

# REPORT

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Chris Cebryk

## Eagle Heights Country Residential Estates Natural Area Screening



JANUARY 2020

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# 1 INTRODUCTION

A natural area (environmental) screening was requested by the RM of Corman Park Administration in conjunction with the consideration of an application to rezone and subdivide 84 country residential lots situated in the W ½ 11-37-04-03M known as Eagle Heights Country Residential Estates (the Site).

The objective of this screening is to document and inventory the current environmental, natural, cultural and historical assets that are present within the development area as a means of refining the boundaries of the Green Network Study as stated in Section 13.01 of the Saskatoon North Partnership for Growth Regional Plan.

# 2 REGULATORY CONTEXT

The following federal and provincial acts, regulations and policies influence development within the Site.

## 2.1 Federal

### Species at Risk Act

The purposes of the *Species at Risk Act* are to prevent wildlife species in Canada from disappearing, to provide for the recovery of wildlife species that are extirpated (no longer exist in the wild in Canada), endangered, or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. The Act legislates the protection of these species and the designation of critical habitat through agreement, permits, public registry and land dedication.

### Migratory Birds Convention Act

This Federal Act provides policies and authorizes the Federal Minister of Environment to control activities that potentially disturbs migratory birds, their eggs and nests. The Act stipulates that no active nesting site or habitat of a migratory bird species shall be disturbed during nesting or rearing periods which generally occurs between April and August.

### The Canadian Environmental Protection Act

*The Canadian Environmental Protection Act* is aimed at preventing pollution and protecting the environment and human health. The goal of the Act is to contribute to sustainable development - development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Discharges of pollution into the environment fall under the jurisdiction of this Act.

### The Canada Wildlife Act

*The Canada Wildlife Act* covers the protection of at-risk plant and animal species. The Act prohibits actions that would impact species at risk and allows for the designation of these species as extirpated, endangered, threatened, or vulnerable.

## 2.2 Provincial

### Saskatchewan Wetland Policy

This policy which was adopted in 1995, encourages sustainable management of wetlands and the restoration and rehabilitation of degraded wetland areas.

### **The Weed Control Act**

*The Weed Control Act* requires that every owner or occupant of land shall, under the supervision of a designated municipal weed inspector, take measures to control or eradicate any prohibited, noxious and nuisance weeds as designated by the Act.

### **The Wildlife Act**

*The Wildlife Act* prohibits anyone from killing, injuring, possessing, disturbing, taking, capturing, harvesting, genetically manipulating or interfering with any wild species at risk. Where a breeding site for a species at risk is identified within a study area, the Saskatchewan Ministry of Environment should be consulted to confirm a recommended setback distance at the time of development.

### **The Planning and Development Act/Dedicated Lands Regulations**

*The Planning and Development Act* establishes the basis for responsible land management in the province. The Act defines what characteristics of land justify its designation as Environmental Reserve and/or a Municipal Utility Parcel. Environmental Reserve is deemed to be an appropriate designation where the land consists of:

- a. a ravine, coulee, swamp, natural drainage course or creek bed;
- b. wildlife habitat or areas that:
  - o are environmentally sensitive;
  - o or contain historical features or significant natural features;
- c. land that is subject to flooding or is, in the opinion of the approving authority, unstable; or
- d. land that abuts the bed and shore of any lake, river, stream or other body of water and that is required for the purpose of:
  - o the prevention of pollution;
  - o the preservation of the bank; or
  - o the protection of the land to be subdivided against flooding.

The Act also recognizes and accounts for the dedication of land for the purposes of locating a public work which includes drainage systems and facilities.

### **Environmental Assessment Act**

*The Environmental Assessment Act* states that a proponent of a 'development' shall conduct an environmental impact assessment. A 'development' under the Act is defined as any project, operation or activity that is likely to:

- have an affect on any unique, rare or endangered feature of the environment;
- substantially utilize any provincial resource and in so doing pre-empt the use, or potential use, of that resource for any other purpose;
- cause the emission of any pollutants or create by-products, residual or waste products which require handling and disposal in a manner that is not regulated by any other Act or regulation;
- cause widespread public concern because of potential environmental changes;
- involve a new technology that is concerned with resource utilization and that may induce significant environmental change; or
- have a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment.

### Environmental Management and Protection Act

Pursuant to the above noted Act, no person shall discharge or allow the discharge of a substance into the environment in an amount, concentration or level or at a rate of release that may cause an adverse effect. The Act also regulates shoreline alteration activities and states that a permit is required if any of the following are to occur:

- alter or cause to be altered the configuration of the bed, bank or boundary of any river, stream, lake, creek, marsh or other watercourse or water body;
- remove, displace or add any sand, gravel or other material from, in or to the bed, bank or boundary of any river, stream, lake, creek, marsh or other watercourse or water body; or
- remove vegetation from the bed, bank or boundary of any river, stream, lake, creek, marsh or other watercourse or water body.

## 3 ASSESSMENT METHODS

The methods used to complete this screening include:

- A desktop study to gather available background data using readily available information about the Project area (i.e. plans, maps, figures, aerial photographs) and existing databases (e.g. the Saskatchewan Conservation Data Center, the Biodiversity Website (HABISask), GeoSask, the Committee on the Status of Endangered Wildlife in Canada status reports, Schedule 1 of Species at Risk (SARA), the Government of Saskatchewan's Bird's Atlas, the Water Security Agency's Water Well Information Database); and
- A preliminary heritage and archaeological screening assessment using the Government of Saskatchewan, Ministry of Parks, Culture and Sports, Developer's Online Screening Tool.

Designated areas would consist of National or Provincial Park Lands, Historic Parks, Water Security Agency, Game Preserve, National Wildlife Area, Migratory Bird Sanctuary, Conservation Easements, Crown Conservation Easements, Crown Land Subdivisions, Ecological Reserves, Fish and Wildlife Development Fund Lands, Community Pastures – Federal, Ramsar Wetland, Reservoir Development Areas, Representative Areas, Community Pastures – Provincial, Special Management Areas, Wildlife Habitat Protection (WHPA), Wildlife Refuge, Private Stewardship Agreement, Wind turbine Avoidance Zone

The study area for the screening consists of 2 km radius from the approx. center of the Site that is being considered, unless otherwise noted.

In addition to the desktop screening, a visit field was conducted by Wade Sumners, P.Biol. on October 25, 2019 to confirm the land use and dominant plant communities.

## 4 SCREENING RESULTS

### 4.1 Land Use Designation

Obtained from HabiSask - <http://biodiversity.sk.ca/HABISask.htm>

Surrounding Land Use: Treed, wetland, cropland, residences

Designated areas: none

The nearest Agricultural Crown Land can be found 8.5 km west of the property, adjacent to the South Saskatchewan River, while the nearest Migratory Bird Sanctuary is located at the Saskatoon Forestry Farm Park and Zoo which is 6.9 km to the west.

Nearest Aboriginal Lands: Asimakaniseekan Askiy I.R. 102 - Urban reserve within the City limits of Saskatoon - 8.4 km southwest of the Site.

## 4.2 Soil and Topography

Obtained from The Soils of the Saskatoon Map Area (73B) -  
<http://sis.agr.gc.ca/cansis/publications/surveys/sk/sks4/index.html>

Chernozemic Dark Brown soils (formed under a grassland vegetation) - developed from a parent material that is medium to moderately fine textured, moderately to strongly calcareous, being comprised of unsorted glacial till and silty glacio-lacustrine deposits.

Map Units (dominant): W4, E3

Texture: loam

Landform: knob and kettle

Slope: 6 - 9 % moderately sloping or gently rolling (class 4)

## 4.3 Ecoregion and Terrestrial Vegetation

Ecozone: Prairie

Ecoregion: Moist Mixed Grassland

Obtained from <http://biodiversity.sk.ca/HABISask.htm> and Acton, D.F., G.A. Padbury, C.T. Stushnoff. 1998. Ecoregions of Saskatchewan. Canadian Plains Research Center, University of Regina, Regina, SK.

Trees and shrubby vegetation in this region generally occur along stream courses and permanent sloughs. The margins of the wetlands and small lakes are typically dominated by cattails, bulrushes, and sedges. The remaining land base is mostly agricultural crops and grasses with a number of flowering plants and shrubs found in the lower, moister areas (Acton et al. 1998). Native vegetation in this ecoregion is limited to non-arable pasture lands, where spear grasses (*Hesperostipa* spp.) and wheatgrasses (*Agropyron* and *Elymus* spp.), along with deciduous shrubs such as snowberry (*Symphoricarpos albus*), rose (*Rosa* spp.), chokecherry (*Prunus virginiana*), and wolf willow (*Elaeagnus commutate*) are among the more common species. Small aspen groves are typically found around the sloughs and are a characteristic feature of the landscape.

During the field visit it was observed that the vegetation types included modified grassland (dominated by smooth brome grass (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), snow berry and wolf willow), treed areas, and wetlands. A couple small hill tops did have elements of native grassland (e.g. speargrass, wheatgrass, and june grass (*Koeleria macrantha*)) but these areas have been invaded by the invasive grasses and shrubs that are dominant at the site. Treed areas were comprised of trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), and the following shrubs: Saskatoon (*Amelanchier alnifolia*), willow (*Salix* spp.), dogwood, chokecherry, rose, wolf willow, and snowberry. Cattails (*Typha latifolia*), trembling aspen, willow (*Salix* spp.), sow thistle (*Sonchus arvensis*), slough grass (*Beckmannia syzigachne*), foxtail barley (*Hordeum jubatum*), reed canary grass (*Phalaris arundinacea*), and rushes (*Juncus* spp.) were found associated with low and seasonally wet areas throughout the Site.

As well, a moderately sized (area of approx. 1,300 m<sup>2</sup>) stand of European buckthorn (*Rhamnus cathartica*) was observed near a temporary wetland in the northern portion of the Site. This species is invasive often forming dense, even-aged thickets, crowding and shading out native shrubs and herbs. A carpet of buckthorn seedlings often occurs and was present in this stand; preventing native tree and shrub establishment. This species is spread by seed and often acts as a diuretic for birds that eat its berries. Approx. 10,000+ individuals were estimated to occupy this stand.

#### 4.4 Groundwater Wells and Groundwater

Water well drilling records near the Site (Obtained from - <https://gis.wsask.ca/Html5Viewer/index.html?viewer=WaterWells.WellsViewer/>)

10 water wells were identified within 1.6 km of the Parcel, two wells (soil test holes for research purposes) are within the Site.

It is important to note that the database does not contain or identify all the wells completed in the province, only those records that were submitted by drillers.

#### 4.5 Aquatic Resources

Aquatic Resources present:

11 wetlands were observed within and crossing the Site. Wetlands were classified according to Stewart and Kantrud's (1971) wetland classification system (<https://pubs.usgs.gov/rp/092/report.pdf>) which identifies specific vegetation zones surrounding the wetland and assigns a class based on the vegetation present.

Area ID	Area (ha)	Class	Description	Concerns	Potential Mitigation
PW01	0.46	5	Permanent wetland	Affected by farming activities	Stormwater Management Plan
PW02	3.24	5	Permanent wetland	Affected by farming activities	Stormwater Management Plan
TW01	0.44	2	Temporary wetland	none	Lost
TW02	0.13	2	Temporary wetland	Affected by farming activities	Lost
PW03	8.43	5	Permanent wetland	Affected by farming activities	Stormwater Management Plan
TW03	0.25	2	Temporary wetland	None	Lost
TW04	0.21	2	Temporary wetland	None	Lost
TW05	0.13	2	Temporary wetland	None	Lost
TW06	0.01	2	Temporary wetland	None	Lost
PW04	1.47	5	Permanent wetland	Affected by farming activities	Lost
PW05	4.48	5	Permanent wetland	Affected by farming activities	Stormwater Management Plan

Permanent Wetland (PW) - An open-water zone dominates the deepest part of the wetland area while the presence of vascular plants in this zone is rare. Peripheral deep-marsh, shallow-marsh, wet-meadow, and low-prairie zones are often present surround this open water zone. These ponds and lakes maintain fairly stable water levels throughout the year.

Temporary Wetland (TW) – Vegetation occupies the central areas of shallower pond basins and commonly occurs as a peripheral band in most of the deeper ponds and lakes. The wet-meadow zone dominates the deepest part of the wetland area. A peripheral low-prairie zone is usually present. Water loss from bottom seepage is fairly rapid in this wetland and is maintained for only a few weeks after the spring snowmelt and occasionally for several days after heavy rainstorms in late spring, summer, and fall.

There are no watercourses (i.e. creeks) on the Site and there is no evidence that any of the wetland complexes contain fish or provide fish habitat.

#### 4.6 Wildlife and Wildlife Habitat

The east portion of the Site has not been cultivated – likely due to an undulating landform in this area. Wildlife and signs of wildlife (e.g. scat, bark rubbing, twig browsing, numerous burrows) were present throughout this uncultivated area. Six white tail deer were observed during the survey. Although few birds were observed during this visit, it can be expected that this area is heavily used by migratory bird species due to the fruit bearing shrubs and suitable habitat in this portion of the Site. Wildlife trails were well established, in this area, which may also be contributed to by nearby resident usage (i.e. for walking).

#### 4.7 Protected Species

Historic records of occurrence of protected species obtained from <http://biodiversity.sk.ca/HABISask.htm>

**Table 4-1**  
**Historic Occurrences of Protected Species within 2 km of the Site**

Common Name	Species	Ranking	Preferred Habitat
Plains rough fescue	<i>Festuca hallii</i>	S3 (uncommon)	dry grassland <sup>1</sup>
White-top	<i>Erigeron strigosus</i>	S3 (uncommon)	open, disturbed sites <sup>2</sup>
Whooping crane	<i>Grus americana</i>	S1 (very rare)	marshes, bogs, and shallow lakes <sup>3</sup>

#### 4.8 Heritage Resources

A Heritage Resources Impact Assessment (HRIA) was completed in the Site, on October 31st, 2013, by CanNorth. Areas were assessed using a combination of pedestrian reconnaissance and the excavation of subsurface shovel probes. No archaeological sites were identified, and it has been recommended that the Project be provided with regulatory approval, according to Section 63 of *The Heritage Property Act*, allowing the residential subdivision development to proceed as planned.

If Project plans are altered, or if heritage resources are discovered during construction, the Heritage Conservation Branch (HCB) must be notified immediately. In the event that human remains are discovered during construction activities, the local RCMP detachment and the HCB (306-787-2817) will need to be contacted.

<sup>1</sup> Moss, 1983. Flora of Alberta. 2<sup>nd</sup> Ed (J.G. Packer Editor) University of Toronto Press, Toronto.

<sup>2</sup> [http://www.efloras.org/flora\\_page.aspx?flora\\_id=1](http://www.efloras.org/flora_page.aspx?flora_id=1)

<sup>3</sup> [https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails\\_e.cfm?sid=34](https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=34)

## 5 SUMMARY AND RECOMMENDATIONS

The environmental impacts resulting from the planned activities on this Site are expected to be low because of the dominance of non-native and invasive vegetation and the plan to incorporate portions of these natural areas in the development. Cultivated land, modified grassland, trees and wetlands form the predominant vegetation types on the Site. Modified grassland is dominated by the aggressive expansion of smooth brome grass, Kentucky bluegrass, and shrubs; which are common and widespread in Saskatchewan. The species present in this modified grassland often change growing conditions (e.g. increasing leaf litter and retaining surface moisture) for native species, limiting their establishment. Areas with elements of native grassland on the Site are being invaded by these species, thereby limiting its designation as native prairie. It is expected that these areas will transition into the surrounding modified grassland vegetation type.

European buckthorn should be removed from the Site, by active management or partnering with a group that is managing this species. Meewasin Valley Authority has conducted an eradication program for this species along the South Saskatchewan River for several years (10+) and an agreement could be made to reduce the stand at the Site. This species is designated as a noxious weed in Saskatchewan and some form of control is required pursuant to *The Weed Control Act*. Leaving this stand idle will allow this species to continue to dominate the understory and spread beyond this Site.

The development plan for the site proposes the retention of approximately 25% of the gross land area to be publicly dedicated and maintained in a naturalized state in conjunction with a stormwater management plan for the site. This plan includes three parcels that have the largest wetlands within the property and are intended to be enhanced to provide greater delineation of the wetland boundaries and to increase their storage capacity in relation to the proposed development of the remaining areas of the Site. Naturalization of these stormwater retention areas will support the preservation of natural habitat and offer continued public access to these areas.

Construction activities should be conducted outside of the avian breeding period (before April 15 to August 30) as per *The Migratory Birds Convention Act*. If land clearing must take place during this period, a qualified person should be present to confirm that there are no active nests in the area within seven days of clearing. Construction activities should also seek to minimize the disturbance to the natural vegetation, provide erosion and sediment control and should be scheduled to avoid sensitive periods such as bird nesting. Where disturbance is inevitable, the site should be restored to a natural state through the reintroduction of compatible and complementary plant species.

The RM of Corman Park Zoning Bylaw encourages the retention of trees and vegetation during lot development and outright restricts the removal of trees or other vegetation within 20 metres of a water body where the removal could have a negative impact on the water body. This undeveloped buffer along the back of lots supports continued wildlife access and movement within the area while also providing substantial benefits for enhancing water quality. For bank stability, temperature control, minimization of direct impacts, and pollutant removal capacities, substantial benefits are achieved within the first 15 metres of vegetated buffer width. Studies indicate that marginal increases in benefits may accrue when buffer widths are increased beyond this distance.<sup>4</sup> The application of stormwater best management practices (BMPs), when used in conjunction with riparian and wetland buffer strips, can result in a significant increase in water-quality benefits from vegetated buffers.

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<sup>4</sup> <https://www.stormh2o.com/home/article/13004950/riparian-and-wetland-buffers-for-waterquality-protection>

Based upon the observed conditions, the vegetative diversity in wetland areas can be considered low due to the existence of reed canary grass and other non-native species and the surrounding agricultural activities. It is common for wetlands that predominantly perform a stormwater management function to have a low ecological value. The Class 5 wetlands within the Site serve an important function in flood attenuation and improving water quality. The wetlands are part of a terminal basin where significant runoff storage occurs (+4 meters deep) before water tips out of the wetlands and into adjacent low-lying areas. As a terminal basin, these wetlands offer semi-permanent storage which supports a high rate of biological activity; enabling the natural transformation of many of the common pollutants that occur in stormwater runoff into harmless by-products and essential nutrients that can be used to promote and support biological productivity.<sup>5</sup>

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<sup>5</sup> City of Moncton, 2015. Naturalized Stormwater Management Guidelines, Public Report. Moncton NB.

# 6 NATURAL AREA INVENTORY

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**Legend**

- PW - Permanent Wetland
- TW - Temporary Wetland
- MG - Modified Grassland
- TR - Trees
- A - European Buckthorn
- B - Elements of Native Grassland

Project No. 2012-4165  
 Date: 2019/12/20  
 Scale: 1:5000



Eagle Heights Country Estates  
 Natural Area Inventory

## 7 SITE PHOTOS



**Photograph 1: Modified grassland, wetlands and cultivated fields were the dominant vegetation types on the Site**



**Photograph 2: Modified grassland was comprised of smooth brome grass, Kentucky bluegrass and shrubs**



**Photograph 3: European buckthorn (a noxious plant) was present in a moderately sized stand near a temporary wetland**



**Photograph 4: European buckthorn seedlings in the understory of the stand**



**Photograph 5: Several tree rubbings were observed**



**Photograph 6: Several burrows were observed on the site**



**Photograph 7: A temporary wetland observed at the Site**

## CERTIFICATION PAGE

This report presents our findings regarding the Natural Area Screening for the proposed Eagle Heights Country Residential Estates Development.

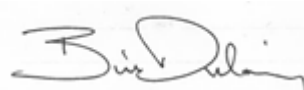
Respectfully submitted,

Prepared by:



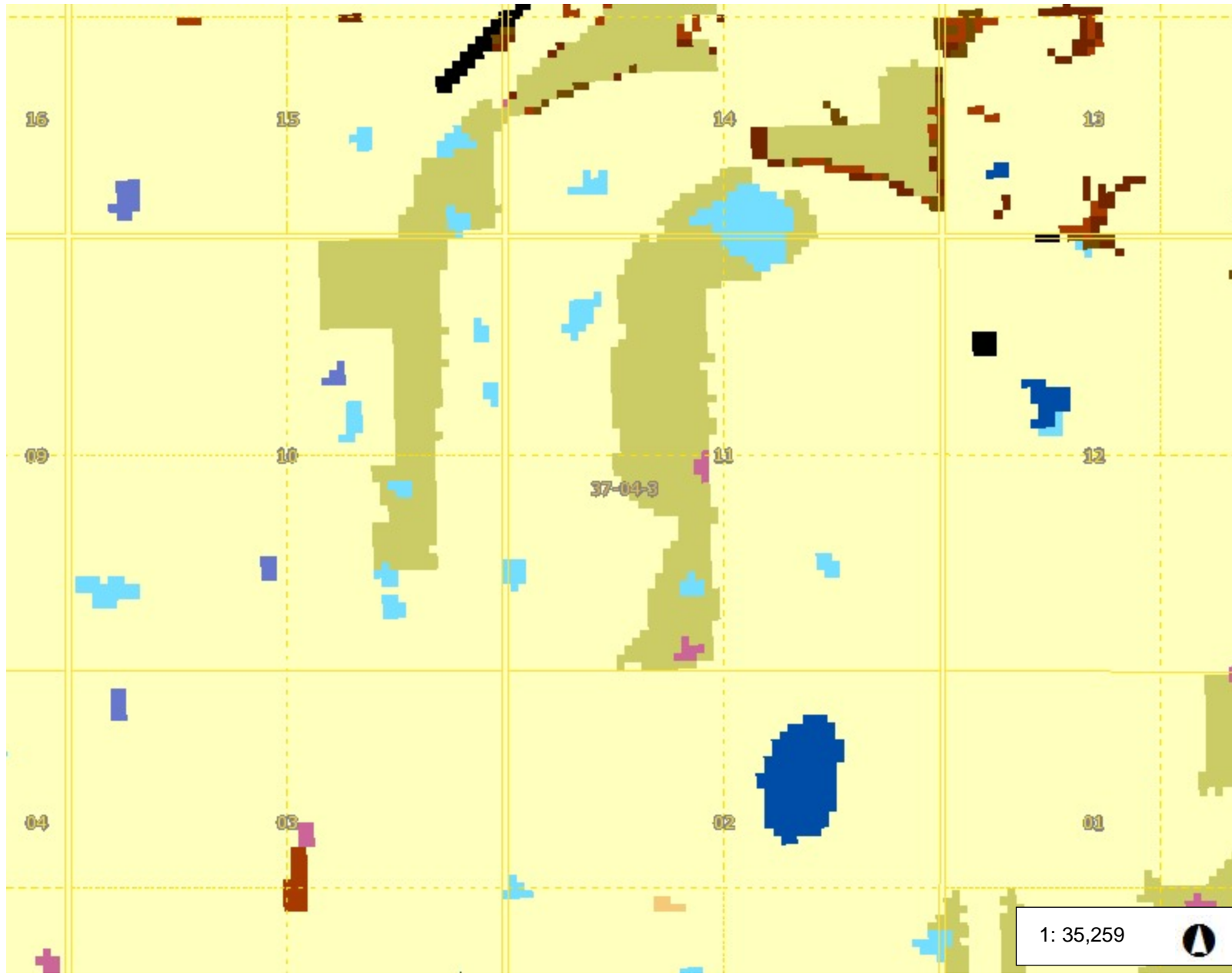
Wade Summers, P.Biol.  
Senior Biologist

Reviewed by:



Bill Delainey, RPP  
Project Manager

# Eagle Heights



## Legend

- Township
- Section
- Quarter Section
- Sask Digital Land Cover**
- Agriculture
- Hay Crops (Forage)
- Native Dominant Grasslands
- Tall Shrubs
- Pasture (Seeded Grass Lands)
- Hardwoods (Open Canopy)
- Hardwoods (Closed Canopy)
- Jackpine (Closed Canopy)
- Jackpine (Open Canopy)
- Spruce (Closed Canopy)
- Spruce (Open Canopy)
- Mixed Woods
- Treed Rock
- Recent Burns
- Revegetating/Regeneration Burn
- Cutovers
- Water
- Marsh
- Herbaceous Fen
- Mud/Sand/Saline
- Shrub Fen (Treed Swamp)
- Treed Boa

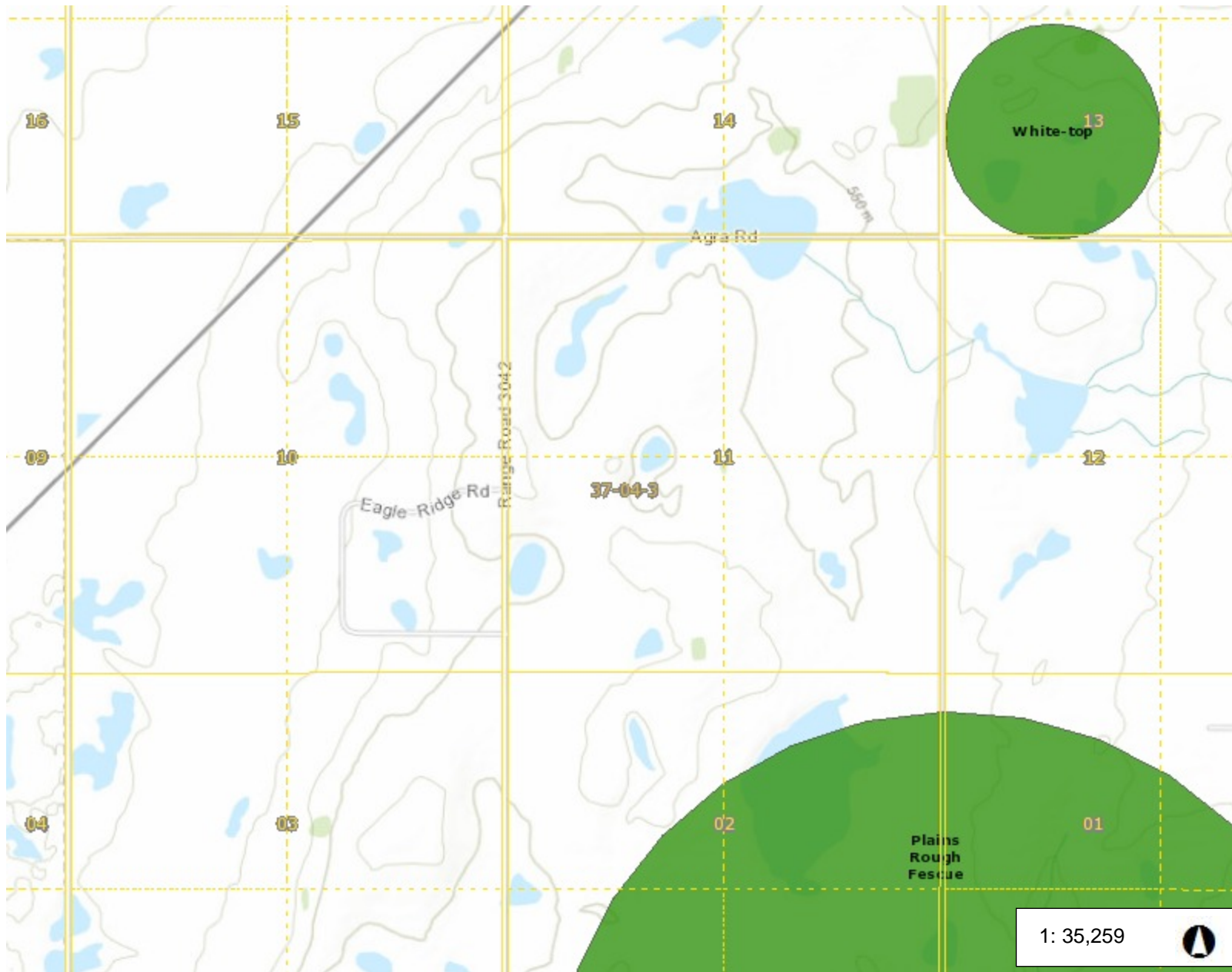
1: 35,259



1.8 0 0.90 1.8 Kilometers

## Notes

# Eagle Heights Identified Species



- Legend**
- Bird Species
  - Township
  - Section
  - Quarter Section
- Rare and Endangered Species**
- Vertebrate Animal
  - Invertebrate Animal
  - Animal Assemblage
  - Vascular Plant
  - Nonvascular Plant
  - Other (Botanical)
  - Fungus

**Notes**

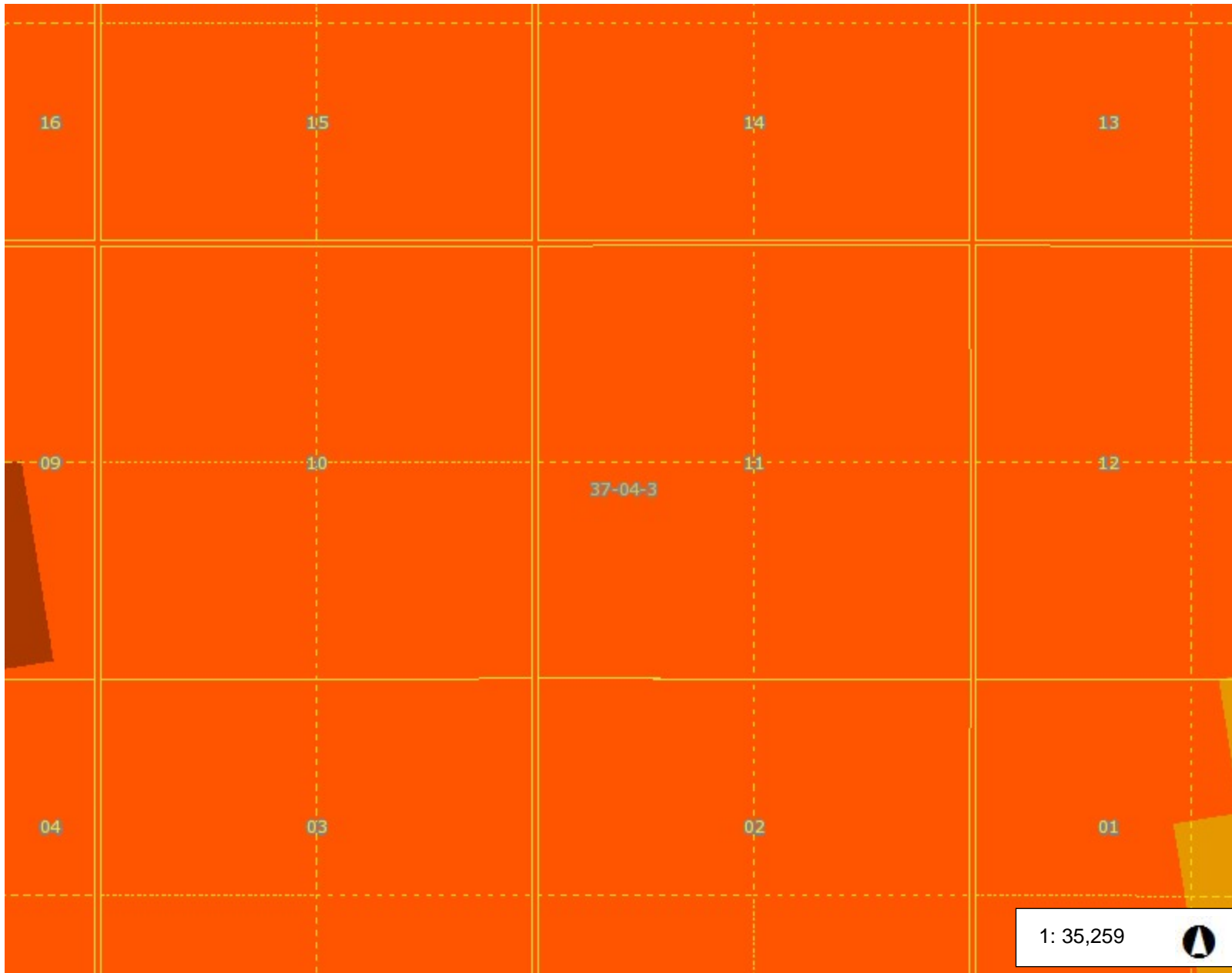
1.8 0 0.90 1.8 Kilometers

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
 © Latitude Geographics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

**THIS MAP IS NOT TO BE USED FOR NAVIGATION**

# Eagle Heights Soil Classification



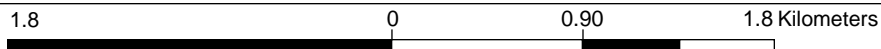
**Legend**

- Township
- Section
- Quarter Section

**Saskatchewan Soil Capability**

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Organic

1: 35,259



**Notes**