



**City of Saskatoon East Sector Fall
Vegetation and Wildlife Survey**

Prepared For:
City of Saskatoon

Prepared By:
Stantec Consulting Ltd.
100 – 75 - 24th Street East
Saskatoon, SK S7K 0K3
www.stantec.com

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1.0 Introduction

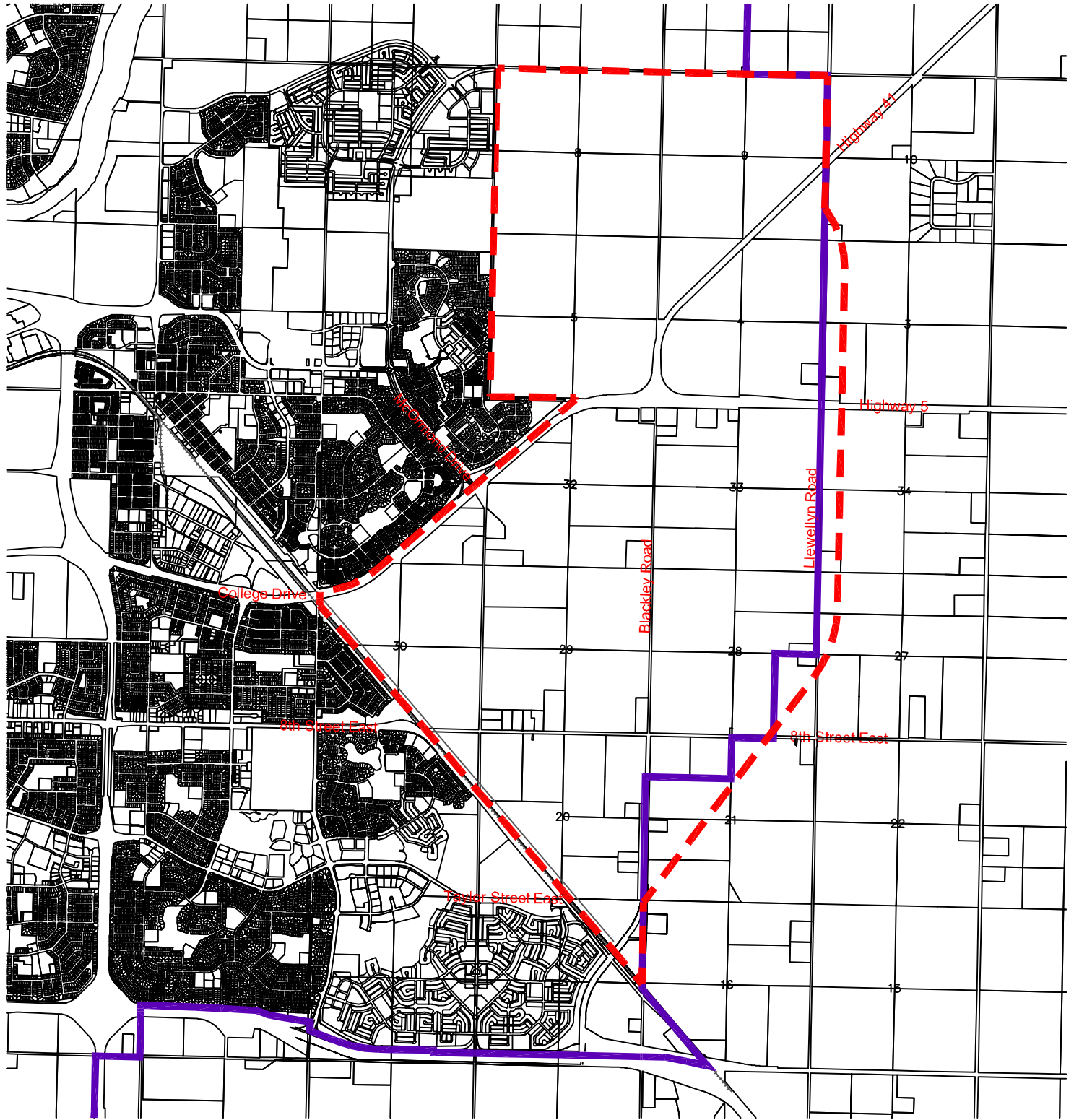
Stantec Consulting Ltd. was retained by the City of Saskatoon (COS) to conduct a fall vegetation and wildlife survey for the East Sector (hereafter referred to as “study area”). This survey was requested as part of the COS’s East Sector Plan Study and will provide baseline ecological information about the study area and help determine the requirements for a 2011 spring/summer survey.

This report provides a summary of the activities undertaken for the project, survey results and provides recommendations for a spring 2011 survey.

1.1 PROJECT LOCATION

The study area is located within the Elstow Plain landscape area of the Moist Mixed Grassland ecoregion of Saskatchewan. The study area consists of fifty-three quarter sections located at the east end of the COS, within the city boundary (Figure 1.1). The land locations included in the study area are: Sections 20-21, 27-30, and 31-34, Township 36, Range 4, West of 3rd Meridian and Sections 3-5, and 8-9, Township 37, Range 4, West of 3rd Meridian.

East Sector



N.T.S.

Legend

- City Boundary
- East Sector Boundary



Figure 1.1 - Project Location

NOTE: The information contained on this map is for reference only and not to be used for legal purposes. This map may not be reproduced without the expressed written consent of Community Services - Future Growth Section.

2.0 Methods

2.1 DESKTOP STUDY

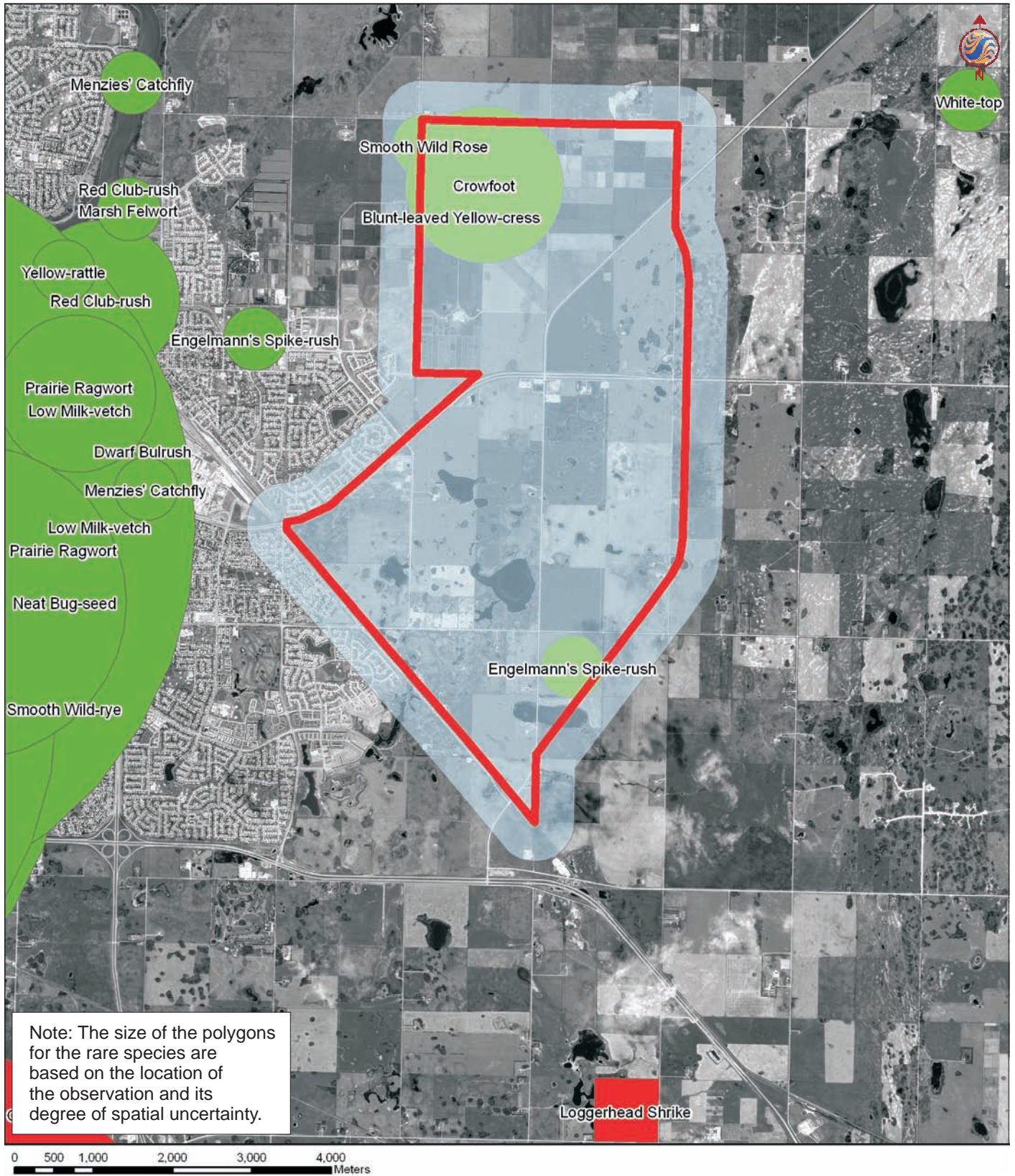
Prior to conducting the field survey, aerial photographs were reviewed to identify areas with the potential for native vegetation and wildlife species. A screening of the Saskatchewan Conservation Data Centre (SKCDC) database indicated the following rare plants within the study area boundary plus a 500 m buffer: blunt-leaved yellow-cress (*Rorippa curvipes* var. *truncata*; provincially ranked S2S3), crowfoot (*Viola pedatifida*; provincially ranked S3), Engelmann's spike-rush (*Eleocharis engelmannii*; provincially ranked S2) and smooth wild rose (*Rosa blanda*; provincially ranked S1S2) (Figure 2.1). Refer to Appendix A for provincial ranking definitions. A buffer distance of 500 m was chosen to ensure that a complete list of potential rare species was compiled; rare species found in the nearby vicinity can still occur within the study area if suitable habitat is available. Habitat requirements for the wetland species include low moist depressions, calcareous meadows and lime-rich wetlands, moist sandy, mud and marsh soils and saline soils. The upland species habitat requirements include dry open woods, hills, prairies and roadsides, dry gravelly and exposed banks in native grassland, and gravelly or sandy hillsides.

A Loggerhead Shrike (*Lanius ludovicianus*) record was located two and a half miles south from the edge of the study area during the screening of the SKCDC (Figure 2.1). Loggerhead Shrike habitat includes grasslands, sagebrush, pastures, agricultural and wooded areas with small trees and shrubs for it to nest and forage, particularly small bush trees and dense or thorny bushes. Other provincially listed wildlife species that are known to occur in the general area include Common Nighthawk (*Chordeiles minor*), Horned Grebe (*Podiceps auritus*), Northern Leopard Frog (*Rana pipiens*), Olive-sided Flycatcher (*Contopus cooperi*), Rusty Blackbird (*Euphagus carolinus*), Short-eared Owl (*Asio flammeus*), Sprague's Pipit (*Anthus spragueii*) and Yellow Rail (*Coturnicops noveboracensis*). Suitable habitat requirements for these species include open pastures, cultivated fields, native prairie and permanent or semi-permanent wetlands with emergent vegetation.

It was determined through air photo interpretation that most of the quarter sections were cropland. However, the cropland quarter sections also contained tree stands and wetlands representing potential vegetation and wildlife habitat, therefore, it was decided that they would be examined during the field survey.

2.2 FIELD SURVEY

A road-side survey of the study area was conducted on October 13-14, 2010. All vegetation and wildlife species which could be identified were recorded and representative photographs of the study area were taken. In addition to field observations, the Wetland Policy Study (Stantec 2009) report was consulted to obtain information about riparian vegetation and help determine



Legend:

- East Sector Boundary
- 500m buffer
- Animal - Rare Species
- Plant - Rare Species

Client/Project:

**CITY OF SASKATOON
EAST SECTOR FALL VEGETATION
AND WILDLIFE SURVEY**

Figure No.:

2.1

Title:

**RARE SPECIES RECORDS WITHIN
EAST SECTOR**



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which wetlands represented potential habitat for the rare vegetation species listed in the SKCDC database.

3.0 Results

Land use within the study area is primarily cropland with two quarter sections of native prairie in the NE and SE 8-37-4 W3M. Wetlands, tree stands and shelterbelts scattered throughout the study area represent the landscape features with potential habitat for rare vegetation and wildlife species.

Few vegetation and wildlife species were identified or observed during the field survey due to the lateness of the season. However, based on our observations, it was possible to identify thirty-one quarter sections, out of fifty-three, that contain potential habitat for the presence of rare plant or wildlife species.

Appendix B presents the detailed results of the survey and outlines the following information for each quarter section: land use, field survey observations, recommendations for future surveys and the rationale behind the recommendation.

Refer to Appendix C for representative site photographs.

4.0 Conclusion and Recommendations

This study found that thirty-one of the fifty-three quarter sections surveyed within the study area contained habitat features which could be suitable for rare plant and wildlife species. These features include wetland areas, tree patches and mature treed shelterbelts, tree and shrub hedgerows and native prairie remnants and pastures. Overall, the study area is highly disturbed by agricultural activities and has a low potential for rare vegetation and wildlife species. However, the small undisturbed patches may serve as potential habitat for rare plant and wildlife species, particularly the native prairie quarter sections, and are worth further investigation.

We recommend that thirty-one quarter sections be re-visited during a spring/summer 2011 survey. The following quarter sections are considered first priority areas because they contain habitats which could support rare plant and wildlife species:

- NE 17, NE 19, NE 20, NW 20, SE 20, NE 21, NW 21, SW 21, NW 27, SW 27, NE 28, NW 28, NE 29, NW 29, SE 29, NE 30, NW 30, SE 30, SE 32, SW 32, NE 33, and NW 34-36-4 W3M.
- NW 3, SE 4, SW 4, NE 5, SE 5, NE 8, NW 8, SW 8 and SE 8-37-4 W3M.

Additionally, seventeen quarter sections are considered second priority areas because they provide important wildlife habitats. These habitats may serve as nesting or foraging areas for wildlife species which would be protected under the Migratory Birds Convention Act (1994). This act protects bird species by not allowing any disturbance to nests or nesting birds during breeding periods. These quarter sections do not necessarily need to be surveyed during the 2011 spring/summer survey, but should be surveyed before construction clearing. These quarter sections are listed below:

- SW 20, SE 28, SW 29, SW 30, SE 31, NE 32, NW 33, SE 33, SW 33, and SW 34-36-4 W3M.
- SW 3, NE 4, NW 5, SW 5, NW 9, SE 9 and SW 10-37-4 W3M.

The following five quarter sections do not require future surveys as they do not have the potential for rare species or important wildlife habitats:

- SW 28 and NW 32-36-4 W3M.
- NW 4, NE 9 and SW 9-37-4 W3M.

Appendix A

Provincial Ranking Definitions

PROVINCIAL RANK DEFINITIONS

Ranks provided by the SKCDC are intended to indicate a species' risk of extirpation. They do not necessarily reflect its management priority. In addition, some species may be rare in the province yet not at risk of extirpation.

An element occurrence is the spatial representation of a species or ecological community at a specific location. An element occurrence generally delineates a species population or ecological community, and represents the geo-referenced biological feature that is of conservation or management interest. A single element occurrence may be documented by one or multiple specimens or by observations taken from the same population over multiple years.

A Range Rank (i.e., S2S3) is used when existing information on an element straddles the criteria defining two separate ranks (i.e., S2 vs S3).

Rank	Status	Definition	Comments
S1	Extremely Rare	5 or fewer occurrences in Saskatchewan, or very few remaining individuals	Critically imperiled; may be especially susceptible to extirpation because of some factor of its biology
S2	Rare	6 to 20 occurrences in Saskatchewan or few remaining individuals	Imperiled; may be susceptible to extirpation because of some factor of its biology
S3	Rare - Uncommon	21 to 100 occurrences in Saskatchewan; may be rare and local throughout province or may occur in a restricted provincial range (may be abundant in places)	Vulnerable; may be susceptible to extirpation by large scale disturbances
S4	Common	more than 100 occurrences; generally widespread and abundant but may be rare in parts of its range	Apparently secure but may be of long-term concern
S5	Very Common	more than 100 occurrences; widespread and abundant, but may be rare in parts of its range	Demonstrably secure

Appendix B
Vegetation and Wildlife Survey Summary

Appendix B: Vegetation and Wildlife Survey Summary

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
NE 17-36-4 W3M	Cropland	Cropland interspersed with wetlands which have a cover type of foxtail barley (<i>Hordeum jubatum</i>), cattails (<i>Typha</i> spp.) and dock species (<i>Rumex</i> spp.).	Y	Potential habitat for rare plant species at risk. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database, therefore, there is the potential for rare plant species.
NE 19-36-4 W3M	Tame Pasture	Tame pasture on the outskirts of the city which looks to have been unoccupied for several years. This quarter section consists of small shrubs and a wetland surrounded by cattails.	Y	Potential habitat for rare plant species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
NE 20-36-4 W3M	Cropland	Cropland with two farmyards surrounded by mature treed shelterbelts. The west half has several wetlands surrounded by mature trembling aspen (<i>Populus tremuloides</i>) and a wetland directly adjacent to the high grade gravel road which consists of trembling aspen, willows (<i>Salix</i> spp.) and cattails. This quarter section has potential habitat for large nesting birds given the mature trees surrounding the wetlands.	Y	Potential habitat for rare plant and wildlife species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
NW 20-36-4 W3M	Cropland	Cropland with wetlands surrounded by trembling aspen and willows interspersed throughout the quarter section. One stick nest was observed in a willow shrub which is most likely occupied by a Black-billed Magpie (<i>Pica hudsonia</i>). This quarter section has the potential habitat for some nesting birds.	Y	Potential habitat for rare plant and wildlife species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
SE 20-36-4 W3M	Cropland	Cropland with two farmyards located in the east central portion of the quarter section. The farmyards are surrounded by a mature poplar (<i>Populus</i> spp.) shelterbelt. A large wetland covers most of the northeast portion of the quarter section and was occupied by five Ruddy ducks (<i>Oxyura jamaicensis</i>) and five American Coots (<i>Fulica americana</i>). Vegetation species identified include cattails, dock species and bulrush species (<i>Scirpus</i> spp.). Mature trees and shrubs line the west side of the large wetland and the shelterbelts from the farmyards line the south and north sides. The large wetland provides great nesting habitat for waterfowl and the mature trees would be good	Y	Potential habitat for rare plant and wildlife species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		habitat for large and small nesting birds.		
SW 20-36-4 W3M	Cropland	Cropland with a small wetland visible near the train tracks and vegetation consisting of dock. A farmyard is bordered by mature trees which could serve as habitat to nesting birds. A Black-billed Magpie was identified feeding in the cropland.	N	Potential habitat for nesting and foraging wildlife species. This quarter section would only serve as habitat to nesting birds in the mature trees surrounding the farmyard and has low potential for rare vegetation and wildlife species.
NE 21-36-4 W3M	Cropland	Cropland with a mature caragana (<i>Caragana spp.</i>) shelterbelt located on the west side of the quarter section. This shelterbelt may serve as potential nesting habitat for bird species at risk.	Y	Potential habitat for rare bird species at risk. It is recommended to re-survey this quarter section for nesting bird species at risk, particularly the Loggerhead Shrike.
NW 21-36-4 W3M	Cropland	Cropland with a shelterbelt of American elm (<i>Ulmus americana</i>) and shrub species located along the south side of the quarter section. Two stick nests were visible within the shelterbelt and two Black-billed Magpies and one American Crow (<i>Corvus brachyrhynchos</i>) were identified perching near the nests. Also, along the south portion of the quarter section exists the remnants of an old farmyard with a shelterbelt of trees. A row of shrubs line the east portion of the quarter section but were unidentifiable.	Y	Potential habitat for rare plant and bird species at risk. It is recommended to re-survey this quarter section for nesting bird species at risk, particularly the Loggerhead Shrike. The SKCDC lists a record for Engelmann's spike-rush (<i>Eleocharis engelmannii</i>) within this quarter section.
SW 21-36-4 W3M	Cropland	Cropland with a hedgerow of shrubs and poplar species bordering the south side. A large wetland exists in the north half with a shelterbelt of American elm and shrub species bordering the north side of the quarter section and a large tree on the south side of the quarter section. Vegetation species identified bordering the wetland include cattail and bulrush species. Wildlife species occupying the wetland include Blue-winged Teal (<i>Anas discors</i>), Gadwall (<i>Anas strepera</i>), Northern Shoveler (<i>Anas clypeata</i>) and American Coot. During the survey, approximately 60-70 waterfowl were occupying the wetland.	Y	Potential habitat for rare plant and wildlife species. This quarter section has good potential habitat for large and small nesting birds, waterfowl and the potential for rare plants along the edges of the wetland.
NW/SW 27-36-4 W3M	Hayland/Cropland	North half consists of hay land and the south half of cropland. A large wetland is located in the north half of the quarter section with approximately 80-100 ducks observed including Gadwall and Blue-winged Teal.	Y	Potential habitat for rare plant species. The wetland in this quarter section may have potential habitat for some of the listed rare plants from the screening and may warrant further surveying. This quarter section may serve as potential habitat for listed waterfowl species at risk.
NE 28-36-4 W3M	Cropland	Cropland with a farmyard located in the southeast corner that is surrounded by a mature treed shelterbelt which could be ideal habitat for nesting birds. The wetland in the NW 27-36-4	Y	Potential habitat for rare plant and wildlife species. This wetland provides potential habitat for waterfowl species and may have potential habitat for rare vegetation and wildlife.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		W3M extends into this quarter section and is surrounded by shrub species.		
NW 28-36-4 W3M	Cropland	Cropland with wetlands interspersed throughout the quarter section. Some wetlands were surrounded by trembling aspen and willows, while other wetlands were surrounded by cattails. This quarter section may serve as potential habitat for nesting birds and cover for deer.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
SE 28-36-4 W3M	Cropland	Cropland with a farmyard located in the northeast corner of the quarter section with a young shelterbelt of poplar tree species. A trembling aspen and willow tree patch is located west from the farmyard and could provide suitable cover and habitat for deer and bird species. Several wetlands are interspersed throughout and surrounded by trembling aspen and willow species and may provide suitable nesting habitat for birds.	N	This quarter section has low potential for rare plants and wildlife species; however it may provide suitable habitat for nesting and foraging wildlife species.
SW 28-36-4 W3M	Cropland	Cropland with one wetland located in the northwest corner of the quarter section surrounded by trees and shrubs which would be suitable habitat for deer cover and nesting birds.	N	This quarter section has low potential for rare plants and wildlife species; however it may provide suitable habitat for nesting and foraging wildlife species.
NE 29-36-4 W3M	Cropland	Cropland with multiple treed wetlands throughout including a large one extending into the south portion of the quarter section. Waterfowl species were visible on the large wetland but were too far from the road to be identified. This quarter section provides suitable habitat for nesting birds and waterfowl.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
NW 29-36-4 W3M	Cropland	Cropland with multiple small wetlands surrounded by cattail species. A wetland next to the road was occupied by three American Coots and six Blue-winged Teal.	Y	Potential habitat for rare plant species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
SE 29-36-4 W3M	Cropland	Cropland with a large wetland that has an open expanse of water. Waterfowl species were visible but too far from the road to be identified. Multiple trees and shrubs surround the wetland which would be suitable habitat for nesting birds. A farmyard is located in the southeast corner with a few pine (<i>Pinus spp.</i>) tree species.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. This wetland may warrant further investigation because it has potential habitat for the listed rare plant species from the screening.
SW 29-36-4 W3M	Industrial/Commercial	South portion of quarter section is industrial businesses; however, a large wetland is located just north with a large expanse of water which	Y	The non-industrial portion of this quarter section may have potential habitat for rare plant or wildlife species.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		was occupied by approximately 10-15 American Coots. The northern portion of the quarter section consists of a dog park and a snow drop off area. These areas consist of trembling aspen tree patches which would be suitable habitat for nesting birds.		
NE 30-36-4 W3M	Cropland	Cropland with a large wetland extending into the south portion of the quarter section which would serve as good habitat potential for waterfowl species. The quarter section also includes multiple smaller wetlands surrounded by trees and shrubs that would serve as suitable habitat for deer and nesting birds.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. The vegetation around the large wetland in the south portion of the quarter may warrant further investigation for the potential of rare plant species.
NW 30-36-4 W3M	Cropland	Cropland with multiple wetlands throughout the quarter section consisting of cattail species, dock species, trembling aspen and willows. These may serve as suitable habitat for deer cover and nesting birds.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
SE/SW 30-36-4 W3M	Cropland	Cropland with weedy species and multiple wetlands which range from being surrounded by cattail species and dock species to ones surrounded by trees and shrubs. These would be suitable cover for deer or for nesting birds. The north half of SE 30-36-4 W3M consists of a large wetland which was occupied by twenty Gadwalls, ten American Coots and Redheads (<i>Aythya americana</i>).	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species. The vegetation around the large wetland in the north half may warrant further investigation for the potential of rare plant species.
SE 31-36-4 W3M	Cropland	Cropland full of weedy species with a row of coniferous trees on the south portion of the quarter section which may be suitable habitat for some nesting birds.	N	This quarter section has low potential for rare plants and wildlife species; however, it may be suitable habitat for nesting and foraging wildlife species.
NE 32-36-4 W3M	Cropland	Cropland with a wetland surrounded by trembling aspen and willow species directly south from the gas station which may be suitable habitat for nesting birds. Another wetland exists in the south portion of the quarter section and consists of cattail species.	N	This quarter section has low potential for rare plants and wildlife species; however, it may be suitable habitat for nesting and foraging wildlife species.
NW 32-36-4 W3M	Cropland	Cropland with no wetlands or tree patches.	N	This quarter section has low potential for rare plants and wildlife species.
SE 32-36-4 W3M	Cropland	Cropland with a large grassy wetland in the north portion of the quarter section which extends to a treed wetland surrounded by mature trees and shrubs (i.e. trembling aspen and willows) which would be suitable bird nesting and deer habitat. Several smaller	Y	Potential habitat for rare plant and wildlife species within the wetlands and shelterbelts. Nesting and foraging habitat may be present for wildlife species within the treed wetlands and shelterbelts.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		wetlands are located throughout this quarter section surrounded by cattail species. Ten Northern Shovelers and fifteen Gadwalls were observed on a wetland in the southeast corner of the quarter. A farmyard is situated in the southern portion of the quarter section surrounded by a mature treed shelterbelt containing two visible stick nests.		
SW 32-36-4 W3M	Hayland/Cropland	Hayland/cropland with a farmyard located in the south portion of the quarter section with a mature treed shelterbelt consisting of poplar tree species and other coniferous and deciduous trees. This would serve as good nesting habitat for birds. The aerial photograph shows a large wetland toward the middle of the quarter section but it was not visible from the road during the field survey. This would warrant further investigation as it could have potential rare plant habitat. One coniferous tree is located next to the grid road and could also serve as potential habitat for nesting birds.	Y	Potential habitat for rare plant species within the wetland and nesting and foraging habitat for wildlife species within the treed shelterbelt.
NE 33-36-4 W3M	Cropland	Cropland with multiple grassy wetlands surrounded mostly by cattail species. The wetlands located in the northeast corner of the quarter section contained water with approximately 30 ducks including Gadwalls, American Wigeons and Redheads.	Y	Potential habitat for rare plant species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
NW 33-36-4 W3M	Cropland	Cropland with multiple wetlands throughout the quarter section which were not visible from the road but identified from the aerial photograph. A farmyard with a mature treed shelterbelt is located in the north portion of the quarter section. The treed shelterbelt would be good habitat for nesting birds.	Y	Potential habitat for rare plant species and nesting and foraging habitat for wildlife species.
SE 33-36-4 W3M	Cropland	Cropland with a small grassy wetland visible from the road. The aerial photograph indicates several other small wetlands within this quarter section.	N	This quarter section has low potential for rare plant or wildlife species.
SW 33-36-4 W3M	Cropland	Cropland with a dugout located in the northwest corner of the quarter section surrounded by small willows which may provide some habitat for small nesting birds. Multiple wetlands are also located throughout the quarter section which is mainly surrounded by cattail species. A wetland located in the southwest corner of the quarter section is surrounded by a few shrubs	N	This quarter section has low potential for rare plant or wildlife species; however, it may provide suitable habitat for nesting and foraging wildlife species.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		on the south side which may provide some nesting habitat for small birds.		
NW 34-36-4 W3M	Cropland	Cropland with two highly disturbed wetlands along the grid road which are highly vegetated with cattails and grass species but no trees or shrubs surrounding. A wetland located in the northwest corner had visible water and was occupied by two American Coots and one Northern Shoveler.	Y	Potential habitat for rare plant species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
SW 34-36-4 W3M	Cropland	Cropland with a farmyard located in the south portion of the quarter section surrounded by a mature treed shelterbelt which has potential habitat for nesting birds.	N	This quarter section has low potential for rare plant and wildlife species; however, the treed shelterbelt may serve as suitable habitat for nesting and foraging wildlife species.
NW 3-37-4 W3M	Cropland	Cropland with a large wetland complex on the west side along the high grade gravel road consisting of cattails, bulrushes and willows. The wetland had visible standing water and was occupied by eight American Coots and one Northern Shoveler. Between the wetland and the road is an area that is uncultivated and consists of grass species.	Y	This area should be re-surveyed for possible listed rare plant species and could also be suitable habitat for grassland nesting birds. This quarter section has the potential for rare plant and wildlife species.
SW 3-37-4 W3M	Cropland	Cropland with a farmyard located in the southwest corner of the quarter section surrounded by a mature treed shelterbelt. This would be suitable habitat for nesting bird species. Multiple cattail-dominated wetlands are interspersed throughout the quarter section.	N	This quarter section has low potential for rare plant and wildlife species; however, the treed shelterbelt may serve as suitable habitat for nesting and foraging wildlife species.
NE 4-37-4 W3M	Cropland	Cropland with multiple wetlands scattered throughout the quarter section. Some of the wetlands are surrounded by trembling aspen and willow species while others mainly consist of cattail species. Some of the wetlands have visible standing water and are occupied by waterfowl species which could not be identified from the road. A stick nest was also observed in a trembling aspen tree surrounding a wetland in the northeast corner of the quarter section.	N	This quarter section has low potential for rare plant and wildlife species; however, the treed wetlands may serve as suitable habitat for nesting and foraging wildlife species.
NW 4-37-4 W3M	Cropland	Cropland with no wetlands or tree patches.	N	This quarter section has low potential for rare plant and wildlife species.
SE 4-37-4 W3M	Cropland	Cropland with a large complex of trembling aspen groves along the east side of the quarter section, this would provide suitable habitat for nesting birds. A large wetland is located in the southeast corner with an open expanse of water and occupied by eight Gadwalls, two Mallards and twelve Redheads. The wetland is surrounded by trees and shrubs and would be	Y	This quarter section warrants further investigation and has the potential for rare plant and wildlife species within the wetland and treed areas.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		suitable habitat for nesting birds. A farmyard is located just north from the large wetland and is surrounded by mature poplar tree species and a trembling aspen grove. Based on the aerial photograph, it appears there are multiple wetlands throughout the quarter section but was unable to confirm due to visual constraints.		
SW 4-37-4 W3M	Cropland	Cropland with multiple small wetlands visible on the aerial photograph but was unable to view from the roadside. The wetlands are most likely surrounded by cattail species with no tree or shrub species.	Y	Potential habitat for rare plant species. Previous study (Stantec 2009) indicated that several wetlands in this quarter section contain species that occur in similar habitats as the species listed in the SKCDC database; therefore, there is the potential for rare plant species.
NE 5-37-4 W3M	Cropland	In the northeast corner of the quarter section, a set of towers exists with a visible cover of weedy species including dock species, sow thistle species and grass species. This quarter section is directly south from a native prairie section and it could be possible for this grassy area to contain some native prairie species. It may warrant further investigation as this quarter section may have the potential habitat for rare plant and wildlife species. The rest of the quarter section is cropland with no visible wetlands or tree patches.	Y	Potential habitat for rare plant species within the weedy/grassy area.
NW 5-37-4 W3M	Cropland	Cropland with the Kernan Prairie Research Farm headquarters in the south part of the quarter section. The research farm is surrounded by a mature treed shelterbelt that would provide suitable habitat for nesting birds.	N	This quarter section has a low potential for rare plant and wildlife species; however, the treed shelterbelt may serve as suitable habitat for nesting and foraging wildlife species.
SE 5-37-4 W3M	Cropland	Cropland with a wetland which extends through the central portion of the quarter section. This wetland appears to contain hydrophytic vegetation and a good possibility of native vegetation species.	Y	This wetland would warrant further investigation as it may contain habitat suitable for the listed rare plant species.
SW 5-37-4 W3M	Cropland	Cropland with the Kernan Prairie Research Farm headquarters in the north portion of the quarter section. The research farm is surrounded by a mature treed shelterbelt and would provide suitable habitat for nesting birds.	N	This quarter section has a low potential for rare plant and wildlife species; however, the treed shelterbelt may serve as suitable habitat for nesting and foraging wildlife species.
NE 8-37-4 W3M	Native Prairie	Native prairie with a large trembling aspen tree patch along the high grade gravel road. Visible vegetation species within the fenced area includes goldenrod species (<i>Solidago spp.</i>),	Y	This quarter section has high potential for rare plant and wildlife species. The SKCDC lists a record for crowfoot (<i>Viola pedatifida</i>) within this quarter section.

Quarter Section	Land Use	Description	Recommended for Spring 2011 Survey (Y or N)	Rationale
		thistle species (<i>Cirsium spp.</i>) and multiple native grass species. Several small shrub patches are also scattered throughout which would provide nesting bird habitat.		
NW 8-37-4 W3M	Cropland	Cropland with two wetlands in the west portion of the quarter section along the high grade gravel road. They both consist of reed grass species (<i>Calamagrostis spp.</i>) and cattail species. No trees or shrubs are located on the quarter section; however, a Northern Shrike (<i>Lanius excubitor</i>) was identified perched on the fence post which lines the west portion of the quarter section.	Y	This quarter section may have the potential for rare plant species within the wetlands and wildlife species due to the Northern Shrike located to be within the quarter quarter. The SKCDC lists a record for smooth wild rose (<i>Rosa blanda</i>) and crowfoot (<i>Viola pedatifida</i>) within this quarter section.
SE 8-37-4 W3M	Native Prairie	Native prairie that is fenced with small patches of shrubs and trees which would be suitable habitat for nesting birds. Vegetation species identified include western snowberry (<i>Symphoricarpos occidentalis</i>), goldenrod species and wheatgrass species (<i>Agropyron spp.</i>).	Y	This quarter section has high potential for rare plant and wildlife species. The SKCDC lists a record for crowfoot (<i>Viola pedatifida</i>) within this quarter section.
SW 8-37-4 W3M	Cropland	Cropland with no visible wetlands or tree patches.	Y	The SKCDC lists a record for blunt-leaved yellow cress (<i>Rorippa curvipes var. truncata</i>) and crowfoot (<i>Viola pedatifida</i>) within this quarter section.
NE 9-37-4 W3M	Cropland	Cropland with no visible wetlands or tree patches.	N	This quarter section has low potential for rare plant and wildlife species.
NW 9-37-4 W3M	Cropland	Cropland with a dugout located in the central portion of the quarter section surrounded by small shrubs.	N	This quarter section has low potential for rare plant and wildlife species; however it may serve as suitable nesting or foraging habitat for wildlife species.
SE 9-37-4 W3M	Cropland	Cropland with a treed wetland surrounded by trembling aspen and willow species which could serve as habitat for nesting birds. Also, a dugout is located in the northwest section of the quarter section with a Manitoba maple (<i>Acer glabrum</i>) tree surrounding.	N	This quarter section has low potential for rare plant and wildlife species; however, the treed wetlands may serve as potential habitat for nesting and foraging wildlife species.
SW 9-37-4 W3M	Cropland	Cropland with no visible wetlands or tree patches.	N	This quarter section has low potential for rare plant and wildlife species.
SW 10-37-4 W3M	Cropland	Cropland with a farmyard located in the southwest corner of the quarter section surrounded by a grove of trembling aspen and poplar tree species.	N	Suitable habitat for large nesting birds but low potential for rare plant and wildlife species.

Appendix C
Representative Site Photographs



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PHOTO 1 NE 17-36-4 W3M view east



PHOTO 2 NE 19-36-4 W3M view southwest



PHOTO 3 NE 20-36-4 W3M view south



PHOTO 4 NW 20-36-4 W3M view west-south-west



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PHOTO 5 SE 20-36-4 W3M view northwest



PHOTO 6 NE 21-36-4 W3M view south-southwest



PHOTO 7 NW 21-36-4 W3M view east-southeast



PHOTO 8 SW 21-36-4 W3M view east



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PHOTO 9 NW/SW 27-36-4 W3M view east



PHOTO 10 NE 28-36-4 W3M view northwest



PHOTO 11 NW 28-36-4 W3M view southeast



PHOTO 12 SE 29-36-4 W3M view northwest



Stantec



PHOTO 13 NE 29-36-4 W3M view southwest



PHOTO 14 NW 29-36-4 W3M view northeast



PHOTO 15 SE 29-36-4 W3M view north



PHOTO 16 SW 29-36-4 W3M view southeast



Stantec



PHOTO 17 NE 30-36-4 W3M view northwest



PHOTO 18 NW 30-36-4 W3M view southeast



PHOTO 19 SE 30-36-4 W3M view west



PHOTO 20 SE 32-36-4 W3M view west



Stantec



PHOTO 21 SW 32-36-4 W3M view southeast



PHOTO 22 NE 33-36-4 W3M view west



PHOTO 23 NW 33-36-4 W3M view southeast



PHOTO 14 NW 34-36-4 W3M view northeast



Stantec



PHOTO 25 NW 3-37-4 W3M view east



PHOTO 26 SE 4-37-4 W3M view northwest



PHOTO 27 SW 4-37-4 W3M view southeast



PHOTO 38 NE 5-37-4 W3M view west



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PHOTO 29 SE 5-37-4 W3M view north



PHOTO 30 NE 8-37-4 W3M view southwest



PHOTO 31 NW 8-37-4 W3M view east



PHOTO 32 SE 8-37-4 W3M view northwest