

City of Saskatoon Blairmore Natural Areas Screening Final Report



Prepared For

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EXECUTIVE SUMMARY

This final report summarizes the results and recommendations of a Natural Areas Screening (NAS) for the Blairmore Sector Plan Study Area (the Study Area) in the City of Saskatoon (the City). The NAS is comprised of a desktop review of past studies, historical biophysical and heritage records, and spatial data, and a biophysical field program conducted in 2021 to 2022 focussed on characterizing vegetation and wildlife communities, and wildlife use within the Richard St. Barbe Baker Afforestation Area and the George Genereux Urban Regional Park (the Afforestation Areas). The intent of this NAS is to support the planning and design of future development within the Blairmore Sector.

The Study Area is 2,958 hectares (ha) and includes several existing developments. Natural areas found within the Study Area include the Richard St. Barbe Baker Afforestation Area (140 ha), located in the S½ 22-36-06 W3M and S½ 23-36-06 W3M, and the George Genereux Urban Regional Park (60 ha), located in NE 21-36-06 W3M, and the West Swale that extends through the central portion of the Study Area in a south-west to south-east direction.

Agricultural land within the central and northern portions of the Study Area consists predominantly of cultivated fields with interspersed farmyards and/or yard sites with remnant habitat patches comprised of wetland basins, shelterbelts, and tree bluffs. The following sections highlight the findings from the desktop review and field program.

SOILS

The dominant soil associations in the Study Area are Elstow and Tuxford. Both soil associations present moderately severe limitations for agricultural production due to low soil water holding capacity and poor soil structure. Soils across the Study Area are largely subgroup variations of Dark Brown Chernozems, with Solonetzic soils occurring within Tuxford association soils, including Solonetz and Solod soils on lower slopes.

The results of this desktop review do not constitute a detailed historical review, and do not meet the standards for a complete Phase I Environmental Site Assessment (ESA). Overall, potential for soil contamination or waste dumping within the Study Area was found in industrial areas such as the Canadian National Railway (CN) Rail Yards Management Area and within some commercial areas, with the potential contaminant sources primarily associated with automotive processes (e.g., repairs, refueling, improper fuel and/or solvent storage and disposal). A potential for dumping exists where there is uncontrolled access to vacant land. In total, 14 areas of potential environmental concern (APEC) were identified. Of the 14 APECs, nine may be considered for a Phase I ESA and one APEC may be considered for a Phase II ESA. Finally, the desktop screening did not find evidence of reported spills or contaminant history at four APECs.



HABITAT CLASSIFICATION

The Study Area is comprised of seven habitat types. The dominant habitat type consists of cultivated land, which includes both Crop Land and Hay Land (Forage) accounting for 51% (1,517 ha) of total land cover, followed by Disturbed/Developed habitat types at 30% (890 ha), which include rural and urban developments, roadways, and industrial facilities (e.g., the CN Yards Management Area). The Yard Sites (<1%; 20 ha) comprise a combination of residences, outbuildings, shelterbelts, and farm infrastructure, as well as associated Tame Grassland. Wetland habitat defines 10% (262 ha) of the total Study Area; the majority of which is contained within the West Swale. Open Canopy Mixed Woodland, primarily associated with the two Afforestation Areas, and Closed Canopy Deciduous Woodland comprised of remnant native tree bluffs and tree-ringed wetland margins collectively account for the remaining 8% (248 ha) of the Study Area.

VEGETATION

A total of 105 vegetation species have been historically documented across the entire Study Area; most of which are associated within the Afforestation Areas. Historical observations of five provincially tracked vegetation species were identified in the Study Area.

Field studies for vegetation were focussed on the Afforestation Areas and included vegetation species detection surveys to identify provincially tracked or federally listed species and species listed under *The Weed Control Act* (Government of Saskatchewan 2010), as well as forested rangeland health Assessments.

During the field surveys, two plant Species of Management Concern (SOMC), the red-elder berry (*Amaranthus californicus*), listed provincially as S2, (imperiled/very rare), and small yellow lady's slipper (*Cypripedium parviflorum* var. *makasin*), listed provincially as a S3 species (vulnerable/rare to uncommon), were observed within Richard St. Barbe Baker Afforestation Area.

Vegetation communities within the Afforestation Areas are dominated by dense rows of common caragana (*Caranaga arborescens*), as well as afforested tree species, including Siberian elm (*Ulmus pumila*), Manitoba maple (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus amiercana*), and scotch pine (*Pinus sylvestris*). Despite the presence of native species, the overall ground cover across the Afforestation Area is dominated by invasive, agronomic species, including smooth brome (*Bromus inermis*), quack grass (*Elymus repens*), and crested wheatgrass (*Agropyron cristatum* ssp. *pectinatum*). Some remnant native aspen dominant communities are present within the Afforestation Areas and support high cover of native vegetation.

Forested rangeland health was assessed at healthy with problems primarily due to abundance of invasive plant species. Of note, European buckthorn (*Rhamnus cathartica*) are heavily encroaching into the understory on the west side of the Richard St. Barbe Baker Afforestation Area.



WILDLIFE

Within the Study Area, 91 bird species, 52 invertebrate species, and eight mammal species have been historically documented. Most of these observations are associated with the with Afforestation Areas. In the Study Area, previously documented vertebrate SOMC include two amphibian species and 11 avian species.

The field program was conducted within the Afforestation Areas and consisted of a raptor stick nest survey, a Common Nighthawk (*Chordeiles minor*) survey, breeding bird surveys (BBS), and a wildlife habitat corridor assessment (i.e., a remote camera program and winter track counts).

One active Red-tailed Hawk (*Buteo jamaicensis*) nest was observed in the George Genereux Urban Regional Park. No amphibians or Common Nighthawks were observed during the surveys. Thirty-two avian species were detected in the Afforestation Areas. Eleven wetland associated species were detected adjacent to the permanent wetland in the Richard St. Barbe Baker Afforestation Area. No SOMC were observed during the surveys; however, two avian SOMC were incidentally observed: 1) one occurrence of a Common Nighthawk; and 2) one occurrence of a Horned Grebe (*Podiceps auratus*).

A total of 13 mammal species were observed during the wildlife habitat corridor assessment. In general, wildlife activity appears to be greater in the areas with lower human/dog activity or in areas of natural Closed Canopy Deciduous Woodland and wetland habitats, areas with thick understory of short and tall shrubs, or the presence of conifer trees. The winter track counts indicated that wildlife is moving in and out of the Afforestation Areas. Coyotes (*Canis latrans*) are moving between the north boundary of the Richard St. Barbe Baker Afforestation Area and the CN Yards Management Area to hunt. Wildlife was observed crossing the Township Road 362A between the permanent wetland in the Richard St. Barbe Baker Afforestation Area and the Chappell Marsh Conservation Area. Limited tracks were found between the Richard St. Barbe Baker Afforestation Area and the George Genereux Urban Regional Park or crossing the east and west boundaries of the Afforestation Areas into adjacent land. No obvious patterns of wildlife movement in the interior of the Afforestation Areas could be determined because the majority of the wildlife activity within these areas are from repeated use by snowshoe hare (*Lepus americanus*), feeding and use of security cover.

HERITAGE

A heritage desktop review of the Study Area was completed to determine Heritage Resources Impact Assessment (HRIA) requirements. No known archaeological sites are located within the Study Area; however, four known archaeological sites are located near the south-east corner outside of the Study Areas:

- Gowen I (FaNq-25);
- Gowen II (FaNq-32);
- Gayle (FaNq-26); and,
- Corey (FaNq-75).



A HRIA will be required for three quarter-sections in the south-east corner of the Study Area considered to have moderate to high potential to discover intact archaeological sites:

- NE 13-36-6 W3M;
- NW 13-36-6 W3M; and,
- SE 13-36-6 W3M.

PLANNING RECOMMENDATIONS

EDI recommends that the City focus conservation and enhancement planning on two important natural assets within the Study Area:

- West Swale and associated wetland complexes; and,
- the Afforestation Areas;

From the context of the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a), EDIs recommends that the City adopt an integrated and collaborative approach to allow for input by a variety of disciplines and subject matter experts so that design considerations can be discussed and vetted from multiple points of view.

Ecological recommendations include conserving the West Swale and other important wetland complexes from urban development by designing an exclusion buffer around the identified wetland complexes; minimize wetland habitat degradation and loss by minimizing construction of stormwater structures within the West Swale and other wetland complexes by designing greenways as borders to natural areas; and replace/compensate for any additional wetland areas lost and/or degraded because of development activities.

It is recommended that the City conserve and enhance the ecological function of existing forest communities in the Afforestation Areas through targeted control of weeds and invasive shrubs (i.e., European buckthorn and newly established caragana), and site-specific plantings of native tree and shrubs. Similarly, the ecological function of the Class 5 (i.e., permanent) wetland within SE 22-36-06 W3M of the Richard St. Barbe Baker Afforestation Area should be enhanced by targeted weed control, selective riparian shrub plantings, and the creation of exclusion buffer around the wetland in to reduce further degradation of the riparian area and wetland margins by dogs and recreational users. Recommendations to enhance the recreational potential include the prohibition of motorized vehicles (including dirt bikes) and restricting vehicle access; enhanced recreational and educational opportunities; and engagement and collaboration with stakeholders during planning and implementation of enhancement activities. These measures will offer multiple benefits to recreational users and wildlife, allow for a greater number and broader diversity of users, and increased educational opportunities, promoting diversity and inclusion of multi-user groups, and ultimately public approval of recreational and biodiversity enhancement.

The City has prioritized green space connectivity within the City limits, and within the region (City of Saskatoon 2020a, P4G 2020). Three locations with potential for enhanced green spaces connectivity within



and adjacent to the Study Area were evaluated based on logistics, cost, and usability (by wildlife and recreational users), and are as follows:

- limited connectivity potential between the northern/central portions of the Study Area with the Richard St. Barbe Baker Afforestation Area because of major transportation and industrial corridors (i.e., Highway No. 7 and the CN Yards Management Area) and associated costs with construction of a wildlife overpass;
- moderate potential to create a green network from the Richard St. Barbe Baker Afforestation Area, through the Chappell Marsh Conservation Area to the South Saskatchewan River because of potential costs associated with obtaining conservation easements and/ or land purchase/ lease to conserve the wetland swale extending south from Chappell Marsh to the South Saskatchewan River; and,
- fair connectivity potential to link multi-use trails within the Blairmore Sector to linear parkways in adjacent neighbourhoods, and to the George Genereux Urban Regional Park.

ADDITIONAL STUDIES

Additional biophysical and heritage studies and/ or assessments are recommended to inform future plans for development within the Blairmore Sector:

- groundwater studies to identify areas of high-water table or surface water (presence of wetlands);
- updated functional wetland assessments to determine current extent and composition of the vegetation community, invasive plant species, and conservation potential of potentially important natural assets (i.e., West Swale and wetland complexes 2-5);
- additional wildlife surveys focussed on the West Swale and associated wetland complexes to further augment existing data on wildlife communities;
- an additional wildlife corridor assessment outside of the Afforestation Areas to better understand wildlife movement patterns between the identified natural assets throughout the entire Study Area; and,
- complete the appropriate level (or phase) of ESA for each APECs for soil contamination within the Study Area.



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1 INTRODUCTION

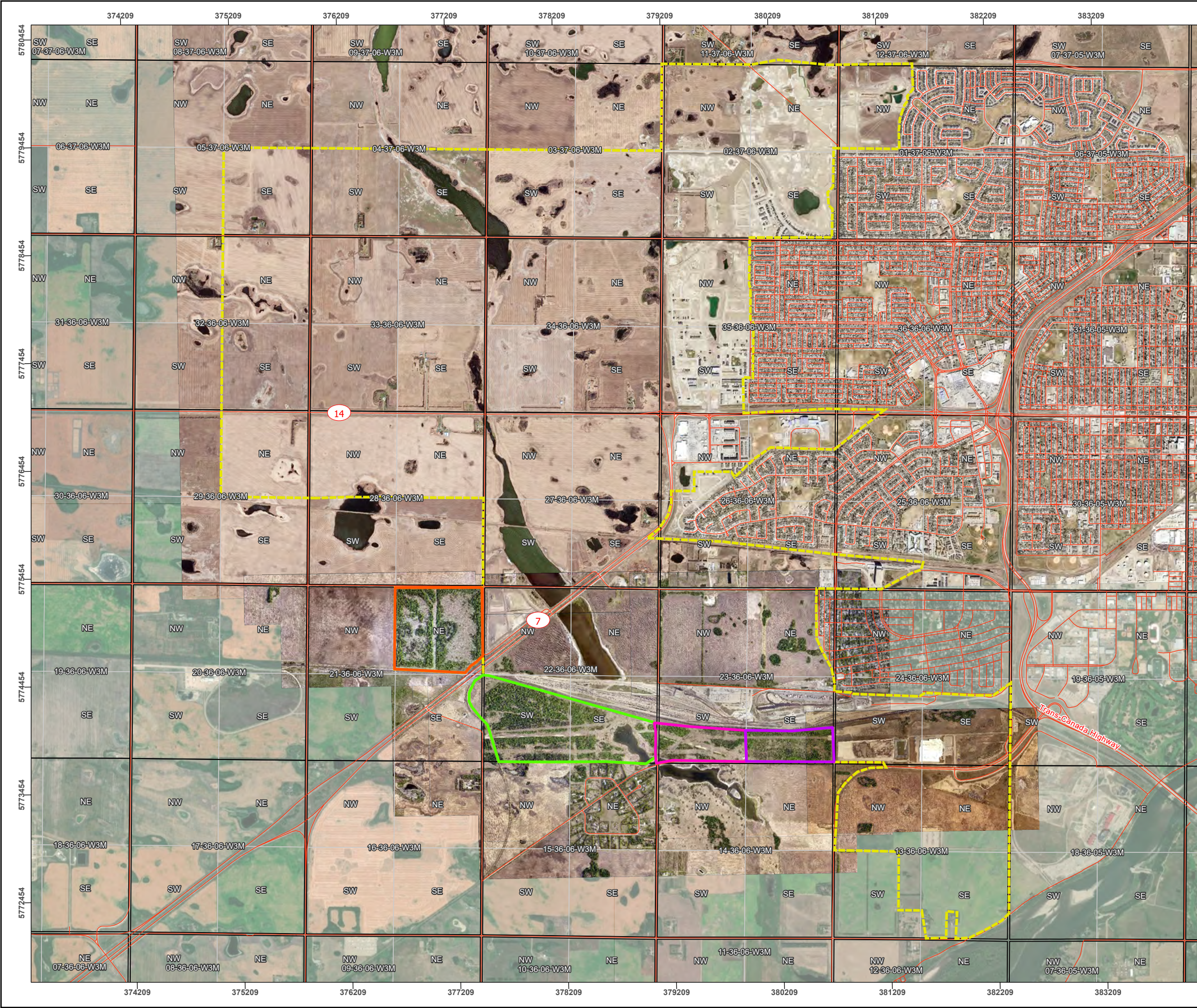
The City of Saskatoon (the City) contracted EDI Environmental Dynamics Inc. (EDI) to complete the Blairmore Sector Plan Natural Area Screening Study (the Project). The intent of the Project is to identify the valuable natural, cultural, and historical assets that are present within land scheduled for development, and to inform decision makers on how and where development can occur in an environmentally responsible manner as it relates to future planning of the Blairmore sector.

1.1 PROJECT OBJECTIVES

The Project's objective is to complete a Natural Area Screening (NAS) of the Blairmore Sector Plan Study Area (the Study Area; Figure 1), consisting of a biophysical and heritage review of the Study Area and a biophysical field program focused on the Richard St. Barbe Baker and George Genereux Afforestation Areas (the Afforestation Areas). A NAS is a planning tool that informs the City to provide a better understanding of the natural, cultural, and historical assets that are present within land that is scheduled for development.

The biophysical review consisted of a desktop review of relevant, publicly available historical data sets, spatial data, and reports to provide a comprehensive inventory of wildlife and vegetation communities historically and recently observed within the Study Area. The field study, which was conducted in 2021 and early 2022, focused on collecting supplementary data to characterize the existing environment, verify and delineate the wetlands and habitat types, and document the vegetation and wildlife communities within the Afforestation Areas.

The heritage review consisted of a desktop review of the Saskatchewan Heritage Conservation Branch (HCB) Developers' Online Screening Tool (HCB 2021) to determine Heritage Resources Impact Assessment (HRIA) requirements; outcomes of the Heritage review will inform the City on the presence and mitigation of potential culturally sensitive areas in advance of future development.



Blairmore Natural Area Screening Study Area

CITY OF SASKATOON

Legend

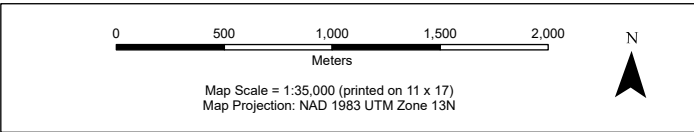
- Road
- Study Area
- Section
- Quarter Section

Afforestation Areas

- George Genereux Urban Regional Park

Richard St. Barbe Baker Afforestation Area

- Parcel 1
- Parcel 2
- Parcel 3



Data Sources

- Main map. City of Saskatchewan Imagery.
- Main map. World Imagery. Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map. National Geographic World Map. National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road. Topographic Data of Canada - 50K CanVec Series. Government of Canada.
- The Township system of Saskatchewan. Government of Saskatchewan.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to ensure this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

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An interim report that presents the findings from the desktop biophysical and heritage review was completed by EDI and approved by the City in August 2021 (EDI 2021). This final report is a stand-alone report that integrates the findings of the interim report with a synthesis of the field program results to address the following objectives:

- to identify important natural assets within the Study Area, including key natural features found within the Afforestation Areas;
- to evaluate the extent of wildlife habitat use/movement patterns within the Afforestation Areas, and potential wildlife habitat connections between the Afforestation Areas and adjacent areas within and outside the Study Area;
- to provide ecological and recreational management planning recommendations in context with the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a); and,
- to provide recommendations for additional biophysical studies and/or assessments to inform subsequent planning within the Blairmore Sector.

Over the past decade, several natural area screening studies have been completed for portions of the Study Area (Walker 1983; Stantec 2006; City of Saskatoon 2010; Golder 2012; Pinter and Associates Ltd. 2013). Results from these previous studies were considered and incorporated into this final report where applicable.

1.2 STUDY AREA

The Study Area is 2,958 hectares (ha) and includes all lands contained within the Blairmore Sector Plan boundary (Figure 1). The Study Area includes two areas that have development completed in the past decade, the Kensington neighbourhood and the Blairmore Urban Centre, both of which had a NAS completed prior to the development. In addition, there are several existing developments on the east side of the Study Area that were built prior to the City requiring a NAS (i.e., Hampton Village, Blairmore, Dundonald, Confederation, Pacific Heights, Parkridge, Fairhaven, Montgomery Place). There are several municipal grid roads, road allowances, and associated infrastructure rights-of-way (ROWs) that cross the Study Area, as well as provincial Highways No. 7 and No. 14 (see Figure 1).

Agricultural land within the central and northern portions of the Study Area consists predominantly of cultivated fields with interspersed farmyards and/or yard sites with remnant habitat patches comprised of wetland basins, shelterbelts, and treebluffs.

Natural areas found within the Study Area include the Richard St. Barbe Baker Afforestation Area (140 ha), the George Genereux Urban Regional Park (60 ha), and the West Swale (City of Saskatoon 2020a). The Afforestation Areas are defined as areas where a forest was established in areas with no previous tree cover (City of Saskatoon 2020a) and are comprised of naturalized tree or shrub cover with identifiable planting patterns and are distinguished by the presence of naturalized understories and surrounding vegetation communities (Meewasin 2019). The original purpose of the Afforestation Areas was not to restore the area back to a natural prairie habitat; rather, to contribute to a planned green belt around the City perimeter, and to create a treed area for a future residential development (Grant 2021).



The George Genereux Urban Regional Park is currently a contiguous parcel of forested and naturalized lands on NE 21-36-06 W3M, whereas the Richard St. Barbe Baker Afforestation Area is comprised of three distinct parcels. From west to east, these include:

- Parcel 1: the Richard St. Barbe Baker Afforestation Area within S½ 22-36-06 W3M, and a small segment within SW 21-36-06-W3M;
- Parcel 2: the Southwest Dog Park (Off-leash Recreation Area) in SW 23-36-06 W3M; and,
- Parcel 3: the Afforestation Area in SE 23-36-06 W3M.

The West Swale is a large, post-glacial meltwater channel scar that stretches through the central portion of the Study Area and is an important drainage that connects to the South Saskatchewan River. Agricultural expansion has removed much of the native vegetation communities, with cropland encroaching on the majority of the wetland margins. The Afforestation Areas and West Swale are considered Natural Capital Assets¹ and part of Saskatoon's Green Network (Meewasin 2019; City of Saskatoon 2020b), with the former considered to be two of the managed urban green space sites within the City (Meewasin 2019).

¹ Natural Capital Assets typically refers to bodies of water, soil, animals, plants or ecosystems that contribute to the provision of one or more services required for the health, well-being, and long-term sustainability of a community and its residents. These are commonly referred to as Natural Assets. With regard to the City of Saskatoon, Natural Assets include Aquatic, Forested and Shrubland, and Grassland areas (City of Saskatoon 2020b).



2 BIOPHYSICAL REVIEW

2.1 DESKTOP REVIEW

2.1.1 DATA SOURCES

Dominant habitat (i.e., land cover) types were delineated using Saskatchewan Land Cover data, Google Earth Pro satellite imagery (Google Earth Pro 2020), the 2019 Annual Crop Inventory database from Agriculture and Agri-Food Canada (AAFC 2019), and EDI's general knowledge of the Study Area. The habitat types within the Study Area were classified and defined based on the Saskatchewan Ministry of Environment's (ENV) habitat categories as outlined in the Saskatchewan Conservation Data Centre's (SKCDC) Species Detection Load Form (ENV 2021).

Information on the reported historical occurrences of flora and fauna considered to be Species of Management Concern (SOMC) (i.e., federally listed under Schedule 1 of the *Species at Risk Act* [SARA] and provincially tracked species according to the SKCDC; SKCDC 2021a), as well as invasive flora species previously documented in the Study Area was gathered from the following databases and data sources:

- the SKCDC Hunting, Angling, and Biodiversity of Saskatchewan (HABISask) database (SKCDC 2021b);
- eBird species lists for recorded sites within the Study area (eBird 2021a, 2021b, 2021c);
- iNaturalist (iNaturalist 2021a);
- iMapinvasives (Natureserve 2021); and,
- wetland inventory shapefiles (Golder 2015; Stantec 2009).

While data acquired from HABISask, iNaturalist, and iMapinvasive included coordinates for individual species observations, observations from eBird did not, and it was assumed that species listed occur within, or have the potential to occur within, the Study Area. The iNaturalist observations were filtered to only include research grade observations (i.e., when more than two-thirds of the iNaturalist identifiers agree on a taxon; (iNaturalist 2021a); observations that were considered casual or needing identification were not included. Information related to the soil associations within the Study Area was obtained from the Canadian Soil Information Service online database (AAFC 2020) based on a high-level review to query the Saskatchewan soils data.

Resources accessed and reviewed to identify potential areas of soil contamination included Google Earth Pro satellite imagery (2020), available reported historical environmental site assessment reports (Stantec Consulting Ltd. 2006; Pinter and Associates Ltd 2013) and the following databases related to previously documented contaminated sites:

- Saskatchewan Spills Search (Government of Saskatchewan 2015a);
- Hazardous Substance Storage Facility Search (Government of Saskatchewan 2015b); and,
- National Pollutant Release Inventory (NPRI) Data Search (Government of Canada 2017).



2.1.2 LITERATURE REVIEW

To understand the past and present condition of the Study Area, a detailed review of relevant previous studies, legislation, and literature was conducted. While a complete list of the literature reviewed is included in Section 5 References, the following reports, which pertain specifically to the Study Area, were reviewed in detail:

- City of Saskatoon West/Southwest Sector Natural Area Screening Study (Golder 2012);
- Blairmore Neighborhood 3 – Phase I Environmental Site Assessment (Pinter and Associates Ltd. 2013);
- Blairmore Suburban Centre – Phase I Environmental Site Assessment (Stantec 2006);
- Saskatoon’s Green Infrastructure Strategy (City of Saskatoon 2020a);
- Saskatoon’s Wetland Policy C09-041 (City of Saskatoon 2013); and,
- The Gowen Sites (Walker 1983).

2.1.3 SOILS

2.1.3.1 Soils Classification

Six soil associations and eight soil map units were identified within the Study Area (Figure 2, Table 1). The dominant soil associations are Elstow and Tuxford. Both soil associations present moderately severe limitations for agricultural production due to low soil water holding capacity and poor soil structure. Soils in the Study Area are largely subgroup variations of Dark Brown Chernozems, with Solonetzic soils occurring within Tuxford association soils, including Solonetz and Solod soils on lower slopes (AAFC 2020).

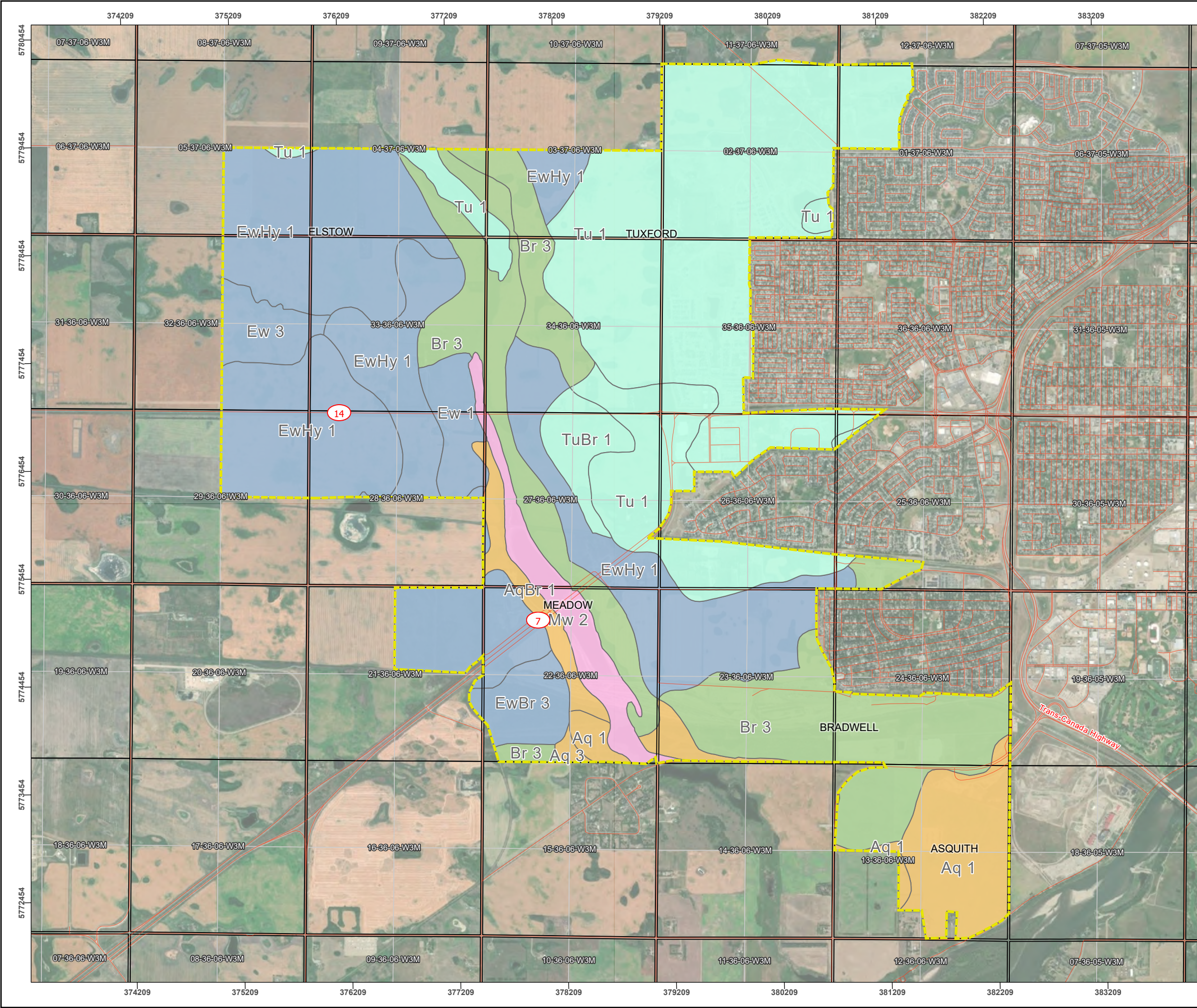
Wind erosion potential ranges from low on loam dominant soils in the north, to high on sandy soils in the southeast portion of the Study Area. Soils in the Asquith association are most at risk of wind erosion, with high (Aq 1, Aq3, AqBr1) wind erosion potential in areas with sandy loam and loamy sand textures. Asquith soils are concentrated in SE 13-36-06 W3M and along the west margin of the West Swale. Potential for water erosion is very low to low across the Study Area due to general site characteristics (e.g., gentle slopes, sandy loam textured soils). Stoniness rating for all soil map units were unclassified. See Table 1 for a summary of soil characteristics, based on information from AAFC (2020).



Table 1. Summary of soils map unit descriptions identified within the Blairmore Natural Area Screening Study Area.

Soil Map Unit	Soil Association	Texture	Slope Description	Surface Expression	Soil Classification	Erosion		Agriculture Capability
						Wind	Water	
AqBr1	Asquith-Bradwell	Very fine sandy clay loam	Very gentle slopes	Undulating	Dark Brown Chernozem	High	Very low	4(6)M 3(4)M
Aq1	Asquith	Sandy loam	Very gentle slopes	Undulating	Dark Brown Chernozem	High	Very low	5(10)M
Aq3	Asquith	Sandy loam	Gentle Slopes	Hummocky	Dark Brown Chernozem	High	Very Low	4(10)M
Br3	Bradwell	Loam	Very gentle slopes	Undulating	Dark Brown Chernozem	Low	Very low	3(10)M
EwHy1	Elstow-Hanley	Loam	Very gentle slopes	Undulating	Dark Brown Chernozem	Low	Low	3(8)M 4(2)D
TuBr1	Tuxford-Bradwell	Clay loam	Very Gentle Slopes	Undulating	Dark Brown Solonetz	Moderate	Low D ¹	3(10)M
Mw 2	Meadow	Sandy loam	Nearly Level	Level	Rego Humic Gleysol	Very low	Very low	6(10)WM
Tu1	Tuxford	Clay loam	Very gentle slopes	Undulating	Dark Brown Solonetz	Low	Low	3(10)M

¹ Higher erosion rates may occur on dissected and steeper slopes.

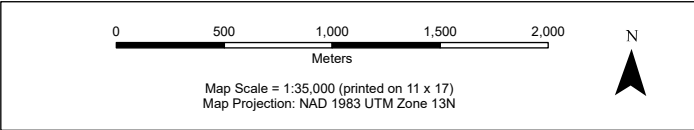


**Soil Map Units and Associations Identified
Within the
Blairmore Natural Area Screening Study Area**

CITY OF SASKATOON

Legend

- Road
- Study Area
- Section
- Quarter Section
- Map Unit
- Soil Association
 - ASQUITH
 - BRADWELL
 - ELSTOW
 - MEADOW
 - TUXFORD



Data Sources

- Main map. World Imagery. Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map. National Geographic World Map. National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road. Topographic Data of Canada - 50K CanVec Series. Government of Canada.
- The Township system of Saskatchewan. Government of Saskatchewan.
- Soil Data. Canada Soil Information Service. Government of Canada.

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2.1.3.2 Soil Contamination and Potential Dumping Sites

A desktop review was completed as high-level screening for potential locations of soil contamination and/or potential areas where waste dumping or potential contamination sources may occur within the Study Area. The objective of the desktop review was to identify locations with recorded soil contamination, or a history of land use or site activity, primarily commercial and industrial, and other locations associated with the potential for contamination. The results were then screened to estimate the level of contamination or whether a Phase I Environmental Site Assessment (ESA) may be required at a specific site.

As part of the desktop review, an inventory of site histories and activities was compiled, similar to the approach normally completed as part of a Phase I Environmental Site Assessment (ESA), but at a much broader scale. This broader scale approach is similar to the description of a pre Phase I ESA, where data are preliminary and insufficient to complete contaminated site scoring (CCME 2008). Following Phase I ESA approach, this desktop review relies on information on historical and current land use and background information gathering, and therefore the results of this review are limited by the availability and accuracy of the data review (Saskatchewan Ministry of Environment 2015, CCME 2016). The desktop review included database searches within a 250 m buffer of the Study Area boundary to determine the potential for soil contamination associated with common land use practices (City of Saskatoon 2009; Contaminated Site Approved Professional Society 2018). The 250 m buffer was based on Phase I ESA methodology and is considered to be a conservative approach to screen for locations with potential for off-site migration (Ontario Environmental Protection Act [Government of Ontario 2021], Environmental Bankers Association 2017, Canadian Standards Association 2001).

While the desktop review considered historical land use where available from reports, satellite imagery or contaminated site and spill registries, the primary source of information was based on current land use. The following sources were reviewed for historical and current land use for the Study Area:

- Google Earth satellite imagery (Google Earth Pro. 2020)
- Hazardous Substance Storage Facility Search, Government of Saskatchewan (2015a)
- Spills Search, Government of Saskatchewan (2015b)
- National Pollutant Release Inventory data, Government of Canada (2018)
- Water Security Agency Water Well Information Database
- Water Security Agency – Aquifer vulnerability index to top of first potentiometric mappable aquifer 73B NTS mapsheet
- MDH Engineered Solutions, 2011. Hydrogeology mapping of NTS mapsheet Saskatoon 73B.
- Phase I Environmental Site Assessment, City of Saskatoon, Land Branch Blairmore Neighbourhood 3: NE 27-36-06-W3M; NW 27-36-06-W3M; SW 27-36-06-W3M; SE 27-36-06-W3M; Saskatoon, Saskatchewan (Pinter and Associates Ltd. 2013)
- Phase I Environmental Site Assessment Blairmore Suburban Centre, Saskatoon, SK (Stantec 2006)



The method for estimation of potential level or Phase of an ESA (e.g., Phase I, II or III) for an area of potential environmental concern (APEC) was based on the standard approach to site assessment and remediation, which includes a Phase I ESA as the initial step in the process (Government of Nunavut 2009)². A higher level or Phase of an ESA was only recommended if soil contamination has been registered in a contaminated site database, or if a Phase II was previously recommended within the referenced sources.

The APECs for soil contamination within the Study Area are summarized in Table 2 and illustrated in Figure 3. The information provided in Table 2 indicates if the site was listed on one of the contamination registries, the land use associated with the potential contamination, the inferred potential contaminant of concern (PCOC) associated with the site activity, and the recommended level or Phase ESA for the APEC.

² This particular reference has been cited, as the guidelines for identifying an area of potential concern provide a better description than other federal or provincial guidelines.



Table 2. Summary of locations of potential and confirmed soil contamination within the Blairmore Natural Area Screening Study Area.

APEC ¹	Registered Contamination	Land Use ²	PCOC	Potential ESA Level	Status
A	n/a	Auto Towing	Hydrocarbons, PAH, BTEX, metals, glycols	Phase I	Potential
B	Spill Site Registry #18023 (2018)	Compost Depot	Hydraulic oil	Phase I or review to determine the spill clean up results	Potential
C	n/a	Esso Gas Station	Hydrocarbons, PAH, BTEX	Phase I	Potential
D	n/a	Heavy machinery (Finning)	Hydrocarbons, PAH, BTEX, metals, glycols, solvents	Phase I	Confirmed
E	n/a	Agricultural loading, facility	Hydrocarbons, PAH, BTEX, nitrogen compounds, organophosphates, organochlorides	Field verification of site conditions and operations is recommended. Phase I if the facility handles fertilizer or if the loading facility is unpaved.	Confirmed
F	n/a	Asphalt Plant	PAH	Phase I	Potential
G	n/a	Canadian National Railway (CN) Yards Management Area including Diesel Shop	Hydrocarbons, PAH, BTEX, metals, glycols, solvents	Phase I. Potential for Phase II	Potential
H	Hazardous Storage Registry Operation ID 61152	Civic Operations Centre	Unknown, information not listed	None. No spills reported. Monitor database for reported spills	Potential
I	n/a	City of Saskatoon Landfill	Nutrients, metals	None. Active facility. Review ongoing monitoring and compliance.	Potential
J	n/a	Co-Op Gas Bar	Hydrocarbons, PAH, BTEX	Phase I	Potential
K	n/a	Historical Farm Disposal Site	Metals, hydrocarbons, PAH, BTEX, solvents, asbestos	Phase II if not previously addressed following the 2013 Phase I reported by Pinter & Associates	Potential
L	n/a	Urban Park	Metals, hydrocarbons, PAH, BTEX, solvents, asbestos	Phase I	Potential
M (unknown location)	Hazardous Storage Registry Operation ID 8161	Saskatchewan Highways and Transportation	Unknown, information not listed	None. No spills reported.	Potential
N (unknown location)	Hazardous Storage Registry Operation ID 11776	Cory Park Esso Storage Site	Unknown, information not listed	None. No spills reported.	Potential

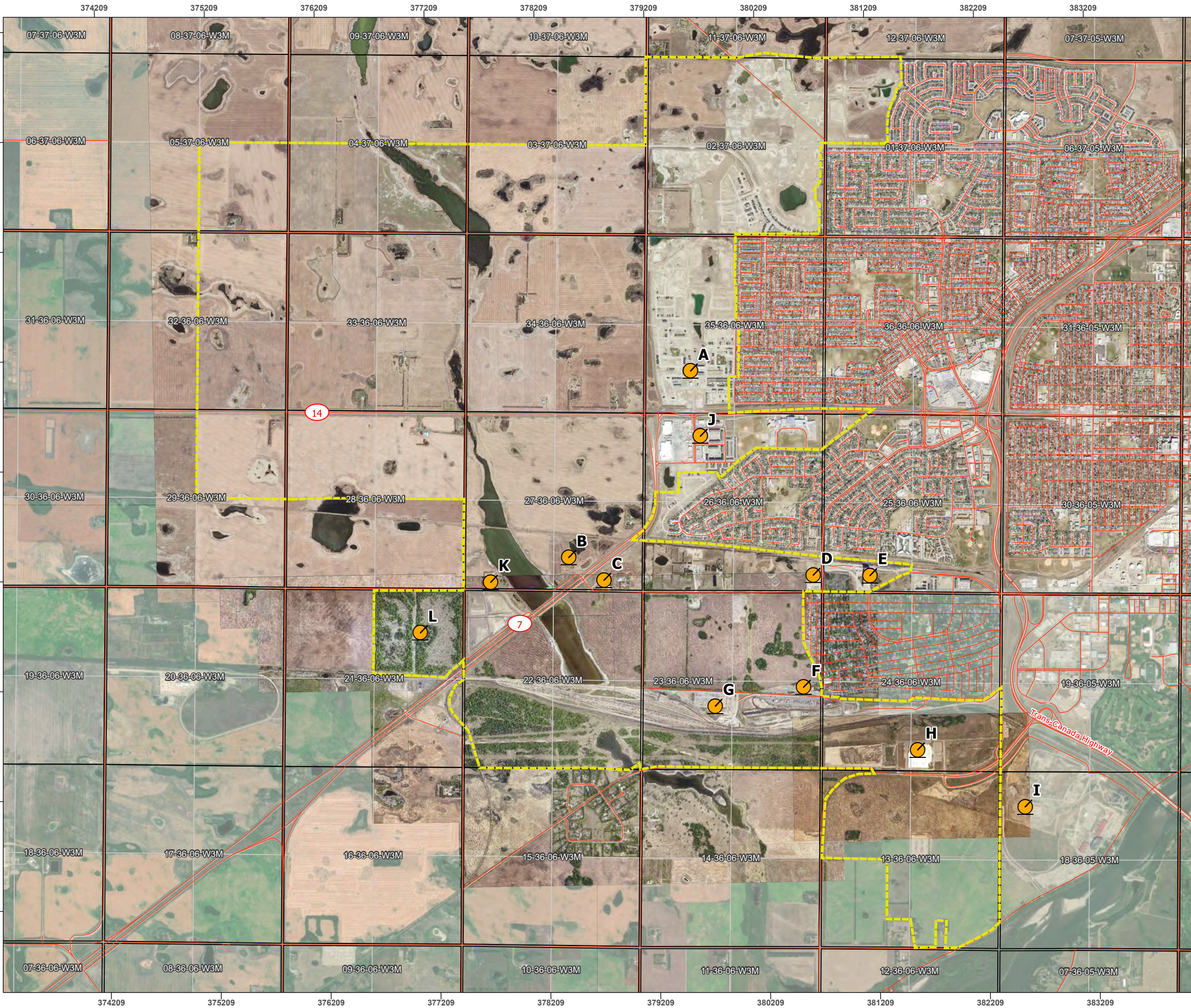
¹The APECs are shown on Figure 3.

²Designated land use includes both present or historical activities.

n/a – No registered contamination found on contaminated site database searches.

PAH – Polycyclic Aromatic Hydrocarbons

BTEX – Benzene, Toluene, Ethylbenzene, Xylene

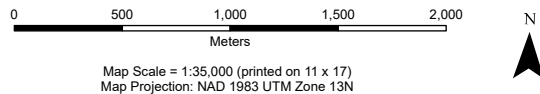


Potential Soil Contamination Areas Within the Blairmore Natural Area Screening Study Area

CITY OF SASKATOON

Legend

- Areas of Potential Environmental Concern (APEC)
- Road
- Study Area
- Section
- Quarter Section
- Wetland



Data Sources

- Main map. City of Saskatchewan Imagery.
- Main map. World Imagery. Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map. National Geographic World Map. National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road. Topographic Data of Canada - 50K CanVec Series. Government of Canada.
- The Township system of Saskatchewan. Government of Saskatchewan.

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Drawn: CT/OL	Checked: MK/SS	Figure 3	Date: 2022-04-04
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Based on the available data sources reviewed, a total of 13 APECs were identified where there are known sites or sites of potential soil contamination or dumping within the Study Area. APEC G refers broadly to the entire location of Canadian National Railway (CN) Yards Management Area, with the assumption that activities vary across the site (e.g., loading areas, diesel shop, maintenance, active rail loading/unloading). Future recommendations for any potential ESA investigation may not apply to the entire site, but may be localized, depending on scope and reported activities in the rail yard, and site specific factors such as potential for off-site migration which cannot be determined from a desktop review.

The waste disposal/dumping site (APEC L), shown in Figure 3, was identified during a site reconnaissance in the George Genereux Urban Regional Park conducted by EDI on May 14, 2021. This appeared to be a recently used, uncontrolled dumping area in NE 21-36-06 W3M, and debris observed included furniture, household waste, electronics, construction waste, paint cans, and miscellaneous domestic trash. Uncontrolled sites have potential for dumping of other products, such as solvents, hydrocarbons, and batteries (Contaminated Site Approved Professional Society 2018). Potential for dumping of these products may occurred at uncontrolled dumping locations like the George Genereux Urban Regional Park. In addition, a historical Phase I ESA report (Pinter & Associates 2013) identified two hazardous materials storage facilities (APECs M and N); however, site-specific locations were not provided, but they have been included here for completeness.

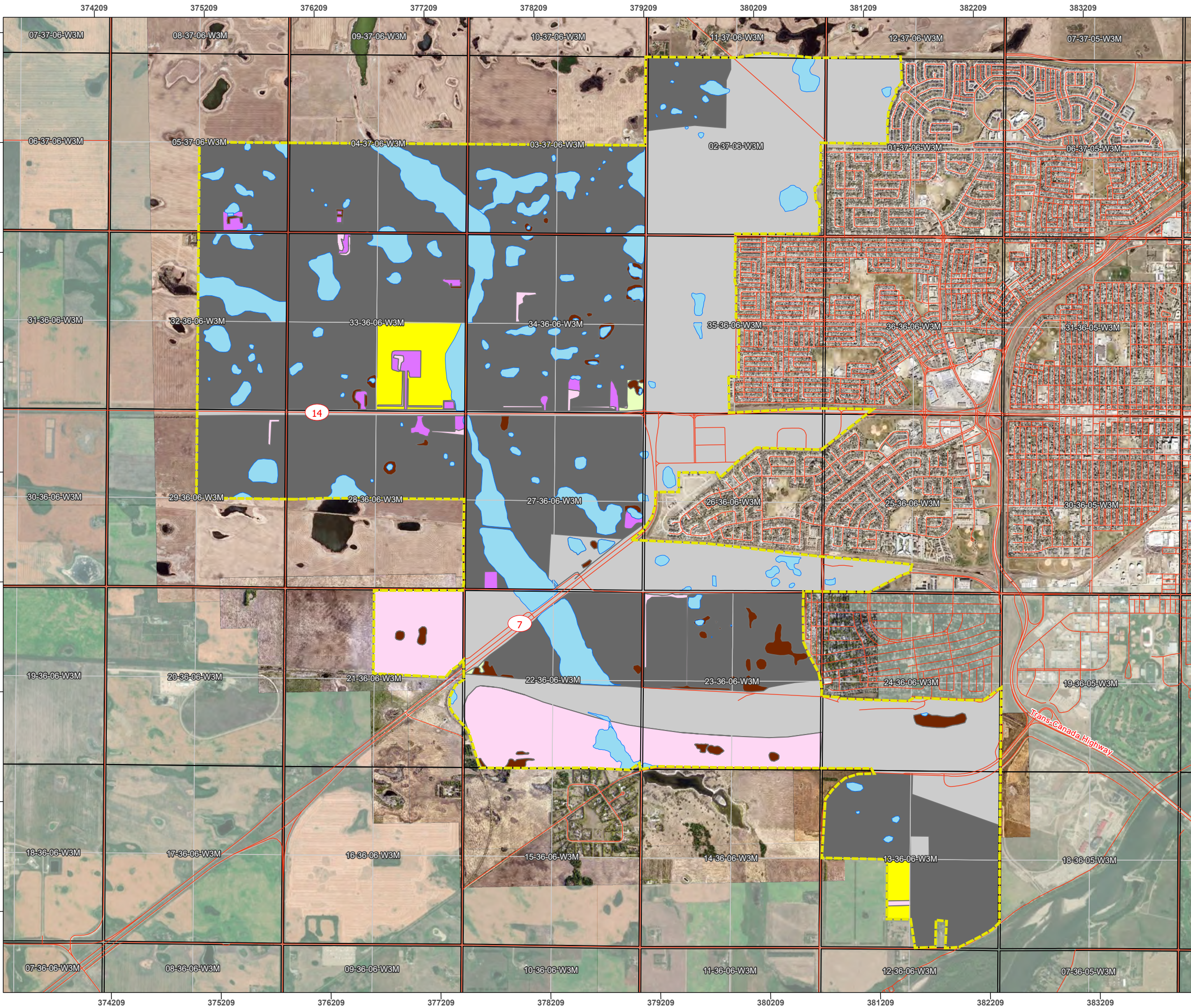
No dry-cleaning businesses were identified within the Study Area during the desktop review, however, if any are registered in the Study Area, they would be recommended for a Phase I, with the potential for a Phase II ESA. Potential exists for soil contamination on agricultural land (i.e., within farmyard sites) primarily where fuel storage, equipment refueling, septic systems, or disposal sites occurred; therefore, any parcel of agricultural land could be recommended for a detailed review of historical imagery and records and/or a Phase I ESA. A detailed review of historical imagery of individual agricultural properties was outside the scope of this desktop review.

Overall, potential for soil contamination or waste dumping within the Study Area was identified at a screening level, in industrial areas such as the CN Yards Management Area and within some commercial areas, with the potential contaminant sources primarily associated with automotive processes (e.g., repairs, refueling, improper fuel and/or solvent storage and disposal). A potential for dumping exists where there is uncontrolled access to vacant land.

The results of this desktop review do not constitute a detailed historical review, and do not meet the standards for a complete Phase I ESA. The results are intended to inform the desktop screening and to identify potential locations of soil contamination.

2.1.4 HABITAT CLASSIFICATION

The Study Area is comprised of seven habitat types, as illustrated in Figure 4. Table 3 provides a summary of the habitat type encountered, along with the definitions provided in the 2012 assessment (Golder 2012) as a comparison for definitions used for the habitat classification for this review.



Habitat Types Identified Within the Blairmore Natural Area Screening Study Area

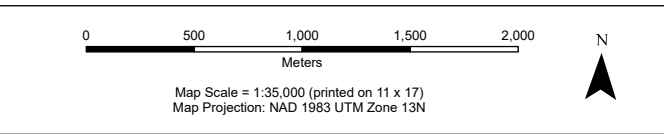
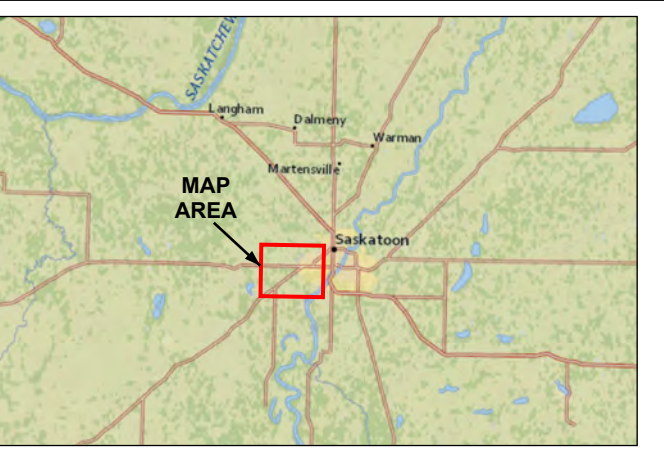
CITY OF SASKATOON

Legend

- Road
- Study Area
- Section
- Quarter Section
- Wetland

Habitat

- Closed Canopy Deciduous Woodland
- Crop Land (Cultivated)
- Disturbed/Developed
- Hay Land (Forage)
- Open Canopy Mixed Woodland
- Tame Grassland
- Yard Site



Data Sources

- Main map. City of Saskatchewan Imagery.
- Main map. World Imagery, Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map. National Geographic World Map. National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
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Table 3. Habitat types identified within the Blairmore Natural Area Screening Study Area.

Habitat Type ¹	Land Classification in the 2012 (Golder) ² Natural Area Screening	Total Area (ha)	Percent Cover (%)
Crop Land	Cultivated	1,456	49
Disturbed/Developed ³	Disturbed	890	30
Yard Site/Tame Grassland	Modified Grassland	20	<1
Hay Crop (Forage)	Cultivated	61	2
Open Canopy Mixed Woodland ⁴	Not defined	208	7
Closed Canopy Deciduous Woodland ⁵	Not defined	40	1
Wetland ⁶	Wetland	282	10

¹ Habitat types are based on the categories provided by the Saskatchewan Conservation Data Centre's Species Detection Load Form (ENV 2021).

² Golder Associates Ltd. 2012. City of Saskatoon West/Southwest Sector Natural Area Screening Study. Desktop Review Report. Report Number 12-1361-0028.

³ Developed includes commercial and industrial development and residential, and municipal areas.

⁴ Open Canopy Mixed Woodland includes the Afforestation Areas and shelter belts.

⁵ Closed Canopy Deciduous Woodland includes naturally occurring woodland groves and tree-ringed wetland margins.

⁶ Total area includes natural wetlands, storm ponds, and dugouts.

The majority of the Study Area, except for remnant wetland basins and wooded areas, have been directly disturbed by agriculture or urban and rural development. The dominant habitat type consists of cultivated land, which includes both Crop Land and Hay Land (Forage) accounting for 51% (1,517 ha), followed by Disturbed/Developed habitat types at 30% (890 ha), which include rural and urban developments, roadways, and industrial facilities. The CN Yards Management Area includes the Saskatoon railway station, train switching yards, and maintenance yard that borders the north boundary of the Richard St. Barbe Afforestation Area. Although similar to the Disturbed/Developed habitats, the Yard Sites (<1%; 20 ha) comprise a combination of residences, homesteads and outbuildings, shelterbelts, and farm infrastructure, as well as associated Tame Grassland.

Habitat types considered to be of primary ecological interest in the Study Area are those larger, relatively contiguous tracts of woodland habitat associated with the Richard St. Barbe Baker Afforestation Area and the George Genereux Urban Regional Park, both classified as woodland habitat types and, wetlands, including the West Swale complex, as well as numerous shallow wetland basins and wetland complexes.

Wetlands account for 10% (282 ha) of the Study Area and are primarily associated with the West Swale complex, with temporary, seasonal, semi-permanent, and permanent wetlands scattered throughout. Most wetlands are located within cultivated crop land and are directly influenced by agricultural activities; however, these areas can provide suitable habitat for native plant and wildlife species. Wetlands are further described and classified in Section 2.1.4.1.

The woodland communities in the Study Area include the Open Canopy Mixed Woodland and Closed Canopy Deciduous Woodland habitat types, which collectively account for 8% (248 ha). The Open Canopy Mixed Woodland is the dominant woodland habitat and is primarily associated with the two Afforestation Areas,



although smaller patches occur in established shelterbelts in yard sites throughout the Study Area. The Closed Canopy Deciduous Woodland habitat type comprises the remnant native tree bluffs and tree-ringed wetland margins, both of which are scattered throughout the cultivated areas within the Study Area, and within the Afforestation Areas.

2.1.4.1 Wetlands

The wetlands in the Study Area were previously assessed by Stantec (2009) and Golder (2012, 2015). As part of this desktop biophysical review, all previously identified wetlands were reviewed, and recent satellite imagery (Google Earth Pro 2020) was used to verify and/or update the wetland boundaries and then classified based on Stewart and Kantrud (1971). Because wetland extents fluctuate with precipitation patterns, wetland basins were delineated based on vegetation communities and not water levels, and the results and findings of the earlier wetland studies were considered. Class 1 (ephemeral) wetlands were not identified in this wetland assessment due to the extent of agricultural disturbances (e.g., drainage, cultivation in drier years) which have reduced surface water and removed indicator plant species cover. Definitions of wetland classes are presented in Appendix A.

Functional assessments were conducted by Golder (2015) on select wetlands using the Minnesota Routine Assessment Method (MnRAM) (Minnesota Board of Water and Soils Resources 2010a). The MnRAM assesses function of wetlands and was designed to consider both functions and values (Minnesota Board of Water and Soils Resources 2010b). The MnRAM database evaluates 12 function/value characteristics that relate to vegetation composition, hydraulic regime, water quality, shoreline protection, habitat for fish, amphibians, and wildlife species, as well as anthropomorphic value attributes such as aesthetic, educational, cultural, and various land uses. Once wetlands have been assessed they are then assigned to one of the following four management classifications: Preserve, Manage 1, Manage 2, or Low (Minnesota Board of Water Resources 2010a).

A total of 129 wetlands, 5 storm water ponds and 5 dugouts were previously identified within the Study Area (Figure 5; Appendix Table B-1). Based on this desktop review, it appears that the classification of most wetlands not directly affected by development remains unchanged since reported in 2015 (Golder 2015). Any recent changes in wetland classification appear to primarily be due to urban development and agricultural activities.

As a result of a desktop review of available satellite imagery (Google Earth Pro 2020), 67 additional wetlands were identified (i.e., these wetlands were not included in the previous wetland assessments) (Figure 5; Appendix Table B-1). Most of the additional wetlands were classified as Class 2 (Temporary) and Class 3 (Seasonal). Shallow temporary and seasonal basins are scattered throughout cultivated areas and exhibit varying permanence depending on seasonal moisture and agricultural activities.

Many of the wetlands noted within the Study Area are associated with the West Swale, which extends from the northeast to the southeast and downstream to the South Saskatchewan River. The West Swale supports a complex of permanent wetlands connected by semi-permanent wetland channels that are comprised of intermittent deep and shallow marsh zones. The entire West Swale channel is approximately 170 ha, of which



117 ha is within the Study Area and is crossed six times by various roadways (e.g., township and range roads, provincial highways) and the CN Yards Management Area.

Drainage within the West Swale gently slopes to the southeast and supports an intermittent and slow drainage flow across the channel. Many of the shallow, low-lying basins are dry in low run-off years with permanent open water concentrated in larger and deeper wetland basins (as noted on Google Earth Pro 2020).

Since the 2009 wetland assessment (Stantec 2009), most of the wetlands classified within the Study Area have not changed (i.e., their classification remains the same). Exceptions include wetlands in the northeast portion of the Study Area associated with the Elk Point Development Area, primarily in NW 1-37-06 W3M and E½ 2-37-06 W3M. Approximately 21 ha of wetlands and associated riparian area in the Elk Point Development Area were lost as a result of development activities (e.g., clearing, grading, and infilling). Similarly, Wetland 1, as delineated by Stantec (2009), was lost to the development of the Kensington neighbourhood and replaced, in part, by a constructed stormwater management pond.

Wetland complexes within the Study Area associated with the West Swale were identified and assessed for recreational and conservation potential (See Section 2.4.4). As a result, six complexes were delineated, including the central West Swale (Complex 1; Figure 6, Table 4). Wetland Complex 2 in SE 03-37-06 W3M is connected to the West Swale by a shallow drainage run. Both complexes are of high functional value (Preserve 1). Wetland Complexes 3, 4, 5, and 6 do not appear to be connected to the West Swale hydrologically but may have recreational potential as linear, publicly accessible greenways for active transportation, as well as act as connectors between natural area assets within the Study Area.

Table 4. Wetland complexes identified within the Blairmore Natural Area Screening Study Area.

Wetland Complex	Area (ha)	Management Class ¹
Complex 1	122.4	Preserve 1
Complex 2	16.6	Preserve 1
Complex 3	4.2	N/A
Complex 4	12.8	Manage 1
Complex 5	10.6	Manage 1
Complex 6	17.0	N/A

¹ Based on Golder (2015) wetland functional assessment study.



2.1.5 DESIGNATED AREAS

The Study Area is completely within the City limits. There were no conservation easements, First Nation or Indigenous owned lands, federally or provincially designated areas or other protected lands identified within the Study Area boundaries. The Afforestation Areas (200 ha total) are considered naturalized areas and are open to the public for recreational day use. The Chappell Marsh Conservation Area, located immediately south of the Richard St. Barbe Afforestation Area in NW 14-36-06 W3M (which is located outside the Study Area), is owned by Ducks Unlimited Canada and is held under a Conservation Easement with the Nature Conservancy of Canada (NCC 2022).

2.1.6 HISTORICAL RECORDS

2.1.6.1 Vegetation

A total of 105 vegetation species have been historically documented within the Study Area (SKCDC 2021b, Natureserve 2021; Appendix C). Most of these observations were recorded within the Afforestation Areas.

2.1.6.2 Wildlife

Within the Study Area, 91 bird species, 52 invertebrate species, and eight mammal species have been historically documented (SKCDC 2021b). Most of these observations are associated with the Afforestation Areas. The concentration of historical observations in these naturalized areas is likely due to a combination of suitable habitat and ongoing citizen science efforts to document species presence and diversity. A list of historical observations of wildlife, including amphibians and reptiles, birds, invertebrates, and mammals is provided in Appendix D.

2.1.6.3 Species of Management Concern

Wildlife

In the Study Area, previously documented vertebrate SOMC include two amphibian species and 11 avian species, as shown in Table 5.

Table 5. Wildlife species of management concern historically documented within the Blairmore Natural Area Screening Study Area.

Common Name	Scientific Name	Subnational Rank ¹	COSEWIC ²	SARA ³	Data source ⁴
Amphibians					
Northern leopard frog	<i>Lithobates pipiens</i>	S3	Special Concern	Special Concern	iNaturalist
Western tiger salamander	<i>Ambystoma mavortium</i>	S4	Special Concern	Special Concern	iNaturalist
Birds					
Great Blue Heron	<i>Ardea herodias</i>	S5B, S5M	-	-	eBird



Common Name	Scientific Name	Subnational Rank ¹	COSEWIC ²	SARA ³	Data source ⁴
Horned Grebe	<i>Podiceps auritus</i>	S5B, S5M	Special Concern	Special Concern	HABISask, eBird
Least Sandpiper	<i>Calidris minutilla</i>	SUB, SUM	-	-	eBird
Lesser Yellowlegs	<i>Tringa flavipes</i>	S4B, S4M	Threatened	-	eBird
Peregrine Falcon	<i>Falco peregrinus anatum</i>	S1B, SNRM	Not at Risk	Special Concern	eBird
Pine Grosbeak	<i>Pinicola enucleator</i>	S2B, S4N	-	-	eBird
Semipalmated Plover	<i>Charadrius semipalmatus</i>	SUB, S5M	-	-	eBird
Short-billed Dowitcher	<i>Limnodromus griseus</i>	SUB, S4M	-	-	eBird
Townsend's Solitaire	<i>Myadestes townsendi</i>	S3N, S3M	-	-	HABISask, eBird
Turkey Vulture	<i>Cathartes aura</i>	S3B, S3M	-	-	eBird
Whooping Crane	<i>Grus americana</i>	SXB, S1M	Endangered	Endangered	HABISask

¹ S1, Critically Imperiled/Extremely Rare, at very high risk of extinction or extirpation due to extreme rarity, very steep declines, high threat level, or other factors; S2, Imperiled/Very Rare, at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors; S3 Vulnerable/Rare to Uncommon, at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors; S4 Apparently Secure, uncommon but not rare, some cause for long-term concern due to declines or other factors; S5, Secure/Common, Demonstrable secure under present conditions, widespread and abundant, low threat level; B, for a migratory species, applies to the breeding population in the province; M, for a migratory species, rank applies to the transient (migrant) population; N, for a migratory species, applies to the non-breeding population in the province; NR, rank is not yet assigned or species has not yet been assessed (not ranked); U, status is uncertain in Saskatchewan because of limited or conflicting information (unrankable); X, believed to be extinct or extirpated from the province.

² The Committee on the Status of Endangered Wildlife in Canada.

³ Schedule 1 of the *Species at Risk Act* (2002).

⁴ iNaturalist (2021a).

Vegetation

Historical observations of five provincially tracked vegetation species have been identified in the Study Area (Table 6). Of these, four have been documented in the Richard St. Barbe Afforestation Area, and one species in SE 02-37-06 W3M. No federally listed plant species have been documented in the Study Area.

Table 6. Provincially tracked plant species historically documented within the Blairmore Natural Area Screening Study Area.

Common Name	Scientific Name	Subnational Rank ¹	Data Source
California amaranth	<i>Amaranthus californicus</i>	S2	HABISask ²
Small yellow lady's slipper	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	S3	iNaturalist ³
Engelmann's spike-rush	<i>Eleocharis engelmannii</i>	S3	HABISask
Plains rough fescue	<i>Festuca hallii</i>	S3	iNaturalist
Small Dropseed	<i>Sporobolus neglectus</i>	S2	HABISask

¹ S2, Imperiled/Very rare, at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors; S3 Vulnerable/Rare to uncommon, at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors.

² SKCDC (2021b).

³ iNaturalist (2021a).



2.2 VEGETATION FIELD PROGRAM

2.2.1 SURVEY METHODS

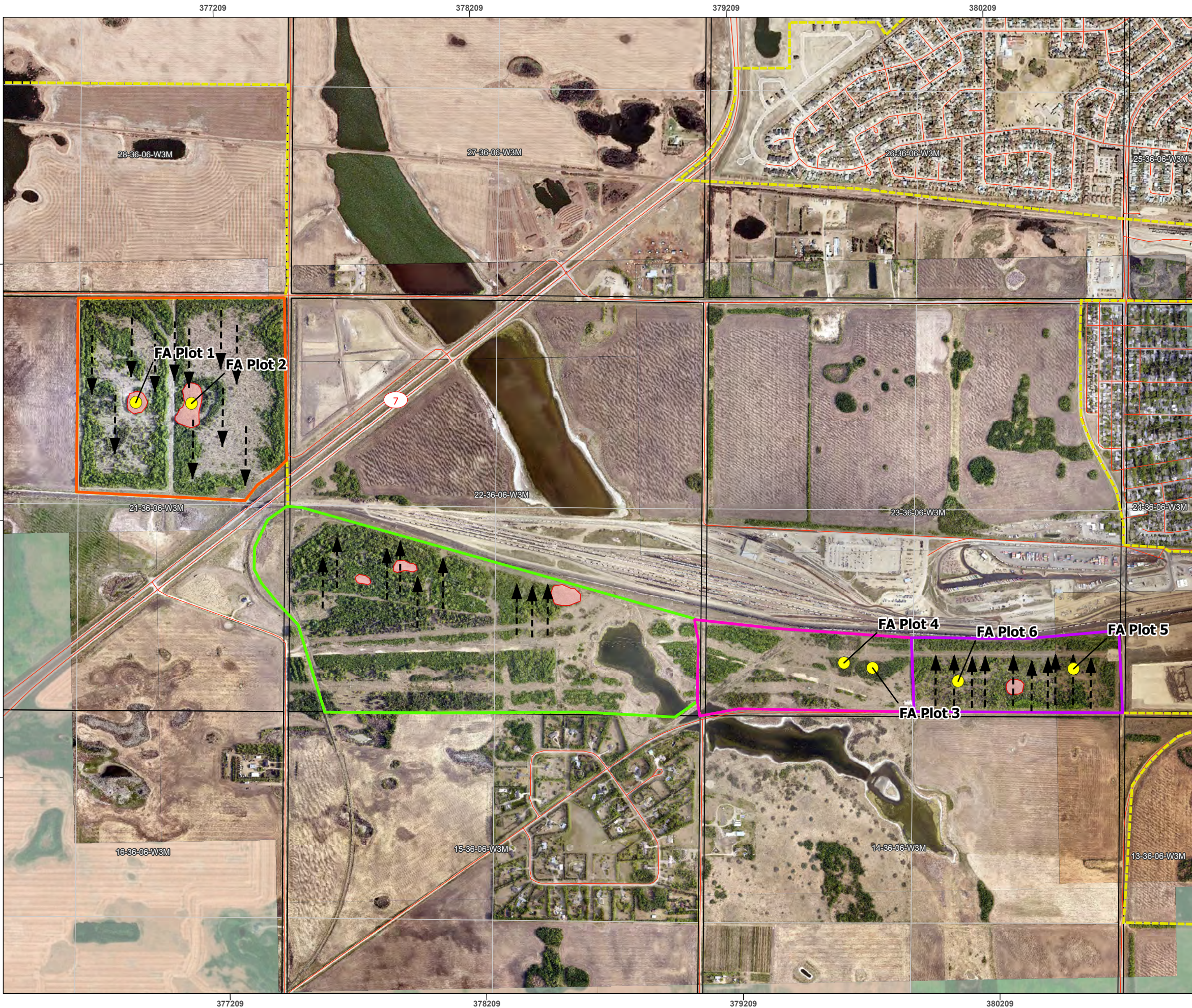
The vegetation field program was focussed on the Afforestation Areas and included: vegetation species detection surveys to identify provincially tracked or federally listed species (i.e., SOMCs); invasive plant species listed under *The Weed Control Act* (Government of Saskatchewan 2010); and forested rangeland health assessments (as per Saskatchewan Prairie Conservation Action Plan (PCAP) Greencover Committee 2008). See Figure 7 for the locations of the species detection surveys and the forested rangeland health assessment transects.

As per the ENV Rare Vascular Plant Survey Protocol (ENV 2019), two survey rounds were conducted, separated by a minimum of 28 days. The first round of surveys was completed on June 28 and June 29, 2021, to capture early blooming species. The second round of surveys was conducted on August 30 and August 31, 2021, to capture late blooming species. The forested rangeland health assessments were conducted in conjunction with the second round of vegetation species detection surveys to assess the health of the forest communities in the George Generuex Urban Regional Park and in Parcels 2 and 3 of the Richard St. Barbe Baker Afforestation Area.

2.2.1.1 Species Detection Surveys

During each round, vegetation species detection surveys within the Richard St. Barbe Baker Afforestation Area (Parcels 1 and 3) were conducted along randomly selected parallel transects, 5 m wide x 200 m long, through predominately Open Canopy Mixed Woodland habitat. The number of transects required was determined using the non-forest site calculation as per Saskatchewan's vascular plant Species Detection Survey Protocol (ENV 2019). All transects were in a north/south orientation; however, the transects were altered somewhat during the field survey to allow the surveyor to navigate safely through thick vegetation. Smaller polygons of distinct habitat types within the Open Canopy Mixed Woodland (e.g., grassland openings, low wetland, and mesic shrubland) were census surveyed, following transects set 5 m apart to survey the entire polygon (Figure 7). Species detection surveys were not conducted with the Southwest Dog Park in Parcel 2 due to the amount of habitat disturbance that has resulted from use of this park. Within the George Generuex Urban Regional Park, survey transects were focused on remnant native woodland communities, including the Aspen-dominant Woodland community.

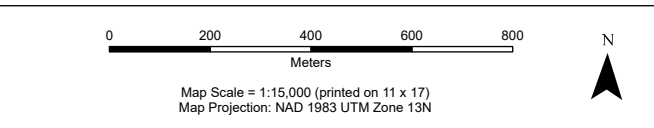
During the surveys, plant species encountered were recorded and compiled into species lists for their respective areas (i.e., George Generuex Urban Regional Park, Richard St. Barbe Baker Afforestation Area). Search efforts were reduced in areas with tall and dense common caragana (*Caragana arborescens*), cover, as this precluded other vegetation from establishing. Species lacking plant parts required for a positive identification were identified to genus, where possible. Provincially listed plant species were mapped, photographed, and enumerated. The presence of invasive species listed under *The Weed Control Act* (Government of Saskatchewan 2010) were documented.



Plant Species Detection Surveys and Plant Species and Forested Rangeland Health Assessment Plots Within the Blairmore Natural Area Screening Study Area

CITY OF SASKATOON

- Legend**
- Forested Rangeland Health Assessment Plot
 - - Species Detection Survey Transect
 - Road
 - Species Detection Census Survey
 - ▭ Study Area
 - Section
 - Quarter Section
 - Afforestation Areas**
 - ▭ George Genereux Urban Regional Park
 - ▭ Richard St. Barbe Baker Afforestation Area
 - ▭ Parcel 1
 - ▭ Parcel 2
 - ▭ Parcel 3



Data Sources

- Main map, City of Saskatchewan Imagery.
- Main map, World Imagery, Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map, National Geographic World Map, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road, Topographic Data of Canada - 50K CanVec Series, Government of Canada.
- The Township system of Saskatchewan, Government of Saskatchewan.

Disclaimer
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2.2.1.2 Forested Rangeland Health Assessments

Six representative plots within the Afforestation Areas were selected for forested rangeland health assessments (Figure 7). Two plots within the George Genereux Urban Regional Park (Plots 1 and 2) and two plots (Plots 3 and 4) within the Southwest Dog Park (Parcel 2) were located within Native Aspen Woodland community. Two plots (Plots 5 and 6) were placed in Open Canopy Mixed Woodland comprised of afforested species and lacking dense caragana understory within Parcel 3 of the Richard St. Barbe Baker Afforestation Area.

Rangeland health considers net production, maintenance of soil/site stability, capture and slow release of water, nutrient and energy cycling and functional diversity of plant species (PCAP 2008). Rangeland includes grassland, pastureland, grazable forestland, shrubland, and riparian areas. forested rangeland health scores are determined by assessing the following five indicators of range health:

- species composition;
- community structure
- invasive species;
- soil/site stability; and,
- hydrologic function and soil protection.

Vegetation status is determined by how the species composition and community structure compare to that of the reference community for the ecosite the survey is in, as well as the cover and distribution of invasive/noxious weeds. Hydrologic function and soil protection are determined by the level of soil erosion, bare soil, and amount of litter present. Overall forest health scores are primarily weighted by vegetation status (70%) with hydrologic function, followed by soil protection (30%) (PCAP 2008). Based on an overall score of 100%, the forest health is categorized as:

- **Healthy (75% - 100%)** – resembles the reference community (i.e., full range of native species), has stable soils, and uniform expected amounts of litter;
- **Healthy with Problems (50% - 74%)** – moderate changes from the reference community (i.e., increase in non-native species, presence of invasive/noxious species), reduction in soil stability, and reduction in the amount and uniformity of litter; and,
- **Unhealthy (<50%)** – significant changes from the reference community (i.e., dominated by non-native species, presence of invasive/noxious species), reduction in soil stability, and significant reduction in the expected amount and uniformity of litter.

2.2.2 VEGETATION COMMUNITIES

The Afforestation Areas are primarily comprised of Open Canopy Mixed Woodland habitat, with isolated patches of Closed Canopy Deciduous Woodland based on the planting scheme when the Afforestation Areas were initially developed (Figure 4). The understory of the Open Canopy Mixed Woodland habitat consists of a mosaic of graminoids, forbs, short shrubs, and tall shrub communities, often occurring as isolated patches.



However, there are isolated communities of short and tall shrubs and conifers that are located throughout each of the Afforestation Areas.

Vegetation communities within the Afforestation Areas are dominated by dense rows of common caragana as well as afforested tree species, including Siberian elm (*Ulmus pumila*), Manitoba maple (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and scotch pine (*Pinus sylvestris*). Despite the presence of native species, the overall ground cover across the Afforestation Areas is dominated by agronomic species, including smooth brome (*Bromus inermis*), quack grass (*Elymus repens*), and crested wheatgrass (*Agropyron cristatum* ssp. *pectinatum*). Some remnant native aspen dominant communities are present within the Afforestation Areas and support dense cover of native vegetation.

The rangeland health of these communities was determined to be poor as common caragana and European buckthorn (*Rhamnus cathartica*) are heavily encroaching into the understory. For a complete list of vegetation species observed in the Afforestation Areas see Appendix E.

2.2.2.1 George Genereux Urban Regional Park

The dominant vegetation community within the George Genereux Urban Regional Park is comprised of sparsely planted rows of Siberian elm, Manitoba maple, green ash, and the occasional American elm (Appendix Photo F-1). The dominant ground cover is largely of agronomic species including alfalfa (*Medicago* sp.), yellow sweet clover (*Melilotus officinalis*), crested wheatgrass, Kentucky bluegrass (*Poa pratensis*), and smooth brome, with sporadic cover of native species including western snowberry (*Symphoricarpos occidentalis*) and Canada goldenrod (*Solidago canadensis*).

The perimeter is largely comprised of dense rows of common caragana with varying canopy cover of green ash, poplar (*Populus* sp.), maple (*Acer* sp.), blue spruce (*Picea pungens*), and scotch pine (Appendix Photo F-2, Appendix Photo F-6). Understory vegetation within the common caragana dominant community supports low vegetative diversity and is primarily comprised of sparse black medic (*Medicago lupulina*) and smooth brome, as well as common caragana saplings.

Native Aspen Woodland (Appendix Photo F-3), primarily comprised of a trembling aspen (*Populus tremuloides*) canopy with an understory of western snowberry and various agronomic species, is in the east portion of NE 21-36-06-W3M. This habitat supports eastern cottonwood (*Populus deltoides*) in the canopy and an understory community of aspen saplings and sporadic cover of Saskatoon (*Amelanchier alnifolia* var. *alnifolia*), chokecherry (*Prunus virginiana* var. *virginiana*), and red-osier dogwood (*Cornus sericea* ssp. *sericea*) (Appendix Photo F-4 and Appendix Photo F-5).

The SaskPower Right of Way (ROW) that transverses the center of NE 21-36-06 W3M in a north/ south direction primarily supports agronomic species such as crested wheatgrass and several provincially listed weed species designated under *The Weed Control Act* (Government of Saskatchewan 2010), including the noxious absinthe (*Artemisia absinthium*), nodding thistle (*Carduus nutans* ssp. *leiophyllus*), Canada thistle (*Cirsium arvense*), common burdock (*Arctium minus*), oxeye daisy (*Leucanthemum vulgare*), kochia (*Bassia scoparia*), scentless chamomile (*Tripleurospermum inodorum*) and tall baby's breath (*Gypsophila paniculate*) (see Section 2.2.2.3).



A total of 88 plant species were observed within the area, with 42 species being non-native, including 17 species listed under *The Weed Control Act* (Government of Saskatchewan 2010). Although several native plant species were observed throughout the George Genereux Urban Regional Park, they were concentrated in remnant native woodland communities, with the remaining areas primarily supporting common caragana, smooth brome, and afforested trees.

Forest Rangeland Health

Plot 1– The vegetation community was scored as Healthy with Problems (40%). The community is comprised largely of mature trembling aspen tree canopy with an understory of western snowberry and smooth brome. The health score was lowered by the presence of invasive species including smooth brome, Canada thistle, and common caragana saplings which comprised >1% of the vegetative community, as well as an absence of a tall herb layer and mid shrub layer.

Plot 2– The vegetation community was scored as Healthy with Problems (70%). The community is comprised of trembling aspen and balsam poplar, with green ash in the canopy; understory species included red-osier dogwood, Saskatoon, chokecherry, western snowberry, and smooth brome grass, as well as dense cover of common caragana and trembling aspen saplings. The health score was primarily lowered by the presence of invasive species including smooth brome, Canada thistle, and common caragana which comprised >1% of the vegetative community.

Overall, the native-dominant Open Canopy Mixed Woodland areas within the George Genereux Urban Regional Park support relatively diverse and healthy vegetation communities and are comprised of native tree species such as trembling aspen and balsam poplar, with an understory shrub cover of red-osier dog wood, Saskatoon, and chokecherry. Common caragana is encroaching into these communities and occurs throughout the understory.

2.2.2.2 Richard St. Barbe Baker Afforestation Area

Parcel 1: S½ 22-36-06 W3M

Habitat within Parcel 1 of the Richard St. Barbe Baker Afforestation Area is characterized as Open Canopy Mixed Woodland, dominated by dense rows of common caragana with variable overstory cover comprised of afforested tree species, including poplar, scotch pine, green ash, and blue spruce (Appendix Photo F-5 and Appendix Photo F-8). Understory communities within the common caragana dominated areas are comprised of common caragana saplings and infrequent occurrences of black medic and smooth brome.

Various afforested woodland communities are scattered throughout Parcel 1 and include scotch pine dominant areas (Appendix Photo F-8), mixed (i.e., deciduous and coniferous) woodland (Appendix Photo F-9), and open grassland areas with sporadic afforested trees, such as Siberian elm and spruce (Appendix Photo F-10). Understory vegetation within woodland communities dominated by afforested tree/shrub species (e.g., green ash, common caragana, blue spruce) are primarily comprised of smooth brome



and sporadic cover of various native (e.g., Canada goldenrod, smooth blue aster, common yarrow) and introduced forb species (e.g., alfalfa sp., clover sp.) (Appendix Photo F-11).

Open grassland areas support low vegetation diversity and are dominated by agronomic grass species such as smooth brome and crested wheatgrass, with forb species including alfalfa, yellow sweet clover, and alsike clover (*Trifolium hybridum*). These areas also support sporadic cover of native forb species such as smooth blue aster (*Symphiotrichum laeve* var. *geyeri*), and common yarrow (*Achillea millefolium*).

Remnant trembling aspen stands within S½ 22-36-06 W3M support diverse vegetation communities comprised of a trembling aspen dominant canopy with sporadic cover of balsam poplar and an understory of native shrub species including red-osier dogwood, chokecherry, and prickly rose (Appendix Photo F-12 and Appendix Photo F-13). Smooth brome forms the dominant ground cover within these communities, with a sporadic cover of common caragana saplings.

A Class 5 (i.e., permanent) wetland, that is included in the West Swale complex, is located in the east portion of SE 22-36-06 W3M. The wetland community is dominated by common cattail (*Typha latifolia*) with hardstem bulrush (*Schoenoplectus acutus* var. *acutus*) and three-square bulrush (*Schoenoplectus pungens*) (Appendix Photo F-14). The riparian zone is heavily invaded with Canada thistle, though the community still supports an abundance of native species. The permanent wetland extends into a seasonally flooded wetland to the north that is comprised of a common reed-grass (*Phragmites australis* ssp. *americanus*) dominant community. An adjacent drier site supports willow sp. (*Salix* sp.), Kentucky bluegrass, Canada thistle, common cattail, and perennial sow-thistle (*Sonchus arvensis*) (Appendix Photo F-15).

The Cedar Village BMX Park is located within SE 22-36-06 W3M, adjacent to the west side of the permanent wetland in Parcel 1. The nearby vegetation community is dominated by green ash with several weed species, including lamb's quarters (*Chenopodium album* var. *album*), pineapple weed (*Matricaria discoidea*) and Sheppard's purse (*Capsella bursa-pastoris*).

Parcel 2: SW 23-36-06 W3M

Most woodland areas in Parcel 2, which includes the Southwest Dog Park, are characterized as Open Canopy Mixed Woodland habitat dominated by rows of common caragana, with a sparse overstory of afforested trees, including green ash and blue spruce. Woodland areas are separated by rows of open grasslands that are largely comprised of smooth brome and crested wheatgrass; however, sparse cover of native forbs, such as smooth blue aster and common yarrow are present (Appendix Photo F-16). A wet meadow community in SW 23-36-06 W3M is dominated by basket willow, with agronomic species such as perennial sow thistle (*Sonchus arvensis*) and sparse occurrences of water sedge (*Carex atherodes*) and fowl bluegrass (*Poa palustris*) in the understory.

Native dominant Open Canopy Mixed Woodland is located in the east portion of the parcel (Appendix Photo F-17). This community is a remnant woodland bluff that was present on the landscape prior to afforestation activities. The community is comprised of trembling aspen, with mid shrubs such as red-osier dogwood, chokecherry and Saskatoon, with prickly rose (*Rosa acicularis*) and western snowberry within the short shrub



layer (Appendix Photo F-18). Common caragana shrubs are continuing to encroach into this community, as saplings are scattered throughout the understory.

Forest Rangeland Health

Plot 3– The vegetation community was scored as Healthy with Problems (80%). The community is comprised of trembling aspen in the canopy, with red-osier dogwood, western snowberry, and smooth brome grass, with a dense cover of common caragana saplings. The health score was lowered by the presence of invasive species including smooth brome, Canada thistle, and common caragana which comprised >1% of the vegetative community.

Plot 4– The vegetation community was scored as Healthy with Problems (70%). The community is comprised of trembling aspen and balsam poplar in the canopy, with red-osier dogwood, western snowberry, and smooth brome grass, with a dense cover of common caragana and trembling aspen saplings. The health score was lowered by the presence of invasive species including smooth brome, Canada thistle, and common caragana which comprised >1% of the vegetative community.

Overall, the native woodland communities within the Southwest Dog Park have remained intact and support relatively high proportions of native tree and shrub cover; however, the encroachment of common caragana and the pervasiveness of agronomic species has reduced the forest health. Pervasive shrub encroachment changes the vegetative structure and plant community, thereby transitioning the understory to dense shrubland and thus influences the flora and fauna species that it supports.

Parcel 3: SE 23-36-06 W3M

The Afforestation Area in Parcel 3 is dominated by Semi-Open Mixed Woodland comprised of afforested tree and shrub species, including scotch pine, blue spruce, green ash, Siberian elm, and Manitoba maple (Appendix Photo F-19). Understory species are agronomic species, including yellow-sweet clover and smooth brome, with sporadic cover of western snowberry and young spruce trees. Low shrub cover includes sparse prickly rose and western snowberry, as well as tree/shrub saplings (e.g., common caragana, spruce, chokecherry) (Appendix Photo F-20). The provincially listed species, small -yellow lady slipper, was observed in the mixed woodland community (Appendix Photo F-23; see Section 2.2.2.4).

A remnant native woodland community dominated by shrubs with sparse trembling aspen is located within the Open Canopy Mixed Forest Woodland (Appendix Photo F-21 and Appendix Photo F-22). The community is comprised of native shrub species including, red-osier dogwood, chokecherry, and American back currant, as well as a population of the provincially listed species, red elderberry (*Sambucus racemosa* ssp. *pubens*) (Appendix Photo F-24; see Section 2.2.2.4). The herb layer of the understory is comprised primarily of a dense cover of Canada thistle and stinging nettle (*Urtica dioica* ssp. *gracilis*). Common caragana and European buckthorn saplings have established within the shrub community.

Common caragana dominant communities are found along the perimeter of this parcel; these areas typically support low plant diversity, with an understory of smooth brome and black medic.



Forest Assessment Plot 5 and Plot 6 – The vegetation community in both plots was scored as Unhealthy (35%). The community is comprised of afforested trees including green ash, Siberian elm, blue spruce, and Manitoba maple in the canopy, with an understory of western snowberry, smooth brome grass, and clover, as well as a dense cover of common caragana and blue spruce saplings. The health score was lowered by the present of invasive species, including smooth brome, Canada thistle, and common caragana which comprised >1% of the vegetative community, and by the absence of forest vegetative layers (i.e., tall shrub, mid shrub, short herb layer).

Overall, afforested communities in SE 23-36-06 W3M support a low vegetation diversity and largely comprised of afforested trees and agronomic species. Predictably, forested rangeland health was assessed as unhealthy given that the community is a non-native natural area (i.e., seeded and planted with non-native species) and unable to reach the same function and health found in native ecosystems.

2.2.2.3 Weed species

In Saskatchewan, weeds are designated as prohibited, noxious, or nuisance under *The Weed Control Act* (Government of Saskatchewan 2010). Prohibited and noxious weeds pose a threat of invasion and rapid spread and are difficult to control. Required control measures for designated weeds under *The Weed Control Act* include:

- **Prohibited weeds:** require early detection and eradication and prevention from further spread;
- **Noxious weeds:** require early detection and eradication of isolated noxious weed infestations (less than five hectares per quarter section), and containment and control of established infestations; and
- **Nuisance weeds:** require integrated control measures to reduce infestation, which may include a change in land management practices.

Where not designated under *The Weed Control Act*, a plant species is classified as a weed in Saskatchewan when it has been introduced to the province (i.e., it has a conservation status of Subnation Rank of “Not Applicable (i.e., SNA)(iMapInvasives (2021).

A total of 47 weed species were observed within the Study Area, 19 of which are listed in *The Weed Control Act*; with 14 listed as noxious and 5 listed as nuisance species (Table 7). The Afforestation Areas are primarily comprised of introduced species, including planted tree and shrub species, as well as agronomic grasses (e.g., crested wheatgrass, smooth brome) and forbs (e.g., alfalfa, sweet clover).

Within the George Genereux Urban Regional Park, several federally listed weeds are concentrated on the SaskPower utility ROW. Dominant weed species observed include absinthe, nodding thistle, Canada thistle, common burdock, oxeye daisy, kochia, scentless chamomile and tall baby’s breath. Other noxious and nuisance weeds were observed sporadically throughout this afforested area.

Within the S½ 22-36-06 W3M of Richard St. Barbe Baker Afforestation Area (i.e., Parcel 1), noxious and nuisance weeds are concentrated on the SaskPower utility ROW and include large populations of absinthe,



and common tansy (*Tanacetum vulgare*), as well as sporadic occurrences of tall baby's breath and leafy spurge (*Euphorbia esula*) within the open grasslands.

Several listed weed species were observed throughout the Afforestation Areas, including absinthe, tall baby's breath, European buckthorn, common toadflax (*Linaria vulgaris*) and narrow-leaved hawkbeard (*Crepis tectorum*). European buckthorn saplings, listed as noxious, were observed within and adjacent to the mesic-shrub community within the Afforestation Area. Common caragana saplings were also observed within the area and are establishing within communities away from points of introduction (e.g., planted common caragana hedge rows). Though not provincially listed, common caragana is an aggressive, introduced species that can rapidly proliferate and preclude other species from establishing.

Table 7. Noxious and nuisance weed species listed in *The Weed Control Act* observed in the Blairmore Natural Area Screening Study Area during the 2021 field study.

Common Name	Scientific Name	Saskatchewan Designation ¹	George Genereux	Richard St. Barbe Baker Parcel 1	Parcel 2	Parcel 3
Common burdock	<i>Arctium minus</i>	Noxious	✓			
Absinthe	<i>Artemisia absinthium</i>	Noxious	✓	✓	✓	✓
Kochia	<i>Bassia scoparia</i>	Noxious	✓			
Nodding thistle	<i>Carduus nutans</i> ssp. <i>leioophyllus</i>	Noxious	✓	✓		
Canada thistle	<i>Cirsium arvense</i>	Noxious	✓	✓	✓	✓
Narrow-leaved hawkbeard	<i>Crepis tectorum</i>	Noxious	✓	✓	✓	✓
Quack grass	<i>Elymus repens</i>	Nuisance	✓	✓	✓	✓
Leafy spurge	<i>Euphorbia esula</i>	Noxious	✓	✓	✓	
Tall baby's breath	<i>Gypsophila paniculata</i>	Noxious	✓	✓		
Foxtail barley	<i>Hordeum jubatum</i>	Nuisance	✓	✓	✓	✓
Blue lettuce	<i>Lactuca tatarica</i>	Nuisance	✓	✓		
Oxeye daisy	<i>Leucanthemum vulgare</i>	Noxious	✓	✓		
Yellow toadflax	<i>Linaria vulgaris</i>	Noxious	✓			✓
European buckthorn	<i>Rhamnus cathartica</i>	Noxious				✓
Field sow-thistle	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Noxious	✓	✓	✓	✓
Common tansy	<i>Tanacetum vulgare</i>	Noxious	✓	✓	✓	
Common dandelion	<i>Taraxacum officinale</i> ssp. <i>officinale</i>	Nuisance	✓	✓	✓	✓
Meadow goats-beard	<i>Tragopogon dubius</i>	Nuisance	✓	✓	✓	✓
Scentless Chamomile	<i>Tripleurospermum inodorum</i>	Noxious	✓	✓	✓	

¹ Species designation based on *The Weed Control Act* (Government of Saskatchewan 2010). Noxious weeds require early detection and eradication of isolated noxious weed infestations (less than five hectares per quarter section), and containment and control of established infestations; Nuisance weeds, require integrated control measures to reduce infestation, which may include change in land management practices.



2.2.2.4 Species of Management Concern

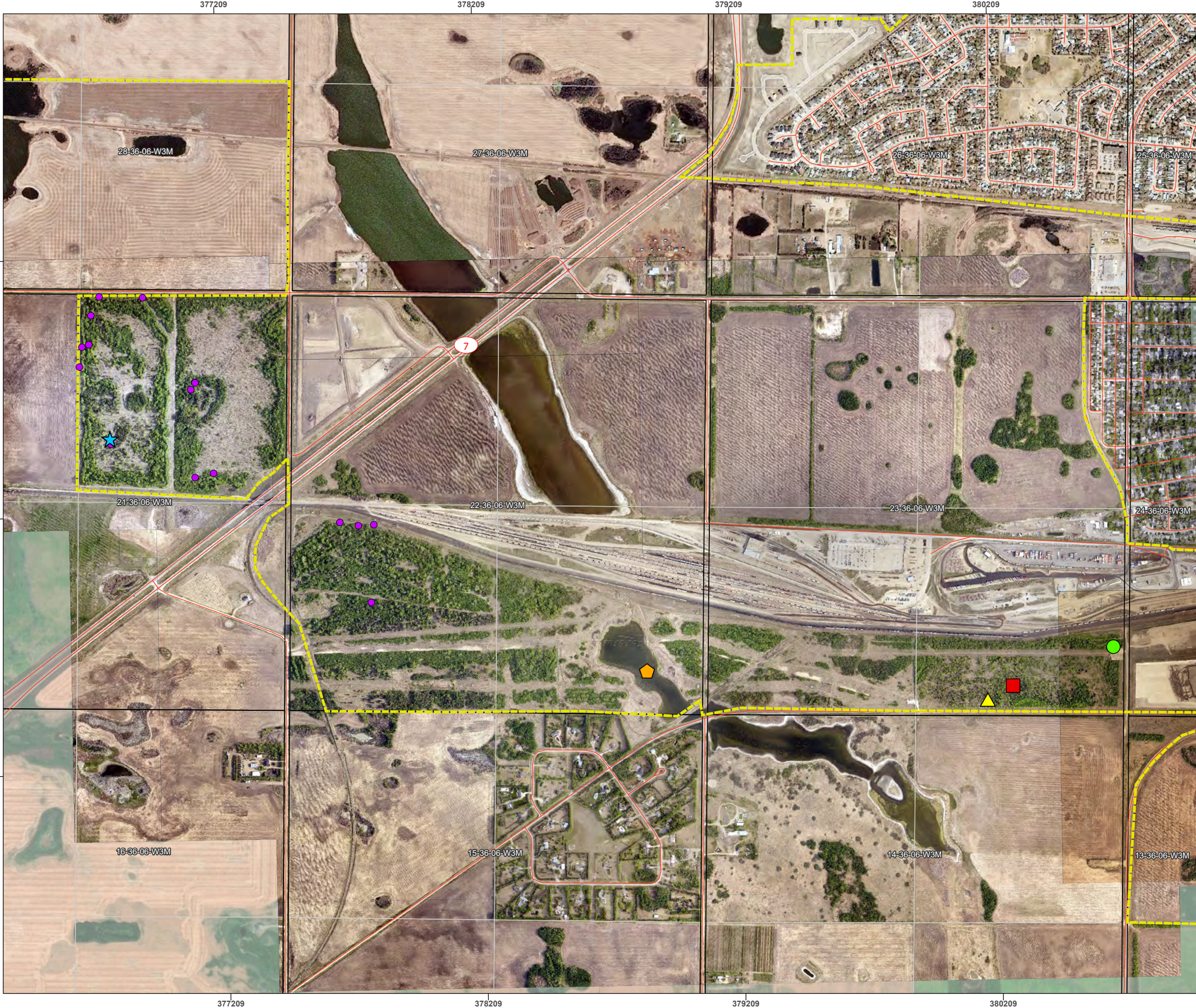
Two vegetation SOMC (Table 8; Figure 8) were noted during the field reconnaissance. A group of red-elder berry, listed provincially as S2, (imperiled/very rare) was observed within a mesic shrub dominated community within SE 23-36-06 W3M of the Richard St. Barbe Baker Afforestation Area (Parcel 3).

An individual, small yellow lady's slipper, listed provincially as a S3 species (vulnerable/rare to uncommon), was observed in an open canopy mixed forest community within the Richard St. Barbe Baker Afforestation Area in SW 23-03-30 W3M.

Table 8. Provincially tracked plant species documented in the Blairmore Natural Area Screening Study Area during the 2021 field study.

Common Name	Scientific Name	Subnational Rank ¹
Red elderberry	<i>Amaranthus californicus</i>	S2
Small yellow lady's slipper	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	S3

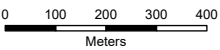
¹ S2, Imperiled/Very rare, at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors; S3 Vulnerable/Rare to uncommon, at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors.



Vegetation and Wildlife Species of Management Concern and Raptor Stick Nests Within the Blairmore Natural Area Screening Study Area

CITY OF SASKATOON

- Legend**
- Inactive Stick Nest
 - Road
 - Study Area
 - Section
 - Quarter Section
 - Plant Observations**
 - Red Elderberry
 - Small Yellow Lady's Slipper
 - Wildlife Observations**
 - Common Nighthawk
 - Horned Grebe
 - Red-tailed Hawk Nest



Map Scale = 1:15,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 13N



Data Sources

- Main map, City of Saskatchewan Imagery.
- Main map, World Imagery, Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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2.3 WILDLIFE FIELD PROGRAM

2.3.1 SURVEY METHODS

All wildlife survey protocols were based on Species Detection Survey Protocols accepted by the Saskatchewan Ministry of Environment (Government of Alberta 2013, ENV 2020a, ENV 2020b, ENV 2020c, ENV 2020d). Incidental observations of wildlife and their sign were recorded independent of planned surveys.

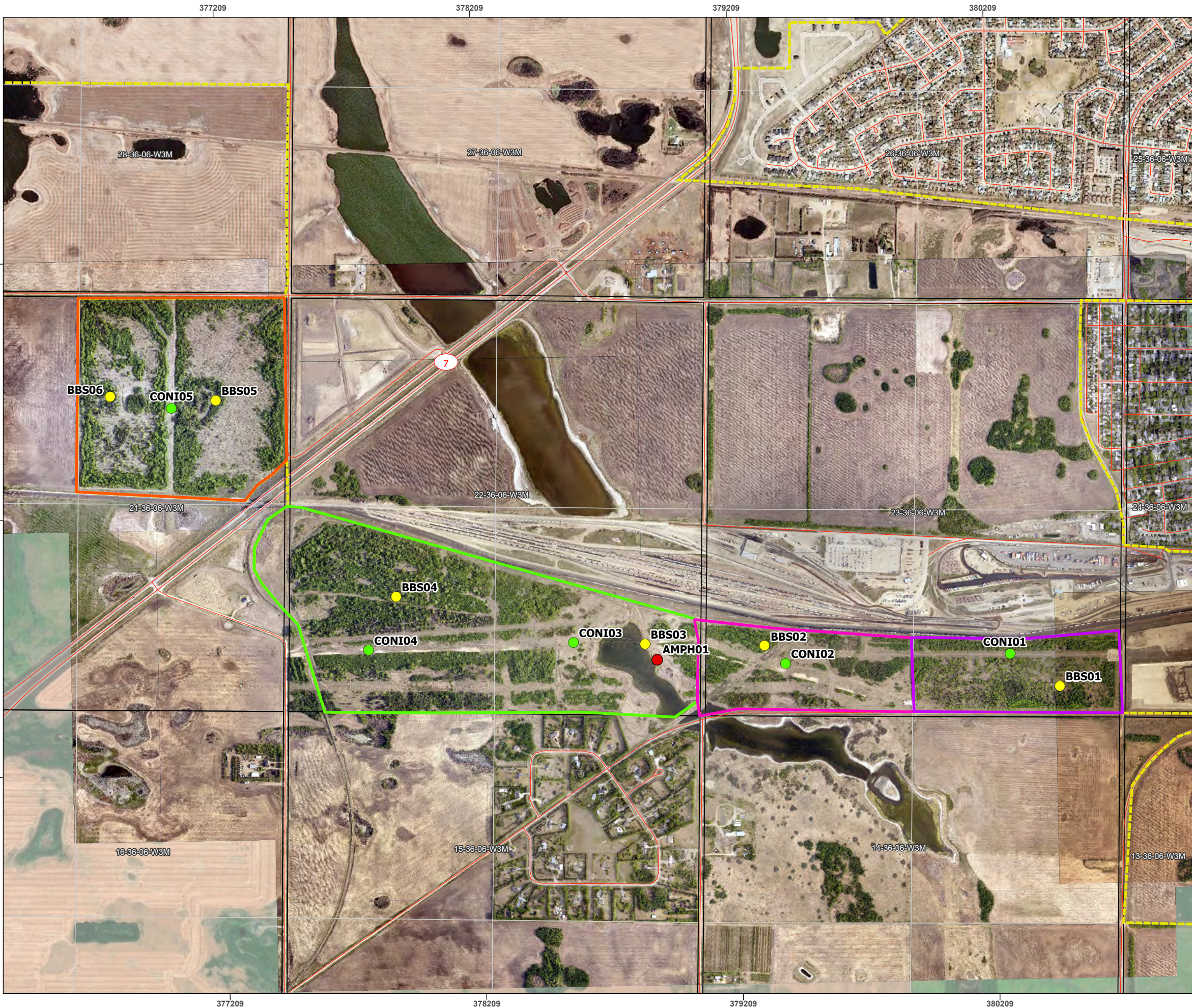
2.3.1.1 Raptor Stick Nest Surveys

Raptor stick nest surveys were completed within the Afforestation Areas within the Study Area in 2021 following the prairie raptors survey protocol in Alberta ESRD's Sensitive Species Inventory Guidelines (Government of Alberta 2013). The surveys were completed during the recommended raptor breeding season during daylight hours on May 10, June 23, and June 28, 2021 (Figure 8). The May survey was completed prior to the tree canopy leaf-out to facilitate the detection of all raptor stick nests within the Study Area. Once a nest was identified, the location was recorded using a GPS, and the occupancy and habitat type were documented. Incidental observations of raptor species and/or stick nests were also recorded during other field surveys throughout the spring and summer. The June surveys were completed to verify the occupancy of the identified stick nests from the May surveys.

2.3.1.2 Amphibian Surveys

Amphibian surveys consisted of evening auditory surveys at a station on the west side of the large Class 5 wetland in Parcel 1 (Figure 9) and a pedestrian search of the perimeter of this wetland during daylight hours. Survey protocols for amphibians were based on the Species Detection Survey Protocols for amphibian auditory and visual surveys (ENV 2020a, ENV 2020b).

Two rounds of auditory surveys were completed on June 23 and June 29, 2021, and three rounds of visual surveys were completed on June 28, July 27, and August 30, 2021. The auditory surveys consisted of five-minute counts; amphibian calls were identified by species. Visual surveys involved a slow pedestrian search around the perimeter of the wetland and counting any egg masses, adults, or young of the year.



Wildlife Survey Points Within the Blairmore Natural Area Screening Study Area

CITY OF SASKATOON

Legend

- Road
- Study Area
- Section
- Quarter Section

Afforestation Areas

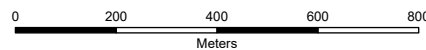
- George Genereux Urban Regional Park

Richard St. Barbe Baker Afforestation Area

- Parcel 1
- Parcel 2
- Parcel 3

Survey Points

- Breeding Bird
- Common Night Hawk
- Amphibian Auditory



Map Scale = 1:15,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 13N

Data Sources

- Main map, City of Saskatchewan Imagery.
- Main map, World Imagery, Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map, National Geographic World Map, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road, Topographic Data of Canada - 50K CanVec Series, Government of Canada.
- The Township system of Saskatchewan, Government of Saskatchewan.

Disclaimer
EDI Environmental Dynamics Inc. has made every effort to ensure this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.

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Checked:
MK/MF

Figure 9

Date: 2022-04-07





2.3.1.3 Common Nighthawk Surveys

Two rounds of Common Nighthawk (*Chordeiles minor*) surveys were completed in areas of suitable habitat within the Afforestation Areas. The surveys consisted of point-counts with call playback during the active breeding period (i.e., late May to late June) for Common Nighthawk and were completed in accordance with the Saskatchewan Common Nighthawk Species Detection Survey Protocol (ENV 2020c).

The Common Nighthawk surveys were completed from one hour before sunset to 30 minutes after sunset on June 23 and June 29, 2021. Each survey round included five survey points spaced a minimum of 800 m apart within the Afforestation Areas (Table 9, Figure 9). At each survey point, the observer completed a three-minute passive count, followed by a three-minute call playback survey, while scanning the landscape and listening for sign of Common Nighthawks.

2.3.1.4 Breeding Bird Surveys

Breeding bird surveys (BBS) were completed within the Study Area to determine bird species occupancy, richness, and relative abundance during the breeding season (i.e., late May to late June). The BBS consisted of point-count surveys (6 survey points), completed in accordance with the Saskatchewan Species Detection Survey Protocols – Grassland Birds Surveys (ENV 2020d).

The BBS were placed in the Afforestation Areas, located within the habitat types in Table 9, Figure 9.

Table 9. Breeding Bird Survey plot locations and habitat types within the Blairmore Natural Area Screening Study Area.

Plot	Afforestation Area	Habitat Type	UTM Zone	UTM Easting	UTM Northing
BBS01	Richard St. Barbe Baker	Open Canopy Mixed Woodland	13	380464	5773738
BBS02	Richard St. Barbe Baker	Open Canopy Mixed Woodland	13	379315	5773916
BBS03	Richard St. Barbe Baker	Class 5 (Permanent Pond/Lake) Wetland	13	378850	5773930
BBS04	Richard St. Barbe Baker	Open Canopy Mixed Woodland	13	377883	5774131
BBS05	George Genereux	Open Canopy Mixed Woodland	13	377194	5774908
BBS06	George Genereux	Open Canopy Mixed Woodland	13	376782	5774930

Two survey rounds were conducted on May 27 and June 23, 2021. The six plots consisted of 100 m radius survey points spaced between 400 - 800 m apart (depending on habitat type) to avoid double-counting individual birds. Survey points were selected to cover representative habitat types in the Study Area.



Surveys were completed between sunrise and four hours after sunrise under appropriate weather conditions (i.e., wind speeds under 20 km per hour, temperatures above 0°C, precipitation no greater than very light drizzle). At each survey point location, observers completed a five-minute point-count survey from the survey point, during which all birds detected by sight or sound were recorded, including their distance and direction from the observer.

2.3.1.5 Wildlife Corridor Assessment

As part of the wildlife field program, a variety of habitat types, existing game trails and other potential wildlife travel corridors within or through Afforestation Areas were evaluated. The intent was to determine general wildlife habitat use and the extent of wildlife habitat connectivity (i.e., how and where wildlife species use and move through the available habitat) within the Afforestation Areas using a combination of remote cameras (RCs) and winter wildlife track surveys.

Remote Camera Program

EDI installed RCs at five sites in the Afforestation Areas to document wildlife species presence and to identify areas that may be used as wildlife travel corridors based on repeated use by individuals or groups of animals. The RC survey sites were distributed throughout the Afforestation Areas to provide general coverage of afforested habitat as well as remnant natural habitats (i.e., aspen/willow stands and wetlands). On a micro scale, RC survey sites were chosen to avoid human activity, to the extent feasible, as well as vegetative cover that would make the cameras susceptible to false triggers (i.e., large openings, tall vegetation). A description of the RC survey sites is provided in Table 10.

In addition to the EDI RC sites, the University of Saskatchewan (U of S) deployed RCs at five sites in the Study Area, north of the Afforestation Areas, as part of the *YXEnwildlife: Biodiversity Monitoring in Saskatoon* research project to monitor wildlife activity. Data (i.e., photos) collected from cameras located within the Study Area were shared by the U of S and have been included as part of the EDI results and discussion for the Project. The locations of all ten RC survey sites are shown in Figure 10, and representative photos of the EDI RC survey sites are located in Appendix G.

EDI deployed five, Boly SG 2060 RCs, while the U of S deployed five Browning Dark Ops HD Pro cameras, both of which use Passive Infrared (PIR)³ motion sensors. The EDI cameras were set to take three photos per detection, with a zero-second time delay between detections to document all passing wildlife. The U of S cameras were set to take three photos per detection with a 30-second delay between detections.

The EDI RCs were deployed on June 9, 2021 and revisited every 2–4 weeks (to download photo data and change the batteries, if required) until December 1, 2021, for a deployment duration of up to 175 days. The U of S cameras were established on September 11, 2020, and were revisited once every 2 weeks until

³ PIR sensors are electronic sensors that measure infrared light radiating from objects in its field of view (FOV). They work by measuring the amount of ambient or background heat in the FOV, and when an object of a different temperature passes through, or there is an abrupt temperature change in the FOV, the sensor converts this change to a change in the sensor's output voltage, which triggers the camera (Wikipedia 2019).



October 1, 2021, for a duration period of up to 386 days. The deployment start and end dates, as well as the total functioning days of each camera survey site, are shown in Table 10.

Occasionally, a camera did not record due to mechanical malfunction, depleted batteries or an issue with the memory card capacity. The RCs tended to stop recording during periods in early- to mid-summer when a combination of high air temperature and wind make the cameras susceptible to false triggers, resulting in filled memory cards and/or depleted batteries.

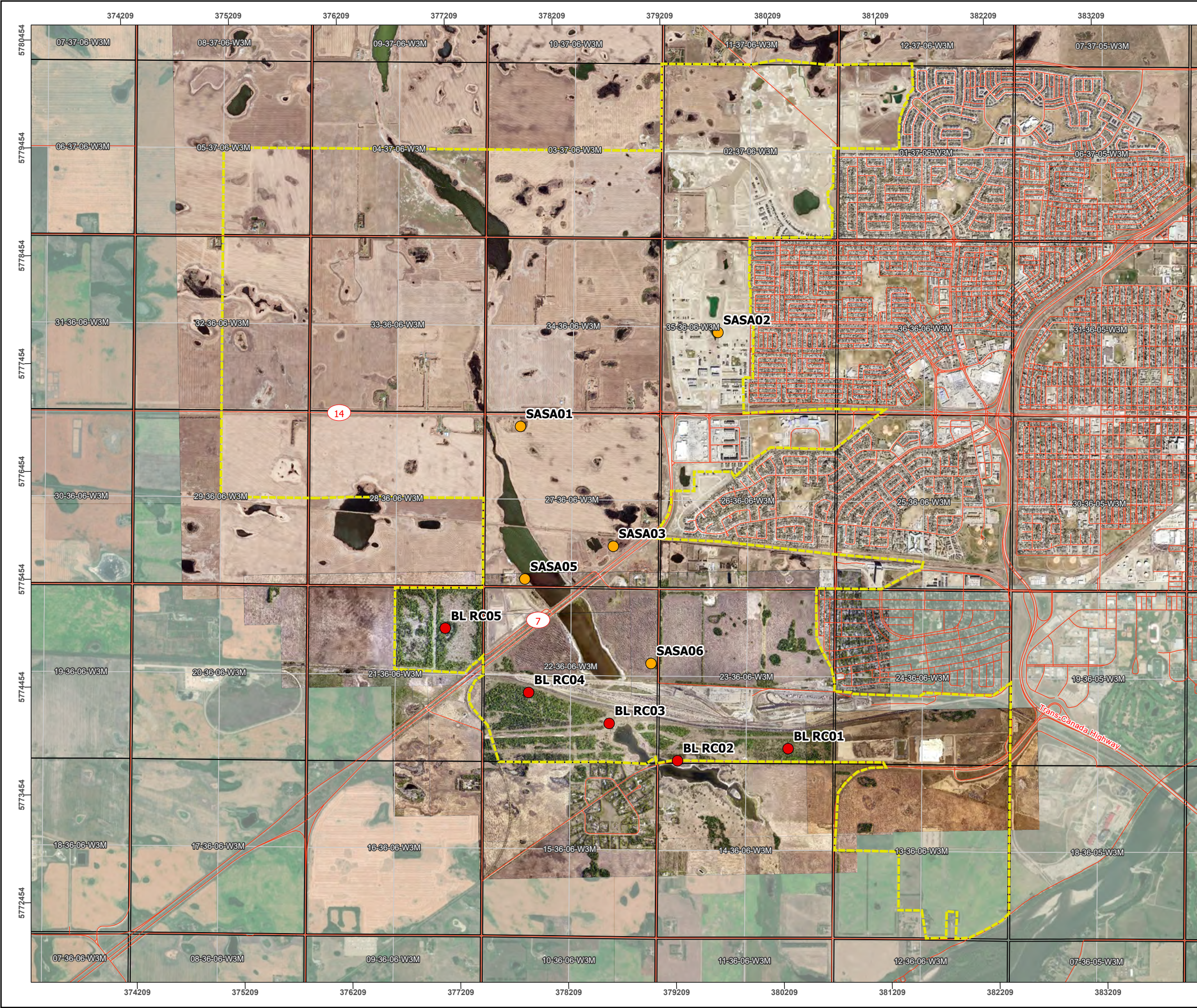
Table 10. Remote camera survey sites for the 2021 field surveys in the Study Area.

RC (RC) Survey Site	Owner	Site Description	Site Photo	Start Date	End Date	Camera Functioning Days
BL ¹ RC01	EDI	Camera deployed on the north edge of natural habitat (i.e., Closed Canopy Deciduous Woodland) and Open Canopy Mixed Woodland.	1-2	June 9, 2021	December 1, 2021	152
BL RC02	EDI	Camera deployed 30 m north of Township Road 362A and 45 m northeast of the permanent wetland in SE 22-36-06 W3M, on a game trail in Open Canopy Mixed Woodland.	7-8	June 9, 2021	December 1, 2021	93
BL RC03	EDI	Camera deployed in wetland habitat (permanent wetland in SE 22-36-06 W3M) on a dry mudflat between cattails and open water.	16	June 9, 2021	December 1, 2021	134
BL RC04	EDI	Camera deployed on a mountain bike trail in Open Canopy Mixed Woodland habitat with a thick tall shrub (caragana) understory.	24	June 9, 2021	December 1, 2021	152
BL RC05	EDI	Camera deployed in an island of natural habitat comprised of Closed Canopy Deciduous Woodland surrounded by Open Canopy Mixed Woodland.	31	June 9, 2021	December 1, 2021	105
SASA01	U of S	Camera deployed in an isolated patch of Closed Canopy Deciduous Woodland natural habitat surrounded by Crop Land habitat.	No Photo	September 11, 2020	October 1, 2021	368
SASA02	U of S	Camera deployed on the edge of a greenspace/stormwater pond of the Kensington neighborhood.	No Photo	September 11, 2020	October 1, 2021	386
SASA03	U of S	Camera deployed on the edge of natural Closed Canopy Deciduous Woodland habitat and wetland habitat at the north end of the City of Saskatoon compost depot.	No Photo	September 11, 2020	October 1, 2021	386
SASA05	U of S	Camera deployed on the edge of natural wetland habitat (West Swale) and Closed Canopy Deciduous Woodland.	No Photo	September 11, 2020	October 1, 2021	386



RC (RC) Survey Site	Owner	Site Description	Site Photo	Start Date	End Date	Camera Functioning Days
SASA06	U of S	Camera deployed in an isolated patch of Closed Canopy Deciduous Woodland natural habitat surrounded by Crop Land habitat.	No Photo	September 11, 2020	October 1, 2021	371

¹ BL – Blairmore



Remote Camera Locations Within the Blairmore Natural Area Screening Study Area

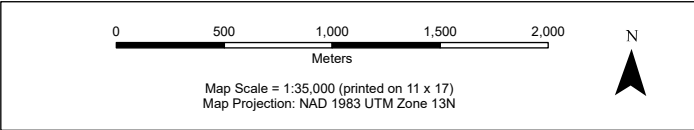
CITY OF SASKATOON

Legend

- Road
- Study Area
- Section
- Quarter Section

Remote Camera Survey Point

- EDI
- U of S



Data Sources

- Main map. City of Saskatchewan Imagery.
- Main map. World Imagery. Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map. National Geographic World Map. National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
- Road. Topographic Data of Canada - 50K CanVec Series. Government of Canada.
- The Township system of Saskatchewan. Government of Saskatchewan.

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Once the RC survey was completed, the photos from each location were filtered to eliminate any blank photos (i.e., photos with no wildlife, caused by false triggering) and analyzed to determine wildlife species, date and time. The data were then entered into an Excel file and categorized by a wildlife event. A wildlife event was defined as a single photo by one passing animal or a series of photos of a single animal or group of animals triggering the camera multiple times within a 1-minute interval for the EDI cameras. The U of S RC analysis classified a wildlife event as a single photo by one passing animal or a series of photos of a single animal or group of animals triggering the camera multiple times within a 30-second interval. For events that contained several individuals (e.g., three deer in a group), the total number of individuals were counted as an index of relative abundance.

Winter Track Survey

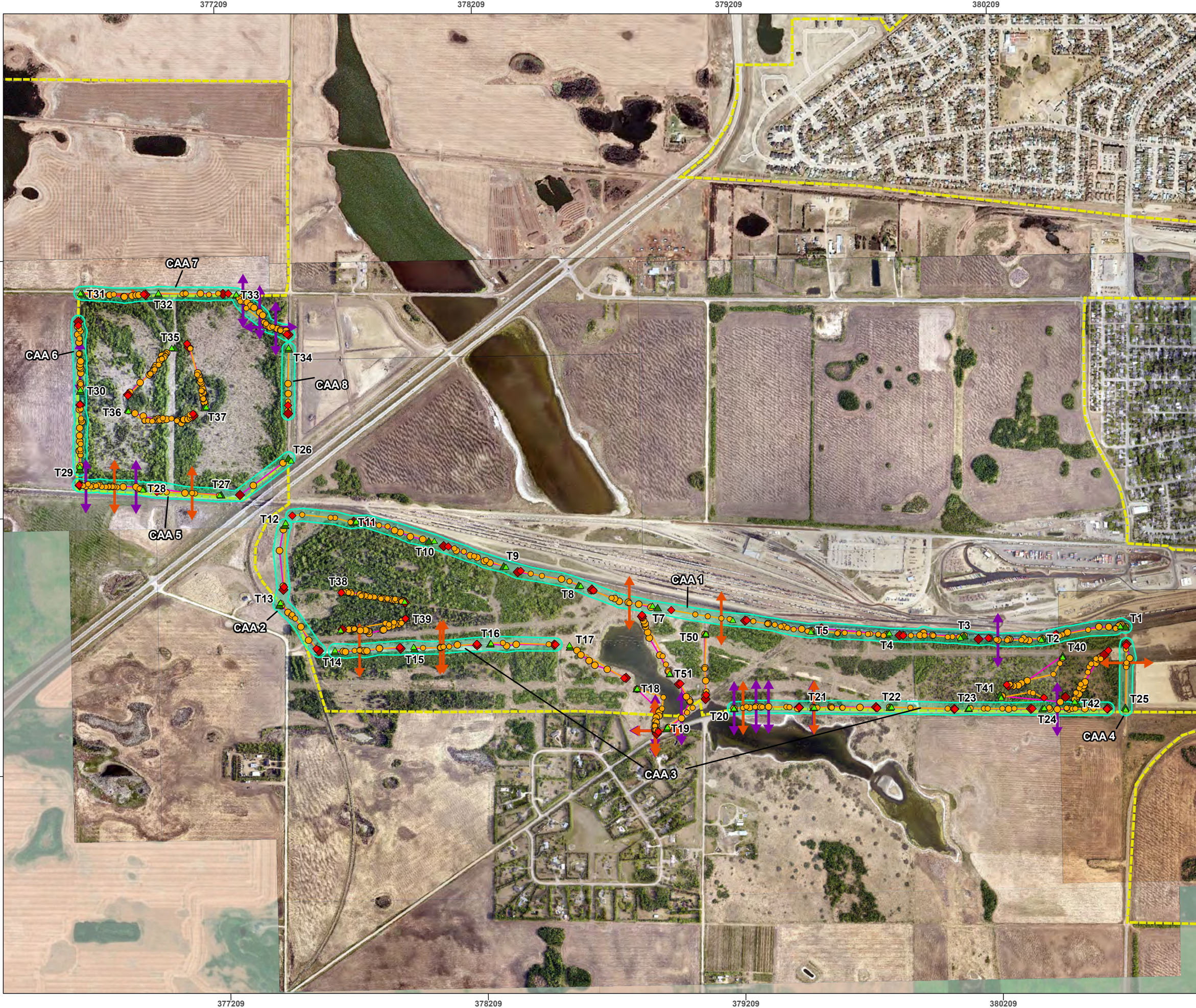
A qualified EDI biologist conducted winter track surveys on January 11-13 (round 1) and March 14-15 (round 2) in the winter of 2022. Transects were established along the outer perimeter as well as within the central core of the treed and wetland habitats of the Afforestation Areas. The purpose of the winter track survey was to capture species presence and identify potential movement patterns by wildlife into and out of the Afforestation Areas. These surveys were completed in accordance with the Species Detection Survey Protocols: Snow Track Surveys (ENV 2014). However, only two rounds of surveys, out of the three that were proposed, were completed due to low species diversity (based on RC data and incidental observations) as well as the high volume of human and domestic dog presence in the Afforestation Areas (i.e., given the off-leash dog park and other recreational trails). This approach was discussed with ENV (interview with K. Scalise, Ministry of Environment, December 2021), and they agreed. The ENV recommended that an explanation of the protocol deviation be included with the data load form submission, which will be addressed once the data has been submitted. The two survey rounds were conducted by a qualified wildlife biologist.

The winter track surveys consisted of 42 (250 m long) transects conducted on foot (with snowshoes) where tracks and direction of travel were identified, along with other wildlife sign such as scat, bedding and feeding activity. Thirty-one transects were established within the outer perimeter of the Afforestation Areas to assess wildlife movement and potential corridor use in/out of the Afforestation Areas. These transects were divided into eight Corridor Assessment Areas (CAA) to analyze movement patterns or directions more effectively (e.g., to determine if wildlife are moving across the CN Yards Management Area from the north end of Richard St. Barbe Baker Afforestation Area). The remaining 11 transects were selected to survey a representative portion of the three main habitat types (i.e., Open Canopy Mixed Woodland, Closed Canopy Deciduous Woodland and Wetland) within the Afforestation Areas. The locations of each winter track transect and CAA are displayed in Figure 11; and a brief description of the CAA's are provided below:

- CAA 1: Transect T01 – T11 - North boundary of the Richard St. Barbe Baker Afforestation Area;
- CAA 2: Transect T12 – T13 - West boundary of Richard St. Barbe Baker Afforestation Area;
- CAA 3: Transect T14 – T16 and T20-T24 - South boundary of Richard St. Barbe Baker Afforestation Area;
- CAA 4: Transect T25 - East boundary of Richard St. Barbe Baker Afforestation Area;
- CAA 5: Transect T26 – T28 – South boundary of George Genereux Urban Regional Park;



- CAA 6: Transect T29 – T30 – West boundary of George Genereux Urban Regional Park;
- CAA 7: Transect T31 – T33 – North boundary of George Genereux Urban Regional Park; and,
- CAA 8: Transect T34 – East boundary of George Genereux Urban Regional Park.

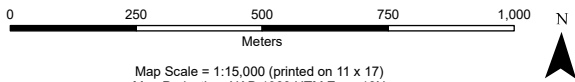


Winter Track Surveys Within the Blairmore
Natural Area Screening Study Area

CITY OF SASKATOON

Legend

- January Survey
- Transect Start
 - Wildlife Occurrence
 - Transect End
 - Trail Direction
 - East-West
 - North-South
 - Transect
 - Study Area
 - Corridor Assessment Area (CAA)
- March Survey
- Transect Start
 - Wildlife Occurrence
 - Transect End
 - Trail Direction
 - East-West
 - North-South
 - Transect



Data Sources

- Winter track survey data collected by EDI Environmental dynamics Inc. January 11-13, 2022 and March 14-15, 2022
- Main map, City of Saskatchewan Imagery.
- Main map, World Imagery, Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
- Inset map, National Geographic World Map, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

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2.3.2 FIELD RESULTS

2.3.2.1 Raptor Stick Nest Surveys

Fourteen stick nests were identified in the Afforestation Areas during the spring 2021 survey. Of these, only one was active and occupied by a Red-tailed Hawk (*Buteo jamaicensis*). This nest was observed in the George Genereux Urban Regional Park in a white spruce tree (Figure 7, coordinates 13U 376777 5774756).

2.3.2.2 Amphibian Auditory Surveys

No amphibians were detected during amphibian auditory surveys.

2.3.2.3 Amphibian Visual Encounter Surveys

No amphibians were detected during amphibian visual encounter surveys.

2.3.2.4 Common Nighthawk Surveys

No Common Nighthawks were detected during the surveys; however, one individual was incidentally observed following evening surveys on June 23, 2021. This individual was heard eliciting territorial calls above the TransGas block valve and meter station on the east border of Parcel 3 (13U 380660 5773883).

2.3.2.5 Breeding Bird Surveys

A total of 32 species were detected during the BBS. Twenty-seven bird species were detected in the Richard St. Barbe Baker Afforestation Area compared to nine bird species observed in the George Genereux Urban Regional Park. The most common species, based on the total number observed across all plots and survey rounds were: Yellow Warbler (*Setophaga petechia*, 18 observations), Blue-winged Teal (*Spatula discors*, 16 observations), Red-winged Blackbird (*Agelaius phoeniceus*, 16 observations), Clay-coloured Sparrow (*Spizella pallida*, 11 observations), and American Robin (*Turdus migratorius*, 10 observations). The difference in species richness between the Afforestation Areas is likely due to the predominance of wetland bird species (11 species) detected at BBS03, which was located adjacent to the wetland in Parcel 2 of the Richard St. Barbe Baker Afforestation Area.

Birds observed outside the BBS plots (i.e., > 100 m from plot centre) are not included in this summary but are presented with incidental species observations in Section 2.3.2.7. See Table 11 for the avian species observed within the habitat types in the Afforestation Areas.



Table 11. Avian species observed in dominant habitat types within the Afforestation Areas during Breeding Bird Surveys.

Common Name	Scientific Name	George Genereux Urban Regional Park	Richard St. Barbe Baker Afforestation Area			Total
		Open Canopy Mixed Woodland (2 plots)	Open Canopy Mixed Woodland (3 plots)	Class 5 Wetland (1 plot)	Total	
American Crow	<i>Corvus brachyrhynchos</i>	3	-	-		3
American Goldfinch	<i>Spinus tristis</i>	2	1	1	2	4
American Robin	<i>Turdus migratorius</i>	6	2	-	2	8
Barn Swallow	<i>Hirundo rustica</i>	-	-	3	3	3
Black-billed Magpie	<i>Pica hudsonia</i>	-	5	-	5	5
Black-capped Chickadee	<i>Poecile atricapillus</i>	1	1	-	1	2
Blue-winged Teal	<i>Spatula discors</i>	-	-	16	16	16
Brown-headed Cowbird	<i>Molothrus ater</i>	1	-	-		1
Canada Goose	<i>Branta canadensis</i>	-	-	3	3	3
Chipping Sparrow	<i>Spizella passerina</i>	-	1	-	1	1
Clay-coloured Sparrow	<i>Spizella pallida</i>	6	2	-	2	8
Common Grackle	<i>Quiscalus quiscula</i>	-	-	-		0
Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	2	2	2
Cooper's Hawk	<i>Accipiter cooperii</i>	-	-	-		0
Gadwall	<i>Mareca strepera</i>	-	-	7	7	7
House Wren	<i>Troglodytes aedon</i>	2	1	-	1	3
Killdeer	<i>Charadrius vociferus</i>	-	-	3	3	3
Least Flycatcher	<i>Empidonax minimus</i>	-	1	-	1	1
Lesser Yellowlegs	<i>Tringa flavipes</i>	-	-	2	2	2
Magnolia Warbler	<i>Setophaga magnolia</i>	-	1	-	1	1
Mallard	<i>Anas platyrhynchos</i>	-	-	5	5	5
Northern Shoveler	<i>Spatula clypeata</i>	-	-	4	4	4



Common Name	Scientific Name	George Genereux Urban Regional Park	Richard St. Barbe Baker Afforestation Area			Total
		Open Canopy Mixed Woodland (2 plots)	Open Canopy Mixed Woodland (3 plots)	Class 5 Wetland (1 plot)	Total	
Palm Warbler	<i>Setophaga palmarum</i>	-	1	-	1	1
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	-	12	12	13
Ring-billed Gull	<i>Larus delawarensis</i>	-	-	1	1	1
Rock Pigeon	<i>Columba livia</i>	-	1	1	2	2
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-	-	-	1
Song Sparrow	<i>Melospiza melodia</i>	-	-	1	1	1
Tree Swallow	<i>Tachycineta bicolor</i>	-	-	1	1	1
Western Meadowlark	<i>Sturnella neglecta</i>	-	1	-	1	1
Yellow Warbler	<i>Setophaga petechia</i>	5	10	3	13	18
Yellow-rumped Warbler	<i>Setophaga coronata</i>	-	2	-	2	2
Total		27	30	65	95	122



2.3.2.6 Wildlife Habitat and Habitat Connectivity

Remote Camera Program

The results of the RC photo analysis are summarized in Table 12 and representative photos are provided in Appendix G. BL RC02 recorded the highest average number of events per day (1.47) followed by SASA03 (0.84) and BL RC05 (0.81). These locations also produced the highest average numbers of individuals at 1.53 individuals per day for BL RC02, 0.96 for SASA03 and 0.89 for BL RC05. The high number of events and individuals detected at BL RC02 was attributed to a total of 102 red squirrel events. Red squirrel activity at this location was likely due to the presence of conifer trees near the camera (including the tree the camera was placed on), as the cones from conifer trees are a main food source for red squirrels. The lowest activity was logged at BL RC01 with an average of 0.20 detections per day (i.e., approximately 1 detection every 5 days). Since BL RC01 was located in the Southwest Dog Park (Parcel 2), the low activity was likely attributable to the high levels of disturbance by dogs and dog walkers.

Overall, 13 mammal species were detected in the Study Area during the RC survey (Table 13).

Table 12. Wildlife detection at RC survey locations within the Blairmore Natural Area Screening Study Area.

Remote Camera Survey Site	Number of Events Per Survey Site ¹	Average Number of Events Per Day ¹	Total Number of Individuals	Average Number of Individuals Per Day
BL RC01	30	0.20	35	0.23
BL RC02	137	1.47	142	1.53
BL RC03	65	0.49	71	0.53
BL RC04	117	0.77	121	0.80
BL RC05	85	0.81	93	0.89
SASA01	237	0.64	262	0.71
SASA02	258	0.67	286	0.74
SASA03	325	0.84	371	0.96
SASA05	280	0.73	294	0.76
SASA06	487	1.31	521	1.40

¹ EDI RC analysis classified a wildlife event as a single photo by one passing animal or a series of photos of a single animal or group of animals triggering the camera multiple times within a 1-minute interval. The U of S RC analysis classified a wildlife event as a single photo by one passing animal or a series of photos of a single animal or group of animals triggering the camera multiple times within a 30-second interval.



Table 13. Wildlife species and number of events documented during the RC survey.

Species	Remote Camera Survey Site										Total
	BL RC01	BL RC02	BL RC03	BL RC04	BL RC05	SASA01	SASA02	SASA03	SASA05	SASA06	
Black bear <i>Ursus americanus</i>	0	0	0	0	0	1	0	0	0	0	1
Coyote <i>Canis latrans</i>	1	5	20	14	27	76	4	140	186	36	509
Deer species <i>Odocoileus spp.</i>	0	0	0	0	0	15	0	5	2	34	56
Hare/Rabbit species	0	0	0	0	0	0	18	1	8	3	30
Moose <i>Alces alces</i>	0	0	0	1	0	1	0	0	0	0	2
Mouse/Vole Species	0	0	0	0	8	0	0	0	0	0	8
Mule deer <i>Odocoileus hemionus</i>	1	4	0	1	4	116	0	117	9	93	345
North American porcupine <i>Erethizon dorsatum</i>	0	0	3	1	0	0	0	1	0	0	5
Raccoon <i>Procyon lotor</i>	1	0	15	0	0	0	0	0	0	2	18
Red fox <i>Vulpes</i>	3	4	13	10	1	5	1	15	8	56	116
Red squirrel <i>Tamiasciurus hudsonicus</i>	0	102	0	1	0	0	0	0	0	0	103
Snowshoe hare <i>Lepus americanus</i>	1	2	0	67	11	0	0	0	0	0	81
Unknown	0	0	0	1	0	0	0	0	0	0	1
Weasel species <i>Mustela spp</i>	0	0	0	1	0	0	0	0	0	0	1
White-tailed deer <i>Odocoileus virginianus</i>	23	20	14	20	34	15	0	3	2	43	174
White-tailed jackrabbit <i>Lepus townsendii</i>	0	0	0	0	0	4	232	38	62	215	551
Total Events	30	137	65	117	85	233	255	320	277	482	2001
Total Species	6	6	5	9	6	8	4	8	7	8	13



Based on the data collected by the RCs, white-tailed jackrabbit were the most abundant species at 551 detections, followed by coyote at 509 and mule deer at 345. However, white-tailed jackrabbits were only detected at the U of S RC locations and not the EDI camera locations in the Afforestation Areas. Survey site BL RC04 had the highest species diversity detecting 9 of the 13 wildlife species, the remaining survey sites detected between five and six species. The U of S RC survey point SASA01, SASA03 and SASA06 detected 8 wildlife species and SASA05 detected 7 species. Survey site SASA02 located in the Kensington neighborhood had the lowest species diversity, with 4 wildlife species detected.

Based on the results, it appears that locations within the Study Area that are more developed or have higher levels of human disturbance and activity have a lower wildlife species diversity and abundance. In addition, the survey site located in the Kensington neighbourhood was located adjacent to a stormwater management pond that is currently lacking in vegetation that would provide usable protective or foraging cover for wildlife. Conversely, survey sites that were located in shrub or treed habitats tended to have a higher species diversity and abundance.

Winter Track Surveys

The winter track data were analyzed based on wildlife occurrence per transect as a measure of activity. A wildlife occurrence is defined as a single set of tracks, multiple sets of tracks, trails and feeding/bedding sign of a particular species. A wildlife occurrence is not considered to be an estimate of relative abundance. Wildlife occurrences documented during the winter track surveys are indicated as orange points in Figure 11; with clusters of points indicating a higher level of wildlife activity compared with areas with no or fewer points.

A total of 11 wildlife species were identified during the winter track surveys (Table 14). The highest level of wildlife activity was documented on transects located within Open Canopy Mixed Woodland with a dense understory of Tall Shrub habitat and/or the presence of conifer trees where wildlife occurrences ranged from 22 to 37 on Transects T28, T33, T36, T38, and T39. The data indicated a higher level of wildlife activity associated with the isolated patches of natural Closed Canopy Deciduous Woodland (i.e., Transects T35, T37, and T40).

Relative to species presence, snowshoe hare had the highest number of occurrences at 153, followed by coyote at 97, deer species at 76 and red fox at 72. It appears that certain species were found in association with particular habitats, likely due to the level of disturbance or human activity in the area or the degree of protection afforded by the vegetation communities. For example, the highest number of snowshoe hare occurrences (28) was noted on Transect T38. This transect was on an existing mountain bike trail that crossed Open Canopy Mixed Woodland with a thick understory of Tall Shrub Grassland (i.e., willow and caragana). The highest number of coyote occurrences was noted on Transect T28 at the southwest boundary of George Genereux Urban Regional Park, which was subjected to low human activity compared to other transects. The highest number of deer occurrences was observed on Transects 5 and 18, located in the north-central and the south-central portion (i.e., west side of the wetland) of the Richard St. Barbe Baker Afforestation Area, respectively. Based on these observations, it appears that the characteristics the habitat types influences species presence. In other words, for habitats supporting naturalized vegetation communities, such as Wetland and



Closed Canopy Deciduous habitat types, there is a greater the likelihood that certain wildlife species will utilize those habitats. Similarly, areas subject to higher rates of use by humans are less likely to be used by wildlife (e.g., the Southwest Dog Park).



Table 14. Wildlife species occurrences observed on each transect during winter track counts within the Blairmore Natural Area Screening Study Area.

Transect (T) Number	Coyote	Red Fox	Weasel Species	Deer Species	Moose	Snow -shoe Hare	White- tailed Jackrabbit	Eastern Cotton- tail	North American Porcupine	Red Squirrel	Mouse /Vole Species	Total Number of Occurrences	Total Number of Species
T01	1	7	1	0	0	0	0	0	0	0	4	13	4
T02	1	5	0	0	0	0	0	0	1	2	5	14	6
T03	1	5	1	0	0	0	0	0	0	0	4	11	5
T04	0	5	0	0	0	0	0	1	1	1	3	11	5
T05	0	1	2	8	0	0	0	0	0	1	1	13	5
T06	0	3	0	0	0	0	0	0	0	0	1	4	2
T07	0	3	0	5	0	1	0	0	0	0	0	9	3
T08	2	1	0	0	0	0	0	0	0	0	1	4	3
T09	3	3	0	0	0	3	0	0	0	0	0	9	3
T10	1	2	0	0	0	3	0	0	0	0	0	6	3
T11	1	0	0	0	0	0	3	0	0	0	0	4	2
T12	1	0	0	0	0	0	0	0	0	0	2	3	2
T13	3	3	0	3	0	0	0	0	0	0	0	9	3
T14	0	0	0	5	0	3	0	0	0	0	2	10	3
T15	2	0	0	1	0	2	0	0	0	1	1	7	5
T16	0	0	0	4	0	0	0	0	0	0	0	4	1
T17	0	0	1	3	0	0	0	0	0	0	1	5	3
T18	2	0	0	8	0	8	0	0	0	0	1	19	4
T19	0	2	0	4	0	0	0	0	0	0	2	8	3
T20	2	4	0	6	0	1	0	0	0	0	0	13	4
T21	0	3	0	3	0	1	0	0	0	2	0	9	4
T22	0	2	1	0	0	0	0	0	0	0	0	3	2
T23	0	2	0	2	0	2	0	0	0	0	0	6	3
T24	3	2	0	4	0	0	0	0	0	1	0	10	4
T25	1	3	0	2	0	0	0	0	0	0	0	6	3
T26	0	0	0	1	0	1	1	0	0	0	0	3	3
T27	4	1	0	1	0	1	0	0	0	0	1	9	5



Transect (T) Number	Coyote	Red Fox	Weasel Species	Deer Species	Moose	Snow -shoe Hare	White- tailed Jackrabbit	Eastern Cotton- tail	North American Porcupine	Red Squirrel	Mouse /Vole Species	Total Number of Occurrences	Total Number of Species
T28	13	3	0	0	1	5	0	0	0	0	0	22	4
T29	9	2	0	0	0	5	1	0	0	0	0	17	4
T30	8	5	0	1	0	3	0	0	0	0	1	18	5
T31	3	0	0	0	0	6	0	0	0	0	0	9	2
T32	1	1	0	0	0	4	0	0	0	0	0	6	3
T33	7	0	0	1	0	15	0	0	0	0	1	24	4
T34	1	0	0	0	0	3	0	0	0	0	0	4	3
T35	7	0	0	1	0	11	0	0	0	1	3	23	5
T36	9	0	1	1	0	14	0	0	0	1	1	27	6
T37	5	0	0	1	0	13	0	0	0	0	1	20	4
T38	3	1	0	0	0	28	0	0	0	4	1	37	5
T39	2	1	0	0	0	13	0	0	0	7	2	25	5
T40	0	1	3	0	0	2	0	0	0	4	0	10	4
T41	0	0	0	1	0	0	0	0	0	4	0	5	2
T42	0	0	3	0	0	3	0	0	0	14	1	21	4
T43	0	0	0	5	0	2	0	0	0	0	0	7	2
T44	1	1	4	5	0	0	0	0	0	0	1	12	5
Total	97	72	17	76	1	153	5	1	2	43	41	509	12



The highest species diversity was typically associated with transects located within the afforestation areas that supported natural Closed Canopy Deciduous Woodland habitat islands within the Open Canopy Mixed Woodland habitat (e.g., Transection T36 with 6 of 11 species detected) compared to transects that were located in the Open Canopy Mixed Woodland habitat type.

Based on the species occurrences and direction of tracks recorded on the transects, wildlife movement patterns appeared to be predominantly north-south across the Afforestation Areas (Table 14). Several sets of red fox and coyote tracks going back and forth between the Richard St. Barbe Baker Afforestation Area and the CN Yards Management Area were observed. Tracks were noted crossing the rail tracks and occasionally using the culverts under the tracks. The CN Yards Management Area, located north of the rail tracks, is a distribution point for shipments of harvested cereal grain and several hundred rock pigeons were observed flying over the rail yard during both rounds of the winter track surveys (Appendix Photo H-1 and Appendix Photo H-2). This could be a prey source/foraging area for these canid species. In addition, two scavenged rock dove carcasses were observed on transects in CAA 1 adjacent to the CN rail yards (Appendix Photo H-3 and Appendix Photo H-4), which indicates that predators using the Richard St. Barbe Baker Afforestation Area are likely traveling north into the CN Yards Management Area for foraging opportunities. A north-south travel orientation in and out of the southern borders of both Afforestation Areas was observed.

Based on the winter track survey data, travel direction and movements of wildlife on the transects located within CAA 7 and 8, located on the north and east borders of the George Genereux Urban Regional Park, could not be determined. This was because the wildlife that use these areas appear to be staying within or using the edges for travel, as opposed to moving into and out of this Afforestation Area. Wildlife movement appeared to be concentrated within several of the CAAs as indicated by game trails that appeared to be used repeatedly (e.g., CAA 3, see Figure 11). Ten trails were observed crossing CAA 3, which was the highest number of trails among all CAAs. The highest density of trails in CAA 3 were located at the south end of the swale wetland in SE 22-36-06 W3M, with wildlife travelling in a north-south direction (Appendix Tables H-1 to H-9; Figure 11). This suggests that the swale wetland and adjacent habitat influence wildlife movement and travel direction by concentrating movement to the edges that support suitable vegetative cover (e.g., protective) and not being able to cross through the wetland (i.e., the wetland serves as an impediment to travel). The number of species, travel direction and feature type recorded for each transect within each CAA are provided in Appendix Tables H-2 to H -9.



Table 15. Wildlife travel direction and dominant feature type identified in the Corridor Assessment Areas in the Blairmore Natural Area Screening Study Area.

CAA #	N	E	S	W	N-S	E-W	I	Dominant Travel Direction	SI ¹	TR ¹	F _B ¹	Dominant Feature Type
CAA 1	31	7	28	19	2	0	11	North	67	3	15	Single Tracks
CAA 2	0	2	2	8	0	0	0	West	11	0	1	Single Tracks
CAA 3	14	3	29	3	11	0	2	South	51	10	1	Single Tracks
CAA 4	1	1	1	2	0	1	0	West	5	1	0	Single Tracks
CAA 5	11	1	10	5	3	0	4	North	26	4	4	Single Tracks
CAA 6	5	16	3	6	1	0	4	East	31	1	3	Single Tracks
CAA 7	1	7	11	4	2	1	13	Indeterminant	21	5	13	Single Tracks
CAA 8	0	1		1	0	0	2	Indeterminant	2	0	2	Single Tracks/Feeding/Bedding

1: SI – Single Tracks, TR – Trail, FB-Feeding/Bedding Sign

Based on the results of the RC and winter track surveys, while a variety of wildlife species were documented in the Afforestation Areas, there were no obvious trends or patterns of wildlife movement identified within them. However, wildlife tended to concentrate their movements to the thick understory or areas that had presence of conifer species and the natural closed canopy woodlands. Both the RC data and winter track observations indicate that wildlife activity is higher in areas with lower human/dog presence and activity, such as in the southwest corner of the George Genereux Urban Regional Park.

Wildlife activity within areas of human/dog activity appeared to be higher in the Afforestation Areas that supported a thick understory of short and tall shrubs as opposed to an open understory of forbs and grasses. Similarly, wildlife species diversity was higher in habitat types with more structurally diverse vegetation communities, such as the islands of natural Closed Canopy Deciduous Woodland, Wetland habitat, the presence of conifer trees and thick understory of caragana, compared to the afforested Open Canopy Mixed Woodland habitat with an open understory. For example, the species diversity at RC location BL RC04, which was located in the thick understory in the Open Canopy Mixed Woodland habitat, included 9 of the 13 wildlife species, and a high level of snowshoe hare activity during the winter at Transects T38 and T39 (Figure 11). This suggests an importance for the presence of diverse/adequate cover for the use/travel by wildlife (i.e., security for a travel corridor).

The data collected during the winter track surveys show that wildlife (mainly fox, coyote, and deer) appear to be moving in and out of the Afforestation Areas, with movement predominantly in a north-south direction (e.g., moving north and south to and from the CN Yards Management Area) (Figure 11). However, these movements were mainly single-track observations as opposed to defined trails, indicating limited travel in these areas (i.e., no game trails). Within the Richard St. Barbe Baker Afforestation Areas, a cluster of defined game trails in CAA 3 (including Transects T18-T20) was identified at the south end of the swale wetland in SE-22-36-06 W3M and SW-23-36-06 W3M. These trails were associated with crossing Township Road 362A to and from the Chappell Marsh Conservation Area, indicating that movement appears to be influenced by



the wetland and riparian area (i.e., wildlife appear to be following the margins of the wetland in a north-south direction).

The data suggest that there is little, if any, wildlife movement between the Richard St. Barbe Baker Afforestation Area and the George Genereux Urban Regional Park across, or under Highway No. 7. This is supported by the lack of track observations on Transects T11 and T12 on the west side of the Richard St. Barbe Baker Afforestation Area and Transects T34 and T26 on the east side of George Genereux Urban Regional Park (Figure 11). This suggests that Highway No. 7 is acting as a barrier to wildlife movement in this area, likely influenced by vehicle traffic.

2.3.2.7 Incidental Wildlife Observations

Incidental wildlife observations include sightings made while traversing the Study Area, as well as the bird species detected during the BBS that were not within the actual BBS plot (i.e., >100 m from the observer).

A total of 45 bird species and six mammal species were incidentally observed (Table 16). Two bird species, Common Nighthawk and Horned Grebe (*Podiceps auratus*) are both listed as *Special Concern* by the COSEWIC, and *Threatened* and *Special Concern* under Schedule 1 of SARA, respectively (Government of Canada 2021).

Table 16. Incidental wildlife observations during the 2021 field program in the Blairmore Natural Area Screening Study Area.

Common Name	Scientific Name	Subnational Rank ¹	COSEWIC ²	SARA ³
Birds				
American Crow	<i>Corvus brachyrhynchos</i>	S5B,S4N	-	-
American Goldfinch	<i>Spinus tristis</i>	S5B	-	-
American Kestrel	<i>Falco sparverius</i>	S5B,S1N	-	-
American Robin	<i>Turdus migratorius</i>	S5B,SUN	-	-
Baltimore Oriole	<i>Icterus galbula</i>	S5B	-	-
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	S5B	-	-
Black-billed Magpie	<i>Pica hudsonia</i>	S5	-	-
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	-	-
Brown-headed Cowbird	<i>Molothrus ater</i>	S5B,SUN	-	-
Blue Jay	<i>Cyanocitta cristata</i>	S5	-	-
Bufflehead	<i>Bucephala albeola</i>	S5B	-	-
Blue-winged Teal	<i>Spatula discors</i>	S5B	-	-
Canada Goose	<i>Branta canadensis</i>	S5B	-	-
Canvasback	<i>Aythya valisineria</i>	S5B	-	-
Clay-coloured Sparrow	<i>Spizella pallida</i>	S5B	-	-
Chipping Sparrow	<i>Spizella passerina</i>	S5B	-	-
Common Grackle	<i>Quiscalus quiscula</i>	S5B	-	-
Common Nighthawk	<i>Chordeiles minor</i>	S4B	Special Concern	Threatened
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	-	-



Common Name	Scientific Name	Subnational Rank ¹	COSEWIC ²	SARA ³
Horned Grebe	<i>Podiceps auritus</i>	S5B	Special Concern	Special Concern
Gadwall	<i>Mareca strepera</i>	S5B	-	-
House Finch	<i>Haemorhous mexicanus</i>	S4B	-	-
House Wren	<i>Troglodytes aedon</i>	S5B	-	-
Killdeer	<i>Charadrius vociferus</i>	S5B	-	-
Least Flycatcher	<i>Empidonax minimus</i>	S5B	-	-
Lesser Scaup	<i>Aythya affinis</i>	S5B	-	-
Marbled Godwit	<i>Limosa fedoa</i>	S4B	-	-
Mallard	<i>Anas platyrhynchos</i>	S5B	-	-
Ring-billed Gull	<i>Larus delawarensis</i>	S5B	-	-
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5B,S5N,S5M	-	-
Redhead	<i>Aythya americana</i>	S5B	-	-
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B	-	-
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B,S1N	Not at Risk	-
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B,SUN	-	-
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5B	-	-
Sora	<i>Porzana carolina</i>	S5B	-	-
Song Sparrow	<i>Melospiza melodia</i>	S5B	-	-
Swainson's Thrush	<i>Catharus ustulatus</i>	S5B	-	-
Tree Swallow	<i>Tachycineta bicolor</i>	S5B	-	-
Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	-	-
Western Meadowlark	<i>Sturnella neglecta</i>	S5B	-	-
Willet	<i>Tringa semipalmata</i>	S4B	-	-
Wilson's Snipe	<i>Gallinago delicata</i>	S5B	-	-
Yellow Warbler	<i>Setophaga petechia</i>	S5B	-	-
Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	-	-
Mammals				
Coyote	<i>Canis latrans</i>	S5	-	-
Elk	<i>Cervus elaphus</i>	S4	-	-
Moose	<i>Alces alces</i>	S5	-	-
Mule deer	<i>Odocoileus hemionus</i>	S4	-	-
Red squirrel	<i>Tamiasciurus hudsonicus</i>	S5	-	-
Snowshoe hare	<i>Lepus americanus</i>	S5	-	-
White-tailed deer	<i>Odocoileus virginianus</i>	S4	-	-

1 S1, Critically Imperiled/Extremely Rare, at very high risk of extinction or extirpation due to extreme rarity, very steep declines, high threat level, or other factors; S4 Apparently Secure, uncommon but not rare, some cause for long-term concern due to declines or other factors; S5, Secure/Common, Demonstrable secure under present conditions, widespread and abundant, low threat level; B, for a migratory species, applies to the breeding population in the province; M, for a migratory species, rank applies to the transient (migrant) population; N, for a migratory species, applies to the non-breeding population in the province; U, status is uncertain in Saskatchewan because of limited or conflicting information (unrankable).

2 The Committee on the Status of Endangered Wildlife in Canada.

3 Species at Risk Public Registry (Government of Canada 2021).



2.4 RECOMMENDATIONS

Results from the biophysical desktop review and the field studies indicate that two important natural assets occur within the Study Area that are considered suitable candidate areas for conservation and enhancement:

- The West Swale (Complex 1) and associated wetland complexes Complexes 2- 5); and,
- the Afforestation Areas.

Recommendations for conservation and management were evaluated in consideration of the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a). The following sections outline EDI's recommendations to the City regarding general planning, conservation and enhancement of these areas. Recommendations for the potential heritage sites (based on the forthcoming HRIA) have not been included in this section because planning requirements are discussed in Section 3.2.

2.4.1 GENERAL PLANNING RECOMMENDATIONS

EDI recommends that an integrated and collaborative approach with representatives from various City departments, Meewasin, and other subject matter experts be implemented during subsequent planning and design phases of the Blairmore Sector. Such an approach would allow for input from a variety of discipline and subject matter experts so that design considerations (e.g., greenways, roadways, intersections, infrastructure) can be discussed and vetted from differing or alternative points of view. This approach aligns with several actions found in the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a):

- **Action 1:** Design the Green Network to reflect our collective history, honour cultural diversity, and create a sense of belonging for all
- **Action 2:** Inspire citizen-driven transformation of the Green Network
- **Action 5:** Develop a cooperative governance approach to Green Network provision and management
- **Action 6:** Redefine the partnership with Meewasin to achieve collective goals related to conservation, education, and development in the Green Network
- **Action 11:** Protect, restore, and manage significant natural areas
- **Action 12:** Connect and naturalize the Green Network in built-up areas
- **Action 13:** Improve biodiversity and ecosystem health throughout the Green Network

2.4.2 WEST SWALE AND ASSOCIATED WETLAND COMPLEXES

The West Swale is an important natural asset within the City (City of Saskatoon 2020a) and has been identified as a natural wetland area within the Saskatoon North Partnership for Growth (P4G) Regional Green Network Study Area (P4G 2020). Based on available desktop data, four associated wetland complexes near the West Swale are tentatively selected as wetlands to protect and enhance during the development of the Blairmore Sector. Following the principles of mitigation hierarchy (Arlidge et al. 2018), EDI recommends the following:



- **Conserve** the West Swale (Complex 1) and other important wetland complexes (Complexes 2- 5) by protecting them from development. Implement an appropriate exclusion buffer around the identified wetland complexes to protect ecological function and increase green space and recreational connectivity;
- **Minimize** wetland habitat degradation and loss by minimizing construction of stormwater structures within the West Swale and other wetland complexes. Incorporate appropriate greenways as borders to natural areas, particularly along the margins of the West Swale and associated wetland complexes; and,
- **Replace/Compensate** for any additional wetland areas lost and/or degraded as a result of development activities (e.g., clearing, grading, and infilling).

Results from the biophysical review suggest that wetland complexes 2 – 5 (Figure 6) are most appropriate for associated linear, publicly accessible greenways (i.e., increased protection) for active transportation and recreation, as well as act as connectors between other natural areas assets (e.g., the West Swale, wetland complexes). Updated functional wetland assessments within the Study Area would inform the final selection of wetland complexes appropriate for ecological enhancements. Such conservation targets align with the P4G Green Network Study Area objectives (e.g., protecting the West Swale) (P4G 2020), and several actions in the City’s *Green Infrastructure Strategy* (City of Saskatoon 2020a):

- **Action 4:** Invest in the Green Network within the City of Saskatoon
- **Action 5:** Develop a cooperative governance approach to Green Network provision and management
- **Action 11:** Protect, restore, and manage significant natural areas
- **Action 13:** Improve biodiversity and ecosystem health throughout the Green Network

2.4.3 AFFORESTATION AREAS

The following recommendations for the Afforestation Areas pertain to enhancing recreational opportunities while still conserving and enhancing ecological functions, both of which are key objectives in the City’s *Green Infrastructure Strategy* (City of Saskatoon 2020a). Recommendations are presented, along with opportunities and challenges for each, and lists relevant Green Infrastructure Strategy actions.

2.4.3.1 Ecological Recommendations

EDI recommends that the City conserve two natural assets within the Afforestation Areas:

- the existing forest communities; and,
- the Class 5 (i.e., permanent) wetland within Parcel 1 of the Richard St. Barbe Baker Afforestation Area.

The forest communities that have established (through planting and naturalization over time) in both Afforestation Areas should be maintained and enhanced by controlling the spread of invasive and noxious



vegetation and increasing tree species diversity. It is recommended that recently established (small plants or patches) of common caragana and European buckthorn shrubs be removed by mechanical and/or chemical methods to prevent further establishment and encroachment of these highly invasive species throughout the Afforestation Areas. Similarly, weed infestations, such as along the utility corridors, or in open areas, could be controlled by mechanical and chemical methods. Site-specific plantings of native tree and shrubs within upland and wetland habitats, in consultation with the City and other interested stakeholders, would be expected to increase the vegetation diversity within the Afforestation Areas. Fruit or berry producing native shrub and/or trees (e.g., Saskatoon plants) could be planted in suitable areas to create a food forest for recreational users.

EDI recommends creating an exclusion buffer around the wetland in SE-22-36-06 W3M to limit the potential for further degradation of the riparian area and wetland margins by dogs and recreational users. For example, the City of Edmonton, Alberta, recommends a 30 m exclusion buffer around wetlands within city limits to protect ecological function (City of Edmonton 2006, Solstice 2016). Native riparian shrub and tree planting, and invasive weed control, are other ways the City could improve the overall ecological function of this wetland.

By enhancing plant species diversity (with a focus on native species), limiting access to the permanent wetland in Parcel 1, and reducing invasive and noxious weeds throughout the Afforestation Areas, the quality of available wildlife habitat and the general aesthetics of the Afforestation Area could be expected to improve over time, ultimately increasing the inherent natural value of the Afforestation Areas. However, such improvements are expected to take several years (3 to 5 years) of periodic weed control, planting effort, and monitoring. During that time, recreational access in the Afforestation Areas would likely be limited (i.e., to enhance the potential for success of the efforts), and mechanical and chemical controls may be negatively perceived by the public.

These ecological recommendations align with four actions found in the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a):

- **Action 3:** Increase food production in the Green Network
- **Action 10:** Protect and grow the urban forest
- **Action 11:** Protect, restore, and manage significant natural areas
- **Action 13:** Improve biodiversity and ecosystem health throughout the Green Network

2.4.3.2 Recreational Recommendations

EDI recommends three actions to enhance the ecologically appropriate recreational opportunities within the Afforestation Areas:

- prohibit use of motorized vehicles (including dirt bikes);
- improve park space and infrastructure; and,
- engage and collaborate with stakeholders during future planning.



Prohibition of motorized vehicles

EDI observed dirt bike use at the Cedar Villa BMX Park during the field program. The BMX park that located north of the Cedar Villa Estates, and adjacent to the west side of the permanent wetland in Parcel 1 is likely a source of noise disturbance for wildlife and recreational users in Parcel 1. It is unknown as to the frequency of dirt bike use, and if dirt bike users are accessing trails in other areas of the Afforestation Areas.

Currently, there are minimal or no barriers limiting vehicles beyond access points into the Afforestation Areas, aside from fencing at the Southwest Dog Park entrance, and some concrete blocks at the west access point to Parcel 1. As a result, garbage dumping, and campfires are common on the west access points of the Richard St. Barbe Baker Afforestation Area, and in the south-east and north access points of the George Genereux Urban Regional Park.

EDI recommends the prohibition of motorized dirt bikes in the Afforestation Areas and restricting all motorized vehicle access by placing additional signage and physical barriers at entrance points. These measures would be expected to benefit recreational users and wildlife by reducing noise disturbance; eliminating the potential for pedestrian-motorized vehicle interactions; and improving public safety and well-being. Restricted access would be expected to reduce waste dumping, limit the potential for soil erosion and contamination, minimize the spread of invasive weeds, and lower the potential for wildfire. However, such changes to access could be viewed as a conflict by some current users.

Enhanced recreational and educational opportunities

The Afforestation Areas have the potential for enhanced recreational and educational opportunities. For example, improvement projects such as the development of additional multi-use trails, installation of interpretive signage, expansion of current parking areas, and designated areas for active and passive recreation, would likely create an opportunity for a greater number and broader diversity of users, and increased educational opportunities. Improved trail networks that are appropriately routed and designed may encourage users to stay on trails, thereby reducing disturbance to the afforested areas. However, increased recreation use could lead to conflicts with current user groups and may contribute to increased disturbance to wildlife and/or wildlife habitat (e.g., increased vehicle traffic along adjacent roads, and increased numbers of people and dogs using the Afforestation Areas).

Stakeholder engagement and collaboration

EDI recommends that the City engage with stakeholders during planning and implementation of enhancement activities. A collaborative approach would be expected to promote diversity and inclusion of multi-user groups, and ultimately public approval of recreational and biodiversity enhancement initiatives. Conversely, there is a risk of not achieving consensus on management or enhancement activities due to differing viewpoints among stakeholders.

Overall, EDI's three key recommendations related to recreational activities align with the following Actions from the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a):



- **Action 1:** Design the Green Network to reflect our collective history, honour cultural diversity, and create a sense of belonging for all
- **Action 2:** Inspire citizen-driven transformation of the Green Network
- **Action 5:** Develop a cooperative governance approach to Green Network provision and management
- **Action 9:** Increase walkability and active transportation throughout the Green Network
- **Action 10:** Protect and grow the urban forest
- **Action 13:** Improve biodiversity and ecosystem health throughout the Green Network

2.4.4 GREEN NETWORK CONNECTIVITY POTENTIAL

The City has prioritized green space connectivity within the City limits, and within the P4G planning region (City of Saskatoon 2020a, P4G 2020). Potential for expending such a green network was evaluated based on available desktop information, and data collected during the RC program and winter track surveys. Three locations with potential for enhanced green space connectivity within and adjacent to the Study Area were evaluated based on logistics, cost, and usability (by wildlife and recreational users) (Table 17).

Potential for creating a green space connection between the southern portion of the Study Area to the Richard St. Barbe Baker Afforestation Area by way of a wildlife/pedestrian crossing bridge over Highway No. 7 and the western edge of the CN Yards Management Area is considered to be limited. Although the winter track counts indicate that wildlife in the Richard St. Barbe Baker Afforestation Area are travelling into the CN Yards Management Area, it is not known if wildlife are travelling beyond the rail yard. Moreover, wildlife tracks were not seen crossing the access road under Highway No. 7 between the Afforestation Areas. As major transportation and industrial corridors separate the northern/central portions of the Study Area and the Richard St. Barbe Baker Afforestation Area, construction of an appropriate and functional bridge crossing is expected to be costly and logistically challenging, with a limited probability that wildlife would use such a structure. Additional research and/or field studies would likely be required to evaluate whether wildlife in the Afforestation Areas would use such a wildlife corridor/crossing.

Potential for enhancing the green network connectivity of the swale complex that extends from the permanent wetland in Parcel 1 of the Richard St. Barbe Baker Afforestation Area, through the Chappell Marsh Conservation Area, south to the South Saskatchewan River is considered to be moderate. Township Road 362A separates the Richard St. Barbe Baker Afforestation Area from the Chappell Marsh Conservation Area (managed by Ducks Unlimited Canada). However, the winter track count data indicated that wildlife such as deer, red fox, and coyote are, to a limited extent, crossing Township Road 362A from the permanent wetland in Parcel 1 to the Chappell Marsh Conservation Area. It is not known if wildlife travel south from the Chappell Marsh Conservation Area to the South Saskatchewan River. However, placement of a suitably sized and designed culvert crossing under Township Road 362A, in conjunction with conservation and enhancement of the swale area south of Chappell Marsh could enhance the potential for safe wildlife movement and create increased green space connectivity within the P4G planning region. Although portions of this swale are protected, efforts to conserve the swale south of Chappell Marsh would likely involve consultation and



collaboration with other stakeholders (e.g., the Rural Municipality of Corman Park and private landowners) and may require a financial commitment by the City (e.g., conservation easements purchase/lease land) to conserve the swale.

Finally, there is expected to be a fair potential to link future multi-use trails within the Blairmore Sector to linear parkways in adjacent neighbourhoods such as Hampton Village and Kensington, and to the George Genereux Urban Regional Park because there are no major infrastructure barriers in these areas. Incorporating greenways into the trail design may also create additional habitat corridors for wildlife.

Table 17. Green network connectivity potential within the Blairmore Natural Area Screening Study Area.

Location	Connectivity Potential	Opportunities/Limitations
Connect the northern/central portions of the Study Area with the Richard St. Barbe Baker Afforestation Area	<i>Limited</i>	<ul style="list-style-type: none"> • Presence of major transportation and industrial corridors (i.e., Hwy 7 and the CN Yards Management Area) • Limited potential for wildlife to use a wildlife bridge north of the CN Yards Management Area because • Expected high costs to build required infrastructure to connect areas
Connect the swale complex extending from the Richard St. Barbe Baker Afforestation Area and Chappell Marsh, south to the South Saskatchewan River	<i>Moderate</i>	<ul style="list-style-type: none"> • Chappell Marsh is already an existing conservation area • Require collaboration with Corman Park and private landowners • Roads pose a barrier to non-avian wildlife species • Expected costs: conservation easements and/ or land purchase/ lease to conserve the wetland swale extending south from Chappell Marsh to the South Saskatchewan River
Link multi-use trails within the Blairmore Sector to linear parkways in adjacent neighbourhoods, and to the George Genereux Urban Regional Park	<i>Fair</i>	<ul style="list-style-type: none"> • Multi-use trails are identified in the Blairmore Sector Plan • Greenways have been established in other recent developments; aligns with the <i>Green Infrastructure Strategy</i> (City of Saskatoon 2020a)

These three options are applicable to the following actions found in the City's *Green Infrastructure Strategy* (City of Saskatoon 2020a):

- **Action 9:** Increase walkability and active transportation throughout the Green Network
- **Action 12:** Connect and naturalize the Green Network in built-up areas
- **Action 13:** Improve biodiversity and ecosystem health throughout the Green Network



3 HERITAGE REVIEW

The Heritage Property Act (Part III and IV, s.59, s.63, s.66) outlines the key provisions for protecting heritage resources in Saskatchewan. The legislation states that heritage resources include Precontact Period and Historic Period archaeological sites, built heritage sites and structures of historical and/or architectural interest and palaeontological sites. Heritage Resources are regarded as a public resource; however, all heritage resources (e.g., artifacts) are the property of the Provincial Crown and are protected under *The Heritage Property Act* (s.66). Any person or corporation who contravenes any provision of *The Heritage Property Act* is guilty of an offence and liable on summary conviction of a fine, imprisonment, or both.

The Heritage Conservation Branch (HCB)'s (Government of Saskatchewan – Parks, Culture and Sport) Archaeological Resource Management Section focuses on land and resource development review, Heritage Resource Impact Assessment (HRIA)s, permitting, managing the Saskatchewan Archaeological Site Inventory, and geographic place naming. To streamline the Heritage Resource Review process, the HCB has developed screening criteria for identifying archaeologically sensitive lands in Saskatchewan.

For any proposed land use or development project the HCB relies on two primary factors to determine if the land use or development project will trigger an HRIA as per s.63 of *The Heritage Property Act*:

- the presence of previously recorded archaeological sites; and,
- the heritage resource potential (or sensitivity) of the development area.

Important secondary factors include:

- the nature and extent of previous land disturbance (including cultivation); and,
- the nature and scope of new land alteration.

This information is taken into consideration with additional screening criteria developed specifically for southern Saskatchewan (grasslands, southern parklands).

3.1 HERITAGE REVIEW RESULTS

There are no known archaeological sites in conflict within the Study Area. However, several areas within the Study Area have been identified as having potential to discover archaeological sites. Areas of heritage concern were noted along the Saskatoon Terrace, a river terrace of the South Saskatchewan River. The Study Area also encompasses the east and west sides of the West Swale (SW and SE 4-37-6 W3M; and portions in Sections 33, 34, 22 and 27 in 36-6 W3M), including an area known as Chappell Marsh (SE 22-36-6 W3M). A stabilized sand dune environment is found in the southeast corner of the Study Area, which is associated with the Moose Woods Sand Hills (Dyck 1970; Walker 1983). These two types of terrain are considered heritage sensitive and have high potential to consist of intact archaeological sites. Several known archaeological sites have been recorded in this area. Two notable sites located less than 1 km from the southeast portion of the Study Area and on the Saskatoon Terrace are the Gowen I (FaNq-25) and Gowen II (FaNq-32) archaeological sites



(Walker 1992). These sites are archaeologically significant in their contribution to the chronological history of the middle Precontact Period in Saskatchewan (Walker 1992).

Historical and archival sources reviewed provide little information about the Study Area. However, the 1883 Dominion Land Surveyor's (DLS) Field Book includes a cart trail (name unknown) adjacent to the South Saskatchewan River in SE 13-36-6 W3M (ISC Field Book 2995). This cart trail appears to have been destroyed by cultivation and is not visible using Google Earth imagery (Google Earth Pro 2020).

According to Information Services Corporation's (ISC) Land Grants and a review of the Saskatchewan Homestead Index Database settlers began arriving in this area around 1891 with the Temperance Colonization Society Limited purchasing land along the South Saskatchewan River in advance of forming a Temperance Colony (Delainey et al. 1982). Based on the historical records reviewed, it does not appear that these areas were heavily utilized, if at all, by the Temperance Colony. An influx of settlers took Land Grants in this area in the early 1900s. The Smithville Cemetery, a marked cemetery in LSD 1-33-36-6 W3M along the north side of Highway No. 14, was established in 1901 and is still active in 2021.

Based on the heritage concerns identified, a Heritage Resource Review Referral (HRRR) was submitted to the HCB to determine HRIA requirements as per s. 63 of *The Heritage Property Act*. The HCB subsequently completed a Heritage Resource Review (HRR) for the Project under HCB File No. 21-475.

The HCB's HRR noted that the Study Area has either been disturbed by cultivation and/or development activity (HCB File No. 21-475). Additionally, previous HRIAs have been completed on a number of these quarter-sections (HRIAs completed under Permit No. 83-017; 01-028; 01-053 and/or 09-197). However, the HCB noted three quarter-sections with heritage concerns (Figure 12):

- NE 13-36-6 W3M;
- NW 13-36-6 W3M; and,
- SE 13-36-6 W3M.

The three quarter-sections with heritage concern are defined on Figure 12. Known archaeological sites, including Gowen I (FaNq-25), Gowen II (FaNq-32), Gayle (FaNq-26) and Corey (FaNq-75) are located adjacent to the quarter-sections noted above (HCB File No. 21-475). These sites are archaeologically significant to our current knowledge of Plains archaeology.

3.2 PLANNING REQUIREMENTS

A HRIA is required for the three quarter-sections listed in Section 3.1 (Figure 12), which are considered to have moderate to high potential to discover intact archaeological sites (HCB File No. 21-475). The HRIA consists of conventional pre-impact field program that includes surface and subsurface investigations. Surface activities include a systematic pedestrian survey of the ground for stone features (e.g., tipi rings, cairns, medicine wheels), artifacts, and other material remains. The subsurface exploration typically involves shallow shovel probes/tests along and excavation of deep tests sites (i.e., with a backhoe) to determine the presence of deeply buried archaeological sites within the stabilized sand dune terrain and



South Saskatchewan River terrace (sediment deposition) found within the three quarter-sections with heritage concern, and near known archaeological sites. Results are then compiled in a HRIA report and submitted to the HCB as part of the permit approval process. If additional heritage sites are found, appropriate mitigations will be discussed with the City in advance of further development planning.



4 RECOMMENDED STUDIES

The following biophysical and heritage studies and/or assessments are recommended to inform future plans for the Blairmore Sector (e.g., Concept Plan Natural Area Screening, Wetland Mitigation Plan, and Natural Areas Management Plans):

- groundwater studies to identify areas where traditional residential developments (i.e., homes with basement developments) are not recommended because of high water table or surface water (presence of wetlands);
- updated functional wetland assessments to determine current extent and composition of the vegetation community, invasive plant species, and conservation potential of potentially important natural assets (i.e., West Swale and wetland complexes 2-5);
- additional wildlife surveys focussed on the West Swale and associated wetland complexes to augment/update existing data on wildlife communities found in and near these natural assets;
- an additional wildlife corridor assessment outside of the Afforestation Areas to better understand wildlife movement patterns between the identified natural assets throughout the entire Study Area; and,
- complete further investigation as required for the appropriate level (or phase) of ESA for each APECs for potential soil contamination within the Study Area as listed on Table 2 in Section 2.1.3.2.



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APPENDICES



APPENDIX A WETLAND CLASSIFICATION DEFINITIONS



Low prairie zone (Class 1 - Ephemeral) – Ephemeral ponds occur in small swales and contain species such as Kentucky Blue Grass (*Poa Pratensis*). Surface water is only maintained for a brief period in early spring prior to the bottom ice seal melt.

Wet meadow zone (Class 2 - Temporary) – In freshwater temporary ponds, the central wet meadow zone is the deepest part of the wetland area and is usually dominated by Western Wheatgrass and Foxtail Barley. Class 2 wetlands experience rapid water loss from ground seepage and surface water is maintained only for brief periods after spring snow melt and occasionally after periods of heavy rain.

Shallow marsh zone (Class 3 - Seasonal) – Seasonal ponds are wetlands with a shallow marsh zone dominating the deepest part of the wetland area. These ponds are frequently surrounded by a ring of willows (*Salix* spp.) with a wet centre containing sedges (*Carex* spp.). Surface water in Class 3 wetlands is maintained for extended periods in the spring and summer but typically dry out in late summer to early fall.

Deep marsh zone (Class 4 - Semi permanent) – In semi-permanent ponds and lakes, the deep marsh zone dominates the deepest part of the wetland area. Common Cattail and Bulrushes (*Scirpus* spp.) are typical emergent species. Surface water in Class 4 wetlands is typically maintained throughout the spring and summer and often into the fall and winter periods.

Permanent open water zone (Class 5 - Permanent) – The permanent open water zone dominates the deepest part of the wetland area and is devoid of emergent vegetation. Surface water of Class 5 wetlands is maintained throughout the year with relatively stable water levels.

Intermittent Alkali zone (Class 6) – The intermittent alkali zone dominates the deepest part of the wetland area and is devoid of emergent vegetation. Alkali wetlands are characterized by a pH above 7 and a high concentration of salts. The dominant plants are generally salt tolerant. Surface water of Class 6 wetlands is typically shallow and highly saline that alternates with exposed bare salt flats.

Fen/Alkaline bog (Class 7) – The fen zone dominates the deepest part of the wetland area. Peripheral wet meadow and low prairie zones are often present. Fen ponds often have floating mats of emergent vegetation, including sedges, grasses, and other herbaceous plants. Surface water in this class is usually absent; however, bottom soils are typically saturated by ground water seepage.

These zones are closely related to differences in water permanency influenced by variability of annual climatic conditions and soil permeability; therefore, classification can change overtime (Stewart and Kantrud 1971).



APPENDIX B WETLANDS IDENTIFIED WITHIN THE BLAIRMORE STUDY AREA



Appendix Table B-1. Wetlands identified within the Blairmore Study Area.

2021 Wetland No. (EDI)	Legal Land Description (W3M)	Wetland Class ¹	Golder (2015)		Stantec (2009)	Notes
			Wetland Class	Management Class ²	Wetland Class	
001	NW 13-36-06	3	3	-	N/A	
002	NW 13-36-06	3	3	-	N/A	
003	NW 13-36-06	3	4	-	N/A	
004	NW 13-36-06	3	4	-	N/A	
005	SW 23-36-06	5	5	-	-5	
006	SE 22-36-06	5	5	Preserve	5	
007	SE 22-36-06	4	5	-	5	Associated with the West Swale
008	NE 22-36-06	5	5	Preserve	5	Associated with the West Swale
009	NW 22-36-06	5	5	Preserve	5	Associated with the West Swale
010	SW 26-36-06	5	5	Preserve	5	Associated with the West Swale
011	SE 27-36-06	Dugout	N/A	-	N/A	
012	NW 26-36-06	5	5	-	5	
013	SE 33-36-06	4	4	Preserve	N/A	Associated with the West Swale
014	SW 27-36-06	4	5	Preserve	5	Associated with the West Swale
015	SW 03-37-06	4	5	-	5	
016	SE 04-37-06	4	5	Preserve	5	Associated with the West Swale
017	SE 26-36-06	4	4	-	N/A	
018	SE 26-36-06	4	N/A	-	N/A	
019	SE 26-36-06	3	N/A	-	N/A	
020	SE 26-36-06	3	3	-	N/A	
021	SE 26-36-06	3	N/A	-	N/A	
022	NW 23-66-06	3	4	-	1	
023	NW 23-66-06	3	4	-	4	
024	NW 23-66-06	4	4	-	4	
025	NW 23-66-06	4	N/A	-	N/A	
026	SW 26-36-06	4	3	-	N/A	
027	SW 26-36-06	Dugout	3	-	3	
027	SW 26-36-06	4	3	-	3	
028	SE 04-37-06	4	N/A	-	0	
029	SE 05-37-06	5	3	-	3	
030	SE 05-37-06	3	3	-	3	
031	SE 32-36-06	3	5	-	0	



2021 Wetland No. (EDI)	Legal Land Description (W3M)	Wetland Class ¹	Golder (2015)		Stantec (2009)	Notes
			Wetland Class	Management Class ²	Wetland Class	
032	SW 33-36-06	4	3	-	3	
033	SE 03-37-06	Storm Water Pond	N/A	-	2	
034	SE 03-37-06	3	N/A	-	N/A	
035	SE 05-37-06	3	N/A	-	2	
036	SE 32-36-06	2	N/A	-	N/A	
037	SW 33-36-06	3	3	-	N/A	
038	NE 29-36-06	2	3	-	N/A	
039	NE 29-36-06	3	N/A	-	N/A	
040	SE 27-36-06	3	N/A	-	N/A	
042	NW 27-36-06	2	3	-	3	
043	SE 02-37-06	2	3	-	N/A	
044	NW 02-37-06	3	N/A	-	N/A	
045	NW 02-37-06	3	3	-	2	
046	NW 02-37-06	2	3	-	3	
047	NW 02-37-06	3	4	-	4	
048	NW 02-37-06	3	4	Manage 1	2	
049	NE 34-36-06	4	3	Manage 1	N/A	
050	NW 02-37-06	2	4	Manage 1	4	
051	NE 34-36-06	2	N/A	-	N/A	
052	NE 34-36-06	4	N/A	Manage 1	N/A	
053	SW 25-36-06	2	3	-	3	
054	NW 23-26-06	2	3	-	N/A	
056	SE 24-36-06	3	3	-	1	
057	SE 26-36-06	3	N/A	Manage 1	N/A	
058	SW 03-37-06	3	N/A	Manage 1	N/A	
059	SE 34-36-06	Storm Water Pond	4	-	N/A	
060	SE 34-36-06	Storm Water Pond	4	-	N/A	
061	SE 34-36-06	4	N/A	-	N/A	
063	SW 34-36-06	4	3	-	1	
064	SE 34-36-06	2	3	-	3	
065	NE 29-36-06	2	3	Manage 1	N/A	
066	SE 21-36-06	3	4	-	N/A	
067	SE 27-36-06	3	4	Preserve	5	
068	NW 27-36-06	4	3	Preserve	2	



2021 Wetland No. (EDI)	Legal Land Description (W3M)	Wetland Class ¹	Golder (2015)		Stantec (2009)	Notes
			Wetland Class	Management Class ²	Wetland Class	
069	SW 03-37-06	4	3	Preserve	1	
070	SW 04-37-06	3	3	-	2	
071	SW 04-37-06	3	N/A	-	N/A	
072	SW 03-37-06	3	N/A	Manage 1	1	
073	SW 03-37-06	2	3	-	N/A	
074	SW 03-37-06	2	N/A	-	N/A	
075	SW 03-37-06	2	4	Manage 1	4	
076	SE 03-37-06	2	N/A	-	N/A	
077	SW 03-37-06	4	N/A	Manage 1	N/A	
078	SW 34-36-06	2	N/A	-	N/A	
079	SW 03-37-06	2	N/A	-	N/A	
080	SE 03-37-06	2	N/A	-	N/A	
081	NW 13-36-06	2	4	-	4	
082	NW 13-36-06	2	4	-	4	
083	NW 13-36-06	3	N/A	-	0	
084	NW 13-36-06	4	N/A	Preserve	4	Wetland complex connected to the West Swale
086	SE 03-37-06	Storm Water Pond	N/A	-	N/A	
087	NW 27-36-06	4	N/A	-	N/A	
088	NE 27-36-06	3	N/A	-	N/A	
089	NW 29-36-06	2	N/A	-	N/A	
090	SW 23-26-06	2	N/A	-	N/A	
091	NW 23-26-06	4	N/A	-	N/A	
092	NW 23-26-06	3	N/A	-	N/A	
093	SE 26-36-06	3	N/A	-	N/A	
094	SE 26-36-06	4	N/A	-	N/A	
095	SE 26-36-06	3	3	-	N/A	
096	SW 26-36-06	Storm Water Pond	3	-	N/A	
097	SW 26-36-06	3	3	-	N/A	
098	SE 27-36-06	3	N/A	-	N/A	
099	NW 26-36-06	3	N/A	-	N/A	
100	NE 26-36-06	3	3	-	3	
101	NE 28-36-06	Dugout	3	-	1	
102	NE 28-36-06	3	4	-	1	
103	NE 28-36-06	3	3	-	4	



2021 Wetland No. (EDI)	Legal Land Description (W3M)	Wetland Class ¹	Golder (2015)		Stantec (2009)	Notes
			Wetland Class	Management Class ²	Wetland Class	
104	NE 28-36-06	3	5	-	5	
105	SE 32-36-06	3	3	-	2	
106	SE 32-36-06	4	4	-	1	
107	SE 32-36-06	3	3	Manage 1	-	
108	SE 32-36-06	4	N/A	-	N/A	
109	SE 32-36-06	3	N/A	-	N/A	
110	SW 33-36-06	2	5	-	2	
111	SW 33-36-06	2	3	-	1	
112	SW 33-36-06	4	3	-	3	
113	SW 34-36-06	3	4	-	1	
114	SW 34-36-06	3	3	-	N/A	
115	SW 34-36-06	3	N/A	-	N/A	
116	SE 34-36-06	4	N/A	-	N/A	
117	NE 34-36-06	3	3	-	N/A	
118	NE 34-36-06	2	3	-	N/A	
119	NE 34-36-06	2	N/A	-	N/A	
120	NE 34-36-06	3	3	-	N/A	
121	NW 34-36-06	3	N/A	-	N/A	
122	NE 32-36-06	3	N/A	-	N/A	
123	NE 32-36-06	3	N/A	-	N/A	
124	NW 33-36-06	3	4	-	N/A	
125	NE 32-36-06	2	3	-	3	
126	SE 05-37-06	3	3	-	0	
127	SE 05-37-06	3	3	-	3	
128	SE 05-37-06	3	N/A	-	N/A	
129	SE 05-37-06	3	N/A	-	N/A	
130	SE 05-37-06	4	N/A	Manage 1	N/A	
132	SW 04-37-06	3	3	-	N/A	
133	SE 03-37-06	3	N/A	-	N/A	
134	SE 03-37-06	3	N/A	-	N/A	
135	SE 05-37-06	3	N/A	-	N/A	
136	NW 02-37-06	2	N/A	-	N/A	
137	NW 02-37-06	4	N/A	Manage 1	N/A	
138	SE 34-36-06	3	3	-	N/A	
139	SW 35-36-06	4	4	-	N/A	
140	NW 02-37-06	4	3	-	N/A	



APPENDIX C HISTORICAL PLANT OBSERVATIONS



Appendix Table C-1. Historical observations of fauna within the Study Area.

Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Mammals					
Coyote	<i>Canis latrans</i>	S5	-	-	iNaturalist
Deer mouse	<i>Peromyscus maniculatus</i>	S5	-	-	iNaturalist
Mule deer	<i>Odocoileus hemionus</i>	S4	-	-	iNaturalist
North American porcupine	<i>Erethizon dorsatum</i>	S4	-	-	iNaturalist
Northern short-tailed shrew	<i>Blarina brevicauda</i>	S4	-	-	iNaturalist
Red fox	<i>Vulpes vulpes</i>	S5	-	-	iNaturalist
Red squirrel	<i>Tamiasciurus hudsonicus</i>	S5	-	-	iNaturalist
White-tailed deer	<i>Odocoileus virginianus</i>	S4	-	-	iNaturalist
Amphibians and Reptiles					
Northern leopard frog	<i>Lithobates pipiens</i>	S3	Special Concern	Special Concern	iNaturalist
Western plains gartersnake	<i>Thamnophis radix haydenii</i>	S5	-	-	iNaturalist
Western tiger salamander	<i>Ambystoma mavortium</i>	S4	Special Concern	Special Concern	iNaturalist
Birds					
American Avocet	<i>Recurvirostra americana</i>	S4B,S4M	-	-	eBird
American Coot	<i>Fulica americana</i>	S5B,S5M	Not at Risk	-	eBird
American Crow	<i>Corvus brachyrhynchos</i>	S5B,S4N,S5M	-	-	eBird, iNaturalist

¹ For some species of invertebrates, common names have not been agreed upon or assigned by the scientific community. Common names used in the SKCDC tracking lists are used in this table.

² S1, Critically Imperiled/Extremely rare, at very high risk of extinction or extirpation due to extreme rarity, very steep declines, high threat level, or other factors; S2, Imperiled/Very rare, at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors; S3 Vulnerable/Rare to uncommon, at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors; S4 Apparently Secure, uncommon but not rare, some cause for long-term concern due to declines or other factors; S5, Secure/Common, Demonstrable secure under present conditions, widespread and abundant, low threat level; B, for a migratory species, applies to the breeding population in the province; M, for a migratory species, rank applies to the transient (migrant) population; N, for a migratory species, applies to the non-breeding population in the province; NR, rank is not yet assigned or species has not yet been assessed (not ranked); U, status is uncertain in Saskatchewan because of limited or conflicting information (unrankable); X, believed to be extinct or extirpated from the province.

³ The Committee on the Status of Endangered Wildlife in Canada

⁴ Schedule 1 of the *Species at Risk Act*



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
American Goldfinch	<i>Spinus tristis</i>	S5B,S5M	-	-	eBird, iNaturalist
American Kestrel	<i>Falco sparverius</i>	S5B,S1N,S5M	-	-	eBird
American Redstart	<i>Setophaga ruticilla</i>	S5B,S5M	-	-	iNaturalist
American Robin	<i>Turdus migratorius</i>	S5B,SUN,S5M	-	-	iNaturalist
American Wigeon	<i>Mareca americana</i>	S5B,S5M	-	-	eBird
Baird's Sandpiper	<i>Calidris bairdii</i>	SUM	-	-	eBird
Black Tern	<i>Chlidonias niger</i>	S5B,S5M	Not at Risk	-	eBird
Black-bellied Plover	<i>Pluvialis squatarola</i>	S4M	-	-	eBird
Black-billed Magpie	<i>Pica hudsonia</i>	S5	-	-	eBird, iNaturalist
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	-	-	eBird, iNaturalist
Blue Jay	<i>Cyanocitta cristata</i>	S5	-	-	eBird
Blue-winged Teal	<i>Spatula discors</i>	S5B,S5M	-	-	eBird
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	S4B,S4M	-	-	eBird
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	S4B,SUN,S4M	-	-	iNaturalist
Brown-headed Cowbird	<i>Molothrus ater</i>	S5B,SUN,S5M	-	-	eBird
Bufflehead	<i>Bucephala albeola</i>	S5B,S5M	-	-	iNaturalist
Cackling Goose	<i>Branta hutchinsii</i>	S5M	-	-	eBird
California Gull	<i>Larus californicus</i>	S4B,S4M	-	-	eBird
Canada Goose	<i>Branta canadensis</i>	S5B,S5M	-	-	eBird, iNaturalist
Canvasback	<i>Aythya valisineria</i>	S5B,S5M	-	-	eBird
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B,S5M	-	-	eBird, iNaturalist
Clay-coloured Sparrow	<i>Spizella pallida</i>	S5B,S5M	-	-	iNaturalist
Common Raven	<i>Corvus corax</i>	S5	-	-	eBird
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	S5B,S5M	Not at Risk	-	eBird
Eared Grebe	<i>Podiceps nigricollis</i>	S5B,S5M	-	-	eBird
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B,S5M	-	-	iNaturalist
Franklin's Gull	<i>Leucophaeus pipixcan</i>	S4B,S4M	-	-	eBird
Gadwall	<i>Mareca strepera</i>	S5B,S5M	-	-	eBird
Great Blue Heron	<i>Ardea herodias</i>	S5B,S5M	-	-	eBird



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Great Horned Owl	<i>Bubo virginianus</i>	S4	-	-	iNaturalist
Greater Yellowlegs	<i>Tringa melanoleuca</i>	S5B,S5M	-	-	eBird
Green-winged Teal	<i>Anas crecca</i>	S5B,S5M	-	-	eBird
Hairy Woodpecker	<i>Dryobates villosus</i>	S5	-	-	eBird
Horned Grebe	<i>Podiceps auritus</i>	S5B,S5M	Special Concern	Special Concern	eBird, HABISask
House Finch	<i>Haemorhous mexicanus</i>	S5N	-	-	eBird
House Wren	<i>Troglodytes aedon</i>	S5B,S5M	-	-	iNaturalist
Killdeer	<i>Charadrius vociferus</i>	S5B,S5M	-	-	eBird
Lapland Longspur	<i>Calcarius lapponicus</i>	S4N,S4M	-	-	eBird
Least Sandpiper	<i>Calidris minutilla</i>	SUB,SUM	-	-	eBird
Lesser Yellowlegs	<i>Tringa flavipes</i>	S4B,S4M	Threatened	-	eBird
Mallard	<i>Anas platyrhynchos</i>	S5B,S5M	-	-	eBird, iNaturalist
Mourning Dove	<i>Zenaida macroura</i>	S5B,S5M	-	-	eBird
Northern Flicker	<i>Colaptes auratus</i>	S5B,SUN,S5M	-	-	eBird, iNaturalist
Northern Harrier	<i>Circus hudsonius</i>	S4B,S4M	Not at Risk	-	eBird, iNaturalist
Northern Pintail	<i>Anas acuta</i>	S5B,S5M	-	-	eBird
Northern Shoveler	<i>Spatula clypeata</i>	S5B,S5M	-	-	eBird, iNaturalist
Pectoral Sandpiper	<i>Calidris melanotos</i>	SUM	-	-	eBird
Peregrine Falcon	<i>Falco peregrinus anatum</i>	S1B,SNRM	Not at Risk	Special Concern	eBird
Pine Grosbeak	<i>Pinicola enucleator</i>	S2B,S4N	-	-	eBird
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5B,S5N,S5M	-	-	eBird
Redhead	<i>Aythya americana</i>	S5B,S5M	-	-	eBird
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B,S1N,S5M	Not at Risk	-	eBird, iNaturalist
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B,SUN,S5M	-	-	eBird
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S5M	-	-	eBird
Rock Pigeon	<i>Columba livia</i>	SNA	-	-	iNaturalist
Rock Pigeon	<i>Columba livia</i>	SNA	-	-	eBird
Ross's Goose	<i>Anser rossii</i>	S5M	-	-	eBird
Ruddy Duck	<i>Oxyura jamaicensis</i>	S5B,S5M	-	-	eBird



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Sandhill Crane	<i>Antigone canadensis</i>	S5B,S5M	-	-	eBird
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5B,S5M	-	-	eBird
Semipalmated Plover	<i>Charadrius semipalmatus</i>	SUB,S5M	-	-	eBird
Semipalmated Sandpiper	<i>Calidris pusilla</i>	SUM	-	-	eBird
Short-billed Dowitcher	<i>Limnodromus griseus</i>	SUB,S4M	-	-	eBird
Snow Bunting	<i>Plectrophenax nivalis</i>	S5N,S5M	-	-	iNaturalist
Snow Goose	<i>Anser caerulescens</i>	S5M	-	-	eBird
Snowy Owl	<i>Bubo scandiacus</i>	S5N,S5M	Not at Risk	-	eBird
Song Sparrow	<i>Melospiza melodia</i>	S5B,S5M	-	-	iNaturalist
Song Sparrow	<i>Melospiza melodia</i>	S5B,S5M	-	-	iNaturalist
Spotted Sandpiper	<i>Actitis macularius</i>	S5B,S5M	-	-	eBird
Stilt Sandpiper	<i>Calidris himantopus</i>	S5M	-	-	eBird
Swainson's Hawk	<i>Buteo swainsoni</i>	S4B,S4M	-	-	eBird
Swainson's Thrush	<i>Catharus ustulatus</i>	S5B,S5M	-	-	iNaturalist
Townsend's Solitaire	<i>Myadestes townsendi</i>	S3N,S3M	-	-	eBird, HABISask
Turkey Vulture	<i>Cathartes aura</i>	S3B,S3M	-	-	eBird
Western Meadowlark	<i>Sturnella neglecta</i>	S4B,S4M	-	-	eBird, iNaturalist
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	SUM	-	-	eBird
White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5B,S5M	-	-	iNaturalist
Whooping Crane	<i>Grus americana</i>	SXB,S1M	Endangered	Endangered	HABISask
Willet	<i>Tringa semipalmata</i>	S4B,S4M	-	-	eBird
Wilson's Phalarope	<i>Phalaropus tricolor</i>	S5B,S5M	-	-	eBird
Wilson's Snipe	<i>Gallinago delicata</i>	S5B,S5M	-	-	eBird
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	S5B,S5M	-	-	iNaturalist
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	S5B,S5M	-	-	iNaturalist
Invertebrates					
A darkling beetle	<i>Eleodes tricostata</i>	S4	-	-	iNaturalist
A dart moth	<i>Euxoa laetificans</i>	SU	-	-	iNaturalist
A flower fly	<i>Eupeodes americanus</i>	S4	-	-	iNaturalist



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
A jumping plant lice	<i>Cacopsylla magnicauda</i>	SU	-	-	iNaturalist
Audubon's tiger beetle	<i>Cicindela purpurea audubonii</i>	SNR	-	-	iNaturalist
Boreal cobweb weaver	<i>Steatoda borealis</i>	S4	-	-	iNaturalist
Cabbage white	<i>Pieris rapae rapae</i>	SNA	-	-	iNaturalist
Celery looper moth	<i>Anagrapha falcifera</i>	SU	-	-	iNaturalist
Civil rustic moth	<i>Caradrina montana</i>	S3	-	-	iNaturalist
Clear-winged grasshopper	<i>Camnula pellucida</i>	S5	-	-	iNaturalist
Common wood-nymph	<i>Ceryonis pegala ino</i>	SNR	-	-	iNaturalist
Convergent lady beetle	<i>Hippodamia convergens</i>	S4	-	-	iNaturalist
Cow path tiger beetle	<i>Cicindela purpurea</i>	SU	-	-	iNaturalist
Eastern rose curculio	<i>Merhynchites bicolor</i>	S4	-	-	iNaturalist
Field cricket	<i>Gryllus pennsylvanicus</i>	S4	-	-	iNaturalist
Four-spotted ghost moth	<i>Sthenopis purpurascens</i>	SU	-	-	iNaturalist
Hieroglyphic lady beetle	<i>Coccinella hieroglyphica</i>	S4	-	-	iNaturalist
Honey bee	<i>Apis mellifera</i>	SNA	-	-	iNaturalist
Hunt's bumble bee	<i>Bombus huntii</i>	S5	-	-	iNaturalist
Lady beetle	<i>Hippodamia parenthesis</i>	S4	-	-	iNaturalist
Nevada bumble bee	<i>Bombus nevadensis</i>	S5	-	-	iNaturalist
New York carpenter ant	<i>Camponotus novaeboracensis</i>	S5	-	-	iNaturalist
Northern amber bumble bee	<i>Bombus borealis</i>	S5	-	-	iNaturalist
Northern spur-throat grasshopper	<i>Melanoplus borealis</i>	S5	-	-	iNaturalist
Painted lady	<i>Vanessa cardui</i>	S5B,SNRM	-	-	iNaturalist
Pale snaketail	<i>Ophiogomphus severus</i>	S4	-	-	iNaturalist
Prairie long-lipped tiger beetle	<i>Cicindela nebraskana</i>	S3	-	-	iNaturalist
Prairie ornamented jumping spider	<i>Habronattus cuspidatus</i>	S4	-	-	iNaturalist
Purple miner bee	<i>Andrena prunorum</i>	S5	-	-	iNaturalist
Ted-blue checkered beetle	<i>Trichodes nutalli</i>	SNR	-	-	iNaturalist
Tidged bark longhorn beetle	<i>Arhopalus asperatus</i>	SU	-	-	iNaturalist
Seven spotted lady beetle	<i>Coccinella septempunctata</i>	SNA	-	-	iNaturalist



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Shortgrass split wolf spider	<i>Schizocosa cespitum</i>	S5	-	-	iNaturalist
Silver-spotted skipper	<i>Epargyreus clarus clarus</i>	S4	-	-	iNaturalist
Silvery blue	<i>Glaucopsyche lygdamus couperi</i>	S5	-	-	iNaturalist
Six-spotted orb weaver	<i>Araniella displicata</i>	S5	-	-	iNaturalist
Snowberry clearwing	<i>Hemaris diffinis</i>	SU	-	-	iNaturalist
Spotted tussock moth	<i>Lophocampa maculata</i>	S4	-	-	iNaturalist
Thick-spined jumping spider	<i>Tutelina similis</i>	S4	-	-	iNaturalist
Thirteen-spotted lady beetle	<i>Hippodamia tredecimpunctata</i>	S4	-	-	iNaturalist
Thistle tortoise beetle	<i>Cassida rubiginosa</i>	SNA	-	-	iNaturalist
Tri-coloured bumble bee	<i>Bombus ternarius</i>	S5	-	-	iNaturalist
Twelve-spotted skimmer	<i>Libellula pulchella</i>	S4	-	-	iNaturalist
Two-spotted lady beetle	<i>Adalia bipunctata</i>	S4	-	-	iNaturalist
Two-striped grasshopper	<i>Melanoplus bivittatus</i>	S5	-	-	iNaturalist
Virginia ctenucha moth	<i>Ctenucha virginica</i>	S4	-	-	iNaturalist
Western yellowjacket	<i>Vespula pensylvanica</i>	S2	-	-	iNaturalist
White spring moth	<i>Lomographa vestaliata</i>	S4	-	-	iNaturalist
Woodland skipper	<i>Ochlodes sylvanoides napa</i>	S2	-	-	iNaturalist
Yellow-banded bumble bee	<i>Bombus terricola</i>	S4	Special Concern	Special Concern	iNaturalist
Yellow-shouldered drone fly	<i>Eristalis stipator</i>	S4	-	-	iNaturalist
Zebra jumper	<i>Saliciscus scenicus</i>	SNA	-	-	iNaturalist



APPENDIX D HISTORICAL WILDLIFE OBSERVATIONS



Appendix Table D-1. Historical observations of fauna within the Study Area.

Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Mammals					
Coyote	<i>Canis latrans</i>	S5	-	-	iNaturalist
Deer mouse	<i>Peromyscus maniculatus</i>	S5	-	-	iNaturalist
Mule deer	<i>Odocoileus hemionus</i>	S4	-	-	iNaturalist
North American porcupine	<i>Erethizon dorsatum</i>	S4	-	-	iNaturalist
Northern short-tailed shrew	<i>Blarina brevicauda</i>	S4	-	-	iNaturalist
Red fox	<i>Vulpes vulpes</i>	S5	-	-	iNaturalist
Red squirrel	<i>Tamiasciurus hudsonicus</i>	S5	-	-	iNaturalist
White-tailed deer	<i>Odocoileus virginianus</i>	S4	-	-	iNaturalist
Amphibians and Reptiles					
Northern leopard frog	<i>Lithobates pipiens</i>	S3	Special Concern	Special Concern	iNaturalist
Western plains gartersnake	<i>Thamnophis radix haydenii</i>	S5	-	-	iNaturalist
Western tiger salamander	<i>Ambystoma mavortium</i>	S4	Special Concern	Special Concern	iNaturalist
Birds					
American Avocet	<i>Recurvirostra americana</i>	S4B,S4M	-	-	eBird
American Coot	<i>Fulica americana</i>	S5B,S5M	Not at Risk	-	eBird
American Crow	<i>Corvus brachyrhynchos</i>	S5B,S4N,S5M	-	-	eBird, iNaturalist

¹ For some species of invertebrates, common names have not been agreed upon or assigned by the scientific community. Common names used in the SKCDC tracking lists are used in this table.

² S1, Critically Imperiled/Extremely rare, at very high risk of extinction or extirpation due to extreme rarity, very steep declines, high threat level, or other factors; S2, Imperiled/Very rare, at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors; S3 Vulnerable/Rare to uncommon, at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors; S4 Apparently Secure, uncommon but not rare, some cause for long-term concern due to declines or other factors; S5, Secure/Common, Demonstrable secure under present conditions, widespread and abundant, low threat level; B, for a migratory species, applies to the breeding population in the province; M, for a migratory species, rank applies to the transient (migrant) population; N, for a migratory species, applies to the non-breeding population in the province; NR, rank is not yet assigned or species has not yet been assessed (not ranked); U, status is uncertain in Saskatchewan because of limited or conflicting information (unrankable); X, believed to be extinct or extirpated from the province.

³ The Committee on the Status of Endangered Wildlife in Canada

⁴ Schedule 1 of the *Species at Risk Act*



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
American Goldfinch	<i>Spinus tristis</i>	S5B,S5M	-	-	eBird, iNaturalist
American Kestrel	<i>Falco sparverius</i>	S5B,S1N,S5M	-	-	eBird
American Redstart	<i>Setophaga ruticilla</i>	S5B,S5M	-	-	iNaturalist
American Robin	<i>Turdus migratorius</i>	S5B,SUN,S5M	-	-	iNaturalist
American Wigeon	<i>Mareca americana</i>	S5B,S5M	-	-	eBird
Baird's Sandpiper	<i>Calidris bairdii</i>	SUM	-	-	eBird
Black Tern	<i>Chlidonias niger</i>	S5B,S5M	Not at Risk	-	eBird
Black-bellied Plover	<i>Pluvialis squatarola</i>	S4M	-	-	eBird
Black-billed Magpie	<i>Pica hudsonia</i>	S5	-	-	eBird, iNaturalist
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	-	-	eBird, iNaturalist
Blue Jay	<i>Cyanocitta cristata</i>	S5	-	-	eBird
Blue-winged Teal	<i>Spatula discors</i>	S5B,S5M	-	-	eBird
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	S4B,S4M	-	-	eBird
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	S4B,SUN,S4M	-	-	iNaturalist
Brown-headed Cowbird	<i>Molothrus ater</i>	S5B,SUN,S5M	-	-	eBird
Bufflehead	<i>Bucephala albeola</i>	S5B,S5M	-	-	iNaturalist
Cackling Goose	<i>Branta hutchinsii</i>	S5M	-	-	eBird
California Gull	<i>Larus californicus</i>	S4B,S4M	-	-	eBird
Canada Goose	<i>Branta canadensis</i>	S5B,S5M	-	-	eBird, iNaturalist
Canvasback	<i>Aythya valisineria</i>	S5B,S5M	-	-	eBird
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B,S5M	-	-	eBird, iNaturalist
Clay-coloured Sparrow	<i>Spizella pallida</i>	S5B,S5M	-	-	iNaturalist
Common Raven	<i>Corvus corax</i>	S5	-	-	eBird
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	S5B,S5M	Not at Risk	-	eBird
Eared Grebe	<i>Podiceps nigricollis</i>	S5B,S5M	-	-	eBird
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B,S5M	-	-	iNaturalist
Franklin's Gull	<i>Leucophaeus pipixcan</i>	S4B,S4M	-	-	eBird
Gadwall	<i>Mareca strepera</i>	S5B,S5M	-	-	eBird
Great Blue Heron	<i>Ardea herodias</i>	S5B,S5M	-	-	eBird



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Great Horned Owl	<i>Bubo virginianus</i>	S4	-	-	iNaturalist
Greater Yellowlegs	<i>Tringa melanoleuca</i>	S5B,S5M	-	-	eBird
Green-winged Teal	<i>Anas crecca</i>	S5B,S5M	-	-	eBird
Hairy Woodpecker	<i>Dryobates villosus</i>	S5	-	-	eBird
Horned Grebe	<i>Podiceps auritus</i>	S5B,S5M	Special Concern	Special Concern	eBird, HABISask
House Finch	<i>Haemorhous mexicanus</i>	S5N	-	-	eBird
House Wren	<i>Troglodytes aedon</i>	S5B,S5M	-	-	iNaturalist
Killdeer	<i>Charadrius vociferus</i>	S5B,S5M	-	-	eBird
Lapland Longspur	<i>Calcarius lapponicus</i>	S4N,S4M	-	-	eBird
Least Sandpiper	<i>Calidris minutilla</i>	SUB,SUM	-	-	eBird
Lesser Yellowlegs	<i>Tringa flavipes</i>	S4B,S4M	Threatened	-	eBird
Mallard	<i>Anas platyrhynchos</i>	S5B,S5M	-	-	eBird, iNaturalist
Mourning Dove	<i>Zenaida macroura</i>	S5B,S5M	-	-	eBird
Northern Flicker	<i>Colaptes auratus</i>	S5B,SUN,S5M	-	-	eBird, iNaturalist
Northern Harrier	<i>Circus hudsonius</i>	S4B,S4M	Not at Risk	-	eBird, iNaturalist
Northern Pintail	<i>Anas acuta</i>	S5B,S5M	-	-	eBird
Northern Shoveler	<i>Spatula clypeata</i>	S5B,S5M	-	-	eBird, iNaturalist
Pectoral Sandpiper	<i>Calidris melanotos</i>	SUM	-	-	eBird
Peregrine Falcon	<i>Falco peregrinus anatum</i>	S1B,SNRM	Not at Risk	Special Concern	eBird
Pine Grosbeak	<i>Pinicola enucleator</i>	S2B,S4N	-	-	eBird
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5B,S5N,S5M	-	-	eBird
Redhead	<i>Aythya americana</i>	S5B,S5M	-	-	eBird
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B,S1N,S5M	Not at Risk	-	eBird, iNaturalist
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B,SUN,S5M	-	-	eBird
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S5M	-	-	eBird
Rock Pigeon	<i>Columba livia</i>	SNA	-	-	iNaturalist
Rock Pigeon	<i>Columba livia</i>	SNA	-	-	eBird
Ross's Goose	<i>Anser rossii</i>	S5M	-	-	eBird
Ruddy Duck	<i>Oxyura jamaicensis</i>	S5B,S5M	-	-	eBird



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Sandhill Crane	<i>Antigone canadensis</i>	S5B,S5M	-	-	eBird
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5B,S5M	-	-	eBird
Semipalmated Plover	<i>Charadrius semipalmatus</i>	SUB,S5M	-	-	eBird
Semipalmated Sandpiper	<i>Calidris pusilla</i>	SUM	-	-	eBird
Short-billed Dowitcher	<i>Limnodromus griseus</i>	SUB,S4M	-	-	eBird
Snow Bunting	<i>Plectrophenax nivalis</i>	S5N,S5M	-	-	iNaturalist
Snow Goose	<i>Anser caerulescens</i>	S5M	-	-	eBird
Snowy Owl	<i>Bubo scandiacus</i>	S5N,S5M	Not at Risk	-	eBird
Song Sparrow	<i>Melospiza melodia</i>	S5B,S5M	-	-	iNaturalist
Song Sparrow	<i>Melospiza melodia</i>	S5B,S5M	-	-	iNaturalist
Spotted Sandpiper	<i>Actitis macularius</i>	S5B,S5M	-	-	eBird
Stilt Sandpiper	<i>Calidris himantopus</i>	S5M	-	-	eBird
Swainson's Hawk	<i>Buteo swainsoni</i>	S4B,S4M	-	-	eBird
Swainson's Thrush	<i>Catharus ustulatus</i>	S5B,S5M	-	-	iNaturalist
Townsend's Solitaire	<i>Myadestes townsendi</i>	S3N,S3M	-	-	eBird, HABISask
Turkey Vulture	<i>Cathartes aura</i>	S3B,S3M	-	-	eBird
Western Meadowlark	<i>Sturnella neglecta</i>	S4B,S4M	-	-	eBird, iNaturalist
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	SUM	-	-	eBird
White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5B,S5M	-	-	iNaturalist
Whooping Crane	<i>Grus americana</i>	SXB,S1M	Endangered	Endangered	HABISask
Willet	<i>Tringa semipalmata</i>	S4B,S4M	-	-	eBird
Wilson's Phalarope	<i>Phalaropus tricolor</i>	S5B,S5M	-	-	eBird
Wilson's Snipe	<i>Gallinago delicata</i>	S5B,S5M	-	-	eBird
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	S5B,S5M	-	-	iNaturalist
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	S5B,S5M	-	-	iNaturalist
Invertebrates					
A darkling beetle	<i>Eleodes tricostata</i>	S4	-	-	iNaturalist
A dart moth	<i>Euxoa laetificans</i>	SU	-	-	iNaturalist
A flower fly	<i>Eupeodes americanus</i>	S4	-	-	iNaturalist



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
A jumping plant lice	<i>Cacopsylla magnicauda</i>	SU	-	-	iNaturalist
Audubon's tiger beetle	<i>Cicindela purpurea audubonii</i>	SNR	-	-	iNaturalist
Boreal cobweb weaver	<i>Steatoda borealis</i>	S4	-	-	iNaturalist
Cabbage white	<i>Pieris rapae rapae</i>	SNA	-	-	iNaturalist
Celery looper moth	<i>Anagrapha falcifera</i>	SU	-	-	iNaturalist
Civil rustic moth	<i>Caradrina montana</i>	S3	-	-	iNaturalist
Clear-winged grasshopper	<i>Camnula pellucida</i>	S5	-	-	iNaturalist
Common wood-nymph	<i>Ceryonis pegala ino</i>	SNR	-	-	iNaturalist
Convergent lady beetle	<i>Hippodamia convergens</i>	S4	-	-	iNaturalist
Cow path tiger beetle	<i>Cicindela purpurea</i>	SU	-	-	iNaturalist
Eastern rose curculio	<i>Merhynchites bicolor</i>	S4	-	-	iNaturalist
Field cricket	<i>Gryllus pennsylvanicus</i>	S4	-	-	iNaturalist
Four-spotted ghost moth	<i>Sthenopis purpurascens</i>	SU	-	-	iNaturalist
Hieroglyphic lady beetle	<i>Coccinella hieroglyphica</i>	S4	-	-	iNaturalist
Honey bee	<i>Apis mellifera</i>	SNA	-	-	iNaturalist
Hunt's bumble bee	<i>Bombus huntii</i>	S5	-	-	iNaturalist
Lady beetle	<i>Hippodamia parenthesis</i>	S4	-	-	iNaturalist
Nevada bumble bee	<i>Bombus nevadensis</i>	S5	-	-	iNaturalist
New York carpenter ant	<i>Camponotus novaeboracensis</i>	S5	-	-	iNaturalist
Northern amber bumble bee	<i>Bombus borealis</i>	S5	-	-	iNaturalist
Northern spur-throat grasshopper	<i>Melanoplus borealis</i>	S5	-	-	iNaturalist
Painted lady	<i>Vanessa cardui</i>	S5B,SNRM	-	-	iNaturalist
Pale snaketail	<i>Ophiogomphus severus</i>	S4	-	-	iNaturalist
Prairie long-lipped tiger beetle	<i>Cicindela nebraskana</i>	S3	-	-	iNaturalist
Prairie ornamented jumping spider	<i>Habronattus cuspidatus</i>	S4	-	-	iNaturalist
Purple miner bee	<i>Andrena prunorum</i>	S5	-	-	iNaturalist
Ted-blue checkered beetle	<i>Trichodes nutalli</i>	SNR	-	-	iNaturalist
Tidged bark longhorn beetle	<i>Arhopalus asperatus</i>	SU	-	-	iNaturalist
Seven spotted lady beetle	<i>Coccinella septempunctata</i>	SNA	-	-	iNaturalist



Common Name ¹	Scientific Name	Subnational Rank ²	COSEWIC ³	SARA ⁴	Data source
Shortgrass split wolf spider	<i>Schizocosa cespitum</i>	S5	-	-	iNaturalist
Silver-spotted skipper	<i>Epargyreus clarus clarus</i>	S4	-	-	iNaturalist
Silvery blue	<i>Glaucopsyche lygdamus couperi</i>	S5	-	-	iNaturalist
Six-spotted orb weaver	<i>Araniella displicata</i>	S5	-	-	iNaturalist
Snowberry clearwing	<i>Hemaris diffinis</i>	SU	-	-	iNaturalist
Spotted tussock moth	<i>Lophocampa maculata</i>	S4	-	-	iNaturalist
Thick-spined jumping spider	<i>Tutelina similis</i>	S4	-	-	iNaturalist
Thirteen-spotted lady beetle	<i>Hippodamia tredecimpunctata</i>	S4	-	-	iNaturalist
Thistle tortoise beetle	<i>Cassida rubiginosa</i>	SNA	-	-	iNaturalist
Tri-coloured bumble bee	<i>Bombus ternarius</i>	S5	-	-	iNaturalist
Twelve-spotted skimmer	<i>Libellula pulchella</i>	S4	-	-	iNaturalist
Two-spotted lady beetle	<i>Adalia bipunctata</i>	S4	-	-	iNaturalist
Two-striped grasshopper	<i>Melanoplus bivittatus</i>	S5	-	-	iNaturalist
Virginia ctenucha moth	<i>Ctenucha virginica</i>	S4	-	-	iNaturalist
Western yellowjacket	<i>Vespula pensylvanica</i>	S2	-	-	iNaturalist
White spring moth	<i>Lomographa vestaliata</i>	S4	-	-	iNaturalist
Woodland skipper	<i>Ochlodes sylvanoides napa</i>	S2	-	-	iNaturalist
Yellow-banded bumble bee	<i>Bombus terricola</i>	S4	Special Concern	Special Concern	iNaturalist
Yellow-shouldered drone fly	<i>Eristalis stipator</i>	S4	-	-	iNaturalist
Zebra jumper	<i>Saliciscus scenicus</i>	SNA	-	-	iNaturalist



APPENDIX E VEGETATION SPECIES LISTS



Appendix Table E-1. Summary of vegetation species observed in the George Generuex Urban Park.

Scientific Name	Common Name	Native or Introduced
<i>Acer ginnala</i>	Amur Maple	Introduced
<i>Acer negundo</i> var. <i>interius</i>	Manitoba Maple	Native
<i>Achillea millefolium</i>	Common Yarrow	Native
<i>Arctostaphylos uva-ursi</i>	Bearberry	Native
<i>Agropyron cristatum</i> ssp. <i>pectinatum</i>	Crested Wheatgrass	Introduced
<i>Amaranthus retroflexus</i>	Red-root Pigweed	Introduced
<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>	Saskatoon	Native
<i>Anemone canadensis</i>	Canada Anemone	Native
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	Native
<i>Arctium tomentosum</i>	Woolly Burdock	Introduced
<i>Artemisia absinthium</i>	Absinthe	Introduced
<i>Artemisia biennis</i> var. <i>biennis</i>	Sagewort	Introduced
<i>Artemisia ludoviciana</i> ssp. <i>ludoviciana</i>	Prairie Sage	Native
<i>Bassia scoparia</i>	Kochia	Introduced
<i>Bromus inermis</i>	Smooth Brome	Introduced
<i>Common caragana arborescens</i>	Common Common caragana	Introduced
<i>Carduus nutans</i> ssp. <i>leiophyllus</i>	Nodding Thistle	Introduced
<i>Carex aurea</i>	Golden Sedge	Native
<i>Carex rossii</i>	Ross' Sedge	Native
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf Fireweed	Native
<i>Chenopodium album</i> var. <i>album</i>	Lamb's-quarter's	Introduced
<i>Cirsium arvense</i>	Canada Thistle	Introduced
<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	Native
<i>Crepis tectorum</i>	Annual Hawksbeard	Introduced
<i>Elaeagnus commutata</i>	Silverberry	Native
<i>Elymus repens</i>	Creeping Wild Rye	Introduced
<i>Euphorbia virgata</i>	Narrow Leafy Spurge	Introduced
<i>Fragaria virginiana</i> ssp. <i>glauca</i>	Smooth Wild Strawberry	Native
<i>Fraxinus pennsylvanica</i>	Green Ash	Native
<i>Galium boreale</i>	Northern Bedstraw	Native
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small Bedstraw	Native
<i>Glycyrrhiza lepidota</i>	Wild Licorice	Native
<i>Grindelia squarrosa</i>	Gumweed	Native
<i>Helianthus annuus</i>	Common Annual Sunflower	Native
<i>Hordeum jubatum</i> ssp. <i>intermedium</i>	Meadow Wild Barley	Native
<i>Lappula squarrosa</i>	Blue-bur	Introduced
<i>Lathyrus ochroleucus</i>	Cream-coloured Vetchling	Native
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	Introduced
<i>Lysimachia ciliata</i>	Fringed Loosestrife	Native



Scientific Name	Common Name	Native or Introduced
<i>Maianthemum stellatum</i>	Starflower False Solomon's-seal	Native
<i>Matricaria discoidea</i>	Pineapple-weed	Introduced
<i>Medicago lupulina</i>	Black Medic	Introduced
<i>Medicago sativa</i> ssp. <i>falcata</i>	Yellow Alfalfa	Introduced
<i>Melilotus albus</i>	White Sweet-clover	Introduced
<i>Melilotus officinalis</i>	Yellow Sweet-clover	Introduced
<i>Osmorhiza longistylis</i>	Long-styled Anise-root	Native
<i>Pedicularis argophyllum</i>	Silvery Scurf Pea	Native
<i>Phleum pratense</i> ssp. <i>pratense</i>	Timothy	Introduced
<i>Picea glauca</i>	White Spruce	Native
<i>Picea pungens</i>	Blue Spruce	Introduced
<i>Pinus sylvestris</i>	Scotch Pine	Introduced
<i>Plantago major</i>	Common Plantain	Introduced
<i>Poa pratensis</i>	Kentucky Blue Grass	Introduced
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam Poplar	Native
<i>Populus deltoides</i>	Eastern Cottonwood	Native
<i>Populus tremuloides</i>	Trembling Aspen	Native
<i>Potentilla anserina</i> ssp. <i>anserina</i>	Silverweed	Native
<i>Potentilla norvegica</i>	Rough Cinquefoil	Native
<i>Prunus virginiana</i> var. <i>virginiana</i>	Chokecherry	Native
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink Wintergreen	Native
<i>Ribes oxycanthoides</i> var. <i>oxycanthoides</i>	Bristly Gooseberry	Native
<i>Rosa arkansana</i>	Low Prairie Rose	Native
<i>Rosa woodsii</i> var. <i>woodsii</i>	Wood's Rose	Native
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American Red Raspberry	Native
<i>Rumex crispus</i>	Curled Dock	Introduced
<i>Rumex pseudonatronatus</i>	Field Dock	Introduced
<i>Salix interior</i>	Sandbar Willow	Native
<i>Salix petiolaris</i>	Basket Willow	
<i>Shepherdia argentea</i>	Buffalo-berry	Native
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod	Native
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sow-thistle	Introduced
<i>Spiraea alba</i> var. <i>alba</i>	Narrow-leaved Meadow-sweet	Native
<i>Stellaria longifolia</i>	Long-leaved Stitchwort	Native
<i>Stellaria media</i>	Common Chickweed	Introduced
<i>Symphoricarpos occidentalis</i>	Western Snowberry	Native
<i>Symphyotrichum ericoides</i> var. <i>pansum</i>	Tufted White Prairie Aster	Native
<i>Symphyotrichum laeve</i> var. <i>geyeri</i>	Smooth Blue Aster	Native
<i>Thalictrum venulosum</i>	Veiny Meadow-rue	Native
<i>Thlaspi arvense</i>	Stinkweed	Introduced
<i>Thermopsis rhombifolia</i>	Golden-bean	Native



Scientific Name	Common Name	Native or Introduced
<i>Trifolium hybridum</i>	Alsike Clover	Introduced
<i>Tripleurospermum inodorum</i>	Scentless Chamomile	Introduced
<i>Ulmus pumila</i>	Siberian Elm	Introduced
<i>Ulmus americana</i>	American Elm	Native
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging Nettle	Native
<i>Viburnum edule</i>	Low Bush-cranberry	Native
<i>Vicia americana</i> ssp. <i>americana</i>	American Purple Vetch	Native
<i>Vicia cracca</i> ssp. <i>cracca</i>	Tufted Vetch	Introduced
<i>Taraxacum officinale</i> ssp. <i>officinale</i>	Common Dandelion	Introduced



Appendix Table E-2. Summary of vegetation species observed in the Richard St. Barbe Baker Afforestation Area.

Scientific Name	Common Name	Native or Introduced
<i>Acer negundo</i> var. <i>interius</i> *	Manitoba Maple	Native
<i>Achillea millefolium</i>	Common Yarrow	Native
<i>Agropyron cristatum</i> ssp. <i>pectinatum</i>	Crested Wheatgrass	Introduced
<i>Alopecurus aequalis</i> var. <i>aequalis</i>	Short-awn Meadow-foxtail	Introduced
<i>Amaranthus retroflexus</i>	Red-root Pigweed	Introduced
<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>	Saskatoon	Native
<i>Anemone canadensis</i>	Canada Anemone	Native
<i>Anemone cylindrica</i>	Long-fruited Anemone	Native
<i>Anemone multifida</i> var. <i>multifida</i>	Cut-leaved Anemone	Native
<i>Antennaria microphylla</i>	Small-leaved Pussy-toes	Native
<i>Anthoxanthum hirtum</i> ssp. <i>arcticum</i>	Sweet Grass	Native
<i>Artemisia absinthium</i>	Absinthe	Introduced
<i>Artemisia biennis</i> var. <i>biennis</i>	Sagewort	Native
<i>Artemisia campestris</i> ssp. <i>canadensis</i>	Canada Sagewort	Introduced
<i>Artemisia frigida</i>	Pasture Sage	Native
<i>Artemisia ludoviciana</i> ssp. <i>ludoviciana</i>	Prairie Sage	Native
<i>Astragalus canadensis</i> var. <i>canadensis</i>	Canadian Milk-vetch	Native
<i>Bassia scoparia</i>	Kochia	Introduced
<i>Bromus inermis</i>	Smooth Brome	Introduced
<i>Calamagrostis stricta</i>	Northern Reed Grass	Native
<i>Campanula rapunculoides</i>	Creeping Bellflower	Introduced
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	Introduced
<i>Carex atherodes</i>	Awed Sedge	Native
<i>Carex rossii</i>	Ross' Sedge	Native
<i>Chenopodium album</i> var. <i>album</i>	Lamb's-quarter's	Introduced
<i>Cirsium arvense</i>	Canada Thistle	Introduced
<i>Cirsium flodmanii</i>	Flodman's Thistle	Native
<i>Cirsium undulatum</i> var. <i>undulatum</i>	Wavy-leaved Thistle	Native
<i>Comandra umbellata</i> ssp. <i>pallida</i>	Bastard Toadflax	Introduced
<i>Caragana arborescens</i> *	Common caragana	Introduced
<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	Native
<i>Cotoneaster lucidus</i>	Shiny Cotoneaster	Introduced
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted Hair Grass	Native
<i>Distichlis spicata</i>	Alkali Grass	Native
<i>Elaeagnus commutata</i>	Silverberry	Native
<i>Eleocharis palustris</i>	Creeping Spike-rush	Native
<i>Elymus repens</i>	Creeping Wild Rye	Introduced
<i>Equisetum arvense</i>	Common Horsetail	Native
<i>Fraxinus pennsylvanica</i> *	Green Ash	Native



Scientific Name	Common Name	Native or Introduced
<i>Galium boreale</i>	Northern Bedstraw	Native
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small Bedstraw	Native
<i>Glycyrrhiza lepidota</i>	Wild Licorice	Native
<i>Grindelia squarrosa</i>	Gumweed	Native
<i>Heterotheca villosa</i> var. <i>minor</i>	Hoary Golden Aster	Native
<i>Hordeum jubatum</i> ssp. <i>intermedium</i>	Meadow Wild Barley	Native
<i>Koeleria macrantha</i>	June Grass	Native
<i>Lathyrus ochroleucus</i>	Cream-coloured Vetchling	Native
<i>Linaria vulgaris</i>	Yellow Toad-flax	Introduced
<i>Lonicera dioica</i>	Wild Honeysuckle	Native
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	Introduced
<i>Lygodesmia juncea</i>	Skeleton-weed	Native
<i>Lysimachia maritima</i>	Sea-milkwort	Native
<i>Maianthemum stellatum</i>	Starflower False Solomon's-seal	Native
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	Native
<i>Matricaria discoidea</i>	Pineapple-weed	Introduced
<i>Medicago lupulina</i>	Black Medic	Introduced
<i>Medicago sativa</i> ssp. <i>falcata</i>	Yellow Alfalfa	Introduced
<i>Medicago sativa</i> ssp. <i>sativa</i>	Alfafa	Introduced
<i>Melilotus albus</i>	White Sweet-clover	Introduced
<i>Melilotus officinalis</i>	Yellow Sweet-clover	Introduced
<i>Mentha canadensis</i>	Wild Mint	Native
<i>Nassella viridula</i>	Green Needlegrass	Native
<i>Osmorhiza longistylis</i>	Long-styled Anise-root	Introduced
<i>Pascopyrum smithii</i>	Western Wheatgrass	Native
<i>Pedimelum argophyllum</i>	Silvery Scurf Pea	Native
<i>Persicaria amphibia</i> var. <i>emersa</i>	Water Smartweed	Native
<i>Phragmites australis</i> ssp. <i>americanus</i>	Common Reed-grass	Native
<i>Picea glauca</i>	White Spruce	Introduced
<i>Picea pungens</i>	Blue Spruce*	Introduced
<i>Pinus sylvestris</i>	Scotch Pine*	Introduced
<i>Plantago major</i>	Common Plantain	Native
<i>Poa palustris</i>	Fowl Blue Grass	Native
<i>Poa pratensis</i>	Kentucky Blue Grass	Introduced
<i>Polygonum aviculare</i> ssp. <i>aviculare</i>	Common Knotweed	Introduced
<i>Populus hybrid</i> *	Poplar hybrid	Introduced
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam Poplar	Native
<i>Populus deltoides</i>	Eastern Cottonwood	Native
<i>Populus tremuloides</i>	Trembling Aspen	Native
<i>Potentilla anserina</i> ssp. <i>anserina</i>	Silverweed	Native
<i>Potentilla pensylvanica</i>	Prairie Cinquefoil	Native



Scientific Name	Common Name	Native or Introduced
<i>Prunus virginiana</i> var. <i>virginiana</i>	Chokecherry	Native
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink Wintergreen	Native
<i>Ranunculus cymbalaria</i>	Seaside Buttercup	Native
<i>Ranunculus sceleratus</i> var. <i>multifidus</i>	Cursed Buttercup	Native
<i>Rhamnus cathartica</i>	European Buckthorn	Introduced
<i>Ribes americanum</i>	Wild Black Currant	Native
<i>Rosa arkansana</i>	Low Prairie Rose	Native
<i>Rosa woodsii</i> var. <i>woodsii</i>	Wood's Rose	Native
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American Red Raspberry	Native
<i>Rumex occidentalis</i>	Western Dock	Native
<i>Salix bebbiana</i>	Long-beaked Willow	Native
<i>Salix interior</i>	Sandbar Willow	Native
<i>Salix petiolaris</i>	Basket Willow	Native
<i>Schoenoplectus acutus</i> var. <i>acutus</i>	Hard-stemmed Bulrush	Native
<i>Schoenoplectus pungens</i>	Three-square Rush	Native
<i>Schoenoplectus tabernaemontani</i>	Soft-stem Bulrush	Native
<i>Setaria viridis</i> var. <i>viridis</i>	Green Foxtail	Introduced
<i>Shepherdia argentea</i>	Buffalo-berry	Native
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod	Native
<i>Solidago missouriensis</i>	Low Goldenrod	Native
<i>Solidago mollis</i>	Velvety Goldenrod	Native
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sow-thistle	Introduced
<i>Spiraea alba</i> var. <i>alba</i>	Narrow-leaved Meadow-sweet	Native
<i>Stachys pilosa</i> var. <i>pilosa</i>	Hairy Hedge-nettle	Native
<i>Symphoricarpos occidentalis</i>	Western Snowberry	Native
<i>Symphyotrichum ciliatum</i>	Rayless Aster	Native
<i>Symphyotrichum ericoides</i> var. <i>pansum</i>	Tufted White Prairie Aster	Native
<i>Symphyotrichum laeve</i> var. <i>geyeri</i>	Smooth Blue Aster	Native
<i>Symphyotrichum lanceolatum</i> var. <i>hesperium</i>	White Panicked American-aster	Native
<i>Tanacetum vulgare</i>	Tansy	Introduced
<i>Taraxacum officinale</i> ssp. <i>officinale</i>	Common Dandelion	Introduced
<i>Thalictrum venulosum</i>	Veiny Meadow-rue	Native
<i>Thermopsis rhombifolia</i>	Golden-bean	Native
<i>Tragopogon dubius</i>	Yellow Goat's-beard	Introduced
<i>Triglochin maritima</i>	Seaside Arrow-grass	Native
<i>Tripleurospermum inodorum</i>	Scentless Chamomile	Introduced
<i>Typha latifolia</i>	Common Cattail	Native
<i>Ulmus americana</i>	American Elm	Introduced
<i>Ulmus pumila</i> *	Siberian Elm	Introduced
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging Nettle	Native
<i>Vicia americana</i> ssp. <i>americana</i>	American Purple Vetch	Native



Scientific Name	Common Name	Native or Introduced
<i>Vicia cracca</i> ssp. <i>cracca</i>	Tufted Vetch	Introduced
<i>Zizia aptera</i>	Heart-leaved Alexanders	Native

* Denotes tree and shrub species known to be afforested within the Richard St. Barbe Afforestation Area



Appendix Table E-3. Summary of vegetation species observed in Parcel 2 of the Richard St. Barbe Baker Afforestation Area.

Scientific Name	Common Name	Subnational Rank
<i>Acer negundo</i> var. <i>interius</i>	Manitoba Maple	S5
<i>Achillea millefolium</i>	Common Yarrow	S5
<i>Agropyron cristatum</i> ssp. <i>pectinatum</i>	Crested Wheatgrass	SNA
<i>Amaranthus retroflexus</i>	Red-root Pigweed	SNA
<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>	Saskatoon	S5
<i>Anemone canadensis</i>	Canada Anemone	S5
<i>Artemisia absinthium</i>	Absinthe	SNA
<i>Artemisia biennis</i> var. <i>biennis</i>	Sagewort	SNA
<i>Artemisia campestris</i> ssp. <i>canadensis</i>	Canada Sagewort	S3
<i>Artemisia frigida</i>	Pasture Sage	S5
<i>Artemisia ludoviciana</i> ssp. <i>ludoviciana</i>	Prairie Sage	S5
<i>Astragalus canadensis</i> var. <i>canadensis</i>	Canadian Milk-vetch	S4
<i>Bassia scoparia</i>	Kochia	SNA
<i>Bromus inermis</i>	Smooth Brome	SNA
<i>Calamagrostis stricta</i>	Northern Reed Grass	S5
<i>Campanula rapunculoides</i>	Creeping Bellflower	SNA
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	SNA
<i>Common caragana arborescens</i>	Common Common caragana	SNA
<i>Carex atherodes</i>	Awned Sedge	S4
<i>Carex rossii</i>	Ross' Sedge	S4
<i>Chenopodium album</i> var. <i>album</i>	Lamb's-quarter's	SNA
<i>Cirsium arvense</i>	Canada Thistle	SNA
<i>Cirsium flodmanii</i>	Flodman's Thistle	S4
<i>Cirsium undulatum</i> var. <i>undulatum</i>	Wavy-leaved Thistle	S4
<i>Comandra umbellata</i> ssp. <i>pallida</i>	Bastard Toadflax	S5
<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	S5
<i>Elaeagnus commutata</i>	Silverberry	S4
<i>Elymus repens</i>	Creeping Wild Rye	SNA
<i>Equisetum arvense</i>	Common Horsetail	S5
<i>Fraxinus pennsylvanica</i>	Green Ash	S4
<i>Galium boreale</i>	Northern Bedstraw	S5
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small Bedstraw	S4
<i>Glycyrrhiza lepidota</i>	Wild Licorice	S4
<i>Grindelia squarrosa</i>	Gumweed	S5
<i>Heterotheca villosa</i> var. <i>minor</i>	Hoary Golden Aster	S5
<i>Hordeum jubatum</i> ssp. <i>intermedium</i>	Meadow Wild Barley	S5
<i>Koeleria macrantha</i>	June Grass	S5
<i>Linaria vulgaris</i>	Yellow Toad-flax	SNA
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	SNA
<i>Lysimachia maritima</i>	Sea-milkwort	S4



Scientific Name	Common Name	Subnational Rank
<i>Maianthemum stellatum</i>	Starflower False Solomon's-seal	S4
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4
<i>Matricaria discoidea</i>	Pineapple-weed	SNA
<i>Medicago lupulina</i>	Black Medic	SNA
<i>Medicago sativa</i> ssp. <i>falcata</i>	Yellow Alfalfa	SNA
<i>Melilotus albus</i>	White Sweet-clover	SNA
<i>Melilotus officinalis</i>	Yellow Sweet-clover	SNA
<i>Nassella viridula</i>	Green Needlegrass	S5
<i>Pascopyrum smithii</i>	Western Wheatgrass	S5
<i>Pedimelum argophyllum</i>	Silvery Scurf Pea	S5
<i>Picea glauca</i>	White Spruce	S5
<i>Picea pungens</i>	Blue Spruce	SNA
<i>Pinus sylvestris</i>	Scotch Pine	SNA
<i>Poa pratensis</i>	Kentucky Blue Grass	SNA
<i>Polygonum aviculare</i> ssp. <i>aviculare</i>	Common Knotweed	SNA
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam Poplar	S5
<i>Populus tremuloides</i>	Trembling Aspen	S5
<i>Prunus virginiana</i> var. <i>virginiana</i>	Chokecherry	S5
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink Wintergreen	S5
<i>Ribes americanum</i>	Wild Black Currant	S4
<i>Rosa arkansana</i>	Low Prairie Rose	S5
<i>Rosa woodsii</i> var. <i>woodsii</i>	Wood's Rose	S5
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American Red Raspberry	S5
<i>Setaria viridis</i> var. <i>viridis</i>	Green Foxtail	SNA
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod	S5
<i>Solidago missouriensis</i>	Low Goldenrod	S5
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sow-thistle	SNA
<i>Spiraea alba</i> var. <i>alba</i>	Narrow-leaved Meadow-sweet	S4
<i>Symphoricarpos occidentalis</i>	Western Snowberry	S5
<i>Symphyotrichum ciliatum</i>	Rayless Aster	S4
<i>Symphyotrichum ericoides</i> var. <i>pansum</i>	Tufted White Prairie Aster	S5
<i>Symphyotrichum laeve</i> var. <i>geyeri</i>	Smooth Blue Aster	S5
<i>Tanacetum vulgare</i>	Tansy	SNA
<i>Taraxacum officinale</i> ssp. <i>officinale</i>	Common Dandelion	SNA
<i>Thalictrum venulosum</i>	Veiny Meadow-rue	S5
<i>Thermopsis rhombifolia</i>	Golden-bean	S5
<i>Tragopogon dubius</i>	Yellow Goat's-beard	SNA
<i>Tripleurospermum inodorum</i>	Scentless Chamomile	SNA
<i>Ulmus pumila</i>	Siberian Elm	SNA
<i>Vicia americana</i> ssp. <i>americana</i>	American Purple Vetch	S5
<i>Vicia cracca</i> ssp. <i>cracca</i>	Tufted Vetch	SNA
<i>Zizia aptera</i>	Heart-leaved Alexanders	S4



APPENDIX F VEGETATION COMMUNITY PHOTOGRAPHS



Appendix Photo F-1. Looking north at the sparsely planted rows of green ash, Siberian elm, and Manitoba maple within the George Genereux Urban Regional Park.



Appendix Photo F-2. Looking north at common caragana rows along the perimeter of the George Genereux Urban Regional Park.



Appendix Photo F-3. Looking east at the native trembling aspen stand within the George Genereux Urban Regional Park.



Appendix Photo F-4. Looking north at the at the closed canopy deciduous woodland within the within the George Genereux Urban Regional Park.



Appendix Photo F-5. Looking east at the closed canopy deciduous woodland within the within the George Genereux Urban Regional Park.



Appendix Photo F-6. Looking north at afforested common caragana rows with spruce, poplar, and green ash overstory within the George Genereux Urban Regional Park



Appendix Photo F-7. Representative photo of dominant understory vegetation within common caragana dominated woodland areas within the George Genereux Urban Regional Park.



Appendix Photo F-8. Looking north at a scotch pine dominated stand located within SW 22-36-06-W3M of the Richard St Barbe Baker Afforestation Area.



Appendix Photo F-9. Looking north towards mixed woodland community located within 22-36-06-W3M of the Richard St Barbe Baker Afforestation Area (Parcel 1).



Appendix Photo F-10. Looking north at the open grassland community within 22-36-06-W3M of the Richard St Barbe Baker Afforestation Area (Parcel 1).



Appendix Photo F-11. Representative photo of understory vegetation in woodland communities dominated by afforested trees throughout the Richard St Barbe Baker Afforestation Area (Parcel 1).



Appendix Photo F-12. Trembling aspen dominant woodland within SW-22-36-06 W3M of the Richard St. Baker Afforestation Area (Parcel 1).



Appendix Photo F-13. Trembling aspen dominant woodland within SW-22-36-06 W3M of the Richard St. Baker Afforestation Area (Parcel 1).



Appendix Photo F-14. Looking south at the Class 5 wetland located within SE 22-36-06-W3M of the Richard St Barbe Baker Afforestation Area (Parcel 1).



Appendix Photo F-15. Looking west at the common reed-grass (*Phragmites australis* ssp. *americanus*) dominant community located within SE 22-36-06-W3M of the Richard St Barbe Baker Afforestation Area (Parcel 1).



Appendix Photo F-16. Looking west along open grassland corridor located within the Southwest Dog Park area in SW 23-36-06 W3M (Parcel 2).



Appendix Photo F-17. Native trembling aspen-dominant woodland community located within the Southwest Dog Park in SW 23-36-06 W3M (Parcel 2).



Appendix Photo F-18. Native trembling aspen-dominant woodland community located within the Southwest Dog Park in SW 23-36-06 W3M (Parcel 2).



Appendix Photo F-19. Afforested woodland community located within SE 23-36-06 W3M of the Richard St. Barbe Baker Afforestation Area (Parcel 3).



Appendix Photo F-20. Afforested woodland community located within SE 23-36-06 W3M of the Richard St. Barbe Baker Afforestation Area (Parcel 3).



Appendix Photo F-21. Looking south at the native trembling aspen woodland stand toward mesic shrub community within SE 23-36-06 W3M of the Richard St. Barbe Baker Afforestation Area (Parcel 3).



Appendix Photo F-22. Looking south at the native-dominant mesic shrub community within SE 23-36-06 W3M of the Richard St. Barbe Baker Afforestation Area (Parcel 3).



Appendix Photo F-23. Small yellow lady's slipper (*Cypripedium parviflorum* var. *makasin*) observed within SW-23-03-30 W3M of the Richard St. Barbe Baker afforestation Area (Parcel 3).



Appendix Photo F-24. Red elderberry (*Amaranthus californicus*) observed within SW-23-03-30 W3M of the Richard St. Barbe Baker afforestation Area (Parcel 3).



APPENDIX G REMOTE CAMERA PHOTOS



Appendix Photo G-1. Looking Southeast at RC location BL RC01 and surrounding habitat; June 9, 2021.



Appendix Photo G-2. Looking Southwest at RC location BL RC01 and surrounding habitat; July 27, 2021.



Appendix Photo G-3. A RC photo of a white-tailed doe captured at BL RC01; June 14, 2021.



Appendix Photo G-4. A RC photo of a mule deer buck captured at BL RC01; November 13, 2021.



Appendix Photo G-5. A RC photo of a white-tailed buck captured at BL RC01; November 15, 2021.



Appendix Photo G-6. A RC photo of a red fox captured at BL RC01; November 18, 2021.



Appendix Photo G-7. Looking north at RC location BL RC02 and surrounding habitat; June 9, 2021.



Appendix Photo G-8. Looking south at RC location BL RC02 and surrounding habitat; August 23, 2021.



Appendix Photo G-9. A RC photo of a white-tailed deer captured at BL RC02; October 15, 2021.



Appendix Photo G-10. A RC photo of a red fox captured at BL RC02; October 20, 2021.



Appendix Photo G-11. A RC photo of a white-tailed deer captured at BL RC02; October 29, 2021.



Appendix Photo G-12. A RC photo of a coyote captured at BL RC02; November 24, 2021.



Appendix Photo G-13. A RC photo of a mule deer captured at BL RC02; November 30, 2021.



Appendix Photo G-14. A RC photo of a mule deer captured at BL RC02; November 30, 2021.



Appendix Photo G-15. Looking south at the original RC location BL RC03 and surrounding habitat prior to camera re-positioning; June 9, 2021.



Appendix Photo G-16. Looking southeast at camera location BL RC03 (after re-positioning) and surrounding habitat; August 20, 2021.



Appendix Photo G-17. A RC photo of a raccoon captured at BL RC03; August, 2021. Note: The date stamp on the photo is incorrect.



Appendix Photo G-18. A RC photo of a red fox captured at BL RC03; October 20, 2021.



Appendix Photo G-19. A RC photo of a coyote captured at BL RC03; October 4, 2021.



Appendix Photo G-20. A RC photo of a porcupine captured at BL RC03; September 18, 2021.



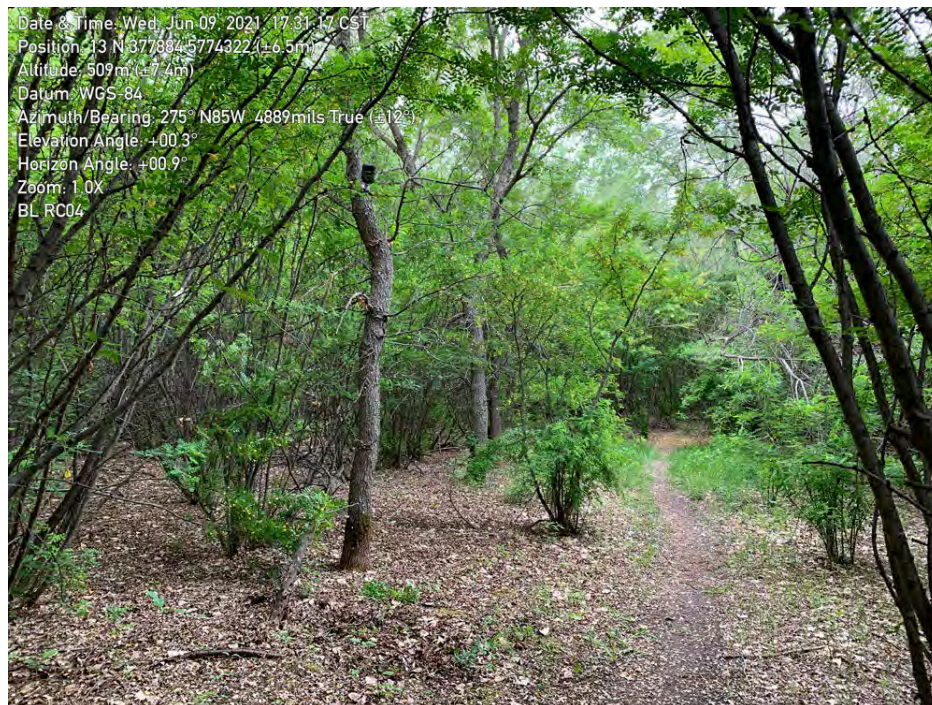
Appendix Photo G-21. A RC photo of a white-tailed buck captured at BL RC03; November 3, 2021.



Appendix Photo G-22. A RC photo of three white-tailed deer captured at BL RC03; November 15, 2021.



Appendix Photo G-23. Looking west at BL RC04 and surrounding habitat; June 9, 2021.



Appendix Photo G-24. Looking west at BL RC04 and surrounding habitat; June 9, 2021.



Appendix Photo G-25. A RC photo of a red fox captured at BL RC04; June 2021.



Appendix Photo G-26. A RC photo of a coyote captured at BL RC04; June 2021.



Appendix Photo G-27. A RC photo of a coyote captured at BL RC04; October 2021.



Appendix Photo G-28. A RC photo of a white-tailed deer captured at BL RC04; June 2021.



Appendix Photo G-29. A RC photo of a white-tailed deer captured at BL RC04; October 2021.



Appendix Photo G-30. A RC photo of a white-tailed deer captured at BL RC04; November 2021.



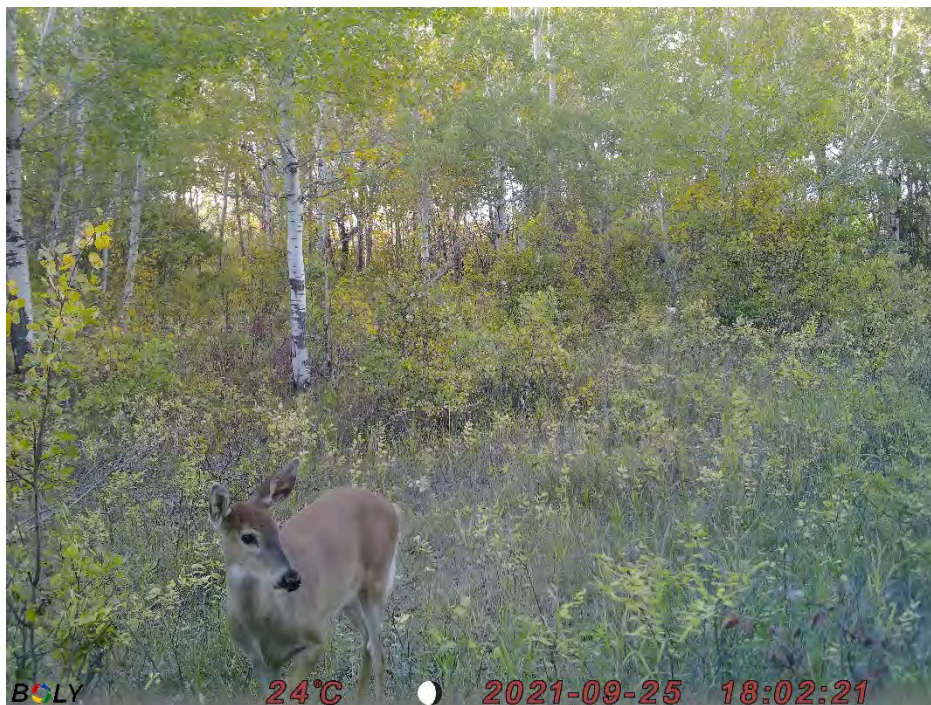
Appendix Photo G-31. Looking south at BL RC05 and surrounding habitat; June 09, 2021.



Appendix Photo G-32. A RC photo of a coyote captured at BL RC05; September 2021.



Appendix Photo G-33. A RC photo of a white-tailed deer captured at BL RC05; September 2021.



Appendix Photo G-34. A RC photo of a white-tailed deer captured at BL RC05; September 2021.



Appendix Photo G-35. A RC photo of a coyote captured at BL RC05; October 2021.



Appendix Photo G-36. A RC photo of a white-tailed deer captured at BL RC05; November 2021.



Appendix Photo G-37. A RC photo of mule deer captured at BL RC05; November 2021.



Appendix Photo G-38. A RC photo of a coyote captured at BL RC05; December 2021.



Appendix Photo G-39. A RC photo of mule deer captured at SASA01; October 2020.



Appendix Photo G-40. A RC photo of a black bear captured at SASA01; May 2021.



Appendix Photo G-41. A RC photo of a white-tailed jackrabbit captured at SASA02; January 2021.



Appendix Photo G-42. A RC photo of a coyote captured at SASA02; September 2021.



Appendix Photo G-43. A RC photo of a coyote captured at SASA03; December 2020.



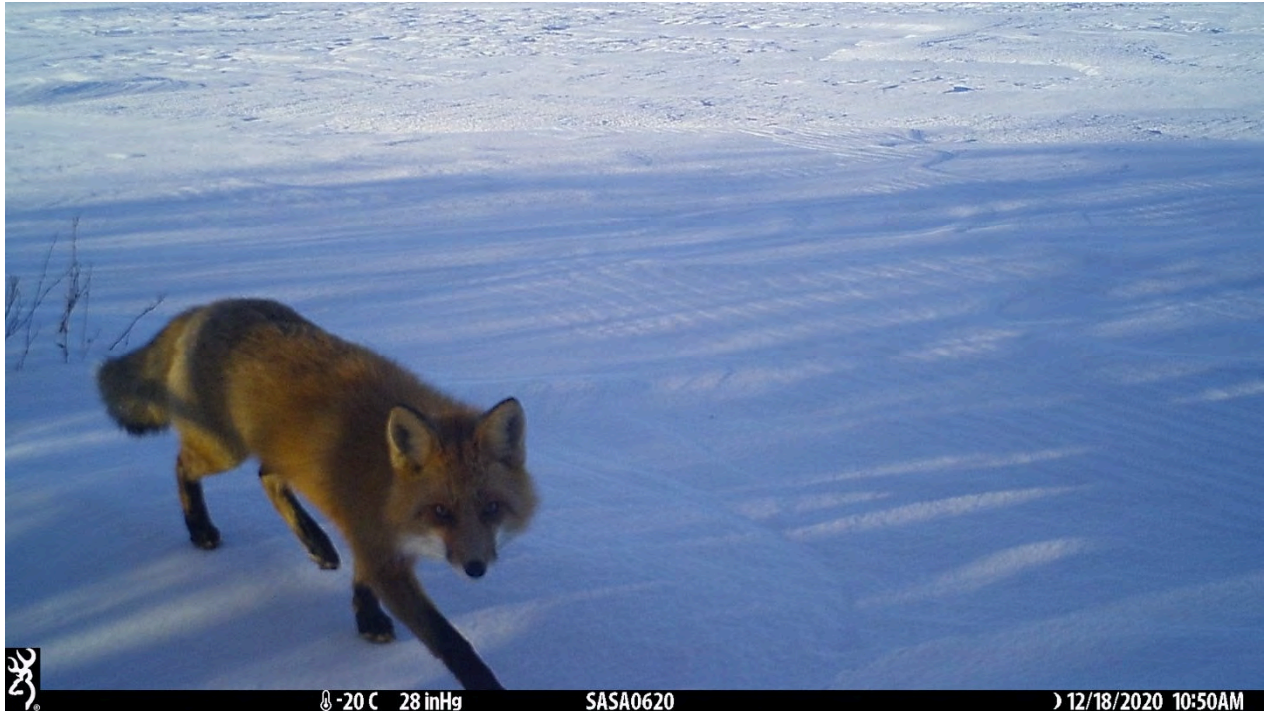
Appendix Photo G-44. A RC photo of a coyote captured at SASA05; February 2021.



Appendix Photo G-45. A RC photo of mule deer captured at SASA05; October 2020.



Appendix Photo G-46. A RC photo of a mule deer captured at SASA06; October 2020.



Appendix Photo G-47. A RC photo of a red fox captured at SASA06; December 2020.



Appendix Photo G-48. A RC photo of mule deer captured at SASA06; October 2020.



APPENDIX H WILDLIFE CORRIDORS - WINTER TRACK DATA AND PHOTOS



Appendix Table H-1. Winter track survey data summary by transect number.

Transect (T) Number	Number of Species	Number Of Individuals	Direction North	Direction East	Direction South	Direction West	Direction North- South	Direction East-West	Indeterminate
T01	4	14	7	0	5	1	0	0	0
T02	5	28	2	2	5	5	0	0	0
T03	4	14	4	0	6	1	0	0	0
T04	5	16	7	1	2	0	0	0	1
T05	5	29	2	0	2	3	0	0	6
T06	2	7	1	0	1	1	1	0	0
T07	3	20	5	0	1	2	1	0	0
T08	3	5	1	0	2	1	0	0	0
T09	3	12	1	1	4	1	0	0	2
T10	3	13	1	2	0	1	0	0	2
T11	2	4	0	1	0	3	0	0	0
T12	2	7	0	1	0	2	0	0	0
T13	3	11	0	1	2	6	0	0	0
T14	3	21	3	0	6	0	1	0	0
T15	5	14	1	0	4	0	2	0	0
T16	1	5	0	0	4	0	0	0	0
T17	3	13	1	1	3	0	0	0	0
T18	4	67	2	0	2	2	5	2	6
T19	3	23	1	1	1	3	1	0	1
T20	4	33	3	0	2	2	5	0	1
T21	4	15	4	1	2	0	2	0	0
T22	2	3	0	1	2	0	0	0	0
T23	3	9	2	0	4	0	0	0	0
T24	4	14	1	1	5	1	1	0	1
T25	3	10	1	1	1	2	0	1	0
T26	3	9	1	0	0	0	0	0	2
T27	5	17	1	0	5	1	2	0	0



Transect (T) Number	Number of Species	Number Of Individuals	Direction North	Direction East	Direction South	Direction West	Direction North- South	Direction East-West	Indeterminate
T28	4	44	9	1	5	4	1	0	2
T29	4	29	4	9	0	4	0	0	0
T30	5	28	1	7	3	2	1	0	4
T31	2	15	1	3	1	2	0	1	1
T32	3	19	0	1	2	0	0	0	3
T33	4	79	0	3	8	2	2	0	9
T34	2	14	0	1	0	1	0	0	2
T35	5	54	2	2	3	6	3	1	6
T36	6	82	6	6	1	0	8	2	4
T37	4	47	1	4	4	0	4	4	3
T38	5	116	8	0	6	1	20	0	2
T39	5	96	0	1	4	2	3	4	11
T40	4	20	2	3	0	3	0	0	2
T41	2	8	2	0	1	0	1	0	1
T42	4	43	6	6	1	1	1	2	4
T50	2	25	1	0	0	3	0	2	1
T51	5	20	1	2	0	9	0	0	0
Total	12	14	96	64	110	78	65	19	77



Appendix Table H-2. Wildlife corridor assessment area 1 (Transect T1-T11) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T01	1	0	0	4	0	1	7	0	0	0	13	7	0	5	1	0	0	0	13	13	0	0	13
T02	1	0	0	5	0	0	5	2	0	0	13	2	2	5	5	0	0	0	14	9	1	4	14
T03	1	0	0	4	0	0	5	0	0	0	10	4	0	6	1	0	0	0	11	11	0	0	11
T04	0	0	0	3	0	0	5	1	0	0	9	7	1	2	0	0	0	1	11	10	0	1	11
T05	0	0	0	1	0	0	1	1	0	0	3	2	0	2	3	0	0	6	13	6	0	7	13
T06	0	0	0	1	0	0	3	0	0	0	4	1	0	1	1	1	0	0	4	3	1	0	4
T07	0	0	0	0	0	0	3	0	1	0	4	5	0	1	2	1	0	0	9	8	1	0	9
T08	2	0	0	0	0	0	1	0	0	0	3	1	0	2	1	0	0	0	4	4	0	0	4
T09	3	0	0	0	0	0	3	0	3	0	9	1	1	4	1	0	0	2	9	7	0	2	9
T10	1	0	0	0	0	0	2	0	3	0	6	1	2	0	1	0	0	2	6	5	0	1	6
T11	1	0	0	0	0	0	0	0	0	3	4	0	1	0	3	0	0	0	4	4	0	0	4
Total	10	0	0	18	0	1	35	4	7	3	78	31	7	28	19	2	0	11	98	67	3	15	85

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign



Appendix Table H-3. Wildlife corridor assessment area 2 (Transect T12-T13) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T12	1	0	0	2	0	0	0	0	0	0	3	0	1	0	2	0	0	0	3	2	0	1	3
T13	3	3	0	0	0	0	3	0	0	0	9	0	1	2	6	0	0	0	9	9	0		9
Total	4	3	0	2	0	0	3	0	0	0	12	0	2	2	8	0	0	0	12	11	0	1	12

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign

Appendix Table H-4. Wildlife corridor assessment area 3 (Transect T14-T24) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T14	0	5	0	2	0	0	0	0	3	0	10	3	0	6	0	1	0	0	10	9	1	0	10
T15	2	1	0	1	0	0	0	1	2	0	7	1	0	4	0	2	0	0	7	5	2	0	7
T16	0	4	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	4	4	0	0	4
T20	2	6	0	0	0	0	4	0	1	0	13	3	0	2	2	5	0	1	13	8	4	1	13
T21	0	3	0	0	0	0	3	2	1	0	9	4	1	2	0	2	0	0	9	7	2	0	9
T22	0	0	0	0	0	1	2	0	0	0	3	0	1	2	0	0	0	0	3	3	0	0	3
T23	0	2	0	0	0	0	2	0	2	0	6	2	0	4	0	0	0	0	6	6	0	0	6
T24	3	4	0	0	0	0	2	1	0	0	10	1	1	5	1	1	0	1	10	9	1	0	10
Total	7	25	0	3	0	1	13	4	9	0	62	14	3	29	3	11	0	2	62	51	10	1	62

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign



Appendix Table H-5. Wildlife corridor assessment area 4 (Transect T25) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T25	1	2	0	0	0	0	3	0	0	0	6	1	1	1	2	0	1	0	6	5	1	0	6
Total	1	2	0	0	0	0	3	0	0	0	6	1	1	1	2	0	1	0	6	5	1	0	6

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign

Appendix Table H-6. Wildlife corridor assessment area 5 (Transect T26-T28) winter track data.

Transect #	Species											Direction									Feature Type			
	COYO	DESP	Moos	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR	Sp. Total	N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T26	0	1	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0	2	3	1	0	2	3
T27	4	1	10	0	1	0	0	1	0	1	0	9	1	0	5	1	2	0	9	8	1	0	9	
T28	13	0	1	0	0	0	0	3	0	5	0	22	9	1	5	4	1	0	2	22	17	3	2	22
Total	17	2	1	0	1	0	0	4	0	7	1	34	11	1	10	5	3	0	4	34	26	4	4	34

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign

Appendix Table H-7. Wildlife Corridor Assessment area 6 (Transect T29-T30) Winter Track Data

Transect #	Species										Sp. Total	Direction									Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total	
T29	9	0	0	0	0	0	2	0	5	1	17	4	9	0	4	0	0	0	17	17	0	0	17	
T30	8	1	0	1	0	0	5	0	3	0	18	1	7	3	2	1	0	4	18	14	1	3	18	
Total	17	1	0	1	0	0	7	0	8	1	35	5	16	3	6	1	0	4	35	31	1	3	35	

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign



Appendix Table H-8. Wildlife corridor assessment area 7 (Transect T31-T33) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T31	3	0	0	0	0	0	0	0	6	0	9	1	3	1	2	0	1	1	9	7	1	1	9
T32	1	0	0	0	0	0	1	0	4	0	6	0	1	2	0	0	0	3	6	3	0	3	6
T33	7	1	0	1	0	0	0	0	15	0	24	0	3	8	2	2	0	9	24	11	4	9	24
Total	11	1	0	1	0	0	1	0	25	0	39	1	7	11	4	2	1	13	39	21	5	13	39

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign

Appendix Table H-9. Wildlife corridor assessment area 8 (Transect T34) winter track data.

Transect #	Species										Sp. Total	Direction								Feature Type			
	COYO	DESP	EACO	MOSP	NAPO	WESP	REFO	RESQ	SNHA	WTJR		N	E	S	W	N-S	E-W	I	Dir. Total	SI	TR	FB	Total
T34	1	0	0	0	0	0	0	0	3	0	4	0	1		1	0	0	2	4	2	0	2	4
Total	1	0	0	0	0	0	0	0	3	0	4	0	1		1	0	0	2	4	2	0	2	4

COYO – Coyote (*Canis latrans*), REFO – Red Fox (*Vulpes vulpes*), WESP - Weasel Species (*Mustela Spp.*), DESP – Deer Species (*Odocoileus Spp.*), MOOS – Moose (*Alces alces*), SNHA – Snowshoe Hare (*Lepus americanus*), White-tailed Jack Rabbit (*Lepus townsendii*), LESP – Hare/Rabbit Species (*Lepus Spp.*), EACO – Eastern Cottontail (*Sylvilagus floridanus*) (NAPO – North American Porcupine (*Erethizon dorsatum*), RESQ - Red Squirrel (*Tamiasciurus hudsonicus*), MOSP – Mouse/Vole Species

T – Transect; Sp. – Species; N-North; E-East; S-South; W-West; N-S – North-South; E-W – East-West; I – Indeterminate; SI – Single Track Set; TR – Trail; FB – Feeding/Bedding Sign



Appendix Photo H-1. Looking east at red fox tracks going into culvert at CAA 1; January 2022.



Appendix Photo H-2. Looking north at red fox tracks going into culvert at CAA 1; January 2022.



Appendix Photo H-3. Looking west at rock pigeon remains and fox tracks at CAA 1; March 2022.



Appendix Photo H-4. Looking south at rock pigeon remains observed on winter track transect T40; March 2022.