping crane (Endangered) as potentially being in the area. No federally listed threatened or endangered species were observed in the AA.

It should be noted that the biological survey was completed in the spring before some species may have emerged or been present. No Level 1 Species of Concern in the ND Game and Fish Wildlife (NDG&F) State Wildlife Action Plan (SWAP) were observed in the spring of 2021, however during monitoring surveys for channel stability assessments in 2015-2020, NRCS staff consistently observed high numbers of dace (species unknown) in the AA. The Northern Pearl Dace (Margariscus margarita) is identified as a Level I Species of Conservation Priority in North Dakota (NDGFD SCP 2021).

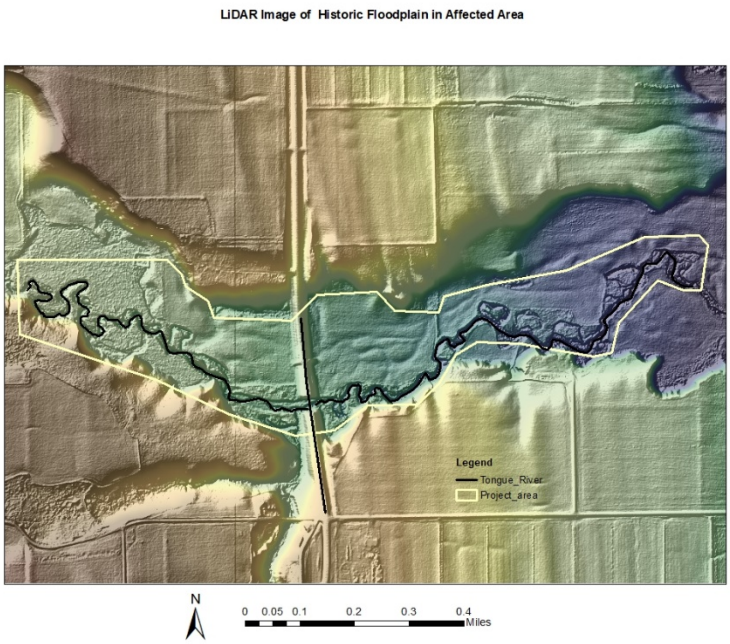

Figure 1 LiDAR Image of Historic Floodplain

Landscape Setting

The AA is located at the transition between the Northern Glaciated Plains Pembina escarpment region to the west and the Lake Agassiz Plain Sand Delta and Beach Ridge to the east (USEPA 2016). The Pembina Escarpment is one of the few forested areas in North Dakota. Hydrology in the area flows off of the Northern Glaciated Plains easterly through the escarpment to the Lake Agassiz plain through several named rivers and unnamed tributaries including the Tongue River. The Sand Delta and Beach Ridge areas are a series of sand deltas exhibiting varying wind and water formed topography adjacent to a region of extremely flat agricultural land. The project area is dominated by riparian woodland and tame grassland habitat, some of which is enrolled in the Conservation Reserve Program (CRP). State Highway 89 runs north and south near the mid-point of the project. A right-of-way easement for the SH89 bridge structure is included in the AA.

Potential Natural Community:

The concept of a potential natural community (Daubenmire 1968) refers to the plant community that will develop on a site over time as a result of (1) natural disturbance processes that occur over relatively long periods; (2) the particular combination of climate, landform, substrate, latitude, and hydrogeomorphic conditions; and (3) biological processes such as seed dispersal, soil biology, and influence from animals and birds. The potential natural community represents a range of plant communities that occur as a spatial mosaic and represent a variety of successional states corresponding with random disturbance events and complex microtopographic and moisture gradients on a site. Developing revegetation strategies based on the potential natural community of a site increases success of establishing dynamic plant communities that can be sustained long-term.
At the largest scale, the Tongue River's potential natural community within the project reach as the Oak/Ash habitat type (Hansen el al 1995). Because Tongue River is a dynamic system with significant sediment transport and deposition, this habitat type will usually result from the following progression:

1. Cottonwood, boxelder, and balsam poplar will develop on the recent alluvial bar, colonizing depositional areas resulting from flood events.
2. Over time, these species will trap sediment and successional shrubs such as red-osier dogwood and woods rose succeed.
3. The shade and protection from these species will lead to the colonization of basswood, elm, ash, and burr oak. American Elm usually succumbs to Dutch elm disease once it reaches 10- 15 years of age.

Climate

North Dakota has a humid continental climate characteristic of fluctuating temperatures of hot summers and cold winters (Enz 2003). The lack of topographic barriers to the north and south of North Dakota allow air masses to easily travel over the state. Cold, dry air from the north and warm, humid air from the tropics result in almost continuous winds as well as daily temperature fluctuations, Temperatures in North Dakota are hottest in July and coldest in January. The average difference in temperatures between July and January is 18 degrees C (65 degrees F) in northeastern North Dakota. Rainfall across North Dakota ranges from 36 to 56 cm (12-22 inches), and snowfall ranges from 64 to 114 cm (25-45 inches). The average growing season of the northeast region is 110 days.

Climate data recorded at the nearest weather station (Cavalier, ND) summarizes the average temperature, rainfall, and snowfall (National Oceanic and Atmospheric Administration Regional Climate Center, Applied Climate Information System data https://www.rcc-acis.org 2021). For the period of 2000-2021, temperature averaged 38.4 ° Fahrenheit and ranged from average minimum lows of -30°F to maximum average highs of 93° F near the AA. The average annual total precipitation is 20.49 inches; this includes the average snowfall depth of 37.4 inches. The highest monthly rainfall typically occurs during the month of June (4.02 inches).

Protected Areas

There are no wildlife management areas or waterfowl production acres in the AA. Two perpetual USDA Farmers Home Administration (FmHA) wetland easements – approximately 32.0 acres - are partially located within the AA. The USFWS is the agency responsible for these easements. The easements reserve the rights to re-establish vegetation and manipulate hydrology for the purpose of re-establishing, protecting, and enhancing wetland functional values. Approximately 11.1 acres of the AA are currently enrolled in the CRP Program and are subject to the USDA Farm Service Agency programmatic rules for disturbance and compatible uses.

Methods

Field Inventory

The vegetative resource inventory was conducted on foot May 18th and 19th, 2021. NRCS personnel present included State Biologist, Curtis Bradbury and watershed and local field personnel: Rita Sveen, Gwen Sobolik and Grace Bredeson. Other observations were noted on October 15, 2020 in concert with the Cultural Resources Class III survey. Prior to this, tree species were also noted during a joint field visit with ND State Forest Service Forest Stewardship Specialist, Joshua Wolk on Jun 29, 2020. Aquatic resource delineations were conducted in May and August of 2020; those methods are documented in Appendix D-6 Aquatic Resources Delineation Report (Houston 2021).

Five habitat categories, as defined by the ND Game and Fish Department (NDGF 2021 Habitats *https://gf.nd.gov/wildlife/habitats/habitats)* were identified in the AA: tame grassland, upland forest, river/stream, and riparian woodland (Table 1). Tame grassland is defined as tilled land returned to grassland. The forests were divided into upland and riparian forests. The river/stream habitat included the stream itself and the adjacent bank area. The plant and animal inventory method used in May 2021, consisted of random transects within each habitat type. All species were identified by visual or aural observation or from evidence of their presence (tracks, scat, or trails); results are provided as Appendix A: Plant and Animal Species Inventory. Species were recorded within each of the five habitat types. *Bird* song identification was facilitated by BirdNET bird sound identification software application (Cornell University, birdNET https://birdnet.cornell.edu/ 2021).

Table 1: NDGFD habitat categories and corresponding organism community groups (North Dakota Game and Fish Department 2021)

State Habitat Categories	Biological Inventory Community Categories
Tame grassland	Grassland (tilled land converted to grassland, heavily managed prairie, hayfields, pasture, managed grassland, construction, and reseeding).
Upland deciduous forest	Upland forest/shrubs
Rivers, streams	River/stream: species normally located below the ordinary high-water mark, however for the purpose of this inventory included bank vegetation.
Riparian	Riparian woodland from the top-of-bank to tame grass or upland forest zones
Wetlands	Subcategories: woody floodplain mosaic and wet prairie

Community Quality

Vegetative survey results were assessed for composition of native species. The qualitative evaluation compared ratios of native species versus all species present. The vigor of the invasive introduced species was also considered.

Non-Native/Invasive Species

Invasive species and pathogens can pose a threat to communities in the AA. The North Dakota Department of Agriculture has listed 13 noxious weeds and Pembina county has listed two weed species (common tansy and kochia (nd.gov/ndda/plant-industries/noxious-weeds 2021). According to NDGFD, Dreissena polymorpha (zebra mussels) are present within the entire length of the Red River. Zebra mussels have not been observed upstream of the Red River past the point of the first vehicular bridge or crossing (ND Game and fish Dept 2021 https://gf.nd.gov/ans/infested-waters 2021). Ophisostoma ulmi and Ophiostoma novo-ulmi (Dutch elm disease) have been confirmed within every county and are likely present within the AA (Knodel, J. et al. 2020).

Threatened, Endangered and Other Important Species Evaluation

Federal Threatened and Endangered and North Dakota State Species of Conservation Concern that were observed on site or are documented by other sources to be in the proximity, were evaluated based on the habitat needs of the species and the quality of such habitat in the AA. Aquatic species were not surveyed for this inventory.

Literature Review Results

North Dakota State Wildlife Action Plan

The North Dakota State Wildlife Action Plan was the primary resource used to assess community composition and quality (NDGFD SWAP 2015). The AA lies within two landscape component areas: Tallgrass Prairie and the River/Stream and Riparian areas in the Red River Valley of the North watershed.

The SWAP describes the tallgrass prairie area as follows:

> "This landscape component consists of the tallgrass prairie historically found predominantly in the eastern one-fourth of North Dakota. The Red River of the North forms the state line between North Dakota and Minnesota. This region today is commonly referred to as the Red River Valley. 10,000 years ago, a large glacial lake named Lake Agassiz covered this region. The flat topography and rich soil of the glacial Lake Agassiz basin provides for excellent but intensive agricultural production including potatoes, beans, sugar beets, corn, and wheat. By the 20th century, much of the tallgrass prairie had been converted to farmland. Few tracts of native vegetation remain in this region today. Places where small natural areas remain intact are remnants of Lake Agassiz. The shoreline of Lake Agassiz created diagonal striations of sand and gravel a few feet high that are still visible in aerial and satellite imagery today. These beach ridges are one component of the focus area "Sand Deltas and Beach Ridges" in conjunction with several large fan-shaped deltas of sand formed from Agassiz…….. Several streams important to native fish meander across the Red River Valley, from west to east, draining into the Red River."

The AA lies within the Sand Deltas and Beach Ridges focus area (Figure 2) . The SWAP describes the area as follows:

> "Thick sand deposits from river sediments carried to glacial Lake Agassiz form windblown sand dunes…. The Beach Ridges form parallel lines of sand and gravel, along with a smaller delta east of the Pembina Gorge, which also supports areas of Upland Forest.

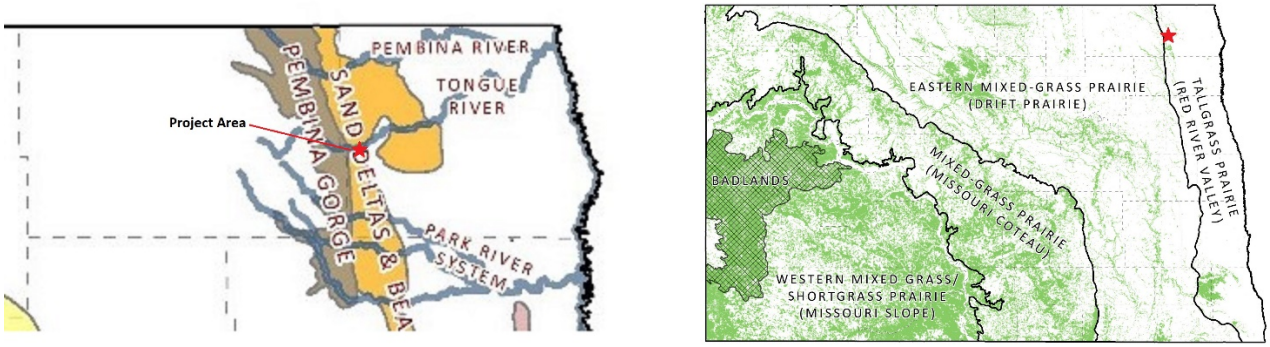

Figure 2 Sand Deltas and Beach Ridge focus area in the Tallgrass Prairie Landscape Component Area

The SWAP has identified the Key Species of Conservation Priority within the landscape component areas as follows:

Tallgrass Prairie (Red River Valley) Landscape Component Area:

Key Species of Conservation Priority:
Birds: American Kestrel, Greater Prairie-Chicken, Sharp-tailed Grouse, Short-eared Owl
Mammals: Plains Pocket Mouse
Reptiles and Amphibians: Northern Prairie Skink, Plains Hog-nosed Snake
Insects: Dakota Skipper, Poweshiek Skipperling."

In addition to these nine key species, 23 other species are identified as Species of Concern within the Tallgrass Prairie Community.

Red River and Tributaries Landscape Component Area:

Key Species of Conservation Priority:
Birds: Bald Eagle, Red-headed Woodpecker, Black-billed Cuckoo
Mammals: River Otter, Northern Long-eared Bat, Little Brown Bat, Big Brown Bat, Gray Fox
Fish: Northern Pearl Dace, Silver Chub, Northern Redbelly Dace, Trout-perch, Chestnut Lamprey, Silver Lamprey, Largescale Stoneroller, Hornyhead Chub, Pugnose Shiner, Blacknose Shiner, Carmine Shiner, Finescale Dace, Yellow Bullhead, Logperch, River Darter, Burbot
Mussels: Threeridge, Wabash Pigtoe, Mapleleaf, Black Sandshell, Creek Heelsplitter, Pink Heelsplitter, Creeper

North Dakota State Forest Action Plan The North Dakota Forest Service (NDFS) State Forest Action Plan (SFAP) was also cited for Riparian Forest plant community information (ag.ndsu.edu/ndfs/about-north-dakota-forestry/statewide-assessment-of-forest-resources-and-forest-resource-strategy, 2020). The AA is an extension of the NDFS **Pembina Gorge** Priority Forest Resource. The woodland community usually consists of bur oak, quaking aspen, green ash, cottonwood, and American Elm.

USFWS Information for Planning and Consultation IPAC The USFWS Information for Planning and Consultation system of the USFWS (US Fish and Wildlife Service 2021a) was consulted for Endangered Species, Migratory Birds, Facilities and Wetlands within the AA. One Endangered Species – Whooping Crane and one Threatened Species – Northern Long-Eared Bat - were identified as possibly present in the AA. No Migratory Birds of Concern to the USFWS are expected to be present in the AA. Two FmHA wetland easements are located within the AA. Several NWI wetlands are near the AA.

North Dakota Heritage Program Species Addendum The ND Heritage Program's 2013 Proposed Species of Concern Addendum identified thirteen ND Level 1 Plant Species of Concern potentially located within the Tallgrass Prairie, Sand Delta, and River/Riparian ecoregions (Figure 3). This report also identified forty-two species that would be most affected by climate change. These species were considered of special importance for identification in the survey. (*North Dakota North Dakota Natural Heritage Program. 2013. North Dakota North Dakota Comprehensive Wildlife Strategy: Proposed Plant Species of Conservation Addendum. North Dakota Natural Heritage Program, North Dakota Parks and Recreation Department, Bismarck, ND).*

North Dakota Game and Fish, Fish Netting Reports The most recent fish survey data available was for Renwick Dam, conducted in 2019. This report found Yellow Perch as the predominant species (50.0%), followed by Black Bullhead (26.6%), White Sucker (20.1%), Northern Pike (1.8%) and Black Crappie (0.6%). (*NDG&F Fisheries 2019 https://gfapps.nd.gov/reports/fisheries/nettingreports/265catchreport.pdf).*

North Dakota Game and Fish Department, Status of Selected Fishes with Immediate Conservation Need in North Dakota, Project T-14-R June 2009. Fish surveys conducted in the Tongue River in the summers of 2006 and 2007 identified Northern Pearl Dace (Margariscus margarita) Level I Species of Conservation Priority and Trout-perch (Percopsis omiscomaycus) as a Level II Species of Conservation Priority in North Dakota. (*https://gf.nd.gov/sites/default/files/publications/T-14-R%20Fish%20Status%20Final%20Report%202009.pdf)*

North Dakota Department of Environmental Quality (NDDEQ) Integrated 2018 Section 303(d) List of Waters Needing Total Maximum Daily Loads (TMDLs) The portion of the Tongue River in the AA is not on the 2018 TMDL list, however, reaches a few miles upstream and a few miles downstream are listed as needing TMDLs for biota, habitat and bioassessments for fish and aquatic biota designated use. (ND DEQ 2018 *https://deq.nd.gov/publications/WQ/3_WM/TMDL/1_IntegratedReports/2018_Final_ND_Integrated_Report_20190426.pdf).*

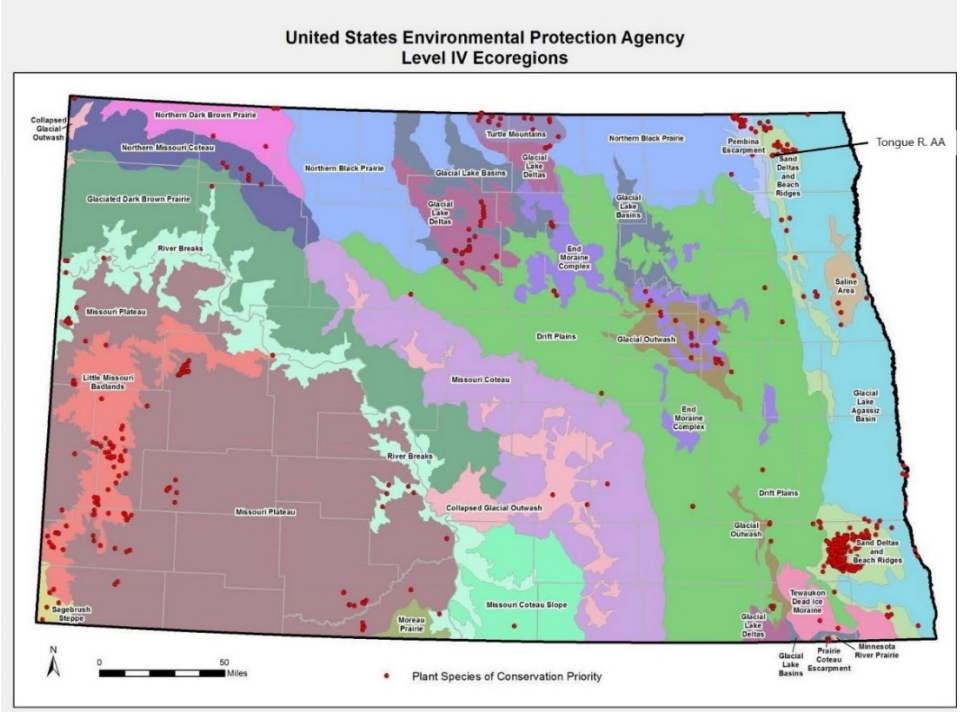

Figure 3 US EPA Level IV Ecoregions (US EPA Ecoregions (2016)

Field Inventory Results

General Observations

Five habitat types were documented during the field survey (Table 2, Figure 4). Over 60% of the habitat types in the AA consists of tame grassland. A significant portion of the tame grass area lies adjacent to State Highway 89. This area is dominated by non-native smooth bromegrass and common tansy. The other tame grass areas (11.1 acres) are enrolled the USDA Conservation Reserve Program (CRP); brome and tansy are present in the CRP as well; however more desirable wheatgrasses and alfalfa comprise a greater fraction. The CRP acres are hayed in a managed rotation as the program allows. Based on LiDAR data and aerial photography, these areas would have had native riparian woodland vegetation prior to settlement. The upland forests are located on the north and south margins of the project area. The upland forest community is predominantly native and contains the most desirable timber species such as bur oak and paper birch. There has been some limited harvesting of mature trees for timber in this habitat type. The riparian forest habitat is the largest woodland habitat. The species are predominately native and there are many desirable native shrubs and wildflowers such as chokecherry, violets, and wild ginger. The river/stream habitat community has been most affected by the downcutting action of the river. The unstable banks are often unvegetated with visible layering of clays and shale and little overhead canopy is present. This has led to the establishment of non-native species such as smooth bromegrass and reed canary grass, with little evidence of new woody seedlings other than boxelder maple.

Table 2: Habitats and communities observed in the assessment area

State Habitat Categories	Biological Inventory Community Categories	Acres in Assessment
Tame grassland	Grassland (heavily managed CRP and hayland)	62.3
Upland deciduous forest	Upland forest/shrubs	12.7
Rivers, streams	River/stream up to top-of-bank	20.9
Riparian	Riparian woodland	38.1
Wetland	Temporary forest/Seasonally flooded herbaceous	1
	Total	135

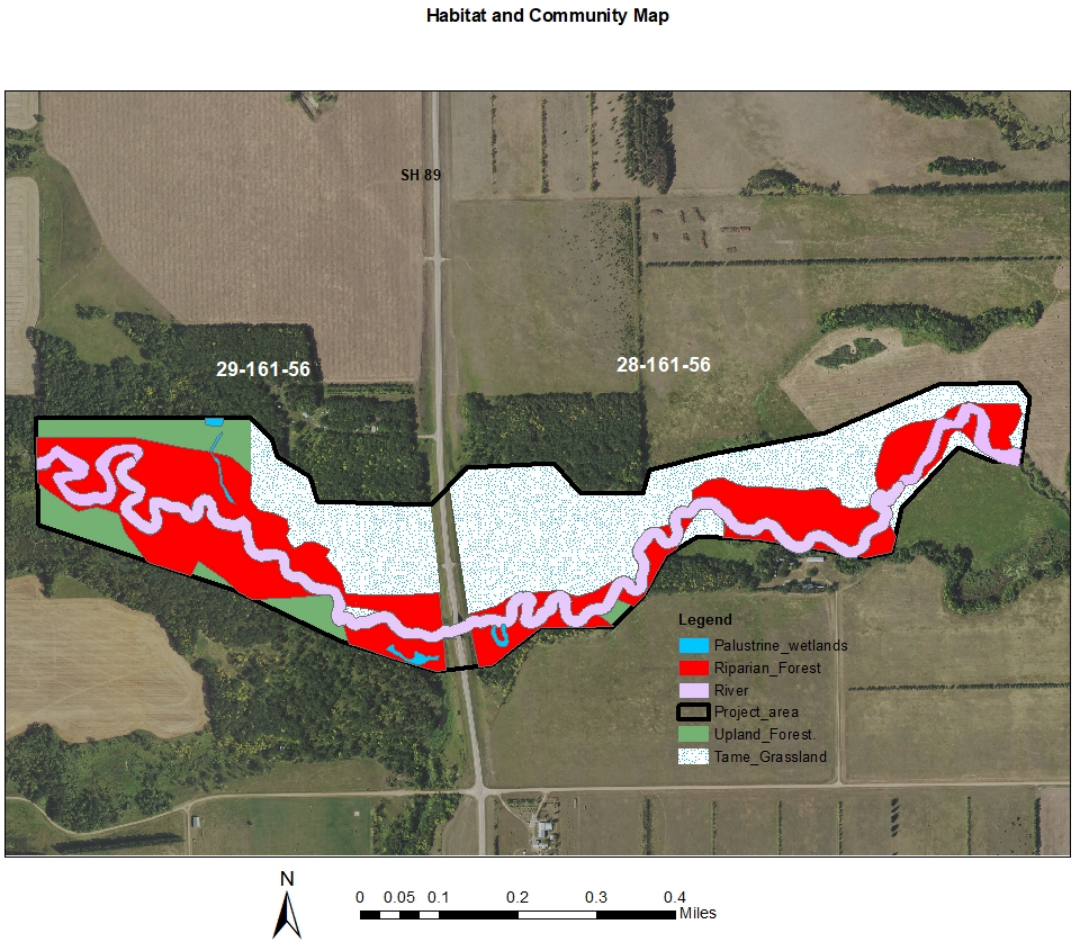

Figure 4 Habitat types in the assessment area

Tree Core Observations

Tree core samples were collected by ND Forest Service personnel to determine the age of trees growing on the artificially diked locations. It is thought that the dikes were constructed for the purpose of protecting newly cleared land from spring and summer flooding. The dikes incorporated remnants of the cleared tree and soil spoil materials from landplaning the crop fields. Wolk determined the age of the Boxelder trees on the dike were approximately 40 years old. He also determined that adjacent basswood trees were approximately 80 years old. Based on this information, we can infer that the dikes are at least 40 years old and were likely constructed over 70 years ago as it would not have been possible to place them without disturbing the basswood trees. This lines up with the timing of levee construction described in Appendix D1; the 1962 aerial photo shows levees and a straightened river channel while the 1941 aerial photo does not.

Community Descriptions

Tame Grassland Community

This area is the largest community in the survey comprising 62.3 acres and 46% of the AA. This community is dominated by non-native and undesirable smooth bromegrass and common tansy on 51.2 acres, the remaining 11.1 acres are enrolled the USDA Conservation Reserve Program (CRP) planted around 1986. More desirable wheatgrasses and alfalfa species dominate the CRP; however, tansy and brome are also present. The CRP acres are hayed in a managed rotation as the program allows.

Plants: This community consists of grasses, forbs, tree, and shrub species. Nineteen species were observed, five of which are native. Three state noxious weeds (Canada thistle, leafy spurge, and musk thistle) and one county noxious weed (common tansy) were observed.

Animals: Fifteen animal species were noted; these included 11 birds, 3 insects and 1 mammal.

Figure 5: Tame Grass Community: Redosior Dogwood with nest (left) Common Tansy spring growth (right)

Upland Deciduous Forest Community

The upland forest comprises 12.7 acres and 9% of the AA. Basswood and bur oak are native and dominate in this zone. Landslides due to channel incision have caused the loss of some of this community on the south side of the river.

Plants: This community consists of grasses, forbs, tree, and shrub species. Ten species were observed, nine of which were native. No noxious weeds were observed in this community.

Animals: Four bird species and one insect species were noted.

Figure 6 Upland Deciduous Community: Basswood (American Linden clump)

Rivers, streams

The river and stream community is approximately 21 acres (2.5 river miles) or 15% of the AA. The deep incision of the river has altered the plant and animal communities. Aquatic plant and animal species in the river were not surveyed, however a few prominent species were noted.

Plants: This community consists of grasses, forbs, graminoids, tree, and shrub species. Fourteen species were observed, eight of which were native. One state noxious weed (leafy spurge) and one county noxious weed (common tansy)were observed in this community. .

Animals: Eleven species of birds, insects, mammals, fish, amphibians, and arthropods were noted; these included 4 birds, 1 mammal, 3 insects, 1 arthropod, 1 amphibian, and 1 fish. More comprehensive instream channel assessments are included in Appendix D, Section 2.

Figure 7 River/Stream Community: Channel downcutting has cause loss of large deciduous species, grass species (smooth bromegrass) dominate.

Riparian Forest

This area is the second largest community in the survey comprising 52.3 acres or 39% of the AA. This community is largely composed of desirable native species of grasses, forbs, graminoids, shrubs and trees.

Plants: This community consists of grasses, forbs, graminoids, tree, and shrub species. Forty-two species were observed, 31 of which were native with two state noxious weeds (leafy spurge and musk thistle) and one county noxious weed (common tansy).

Animals: Twenty-one species of birds, insects, and mammals were noted; these included 15 birds, 3 mammals, and 3 insects.

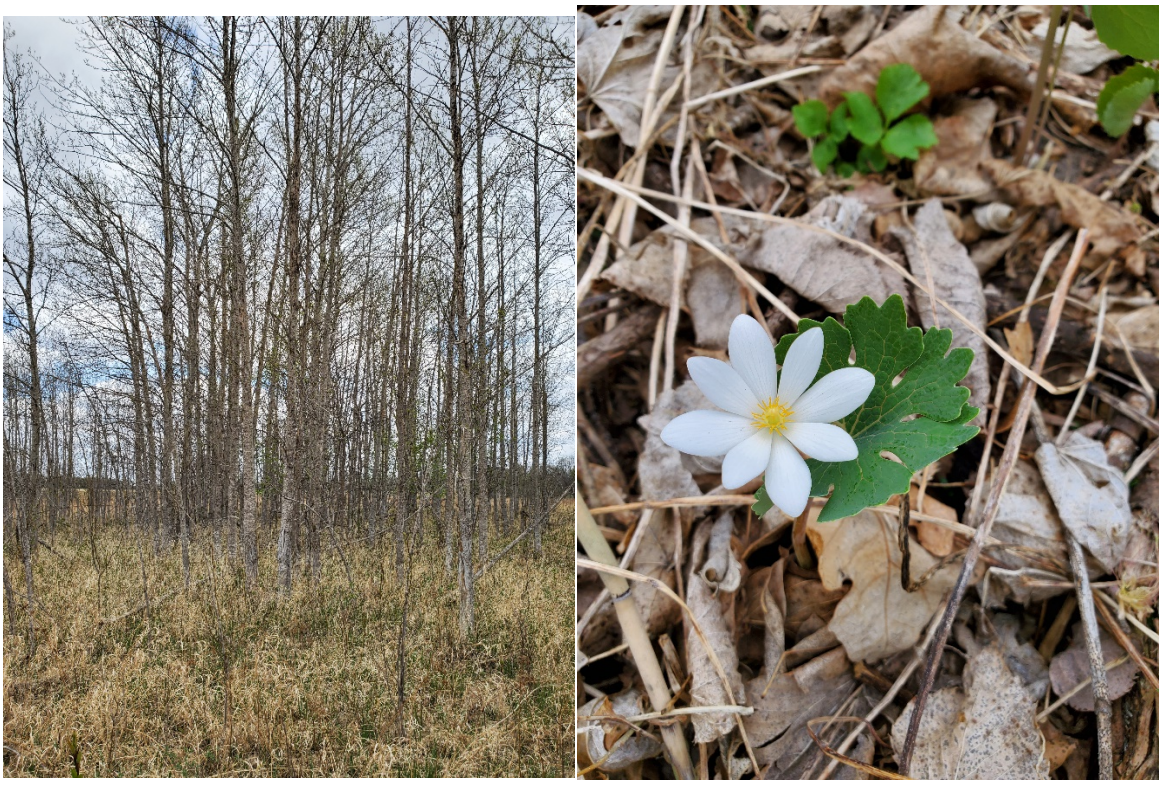

Figure 8 Riparian Forest Community: Good diverse native species: Quaking aspen (left), Blood root (right)

Wetland

Four of the palustrine wetlands delineated in the Aquatic Report (App D-6), are located within the AA, however only 1 of these wetlands (Wetland #4) will be impacted by construction. The other 3 wetlands (8,11 and 12 have been avoided in the project design alternatives. These wetland areas total 1 acre and are less than 1 percent of the AA.

Plants: This community consists of grasses, forbs, graminoids and shrubs. Seven species were observed, all of which were native. No noxious weeds were observed.

Animals: No animal species were observed in the wetland areas.

Community Quality Evaluations

Presence of Invasive Species: Several plant species in the AA are either listed as North Dakota state noxious weeds, county noxious weeds, or state troublesome weeds (Ikley 2020). Six of these are present in the AA (Biennial Wormwood, Canadian thistle, Common Tansy, Leafy Spurge, Common Milkweed and Musk Thistle). These were most prevalent in the tame grass areas, although common tansy was found in all the habitat types. Milkweed is likely listed as from a cropped agricultural perspective; however, this species is critical for monarch butterflies.

Biological Condition: The biological condition varied among habitat types. The greatest species diversity was found in the Riparian Forest community: 42 species (74% native) of plants and 21 species of animals were noted. The condition of the River/stream community is declining due to the channel cutting, streambank erosion and the

subsequent lowering of the water table. The poorest community was the tame grass areas not enrolled in CRP. This community is heavily impacted by invasive smooth bromegrass and common tansy. The palustrine wetland community was very small and likely has been reduced in function due to the loss of hydrology. Excessive channel incision has kept high flows from reaching their natural floodplain.

Species of North Dakota Conservation Priority

The Key Species of Conservation Priority as identified in the SWAP by the ND Game and Fish Dept. received special consideration in the inventory. No Level 1 Species of Concern in the ND Game and Fish Wildlife (NDG&F) State Wildlife Action Plan (SWAP) were observed in the spring of 2021, however during monitoring surveys for channel stability assessments in 2015-2020, NRCS staff consistently observed high numbers of dace (species unknown) in the AA. The Northern Pearl Dace (Margariscus margarita) is identified as a Level I Species of Conservation Priority in North Dakota (NDGF 2021 SCP *https://gf.nd.gov/wildlife/id/northern-pearl-dace*). Unidentified species of woodpeckers and soaring hawks were noted in the May 2021 survey. Level I species are of high importance due to declining populations or importance of area as the breeding range for migratory species. Level II species identified included the Western Meadowlark, Bobolink and Sharp-tailed grouse. The Western Meadowlark and Bobolink are listed as level II due to moderate levels of decline. The Sharp-tailed grouse is level II as North Dakota makes up one-third of the species' range.

National Threatened and Endangered Species

The USFWS Information for Planning and Consultation system of the USFWS (US Fish and Wildlife Service 2021a) was consulted for Endangered Species, Migratory Birds, Facilities and Wetlands within the AA. One Endangered Species – Whooping Crane and one Threatened Species – Northern Long-Eared Bat - were identified as possibly present in the AA. No Migratory Birds of Concern to the USFWS are expected to be present in the AA. Occasional or transient Whooping Cranes are not expected during the construction period, however, if any are observed, construction must cease until they have left the AA. NRCS State Biologist was present at the inventory and observed that maternity/roosting habitat in the AA is suitable for the Northern Long-Eared Bat. Conditions for Implementing Conservation Practices apply for the Northern Long-Eared Bat. No tree removal may take place during the bat's maternity/roosting period from June 1st – July 31st.

Conclusions

The AA contains five major habitat types following North Dakota Game and Fish Department (NDGFD) categories: tame grassland, upland deciduous forest, rivers and streams, wetlands, and riparian woodlands. These communities are categorized as having quality conditions ranging from poor to good. The assessment team documented 67 vegetative species and direct observation or evidence of 47 animal species. The inventory was conducted in the spring; therefore, some plant species may not have emerged or were observed in their desiccated form. Several noxious or troublesome weed species were found. No invasive animal species were found in the survey. Plant communities are thought to be impaired by the down-cutting of the stream which has lowered the water table and is favoring upland species particularly in the tame grass area.

No federally listed threatened and endangered species were observed in the AA. There are two USFWS listed species potentially affected by the project, the Northern Long-Eared Bat, and the Whooping Crane. Suitable habitat for the bat is present in the AA.

The Northern Pearl Dace, a Level I Species of Concern in North Dakota has been identified in the Tongue River. Unidentified dace species were observed in the AA in their primary habitat of pools in streams with sandy and gravel bottoms. The accelerated rate of channel incision is reducing this critical habitat.

In general, the communities and habitats have experienced impacts from human disturbance upstream and downstream that has resulted in removing natural hydrology, this in turn, has changed or eliminated the native plant community. Within the AA, alterations that occurred 30 – 80 years ago such as removing stream meanders, constructing levees, upstream dam construction, bridge construction, and removing native forest vegetation have also altered the species composition and hydrology. The potential exists to restore and improve the plant and animal communities and restore hydrology which will increase the amount and quality of habitat for important species such as the Northern Pearl Dace.

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2021

Appendix A
Plant and Animal Species Inventory – Tongue River Restoration

MAY 2021

USDA NRCS

Plant Species Inventory, Tongue River Restoration, May 2021

Scientific Name	Common name	Native	Tame	Upland forest	Wetland	River/stream	Riparian Woodland
Acer negundo	Boxelder maple	X	X	X		X	X
Alisma L	Water plantain	X				X	
Amelanchier ainifolia	Juneberry	X					X
Anemone canadensis	Meadow anemone	X					X
Aquilegia canadensis	Meadowrue/columbine	X					X
Artemisia biennis	Wormwood, biennial		X				
Arctium sp	Burdock, common		X			X	
Asclepias syriaca	Milkweed, common	X	X				
Betula papyrifera	Paper Birch	X		X			
Bromus inermis	Smooth brome		X	X		X	X
Calamagrostis canadensis	Bluejoint grass	X			X		
Carduus nutans	Musk thistle		X				X
Carex ateroides	Slough sedge	X			X	X	
Carex atherodes	Sedge	X			X	X	
Carex sprengelii	Sedge, sprengel's	X				X	
Castilleja coccinea	Indian paintbrush	X					X
Chenopodium album	Lambsquarter		X				X
Cirsium arvense	Canada thistle		X				
Cornus sericea	Redosier dogwood	X					X
Corylus americana	Hazelnut	X		X			
Equisetum arverse	Horsetail	X			X		X
Euphorbia esula	leafy spurge		X			X	X
Euthamia graminifolia	Goldenrod	X	X				X
Falopia convolvulus	Wild buckwheat					X	
Fraxinus pennsylvanica	Green Ash	X		X			
Galium aparine	Catchweed bedstraw	X					X
Helenium autumnale	Common sneezeweed	X				X	
Helianthus maximiliani	Maximillian sunflower	X					X
Lemna L.	Duckweed	X				X	

Scientific Name	Common name	Native	Tame	Upland forest	Wetland	River/stream	Riparian Woodland
Medicago sativa	Alfalfa		X				
Melilots officinalis	Sweet clover		X				
Phalaris arundinacea	Reed Canary grass						X
Phellinus sp	Tree fungus						X
Philanthus sp	Philanthus algae	X					
Pinus sylvestris	Scots pine		X				
Plantago major	Plantain, common	X					X
Poa palustris	Fowl bluegrass	X					X
Poa pratensis	Kentucky bluegrass		X				
Polygonatum biflorum	Solomon seal	X					X
Populus balsamifera	Balsam Poplar	X					X
Populus deltoides	Cottonwood, native	X					X
Populus tremuloides	Quaking Aspen	X		X			
Prunus americana	American Plum	X					X
Prunus virginiana	Chokecherry	X					X
Quercus macrocarpa	Bur Oak	X		X			X
Ranunculus recurvatus	Blisterwort	X					X
Ribes aureum	Golden current	X					X
Rubus idaeus	Raspberry	X					X
Rumex salicifolius	Mexican dock						X
Salix amygdaloides	Peachleaf willow	X					X
Salix bebbiana	Bebbs Willow	X			X		X
Salix interior	Sandbar willow	X					X
Sanguinaria canadensis	Bloodroot	X					X
Sphagnum sp	Sphagnum moss	X	X		X		
Symphoricarpos albus	Snowberry	X	X	X			X
Symphyotrichum ericoides	Many-flowered aster	X					X

Scientific Name	Common name	Native	Tame	Upland forest	Wetland	River/stream	Riparian Woodland
Tanacetum vulgare	Common tansy		X			X	X
Taraxacum officinale	Dandelion, common		X			X	
Thinopyrum ponticum	Tall wheatgrass		X				
Tilia americana	Basswood/American Linden	X		X			X
Trifolium pratense	Red clover						X
Typha latifolia	Cattails, broadleaf native	X			X	X	
Ulmus americana	American Elm	X		X			X
Ulmus pumila	Siberian Elm		X				
Urtica dioica	Stinging nettle	X					X
vicia americana	American Vetch	X					X
Viola blanda	Violet, white	X					X
Vitis Riparia	Wild grape	X					X

Animal Species Inventory, Tongue River Restoration, May 2021

Scientific Name	Common Name	Taxon	Tame	upland forest	wetland	river/stream	riparian woodland
Aeshna sp	Dragon fly	insect		X		X	
Agelaius phoeniceus	Red wing blackbird	bird	X				
Anas platyrhynchos	Mallard	bird	X				
Archilochus colubris	Hummingbird	bird					X
Bombus sp	Bumble bee	insect	X				
Branta canadensis	Canada goose	bird	X				
Buteo sp	Hawk	bird		X			
Castor canadensis	Beaver	mammal				X	
Colias philodice	White sulfur butterfly	insect					X
Corvus branchyrhynchos	Crow	bird					X
Cyanocitta cristata	Bluejay	bird	X				
Dendroica petechia	Yellow warbler	bird		X			X
Dermacentor variabilis	Wood tick	insect	X				X
Dolichonyx oryzivorus	Bobolink	bird				X	
Empidonax minimus	Least fly catcher	bird					X
Euphagus cyanoecephalus	Brewers' blackbird	bird					X
Fromicidae sp	Ants	insect	X				
Geothlypis trichas	Common Yellowthroat	bird					X
Gerridae sp	Water strider	insect				X	
Icterus galbula	Baltimore oriole	bird					X
Lithobates pipiens	Northern leopard frog	amphibian				X	
Luxilus sp	Minnows	fish				X	
Meleagris gallopavo	Turkey	bird					X
Melospiza melodia	Song sparrow	bird					X
Mniotilta varia	Black and white warbler	bird				X	
Molothrus ater	Brown- headed cowbird	bird					X
Molothrus sp	Cowbird	bird					X

Scientific Name	Common Name	Taxon	Tame	upland forest	wetland	river/stream	riparian woodland
Odocoileus virginianus	White-tailed deer	mammal					X
Orconectes sp	Crayfish	arthopod				X	
Pachydiplax longipennis	Blue dasher dragon fly	insect				X	
Parkesia noveboracensis	Northern waterthrush	bird					X
Petrochelidon pyrrhonota	Cliff swallow	bird	X				
Picoides pubescens	Downy woodpecker	bird					X
Poecile atricapillus	Black-capped chickadee	bird	X				
Procyon lotor	Racoon	mammal					X
Riparia riparia	Bank swallow	bird				X	
Sitta carolinensis	White-breasted nuthatch	bird	X				
Spinus tristis	American Goldfinch	bird	X				
Spizella passerina	Chipping sparrow	bird		X			
Sturnella neglecta	Meadlow lark	bird	X				
Tamiasciurus hudsonicus	Red squirrel	mammal					X
Thomomys talpoides	Northern pocket gopher	mammal	X				
Turdus migratorius	American robin	bird					X
Tympanuchus phasianellus	Sharptail grouse	bird	X				
unk	Woodpecker	bird				X	X
Vespidae sp	Paper wasp	insect					X
Zenaida macroura	Mourning dove	bird	X				