

Rook I Project

Environmental Impact Statement

**Annex VII.2: Vegetation Baseline Report 2 (Inventory, Rare
Plants, and Wetlands)**



CanNorth

Canada North Environmental Services Limited Partnership

A First Nation Environmental Services Company

**VEGETATION BASELINE REPORT 2
(INVENTORY, RARE PLANTS, AND WETLANDS)
FOR THE ROOK I PROJECT**

Final Report

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Project No. 3008

September 2021



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EXECUTIVE SUMMARY

The Rook I Project (Project) is a proposed new uranium mining and milling operation that is 100% owned by NexGen Energy Ltd. (NexGen). The Project would be located in northwestern Saskatchewan, approximately 40 kilometres (km) east of the Alberta-Saskatchewan border, 130 km north of the town of La Loche, and 640 km northwest of the city of Saskatoon. The vegetation inventory baseline program is a component of a comprehensive baseline program that documents the natural and socio-economic environments in the anticipated area of the Project. Information obtained through database searches and field surveys will be used alongside Indigenous Knowledge in the Environmental Assessment and cumulative effects assessment, to inform Project planning, and for developing future monitoring programs and reclamation plans.

The vegetation inventory baseline program was conducted to obtain comprehensive information characterizing terrestrial environments, wetlands, and aquatic and terrestrial vegetation communities, and to document species of conservation concern (SOCC) and associated habitats in near vicinity to the Project (Site Study Area [SSA]) and a broader Local Study Area (LSA). The SSA consisted of an area 25 km² in size encompassing the entire proposed Project footprint, and the LSA consisted of an area 225 km² surrounding and including the SSA. To meet study objectives, SOCC database searches, terrestrial and aquatic vegetation inventory surveys, and wetland classifications were completed.

A list of 276 plant species with conservation concern was compiled from database searches of the Mid-Boreal Upland and Athabasca Plain ecoregions, none of which were listed by Committee on the Status of Endangered Wildlife in Canada or on Schedule 1 of the *Species at Risk Act*. The Hunting, Angling and Biodiversity of Saskatchewan (HABISask) database search identified four provincially rare plant species within 30 km of the centre of the SSA; the W.P. Fraser Herbarium and Species at Risk Public Registry database searches yielded no results. The four species previously found within 30 km of the SSA were all located in wetland or shoreline habitats. None of these species were found during field surveys completed in 2018.

Two terrestrial vegetation inventory surveys were conducted in the SSA and LSA in June and August 2018, and one aquatic vegetation inventory survey was completed in Patterson Lake near the Project in August 2018. Vegetation community and ecosite data, and rare plant and weed location, distribution, and abundance were recorded. A total of 164 terrestrial transects and 103 aquatic sampling points were surveyed in the SSA and LSA. Terrestrial vegetation surveys were completed using straight-line transects, and aquatic surveys were completed using a grid-sampling method. A total of 114 plant species were detected across both the terrestrial and aquatic vegetation inventory surveys. The dominant habitats within the SSA and area of the proposed Project consisted of regenerating and recently burned jack pine (*Pinus banksiana*) stands. Other vegetation communities present within the SSA include wetlands and moist mixedwood/deciduous forests. The aquatic vegetation inventory survey revealed that littoral zones in the four surveyed locations in Patterson Lake are largely non-vegetated.

A total of three provincially ranked rare plant species were identified during the vegetation inventory surveys, including two terrestrial plants and one aquatic plant. Both terrestrial rare plant species were sedges (*Carex* spp.), and were found growing in bogs, shrubby rich fens, and in moist forest areas. The aquatic plant water lobelia (*Lobelia dortmanna*) was found floating in Patterson Lake during the aquatic survey, but was not found growing in any of the shallow littoral areas searched.

Wetland classifications identified a total of 15 wetlands within the SSA and LSA and of these, 13 were within the SSA, 4 were in the immediate vicinity of the Project footprint, and 2 were directly inside the proposed Project footprint.

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Abbreviations	Definition
CanNorth	Canada North Environmental Services
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
EA	Environmental Assessment
EIS	Environmental Impact Statement
HABISask	Hunting, Angling and Biodiversity of Saskatchewan
LSA	Local Study Area
NexGen	NexGen Energy Ltd.
Project	Rook I Project
SARA	<i>Species at Risk Act</i>
SC	Study components
SKCDC	Saskatchewan Conservation Data Centre
SOCC	species of conservation concern
SOP	Standard Operating Procedures
SSA	Site Study Area
TLU	Traditional Land Use
VC	Valued component

Units	Definition
ha	hectare
km	kilometre
km ²	square kilometre
m	metre
%	percent

1.0 INTRODUCTION

The Rook I Project (Project) is a proposed new uranium mining and milling operation that is 100% owned by NexGen Energy Ltd. (NexGen). The Project would be located in northwestern Saskatchewan, approximately 40 kilometres (km) east of the Alberta-Saskatchewan border, 130 km north of the town of La Loche, and 640 km northwest of the city of Saskatoon (Figure 1.0-1). The Project would reside within Treaty 8 territory and within the Métis Homeland. At a regional scale, the Project would be situated within the southern Athabasca Basin adjacent to Patterson Lake, along the upper Clearwater River system (Figure 1.0-2). Access to the Project would be from an existing road off Highway 955. The Project would include underground and surface facilities to support the extraction and processing of uranium ore from the Arrow deposit, a land-based, basement hosted, high grade uranium deposit.

The vegetation inventory baseline program represents a component of a comprehensive baseline program that documents the natural and socio-economic environments in the anticipated area of the Project. The vegetation inventory baseline program was undertaken to provide context from which terrestrial environment effects from the Project can be assessed in the Environmental Impact Statement (EIS).

Since exploration at the Project commenced in 2013, NexGen has engaged regularly and established relationships with local First Nations and Métis Groups (collectively referred to as Indigenous Groups) and northern communities, specifically those closest and with greatest access to the proposed Project. NexGen respects the rights of Indigenous Peoples and the unique relationship Indigenous Peoples have with the environment, and recognizes the importance of full and open discussion with interested or potentially affected Indigenous communities regarding the development, operation, and decommissioning of the proposed Project. Engagement activities to date, as well as future planned engagement activities, reflect the value NexGen places on meaningful engagement with Indigenous and northern communities who could be potentially affected by the proposed Project. Engagement mechanisms have included, but are not limited to: meetings with leadership, workshops and community information sessions, Project site tours, establishing Joint Working Groups to support the gathering and incorporation of Indigenous and Métis Knowledge throughout the Environmental Assessment (EA) process, and providing funding for Traditional Land Use (TLU) Studies¹ to understand how the proposed Project may interact with the Indigenous communities' traditional use of the anticipated area of the Project.

Feedback received during engagement activities was documented for contribution to the EIS for the Project; examples of feedback received include discussion of concerns, interests, potential adverse effects, mitigation, and design alternatives. Many baseline studies were initiated in advance of formal engagement on the EA for the Project; however, engagement during the execution of baseline studies has helped inform the understanding of baseline conditions and confirmed components of the natural and socio-economic environments that required study. A summary of feedback related to the vegetation inventory baseline program is presented in Appendix A of the Vegetation Baseline Road Map (Annex VII).

Canada North Environmental Services (CanNorth) was retained to complete baseline investigations for select study components (SCs) for the Project. The details of studies conducted between June and August 2018 to characterize vegetation communities in terrestrial and aquatic environments are presented herein.

¹Traditional Land Use (TLU) Studies include all land use studies developed by the Project's affected Indigenous Groups, including Traditional Land Use and Occupancy studies, Traditional Knowledge and Use studies, and Indigenous Rights and Knowledge studies, henceforth referred collectively as TLU Studies.

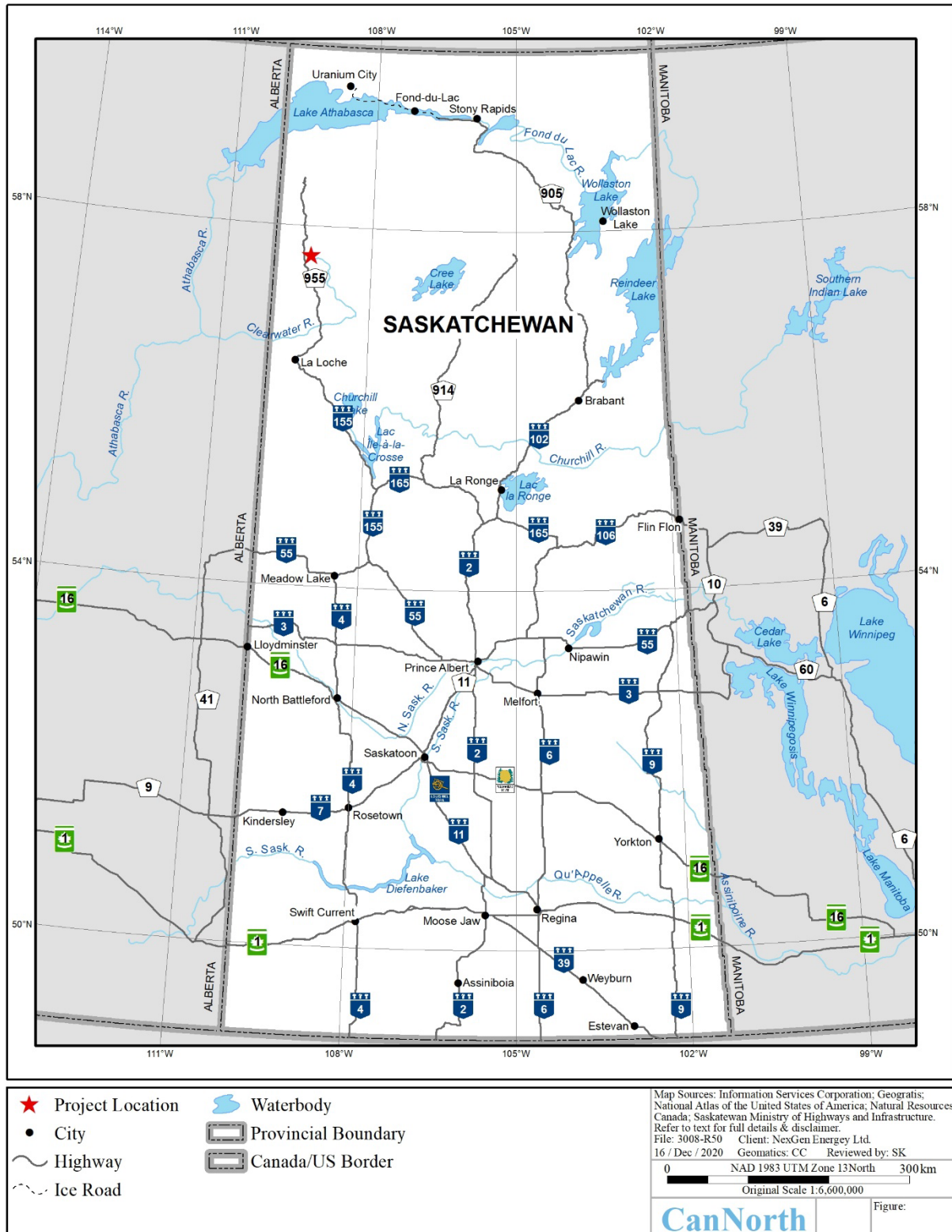


Figure 1.0-1: Location of the Rook I Project within Saskatchewan

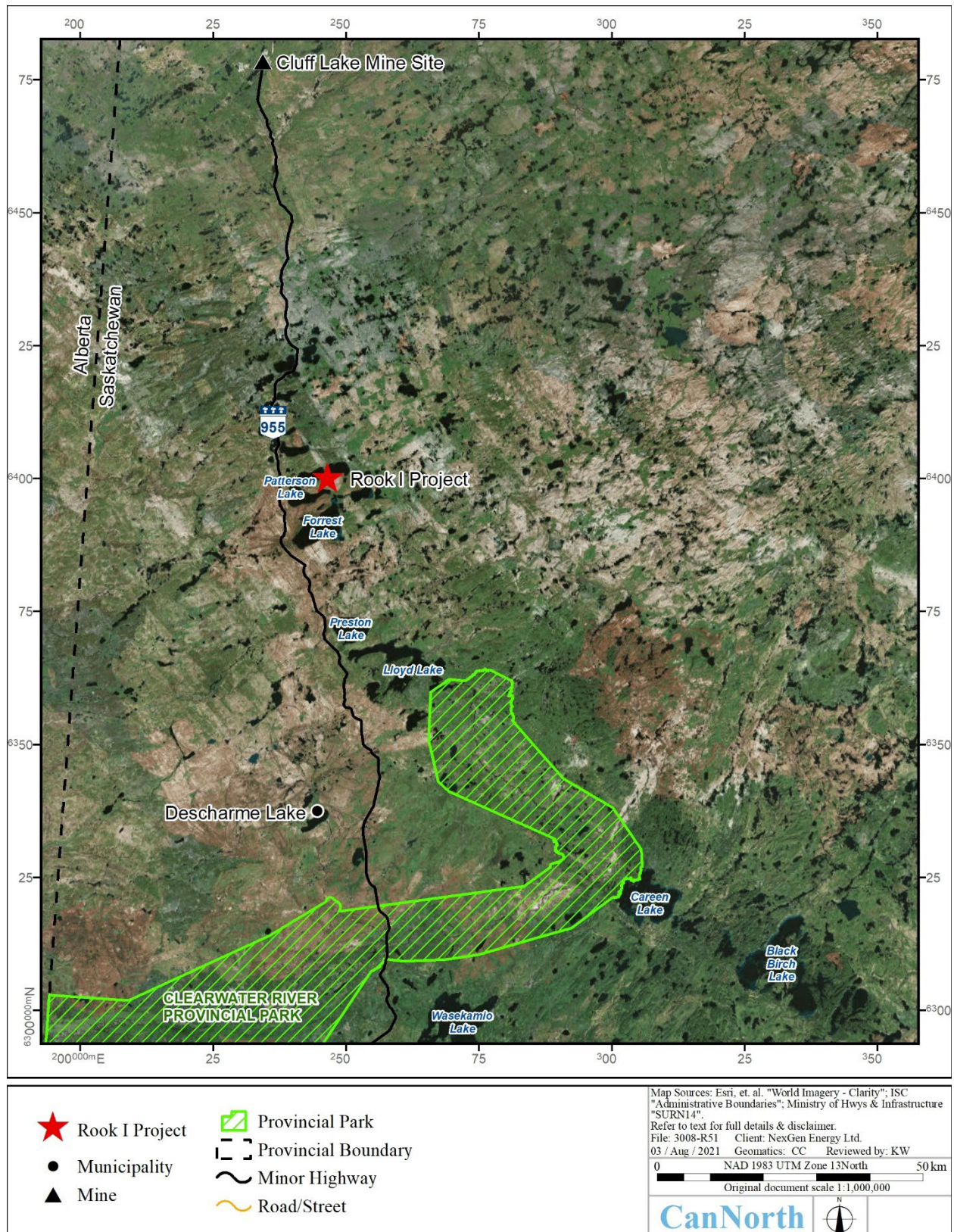


Figure 1.0-2: Location of the Rook I Project within the Region

1.1 Study Objectives

The objective of the vegetation baseline program was to obtain comprehensive information to characterize terrestrial environments, wetlands, and aquatic and terrestrial vegetation communities, and to document species of conservation concern (SOCC) and the associated habitats in study areas surrounding the Project. Study components were chosen for their potential to be selected as a valued component (VC) during the EA process, based on best practices for baseline characterization (ENV 2014; IAAC 2019; CNSC 2020). Valued components are those attributes that are scientifically, ecologically, historically, economically, socially, and culturally important to the government, Indigenous Groups, the public, the proponent, and other stakeholders (ENV 2014). Additionally, “the applicant or licensee should identify all biological species at risk (i.e., endangered, threatened, special concern, extirpated at a federal, provincial or municipal level) known to occur in the area or where the site is within the range of the species” (CNSC 2020).

A lifecycle approach was undertaken for the development and implementation of the Project baseline program that factored in data needs in the short and long term. This information is important for use in the EA and Project planning, and is also integral for developing future monitoring programs. Baseline data would be essential to compare with data obtained once the mine is operational and post-closure, and would inform future reclamation efforts, which was an aspect identified by during community feedback (WD Lewis & Associates Ltd. 2019). Furthermore, baseline vegetation surveys would provide pertinent data on the presence and abundance of traditional food and medicine types that were identified as important by Indigenous Groups in the region through TLU studies and Joint Working Groups (WD Lewis & Associates Ltd. 2019; YNLR 2020; Origins Heritage Consulting Inc. 2020). The information collected through desktop and field studies will be used alongside Indigenous Knowledge to provide a comprehensive and inclusive data set.

To meet study objectives, the following desktop and field studies were completed as part of the vegetation inventory baseline environment investigations for the Project:

- SOCC database searches;
- vegetation inventory surveys; and
- wetland classification.

Studies completed provided quantitative data collected using accepted standards of good scientific practice and up-to-date sampling procedures and equipment (ENV 2017a). The study design and objectives, methods, and results of each component of the vegetation baseline program conducted by CanNorth in 2018 are detailed in Sections 2.0, 3.0, and 4.0. Species nomenclature and common names used in this report follow the Saskatchewan Conservation Data Centre (SKCDC) taxa lists for vascular plants (SKCDC 2018), with the exception of select species used by McLaughlan et al. (2010) to describe forest ecosites, for which the common names used by McLaughlan are followed (e.g., jack pine [*Pinus banksiana*]).

1.2 Study Area

1.2.1 Ecoregion Description

The Project footprint lies within the Boreal Plain Ecozone, with some portions of the Local Study Area (LSA; described below) extending into the adjacent Boreal Shield Ecozone. The Project footprint is within the Firebag Hills landscape area of the Mid-boreal Uplands Ecoregion, whereas the LSA is encompassed by

two ecoregions; the Firebag Hills landscape area of the Mid-boreal Uplands Ecoregion and the McTaggart Plain landscape area of the Athabasca Plain Ecoregion.

The Firebag Hills landscape area of the Mid-Boreal Upland Ecoregion is characterized by variable elevational gradients, ranging from 480 metres (m) to 580 m above sea level, with both strong and gentle rolling morainic hills (Acton et al. 1998). All water in this landscape area drains westward through the Clearwater River and associated watercourses. Regosolic soils are found predominantly on the eroding slopes of watercourses, whereas Dystric Brunisolic soils are found on more stable slopes and in the upland sections on top of sandy glacial till and glaciofluvial deposits. The vegetation on the northern part of this area is characterized by shrubby jack pine forests that possess lichen understoreys, a consequence of frequent forest fires and the sandy soils that lie beneath (Acton et al. 1998). Conversely, the poorly drained depression areas consist of tamarack (*Larix laricina*) and black spruce (*Picea mariana*) peatlands.

The McTaggart Plain landscape area of the Athabasca Plain Ecoregion has northward sloping hills from the southern point of this area, ranging from 540 m to 450 m above sea level (Acton et al. 1998). Sandy glaciofluvial deposits and eskers are abundant in the area, where Brunisolic soils can be found on the well-drained slopes and overtop the glacial till plains. Organic soils, Gleysolic soils, and Cryosolic soils dominate the poorly drained depression areas and large flat bogs, with permanently frozen Cryosolic soils occasionally present. Jack pine and black spruce stands dominate the slopes of many eskers, whereas open jack pine forests are exclusive to sandy glaciofluvial areas. The depression/boggy flat areas are covered in dense black spruce forests with stunted trees (Acton et al. 1998).

1.2.2 Vegetation Study Area

Study areas established for the terrestrial vegetation inventory investigations and wetland classifications conducted by CanNorth in 2018 were determined based on the deposit location, the preliminary site layout, regulatory requirements (provincial [ENV 2017a] and federal [IAAC 2019]), and consideration of study area sizes from other baseline investigations completed for other northern mining developments in Saskatchewan (e.g., CanNorth 2010; 2013a,b; AREVA 2016). Investigations were focused in a Site Study Area (SSA), as well as a LSA, which are centred on the Arrow deposit (Figure 1.2-1). The SSA consisted of an area 25 square kilometres (km²) (5 km x 5 km) encompassing the entire proposed Project footprint, whereas the LSA consisted of an area 225 km² (15 km x 15 km) surrounding and including the SSA (Figure 1.2-1).

The SSA included the area where the deposit is located, and ultimately where the construction and mine operations would occur. The SSA area was where effects (i.e., total area subject to vegetation and soil disturbance, which may have direct and indirect effects on vegetation and wildlife) are expected to occur on the terrestrial environment (GS 2014). The LSA included the area surrounding the SSA where there is reasonable potential of direct and/or indirect effects on the terrestrial environment from the Project activities (GS 2014). The SSA and LSA boundaries are of an appropriate scale and location for assessment of effects on potential VCs resulting from existing and planned activities (CanNorth 2010; GS 2014; IAAC 2019). Note that these baseline study boundaries were defined at the beginning of the baseline field studies to inform the field study designs; however, the SSA and LSA vary from those chosen for EA conducted when the Project design was finalized.

Select areas of Patterson Lake located near the Project were the focus of the aquatic vegetation inventory survey. Patterson Lake discharges into Patterson Creek (part of the Clearwater River) and then flows east through a series of lakes including Forrest, Beet, and Naomi lakes as it makes its way through the Clearwater River system. The Clearwater River extends approximately 300 km, and is located in both

Saskatchewan and Alberta. It also runs through Clearwater Provincial Park, and has been granted Canadian Heritage River status.

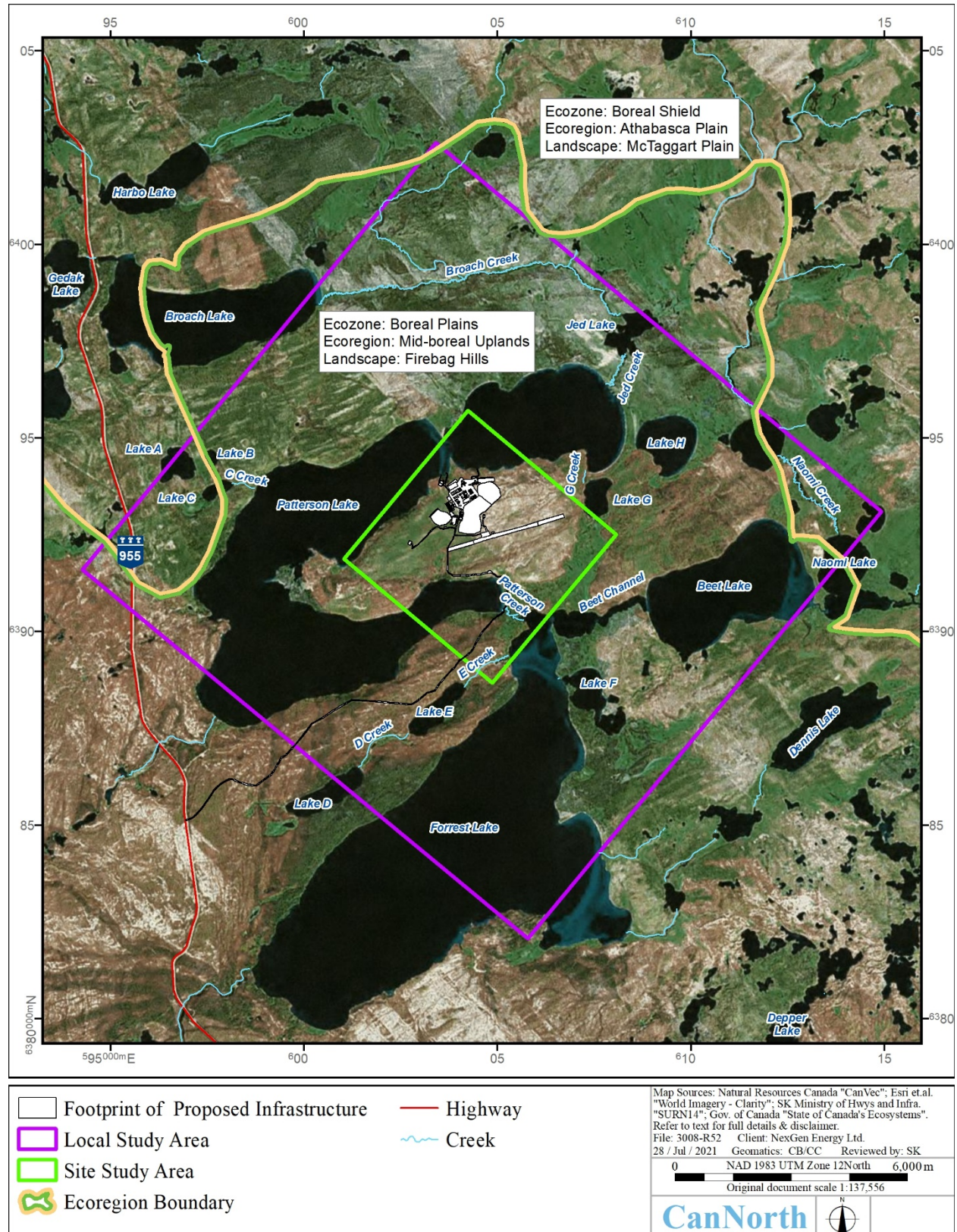


Figure 1.2-1: Site and Local Study Area for the Vegetation Baseline Studies, 2018

2.0 DATABASE SEARCHES

2.1 Study Objectives

To meet regulatory guidance and scientific best practices, database searches were completed to aid in describing terrestrial and aquatic environmental conditions (ENV 2014; IAAC 2019; CNSC 2020). The objectives of the database searches were to summarize ecosites, habitat boundaries, waterbody locations, and historical and geographical data on rare vascular plant SOCC found in the SSA and LSA. Results from database searches were used to plan the in-field terrestrial and aquatic vegetation surveys and wetland classifications, as well as inform field biologists of habitats which are likely to contain SOCC within the SSA and LSA.

2.2 Methods

Prior to field surveys, a list of federal and provincial vascular plant species with conservation concern was compiled. To identify any SOCC that may occur within the SSA and LSA, database searches were completed using the Hunting, Angling and Biodiversity of Saskatchewan (HABISask) mapping application (ENV 2018), the W.P. Fraser Herbarium (SASK 2018), and the Species at Risk Public Registry (SARPR 2018). Search areas used for the HABISask and W.P. Fraser Herbarium database results encompassed a 30-km radius from the centre of the SSA. The list of provincially rare vascular plants that occur in the Mid-Boreal Upland and Athabasca Plain ecoregions was reviewed to determine if any protected species may occur within the LSA (including the SSA) (SKCDC 2018).

Search results for SOCC included species considered federally and/or provincially rare or sensitive that are expected to occur in the study areas, as well as previously recorded occurrences of rare, at-risk, and protected species in the vicinity of the LSA. Federally rare or sensitive species are designated as endangered, threatened, special concern, not at risk, or extirpated under Schedule 1 of the Species at Risk Public Registry (SARPR 2018). Provincially rare or sensitive species are designated S1 (critically imperiled/extremely rare), S2 (imperiled/very rare), S3 (vulnerable/rare to uncommon), SH (historically present without recent verification), SNR (species not yet provincially ranked), or SU (provincial status uncertain due to insufficient information) by the SKCDC (2018, 2021).

2.3 Results

The HABISask database search identified four provincially rare plant species within 30 km of the centre of the SSA and with potential to occur within the SSA or LSA; the W.P. Fraser Herbarium and Species at Risk Public Registry database searches yielded no results (SASK 2018; SKCDC 2018; Table 2.3-1). English sundew (*Drosera anglica*), hair-like beaked-rush (*Rhynchospora capillacea*), and horned bladderwort (*Utricularia cornuta*), which are all provincially-ranked S3, have been observed within 30 km of the centre of the SSA, but at least 10 km from the border of the LSA. Heart-leaved twayblade (*Listera cordata* var. *cordata*), which is provincially-ranked S3, has been observed within approximately 1 km of the LSA. Although no provincially rare plants have been documented within the SSA or LSA, due to the remote location of the Project the absence of observation information in HABISask may reflect lack of previous survey effort in the area rather than an absence of rare species. All four of the rare vascular plant species previously found within 30 km of the Project grow in wetland habitats, which was taken into consideration when designing the vegetation inventory and rare plant surveys. Two hundred and seventy six (276) provincially rare plants are known to occur in the Mid-Boreal Upland and Athabasca Plain ecoregions and

have potential to occur within the SSA or LSA (SKCDC 2018, 2021; Appendix A, Table 1). None of the plant species identified in these database searches are federally listed by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or on Schedule 1 of the *Species at Risk Act* (SARA) (SARPR 2018).

Table 2.3-1: Provincially Rare Vascular Plant Species Known to Occur within 30 km of the Centre of the Rook I Project

Scientific Name	Common Name	Provincial Rank and Activity Restriction Guidelines				Habitat
		SKCDC Rank	Protected Aspect	Restricted Activity Dates	Setback Distance (m)	
<i>Drosera anglica</i>	English sundew	S3	Occurrence	Year round	30	Marly shores, fens, and drainage tracks in peat bogs ^a .
<i>Rhynchospora capillacea</i>	Hair-like beaked-rush	S3	Occurrence	Year round	30	Moist to wet calcareous fens, seeps over limestone or calcareous rock, and marsh meadows ^a .
<i>Listera cordata</i> var. <i>cordata</i>	Heart-leaved twayblade	S3	Occurrence	Year round	30	Moist to wet, mossy spruce or mixedwood forests, swamps, and sphagnaceous bogs and fens ^b .
<i>Utricularia cornuta</i>	Horned bladderwort	S3	Occurrence	Year round	30	Peaty or muddy shores and bogs ^c .

Source: Scientific, common names, and provincial rank from SKCDC (2021); Activity restriction guidelines for high-disturbance activities as per ENV (2017b).

SKCDC = Saskatchewan Conservation Data Centre. S2 = Imperiled/very rare; S3 = Vulnerable/rare to uncommon.

^aSource: FNA 2018.

^bSource: Harms and Leighton 2011.

^cSource: Looman and Best 1979.

3.0 VEGETATION INVENTORY AND RARE PLANT SURVEY

3.1 Study Objectives

To meet regulatory guidance and scientific best practices, field surveys were completed to assist in describing terrestrial and aquatic environmental conditions (ENV 2014; IAAC 2019; CNSC 2020). The objectives of the vegetation inventory and rare plant surveys conducted in summer 2018 were to confirm and expand upon ecosite and plant communities data from database searches, meet Saskatchewan Ministry of Environment (ENV) guidelines for sampling effort in each habitat found within the area of the Project, and to document occurrences of terrestrial and aquatic vascular plant species, including rare and weedy species (ENV 2017a; GS 2010). Surveys were also used to determine which habitats in the LSA have the highest potential to support rare plant populations and gather abundance and distribution data on rare plant occurrences, as SOCC are a potential VC for the EA (ENV 2017a; CNSC 2020).

3.2 Methods

Two terrestrial vegetation inventory surveys were conducted in the LSA between 6 and 13 June 2018, and 14 and 21 August 2018. An aquatic vegetation inventory survey was completed between 15 and 17 August 2018. The surveys were conducted in accordance with the CanNorth Standard Operating Procedures (SOPs) for terrestrial and aquatic vegetation inventory surveys, which conform to ENV guidelines, and account for potential VCs (ENV 2014; ENV 2017a). A Species Detection Research Permit (#18SD005) was obtained from ENV, Fish and Wildlife Branch.

Terrestrial vegetation inventory surveys focused on community composition by identifying and documenting distribution and abundance for vascular plant species present, including the presence of rare/sensitive species and weed species listed under *The Weed Control Act* (GS 2010). Survey locations were determined prior to the commencement of field work, and were based on available ecosite information. Survey locations were aimed to proportionally sample all habitat strata present within the SSA as per the formula provided by ENV (2017a) below, along with select areas of the LSA.

$$y = (0.8x/z) + (40/z)$$

where:

- "y" is the number of 100 m transects;
- "z" is the total transect width (e.g., for a two-person team) in m; and
- "x" is the area of each habitat strata in hectares (ha) (ENV 2017a).

Habitat strata were based on McLaughlan et al. (2010) mapping layers provided by the author and the Saskatchewan Research Council (SRC; see Section 7.0 for mapping sources). Survey effort was based on the total habitat area of the SSA, not the Project footprint shown in figures, as the footprint was in a preliminary draft stage during the field planning period. Initial survey calculations were used as a rough guide for survey effort (i.e., minimum total number of transects to be completed) with the expectation that *in situ* habitat strata may be different than the habitat predicted by the McLaughlan mapping model due to the model's predictive power and changes in the land cover composition over time, such as disturbance (i.e., fire, mining exploration, flooding, etc.). Additionally, the mapping model used for McLaughlan (2010) habitat strata is based on a coarse scale (1:20000 to 1:50000) that does not always account for small, unique ecosites on the landscape. As per ENV (2017a) guidelines, all habitat strata within a Project footprint should be sampled a minimum of once, and those ecosites on the landscape that were not identified through

preliminary desktop searches (i.e., small and unique ecosites) were adequately sampled to meet this requirement when observed *in situ*. The area of the Project lies on the boundary of two ecozones, Boreal Plain and Boreal Shield. Boreal Shield was selected as the primary habitat strata to use for preliminary planning based on available mapping layers, aerial imagery, and previous data collected in the Patterson Lake area. McLaughlan (2010) provides ecozonal synonyms, or comparable ecosites found in different ecozones, which can be useful in a transition zone such as the area of the Project if *in situ* transects prove to be a poor fit for either ecozone.

Surveys were conducted by two qualified botanists via straight-line transects, twice in a growing season for detection of early- and mid-season blooming species (ENV 2017a). Transects are the required sampling unit because they are repeatable, reduce bias, allow calculation of search effort, reduce errors, and are more likely to detect rare plants (Henderson 2009; ENV 2017a). Width and length of transects are determined by the habitat within the survey area. Transect length for forested sites is 100 m, with the maximum width between 4 m to 8 m (2 m to 4 m per person). Transect width is based on the most cryptic (difficult to observe) potential target species and height and depth of vegetation in the habitat. If cryptic species are unlikely and vegetation is short or sparse, transect widths may be wider, while areas with higher potential for cryptic, rare species and dense vegetation require narrower transects (ENV 2017a). These dimensions were used along with ecosite and habitat data from aerial photographs and database search results to calculate the number of transects required (ENV 2017a). All transects were at minimum 10 m apart, as per ENV guidelines, and the minimum area in ha sampled per habitat stratum was 3% of the total habitat area, as per ENV guidance at the time of field planning, as the Project footprint had not been finalized.

A total of 164 terrestrial vegetation inventory transects (Figure 3.2-1; Table 3.2-1), each 100 m in length, at 85 locations, were surveyed fulfilling recommended sampling effort criteria required by ENV (2017a). A total of 79 transect locations were surveyed twice, with the exception of six transect locations surveyed only during the second field visit within the proposed airstrip when the location of the footprint had been updated. These surveys within the proposed airstrip were conducted in a single habitat stratum which had already been surveyed thoroughly enough to meet ENV requirements, and therefore conducting only one survey is not expected to impact data quality. Differences between predicted and completed transects in Table 3.2-1 are related to the presence of unique (unpredicted) ecosites on the landscape, previous landscape disturbances, and the Project footprint adjustments made just before and during in-field vegetation surveys. Where unique ecosites were encountered within polygons predicted to be of a different ecosite type, additional vegetation inventory surveys were completed in these unique habitat strata; conversely, where an ecosite comprised less area than expected from desktop studies, survey effort for that habitat stratum was correspondingly reduced in favour of capturing vegetation community composition of unique ecosites encountered.



Figure 3.2-1: Location of Terrestrial Vegetation Inventory Transects, Summer 2018

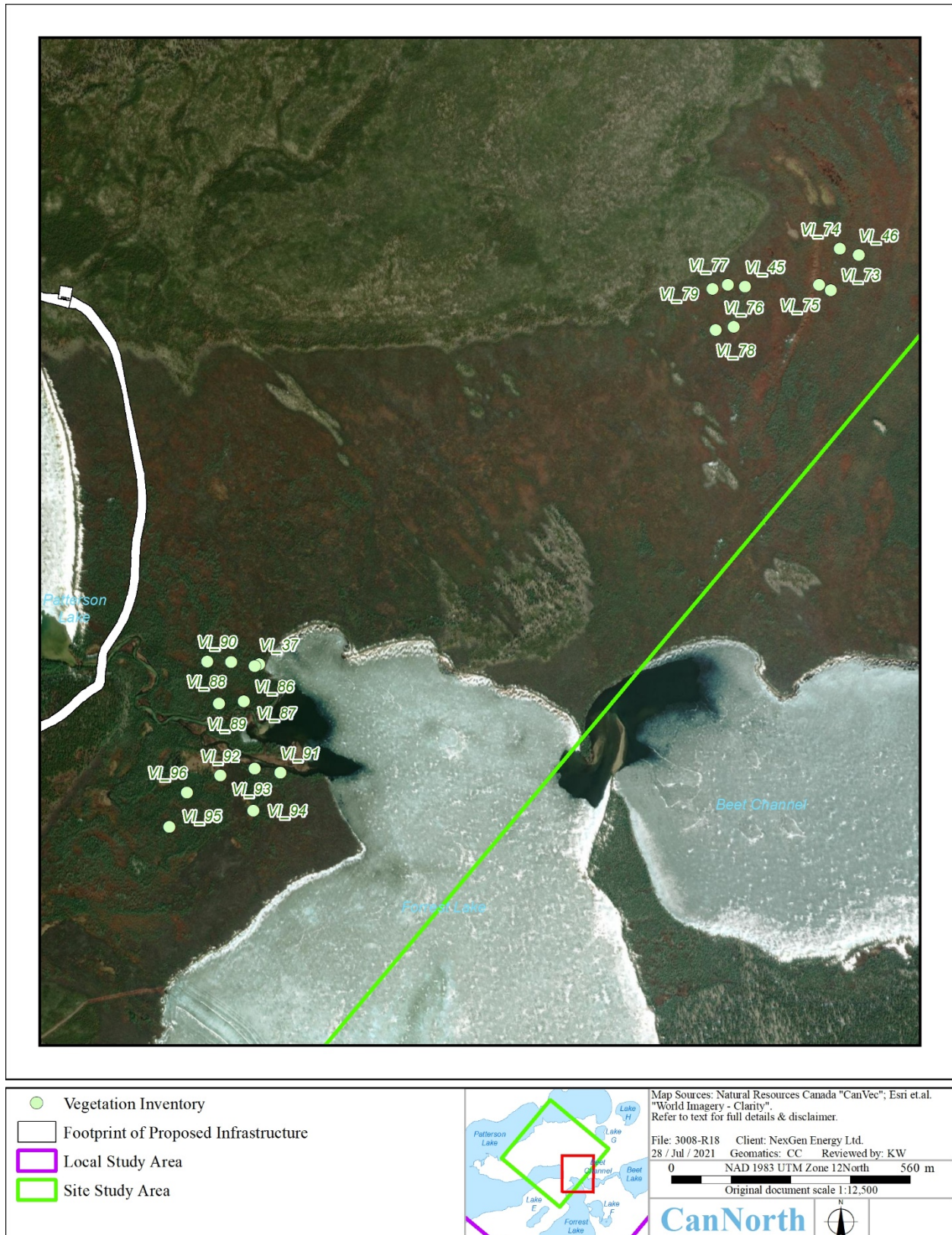


Figure 3.2-1: Location of Terrestrial Vegetation Inventory Transects, Summer 2018 (cont'd)



Figure 3.2-1: Location of Terrestrial Vegetation Inventory Transects, Summer 2018 (cont'd)

Table 3.2-1: Habitat Strata and Survey Effort for Rook I Terrestrial Vegetation Inventory Surveys

Predicted Habitat Stratum ^a	Area of Stratum Within SSA (ha)	Minimum Survey Area per Habitat Stratum (ha) ^b	Transect Width (m)	Formula Used ^c $y=(0.8x/z)+(40/z)$	Predicted Minimum Number of Transects	<i>In Situ</i> Habitat Strata	Number of Transects Completed In Field ^d
BS03	816	24.5	8	$=(0.8*24.5/8)+(40/8)$	7	BS03	21
BS04	511	15.3	8	$=(0.8*15.3/8)+(40/8)$	7	BS04	7
BS13	21	0.6	8	$=(0.8*0.6/8)+(40/8)$	5	BS13	2
BS14	33	1.0	8	$=(0.8*1.0/8)+(40/8)$	5	BS14	3
BS17	104	3.1	4	$=(0.8*3.1/4)+(40/4)$	11	BS17	12
BS18	81	2.4	4	$=(0.8*2.4/4)+(40/4)$	10	BS18	13
BS22	58	1.7	4	$=(0.8*1.7/4)+(40/4)$	10	BS22	-
BS24	6	0.2	4	$=(0.8*0.2/4)+(40/4)$	10	BS24	1
Unpredicted Ecosite	-	-	-	-	-	BS5	6
						BS10	3
						BS15	1
						BS16	4
						BS21	2
						BS23	2
Revegetating/Regenerating Burn ^e	262	7.9	4	$=(0.8*7.9/8)+(40/8)$	12	Burn ^e	8
Total					77		85

LSA = Local Study Area; SSA = Site Study Area.

^aSource: Habitat strata based on mapping layers provided by McLaughlan et al. (2010) and the Saskatchewan Research Council (SRC). Landcover types unsuitable as terrestrial plant habitat (i.e., water, roads) are omitted.

^bCalculated as 3% of the total number of ha per habitat stratum in the site study area.

^cSource: ENV (2017a); x = minimum area in ha per habitat stratum; z = transect width; y = minimum number of transects required.

^dWhere habitat strata differed *in situ* from those predicted from desktop studies, survey effort for predicted habitat strata was reduced in favour of capturing vegetation community composition of unique ecosystems encountered.

^eRegenerating/revegetating burn; treed vegetation <20 years old.

ENV (2017a) recommends the completion of aquatic vegetation surveys for projects within 45 m of semi-permanent or permanent wetlands, including lakes and large waterbodies. Consequently, aquatic vegetation inventory surveys were conducted in four survey locations in Patterson Lake, within close proximity to existing (e.g., exploration camp dock) and potential future site operations. Each location had a rectangular grid/array of sampling points, with the points extending from the shoreline outwards into the lake, ending at the maximum depth most likely to support aquatic plant populations. A total of 103 sampling points were surveyed within these four survey locations (Figure 3.2-2). As per previous research and regulatory standards (Madsen 1999; ENV 2017a), the arrays had at least four sampling points per hectare of the littoral zones, with points spaced 25 m to 70 m apart. The number of points per array was dependent on the size of the littoral zones, with larger zones having more sampling points. At each sampling point, the presence and identification of any existing submerged, floating-leaved, and emergent vegetation was recorded.

All species observed during terrestrial and aquatic vegetation inventory surveys were recorded. Where field identification of a plant specimen was not possible, photographs were taken of the specimen and habitat and confirmed upon return from the field trip. Specimen collection was only completed if necessary for identification and if the collection resulted in a loss of less than 4% of the local population (ENV 2017a).

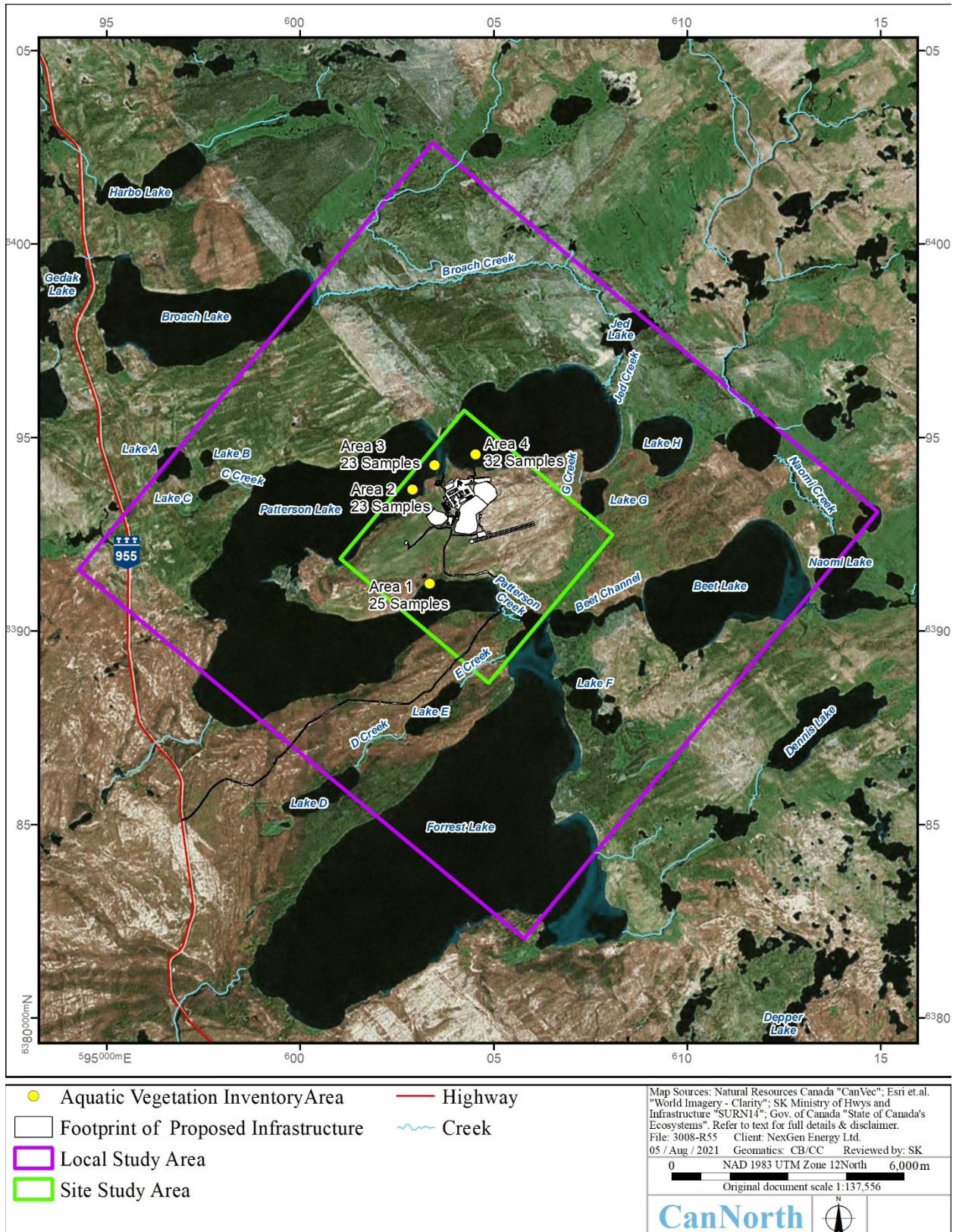


Figure 3.2-2: Overview of Aquatic Vegetation Inventory Sampling Locations, Summer 2018 Results

3.3 Results

A total of 114 plant species were detected across both the terrestrial and aquatic vegetation inventory surveys within the SSA and LSA (Appendix A, Table 2). The dominant habitats within the SSA and the area of the proposed Project consisted of regenerating and recently burned jack pine stands (Appendix B, Photo 1). These vegetation communities tend to have very low species diversity, being almost exclusively dominated by jack pine and common ericaceous shrub species (e.g., bearberry [*Arctostaphylos uva-ursi*], Labrador tea [*Rhododendron groenlandicum*], blueberry [*Vaccinium myrtilloides*], mountain cranberry [*Vaccinium vitis-idaea* ssp. *minus*]), and green alder (*Alnus viridis* ssp. *crispa*). The forest floors of these communities have a greater proportion of lichens than mosses and are typically covered with needle litter, woody debris, and rocks. To a lesser extent, mature jack pine-dominated forests were also observed within the SSA and LSA (Appendix B, Photo 2). These are similar to the regenerating stands, but differ in tree height and canopy cover, tend to have greater green alder cover, and have more mosses on the forest floor than lichens. Other vegetation communities present within the SSA and LSA include wetlands (see Section 4.3) and moist mixedwood/deciduous forests.

A total of three provincially rare plant species were identified in the SSA during the vegetation inventory surveys; two of these were terrestrial species, and one was aquatic (Figure 3.3-1). The terrestrial rare plants included two rare sedge species: Hudson Bay sedge (*Carex heleonastes*) and beautiful sedge (*C. concinna*) (Appendix B, Photos 3 and 4). Both sedge species are provincially ranked as S3 (vulnerable/rare to uncommon) (SKCDC 2018; Table 3.3-1). Over 50 individuals of beautiful sedge and one individual of Hudson Bay sedge were observed. Both rare sedge species were observed growing in moist habitats (i.e., bogs, fens, moist woods) (Table 3.3-1).

Outside of the proposed disturbance area of the Project, vegetation communities in the SSA or LSA are largely undisturbed from anthropogenic sources. Thus, additional rare plant populations may also exist in areas of high habitat potential within the SSA or LSA, as only a portion of available habitat was surveyed. These vegetation inventory surveys do not preclude the potential for additional rare plant species to be present (i.e., due to variable emergence between years). A detailed vegetation table denoting terrestrial plant species found per transect is provided in Appendix A, Table 3.

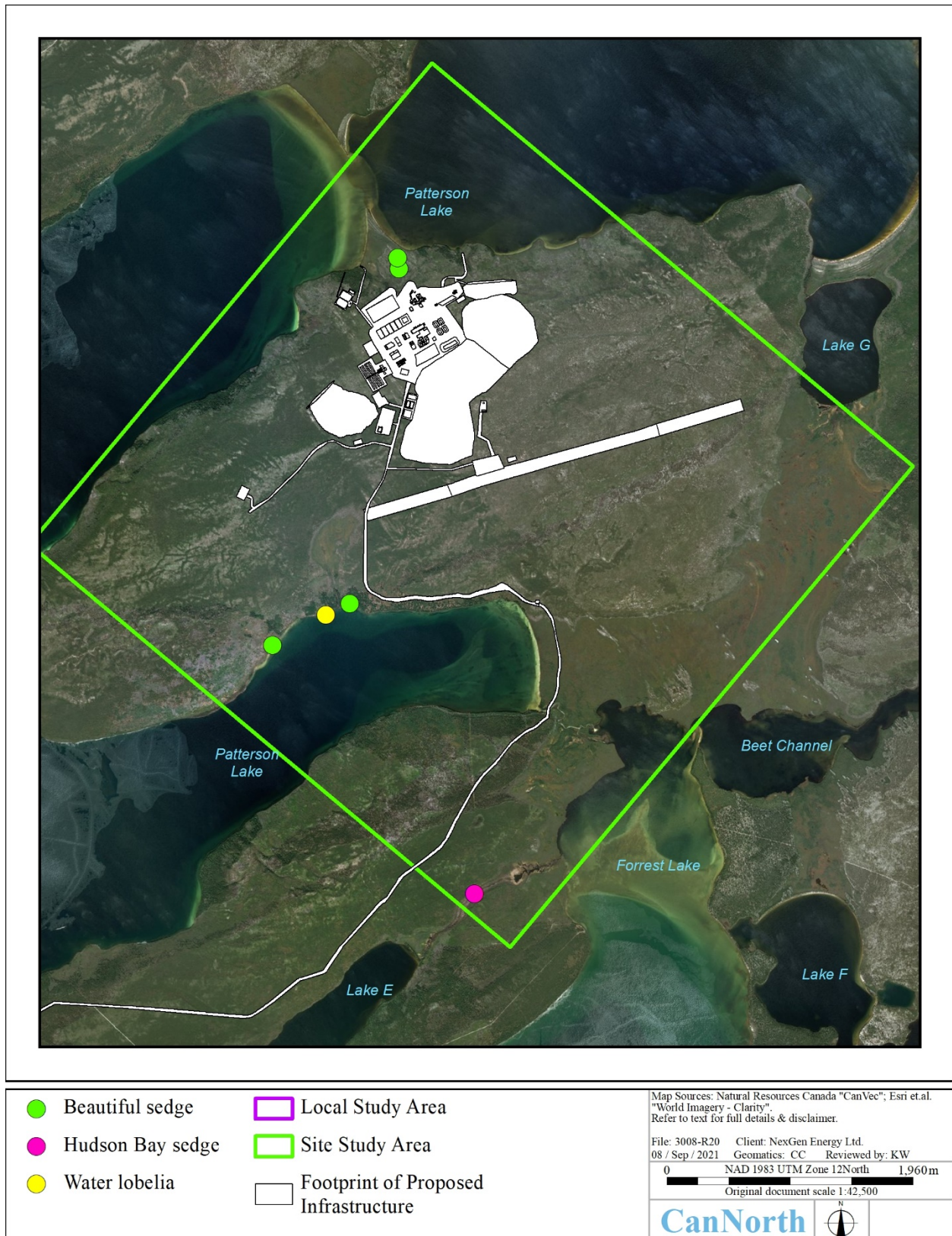


Figure 3.3-1: Provincially Rare Plant Species Observed in Site Study Area, Summer 2018

Table 3.3-1: Provincially Rare Plant Species Observed in the Site Study Area, Summer 2018

Scientific Name	Common Name	SKCDC Rank	Count	Study Area	Habitat	UTM Coordinates ^a	
						Easting	Northing
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	1	SSA	Shrubby rich fen	604581	6389094
<i>Carex concinna</i>	Beautiful sedge	S3	50+	SSA	Shrubby bog	603984	6394070
			2	SSA	Lakeshore/moist coniferous	603974	6394157
			1	SSA	Moist mixedwood	602978	6391074
<i>Lobelia dortmanna</i> ^b	Water lobelia	S3	1	SSA	Aquatic/lake shoreline	603402	6391316

Source: All scientific, common names, and provincial ranks from SKCDC (2018a) with the exception of water lobelia (see footnote b).

a) UTM = NAD83, Zone 12U.

b) Floating fragment only, no rooted specimen found. Species ranking from SKCDC (2021).

SKCDC = Saskatchewan Conservation Data Centre; S3 = vulnerable/rare to uncommon; SSA = Site Study Area.

The aquatic vegetation inventory survey revealed that littoral zones in the four surveyed locations in Patterson Lake are largely non-vegetated. Four different areas were sampled, and of the 103 sampling points visited, plant occurrences were documented at only 16 points (Figure 3.3-2; Appendix A, Table 4). Area 1 was sampled at 25 points for a total of three observed species: sago pondweed (*Stuckena pectinata*) ranked S4; narrow-leaved bur-reed (*Sparganium angustifolium*), ranked S4; and a floating fragment of water lobelia (*Lobelia dortmanna*), ranked S3 (SKCDC 2021), detected at a single survey point (Appendix B, Photo 5). No rooted specimens of this species were detected at any sampling points and the source of the floating fragment was unknown. Area 2 was sampled at 23 points with one species observed: spiny-spored quillwort (*Isoetes echinospora*), ranked S4. Area 3 was sampled at 23 points for a total of four observed species: sago pondweed; narrow-leaved bur-reed; northern pondweed (*Potamogeton alpinus*), ranked S4; and yellow cowlily (*Nuphar variegata*), ranked S4. Area 4 was sampled at 32 points for a total of three observed species: sago pondweed, spiny-spored quillwort, and narrow-leaved bur-reed.

Although none of the rare plant species listed in Table 2.3-1 are listed under SARA or protected under *The Wildlife Act* (GS 1998; SARPR 2018), they are provincially rare (S3). All provincially ranked plant species have recommended activity restriction setback distances. For high disturbance activities such as mining developments, there is a recommended year-round setback of 30 m for all S1 through S3 species (ENV 2017b).

No weeds listed under *The Weed Control Act* (GS 2010) were observed within the LSA or SSA. American mistletoe (*Arceuthobium americanum*) was observed in eight transects within the LSA (Table 3.3-2), four of which were near the area of the proposed Project (Figure 3.3-3). American mistletoe is a parasitic plant that grows on pine trees, with jack pine being the main host in Saskatchewan. Although this is a native species, it is considered to be a problematic forest pest that can infest large areas of pine forests (GS 2016). The most recognizable symptom of mistletoe infestations is the prolific growth of infected branches known as “witches’ broom” (Appendix B, Photo 6). American mistletoe uses trees of any age as hosts, with younger trees and seedlings being more susceptible to mortality from infection. Ultimately, mistletoe infestations can kill large volumes of trees and can produce a substantial fire hazard (GS 2016).



Figure 3.3-2: Patterson Lake Aquatic Vegetation Inventory Survey Results, August 2018

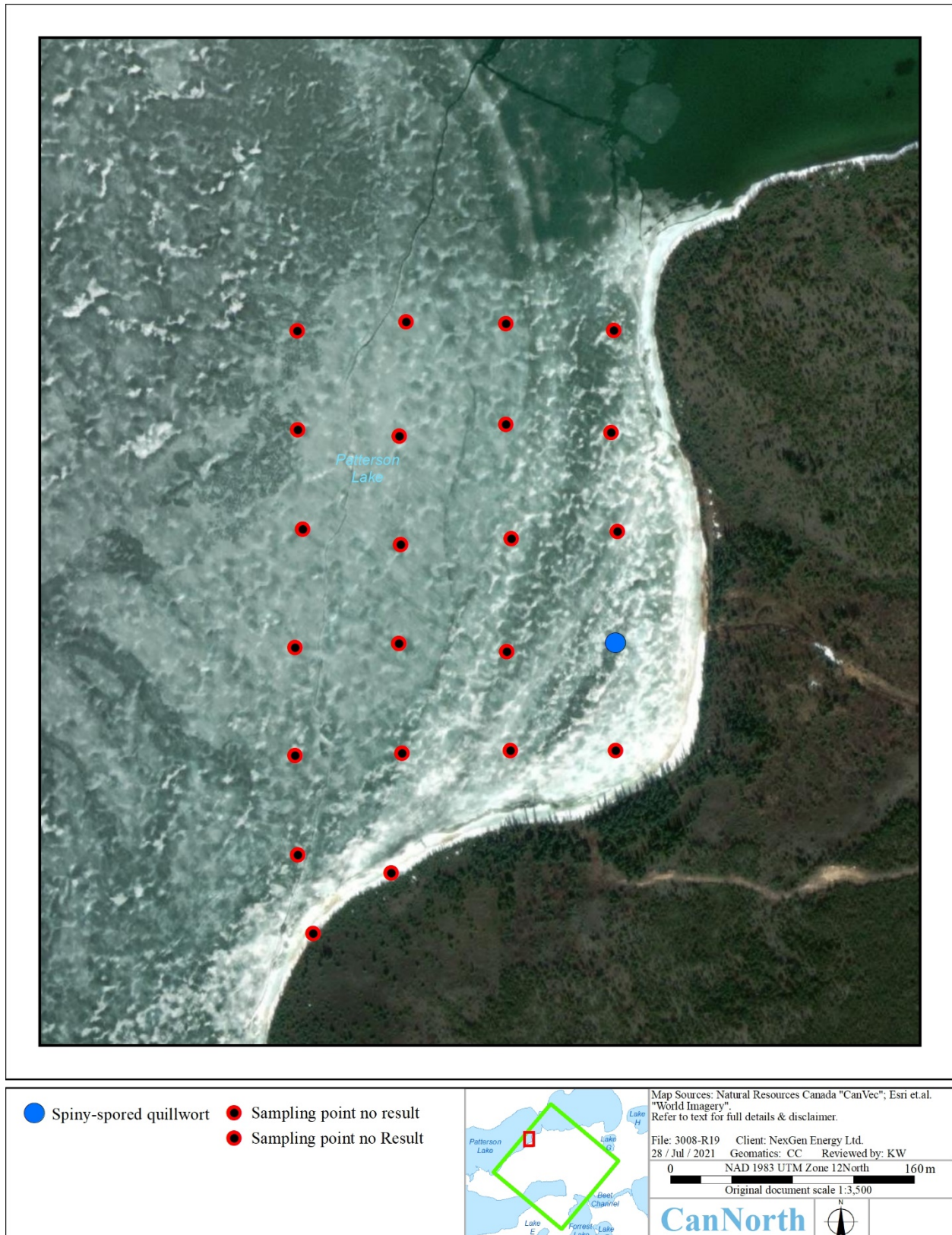


Figure 3.3-2: Patterson Lake Aquatic Vegetation Inventory Survey Results, August 2018 (cont'd)

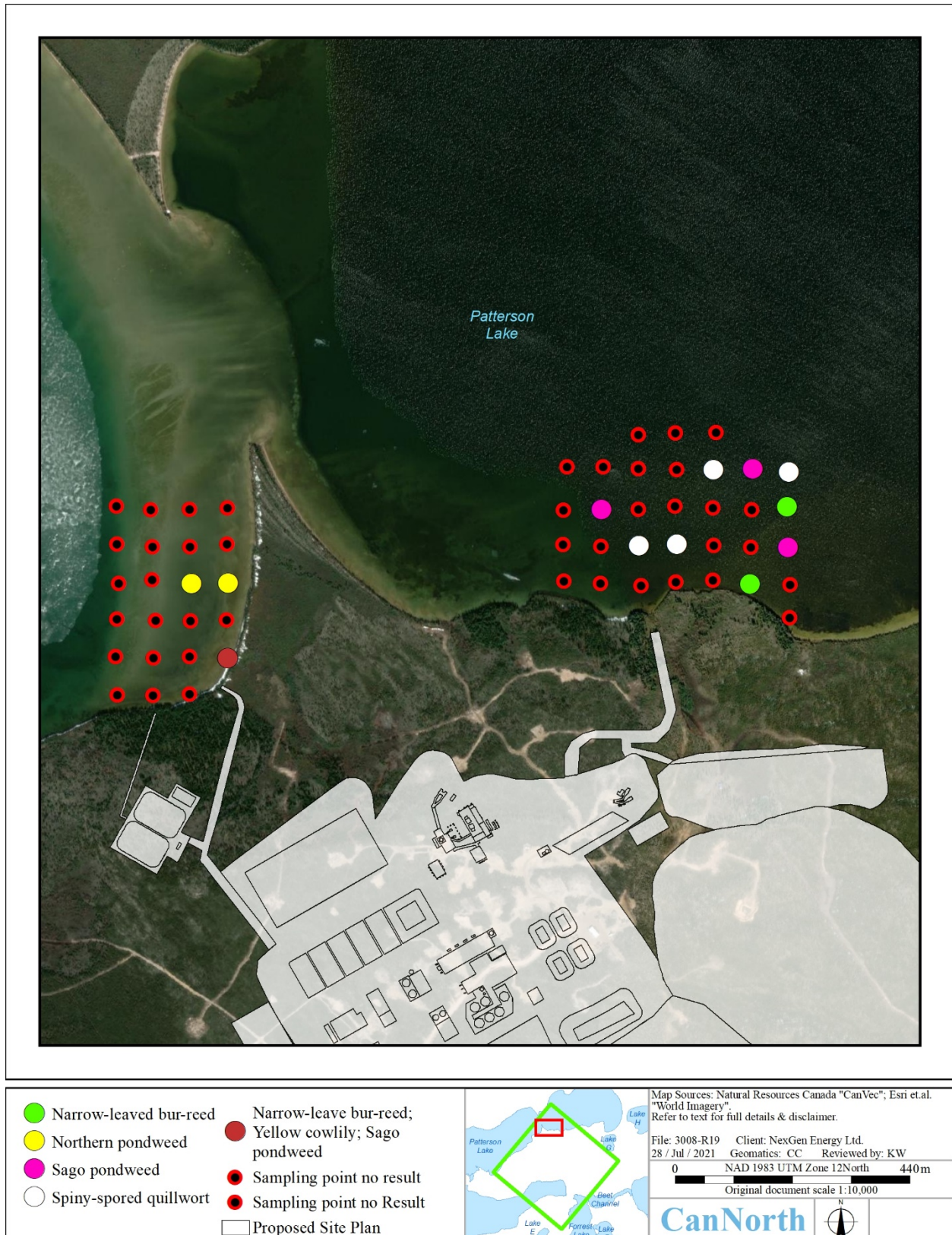


Figure 3.3-2: Patterson Lake Aquatic Vegetation Inventory Survey Results, August 2018 (cont'd)

Table 3.3-2: American Mistletoe (*Arceuthobium americanum*) Observations, Summer 2018

Transect	Description	Stand Age	Study Area	UTM Coordinates ^a	
				Easting	Northing
VI_011	Regenerating/recent burn	0-5 years	SSA/Near Project Footprint	605005	6393332
VI_018	Regenerating/recent burn	6-20 years	SSA/Near Project Footprint	604477	6391766
VI_021	Mature/old-growth	> 100 years	SSA/Near Project Footprint	603865	6391505
VI_033	Regenerating/recent burn	0-5 years	SSA/Near Project Footprint	605263	6393444
VI_047	Mature/old-growth	> 100 years	SSA	604102	6389822
VI_059	Mature/old-growth	> 100 years	SSA	603902	6389627
VI_060	Regenerating/recent burn	6-20 years	SSA	604056	6389453
VI_063	Mid-succession	21-60 years	LSA	603647	6389346

a) UTM = NAD83, Zone 12U.

SSA = Site Study Area, LSA = Local Study Area.

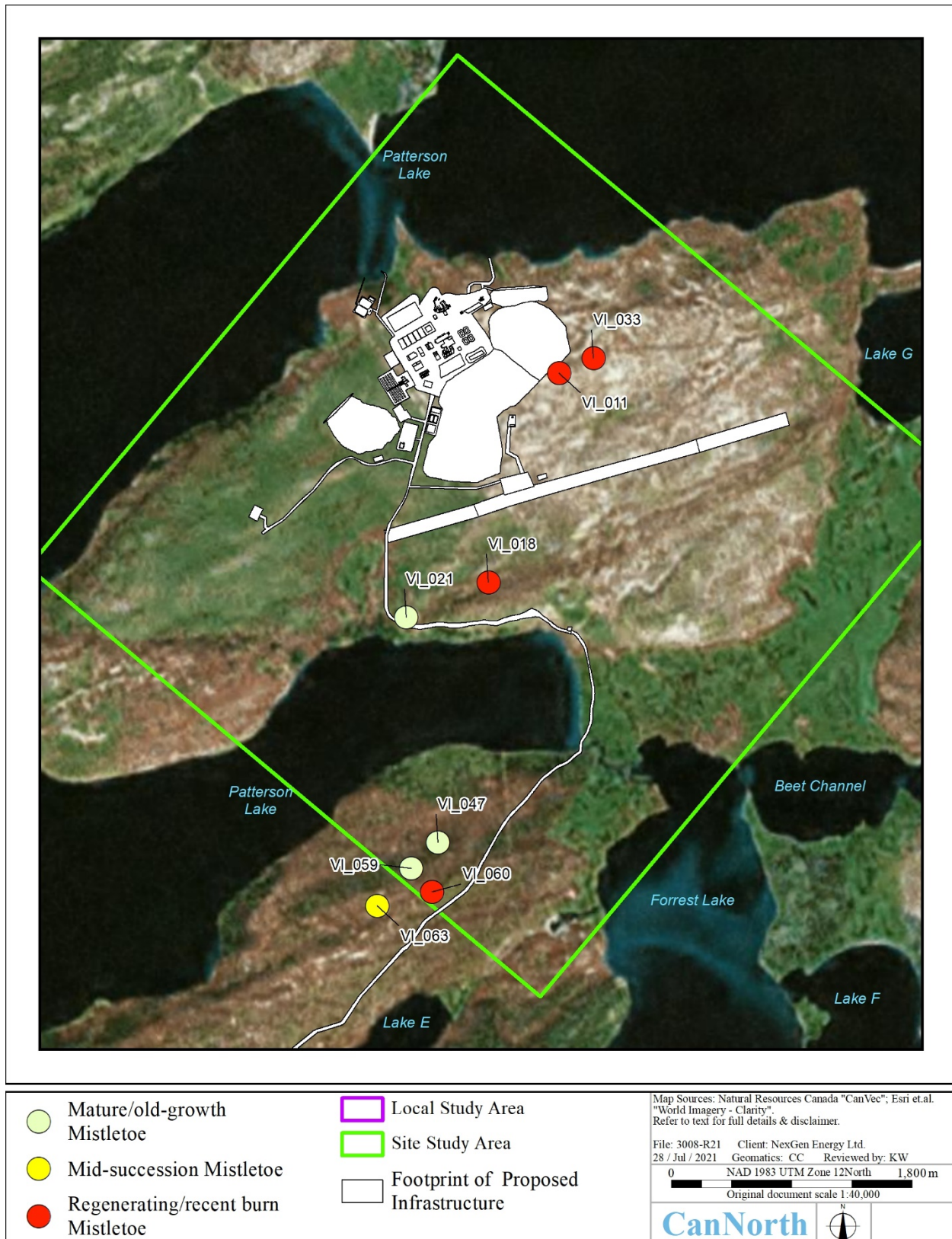


Figure 3.3-3: American Mistletoe Observed in the Site and Local Study Areas, Summer 2018

4.0 WETLAND CLASSIFICATION

4.1 Study Objectives

To meet regulatory guidance and scientific best practices, wetland classifications were completed to assist in describing terrestrial environmental conditions (ENV 2014; IAAC 2019; CNSC 2020). The objectives of the wetland classification surveys conducted in summer 2018 were to confirm and expand upon information obtained from database searches, classify wetlands and associated ecosites, and determine which wetlands were found within the area of the Project, SSA, and LSA. Wetland habitats have a high potential for use as habitat by SOCC, and are considered a potential VC for the EA.

4.2 Methods

Wetland classifications were completed primarily in the SSA and in select areas of the LSA to verify preliminary desktop habitat classification. All wetlands were classified using CanNorth's SOP for northern wetland classification, which is derived from a combination of the Canadian Wetland Classification System (Warner and Rubec, Eds., 1997), Smith et al. (2007), and McLaughlin et al. (2010). Due to incomplete alignment of boreal wetlands in Saskatchewan with any of these classification systems, both the Smith-type wetland and the McLaughlin-type ecosite were recorded. Wetland classifications were conducted between 6 and 13 June 2018, in conjunction with the first round of vegetation inventory surveys.

Several environmental conditions including hydrology, nutrient availability, geology, and climate interact to dictate wetland vegetation communities. Therefore, plant species can be used to identify wetland classes and ecosite type. Dominant tree and shrub species and associated percent cover were recorded at each sampled wetland to identify the wetland classification, sub-category, and ecosite type based on Smith et al. (2007) and McLaughlin et al. (2010), respectively. A legend defining the boreal wetland classifications and their sub-categories is presented in Appendix A, Table 5.

4.3 Results

A total of 15 wetlands were classified within the SSA and LSA. Of these 15 wetlands, 13 were within the SSA, 4 were in the immediate vicinity of the area of the Project, and 2 (Wetlands 5 and 13) were located within the proposed Project footprint. Wetland 5 was within the originally proposed camp expansion location (Figure 4.3-1; Table 4.3-1). Through the Project design refinement process, the proposed camp location has now been moved closer to the mining operations, eliminating the associated potential impacts to the aforementioned wetland. Wetland 13 remains within the boundary of the currently proposed Project footprint.

Field ecologists identified three classes of wetlands, including bogs (10 observances), fens (3 observances), and swamps (2 observances) (Table 4.3-1). The bogs were classified further into two sub-categories (i.e., shrubby and treed bogs) and two corresponding ecosite types (i.e., BS18 and BS17) (Appendix B, Photos 7 to 8). These two sub-categories of bog are both dominated by ericaceous shrubs, but differ in the proportion of *Sphagnum* to feathermosses, tree cover, and composition. Each of the three fens was classified to a unique sub-category (i.e., graminoid poor, shrubby rich and treed poor fens) and unique ecosite (i.e., BS24, BS23, and BS21) (Appendix B, Photos 9 to 11). These fen sub-categories/ecosites differ substantially in species composition and tree and shrub cover, but share similar moisture regimes (i.e., mesic to hygric with some medium/rich mineral water inputs [Smith et al. 2007]).

Finally, the two swamps were also classified to unique sub-categories (i.e., black spruce and hardwood swamps), based on differing forest canopy composition, but both were identified as the same ecosite type (i.e., BS16) (Appendix B, Photos 12 to 13). This ecosite is dominated by black spruce or balsam poplar (*Populus balsamifera*) and may contain scattered patches of white birch (*Betula papyrifera*), with river alder (*Alnus incana* ssp. *tenuifolia*) abundant in the understory (McLaughlan et al. 2010).

Table 4.3-1: Wetlands Observed in the Rook I Study Area, Summer 2018

Wetland ID	Boreal Wetland Classification	Ecosite Type	Dominant Tree Species	Dominant Shrub Species	Study Area	UTM Coordinates ^a	
						Easting	Northing
1	Shrubby bog	BS18	Black spruce (<i>Picea mariana</i>)	Labrador tea (<i>Rhododendron groenlandicum</i>)	SSA	603750	6394168
2	Shrubby bog	BS18	Black spruce	Labrador tea	SSA	605537	6390598
3	Shrubby bog	BS18	Black spruce	Labrador tea	SSA	606631	6391383
4	Shrubby bog	BS18	Black spruce	Labrador tea	SSA	606927	6391456
5	Shrubby bog	BS18	Black spruce	Labrador tea	Near Project Footprint	603521	6392017
6	Treed bog	BS17	Black spruce	Labrador tea	SSA	605527	6390492
7	Graminoid poor fen	BS24	Black spruce	Labrador tea	SSA	605422	6390305
8	Treed bog	BS17	Black spruce	Labrador tea	SSA	605516	6390254
9	Shrubby rich fen	BS23	Willows (<i>Salix</i> spp.)	Willows	LSA	602625	6387256
10	Treed poor fen	BS21	Tamarack (<i>Larix laricina</i>)	Swamp birch (<i>Betula pumila</i>), willows	LSA	604236	6388686
11	Black spruce swamp	BS16	Black spruce	Western river alder (<i>Alnus incana</i> ssp. <i>tenuifolia</i>), Labrador tea	Project Footprint	603369	6391503
12	Hardwood swamp	BS16	White birch (<i>Betula papyrifera</i>), Western river alder	Labrador tea, Western river alder	SSA	603311	6393687
13	Shrubby bog	BS18	Black spruce	Labrador tea, leatherleaf (<i>Chamaedaphne calyculata</i>)	Near Project Footprint	604677	6393898
14	Shrubby bog	BS17	Black spruce	Labrador tea, pale laurel (<i>Kalmia polifolia</i>)	Near Project Footprint	603375	6391849
15	Shrubby bog	BS18	Black spruce	Labrador tea, pale laurel	Near Project Footprint	604576	6394064

Source: Boreal wetland classifications from Smith et al. (2007); Ecosite type from McLaughlan et al. (2010); All scientific and common names from SKCDC (2018).

^aUTM = NAD83, Zone 12U.

SSA = Site Study Area, LSA = Local Study Area.



Figure 4.3-1: Wetlands Observed in the Site and Local Study Area, Summer 2018

5.0 SUMMARY

The vegetation inventory environment baseline program was designed to obtain comprehensive information characterizing terrestrial environments, wetlands, and aquatic and terrestrial vegetation communities, and to document SOCC and associated habitats in near vicinity to the SSA and a broader LSA. Information obtained through database searches and field surveys will be used alongside Indigenous Knowledge in the EA, to help ensure the completion of accurate effects assessments as well as inform Project planning and develop future monitoring programs and reclamation plans. To meet study objectives, the following studies were completed as part of the vegetation inventory baseline environment investigations for the Project:

- species of conservation concern database searches;
- vegetation inventory surveys; and
- wetland classification.

A list of 276 plant SOCC was compiled from database searches of the Mid-Boreal Upland and Athabasca Plain ecoregions; none of the plant species known to these ecoregions are listed by COSEWIC or *The SARA* (SARPR 2018). The HABISask database search identified four provincially rare plant species within 30 km of the centre of the SSA; the W.P. Fraser Herbarium database search yielded no results. The four species previously found within 30 km of the SSA were all located in wetland or shoreline habitats. None of these species were found during field surveys completed in 2018.

Two terrestrial vegetation inventory surveys were conducted in the SSA and LSA, and one aquatic vegetation inventory survey was completed in Patterson Lake near the proposed Project location. Vegetation community and ecosite data, as well as rare plant and weed location, distribution, and abundance were recorded. A total of 164 terrestrial transects and 103 aquatic sampling points were surveyed in the SSA and LSA. Terrestrial vegetation surveys were completed using straight-line transects, and aquatic surveys were completed using a grid-sampling method. A total of 114 plant species were detected across both the terrestrial and aquatic vegetation inventory surveys within the SSA and LSA. The dominant habitats within the SSA and area of the proposed Project consisted of regenerating and recently burned jack pine stands. Other vegetation communities present within the SSA include wetlands and moist mixedwood/deciduous forests. The aquatic vegetation inventory survey revealed that littoral zones in the four surveyed locations in Patterson Lake are largely non-vegetated.

A total of three provincially-rare plant species were identified during the vegetation inventory surveys, including two terrestrial plants and one aquatic plant. Both terrestrial rare plants were species of sedge (*Carex* spp.), and were found growing in bogs, shrubby rich fens, and in moist forest areas. Water lobelia was found floating in Patterson Lake during the aquatic survey, but was not found growing in any of the shallow littoral areas searched.

Wetland classifications identified a total of 15 wetlands within the SSA and LSA; of these, 13 were within the SSA, 4 were in the immediate vicinity of the area of the Project, and 2 were directly inside the originally proposed camp expansion location. After further refinement to the Project design, only one wetland is still located within the boundary of the currently proposed Project footprint.

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Provincially Rare Vascular Plant Species Known to Occur Within the Mid-Boreal Upland and Athabasca Plain Ecoregions of Saskatchewan

Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Achillea millefolium</i> var. <i>megacephala</i>	Large-headed wooly yarrow	S1	S1
<i>Achnatherum richardsonii</i>	Richardson's speargrass	S3	S3
<i>Adoxa moschatellina</i>	Musk-root	S3	S3
<i>Agrostis mertensii</i>	Northern bent-grass	SH	SH
<i>Allium cernuum</i> var. <i>cernuum</i>	Nodding onion	S1	S3
<i>Allium schoenoprasum</i> var. <i>sibiricum</i>	Wild chives	S3	S3
<i>Amelanchier humilis</i>	Running serviceberry	S2	S2
<i>Anaphalis margaritacea</i>	Pearly everlasting	S3	S3
<i>Andromeda polifolia</i> var. <i>latifolia</i>	Glaucous-leaved bog-rosemary	S2	S2
<i>Anemone parviflora</i> var. <i>parviflora</i>	Small-flowered anemone	S1	S1
<i>Anemone quinquefolia</i> var. <i>quinquefolia</i>	Wood anemone	S2	S2
<i>Anemone richardsonii</i>	Yellow anemone	S2	S2
<i>Arabidopsis arenicola</i>	Arctic rock-cress	S2	S2
<i>Arceuthobium pusillum</i>	Dwarf mistletoe	S1	S1
<i>Arctous rubra</i>	Red alpine bearberry	S3	S3
<i>Arethusa bulbosa</i>	Dragon's-mouth orchid	S1	S2
<i>Armeria maritima</i> ssp. <i>interior</i>	Athabasca rhrift	S1	S1
<i>Arnica angustifolia</i> ssp. <i>angustifolia</i>	Narrow-leaf leopardbane	S2	SH
<i>Arnica cordifolia</i>	Heart-leaved arnica	S3	S3
<i>Arnica lonchophylla</i>	Spear-leaved arnica	S2	S2
<i>Artemisia campestris</i> ssp. <i>canadensis</i>	Canada sagewort	S3	S3
<i>Astragalus australis</i>	Indian milk-vetch	S3	S3
<i>Athyrium filix-femina</i>	Lady-fern	-	S4
<i>Athyrium filix-femina</i> var. <i>angustum</i>	Northern lady-fern	S3	S3
<i>Bidens beckii</i>	Water-marigold	S1	S2
<i>Bidens frondosa</i>	Tall beggar's-ticks	S3	S3
<i>Bistorta vivipara</i>	Alpine bistort	S1	S3
<i>Blysmopsis rufa</i>	Red bulrush	S3	S3
<i>Botrychium ascendens</i>	Triangle-lobe moonwort	-	S1
<i>Botrychium hesperium</i>	Western moonwort	S2	S3
<i>Botrychium lanceolatum</i>	Triangle grape-fern	S2	S2
<i>Botrychium lunaria</i>	Common moonwort	S1	S4
<i>Botrychium matricariifolium</i>	Chamomile grape-fern	-	S1
<i>Botrychium minganense</i>	Mingan moonwort	S1	S1
<i>Botrychium minganense</i>	Mingan moonwort	-	S1
<i>Botrychium pallidum</i>	Pale moonwort	-	S1
<i>Botrychium pinnatum</i>	Northwestern moonwort	SNA	SNA
<i>Botrychium simplex</i>	Least grape-fern	S2	S3
<i>Calamagrostis lapponica</i>	Lapland reed-grass	S3	S3
<i>Calamagrostis purpurascens</i> var. <i>purpurascens</i>	Purple reed grass	S3	S3
<i>Calamagrostis rubescens</i>	Pine grass	S2	S2

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Provincially Rare Vascular Plant Species Known to Occur Within the Mid-Boreal Upland and Athabasca Plain Ecoregions of Saskatchewan

Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Calypso bulbosa</i>	Fairy slipper	-	S3
<i>Calypso bulbosa</i> var. <i>americana</i>	Fairy slipper	S3	S3
<i>Campanula aparinoides</i>	Marsh bellflower	S3	S3
<i>Canadanthus modestus</i>	Large northern aster	S3	S3
<i>Cardamine nymanii</i>	Meadow bitter cress	S3	S3
<i>Cardamine parviflora</i>	Small bitter cress	S1	S1
<i>Carex arcta</i>	Bear sedge	S2	S2
<i>Carex bigelowii</i>	Bigelow's sedge	SH	S1
<i>Carex buxbaumii</i>	Brown sedge	S3	S3
<i>Carex chordorrhiza</i>	Prostrate sedge	-	S3
<i>Carex concinna</i>	Beautiful sedge	S3	S3
<i>Carex crawei</i>	Crawe's sedge	S3	S3
<i>Carex cristatella</i>	Small-crested sedge	S2	S1
<i>Carex cryptolepis</i>	Yellow sedge	S2	S2
<i>Carex eburnea</i>	Bristle-leaved sedge	S3	S3
<i>Carex echinata</i> ssp. <i>echinata</i>	Prickly sedge	S3	S3
<i>Carex garberi</i>	Garber's sedge	S3	S3
<i>Carex glacialis</i>	Glacier sedge	SH	SH
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	S3
<i>Carex hystericina</i>	Porcupine sedge	S3	S3
<i>Carex leptoneura</i>	Pleasing sedge	S1	S3
<i>Carex mackenziei</i>	Mackenzie sedge	S1	S1
<i>Carex maritima</i>	Seaside sedge	S1	S1
<i>Carex michauxiana</i>	Michaux's sedge	S3	S3
<i>Carex pachystachya</i>	Thick-spike sedge	-	SNR
<i>Carex pedunculata</i>	Long-stalked sedge	SH	SH
<i>Carex projecta</i>	Necklace sedge	S1	S1
<i>Carex pseudocyperus</i>	Cyperus-like sedge	S3	S3
<i>Carex saxatilis</i>	Rocky ground sedge	S3	S3
<i>Carex saximontana</i>	Rocky mountain sedge	S3	S3
<i>Carex sterilis</i>	Dioecious sedge	S1	S1
<i>Carex supina</i> ssp. <i>spaniocarpa</i>	Weak arctic sedge	SH	SH
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	S4
<i>Carex vulpinoidea</i> var. <i>vulpinoidea</i>	Fox sedge	S3	S3
<i>Castilleja raupii</i>	Purple paintbrush	S2	S2
<i>Cerastium alpinum</i> ssp. <i>alpinum</i>	Alpine chickweed	-	S1
<i>Cerastium beeringianum</i>	Bering sea chickweed	S1	S1
<i>Cerastium brachypodum</i>	Short-stalked mouse-ear chickweed	-	S3
<i>Chimaphila umbellata</i> ssp. <i>occidentalis</i>	Western prince's-pine	S3	SNR
<i>Chimaphila umbellata</i> ssp. <i>umbellata</i>	Western prince's-pine	S3	S3
<i>Chrysosplenium iowense</i>	Iowa golden saxifrage	S1	S1

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Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Cirsium drummondii</i>	Short-stemmed thistle	S3	S3
<i>Cirsium muticum</i>	Swamp thistle	S3	S3
<i>Clematis occidentalis</i> var. <i>grosseserrata</i>	Clematis	S2	S2
<i>Corallorhiza maculata</i> var. <i>maculata</i>	Spotted coralroot	-	SH
<i>Corallorhiza striata</i> var. <i>striata</i>	Striped coral-root	S3	S3
<i>Corispermum americanum</i> var. <i>americanum</i>	American bugseed	S3	S3
<i>Corispermum hookeri</i> var. <i>hookeri</i>	Hooker's bugseed	S2	S2
<i>Corispermum ochotense</i> var. <i>ochotense</i>	Russian bugseed	S1	S1
<i>Cypripedium parviflorum</i>	Small yellow lady's slipper	-	S3
<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small yellow lady's slipper	S3	S3
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Large yellow lady's-slipper	S2	S2
<i>Cypripedium passerinum</i>	Sparrow's-egg lady's-slipper	S3	S3
<i>Cypripedium reginae</i>	Showy lady's-slipper	S1	S1
<i>Cystopteris montana</i>	Mountain bladder fern	S1	S1
<i>Delphinium glaucum</i>	Tall larkspur	S2	S2
<i>Deschampsia mackenzieana</i>	Mackenzie hairgrass	S2	S2
<i>Dichanthelium acuminatum</i> var. <i>fasciculatum</i>	Hairy panic-grass	S3	S3
<i>Diervilla lonicera</i>	Northern bush-honeysuckle	S3	S3
<i>Diphasiastrum sitchense</i>	Alaskan clubmoss	S2	S3
<i>Draba aurea</i>	Golden whitlow-grass	S1	S1
<i>Draba cana</i>	Hoary whitlow-grass	S2	S2
<i>Draba cinerea</i>	Ashy whitlow-grass	SH	SH
<i>Drosera anglica</i>	English sundew	S3	S3
<i>Drosera linearis</i>	Slenderleaf sundew	S1	S3
<i>Dryas drummondii</i>	Yellow mountain-avens	SH	SH
<i>Dryopteris cristata</i>	Crested shield-fern	S3	S3
<i>Dryopteris filix-mas</i>	Male fern	S1	S1
<i>Elatine triandra</i>	Longstem water-wort	S2	S2
<i>Eleocharis compressa</i> var. <i>acutisquamata</i>	Flat-stemmed spike-rush	S3	S3
<i>Eleocharis elliptica</i>	Slender spike-rush	S3	S3
<i>Eleocharis mamillata</i> ssp. <i>mamillata</i>	Soft-stem spike-rush	S1	S1
<i>Eleocharis nitida</i>	Neat spike-rush	S3	S3
<i>Eleocharis uniglumis</i>	One-glumed spike-rush	S3	SH
<i>Elodea canadensis</i>	Canada waterweed	S3	S3
<i>Elymus diversiglumis</i>	Various-glumed wild rye	S3	S3
<i>Elymus glaucus</i>	Smooth wild-rye	S3	S3
<i>Epilobium hornemannii</i> ssp. <i>hornemannii</i>	Hornemann's willowherb	S1	S1
<i>Eremogone congesta</i> var. <i>lithophila</i>	Rocky-round sandwort	-	S3
<i>Erigeron compositus</i>	Compound fleabane	S3	S3
<i>Erigeron elatus</i>	Tall white fleabane	S3	S3
<i>Erigeron hyssopifolius</i>	Hyssop-leaved fleabane	S3	S3

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Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Erigeron hyssopifolius</i> var. <i>hyssopifolius</i>	Hyssop-leaved fleabane	-	S3
<i>Erigeron strigosus</i>	White-top	-	S3
<i>Erigeron strigosus</i> var. <i>strigosus</i>	Daisy fleabane	S3	S3
<i>Eriophorum scheuchzeri</i>	Scheuchzer cotton-grass	S2	S2
<i>Eriophorum tenellum</i>	Delicate cotton-grass	S2	SH
<i>Euphrasia subarctica</i>	Arctic eyebright	S1	S3
<i>Fallopia scandens</i>	Climbing false-buckwheat	S3	S3
<i>Festuca brachyphylla</i> ssp. <i>brachyphylla</i>	Short-leaf fescue	S2	S2
<i>Festuca hallii</i>	Plains rough fescue	S3	S3
<i>Festuca prolifera</i> var. <i>lasiolepis</i>	Proliferous red fescue	SH	SH
<i>Gentianopsis virgata</i> ssp. <i>macounii</i>	Macoun's gentian	-	S3
<i>Gentianopsis virgata</i> ssp. <i>virgata</i>	Lesser fringed gentian	S3	S3
<i>Geranium carolinianum</i>	Carolina wild geranium	S3	S3
<i>Gymnocarpium jessoense</i> ssp. <i>parvulum</i>	Limestone oak fern	S3	S3
<i>Huperzia selago</i> var. <i>densa</i>	Mountain club-moss	S1	S1
<i>Huperzia selago</i> var. <i>selago</i>	Mountain club-moss	S1	S1
<i>Impatiens noli-tangere</i>	Yellow touch-me-not	S2	S2
<i>Isoetes lacustris</i>	Lake quillwort	S2	S2
<i>Isoetes x hickeyi</i>	Hickey's quillwort	S1	S1
<i>Juncus stygius</i> ssp. <i>americanus</i>	Moor rush	S1	S3
<i>Juncus triglumis</i> var. <i>albescens</i>	Pale three-flowered rush	S2	S2
<i>Kalmia procumbens</i>	Alpine azalea	S1	S2
<i>Lactuca biennis</i>	Tall blue lettuce	S3	S3
<i>Lechea intermedia</i> var. <i>depauperata</i>	Impoverished pinweed	S1	S1
<i>Lemna minor</i>	Lesser duckweed	S1	-
<i>Leucophysalis grandiflora</i>	Large white-flowered ground-cherry	S3	S3
<i>Leymus mollis</i> ssp. <i>mollis</i>	Sea lyme-grass	S2	S2
<i>Lilium philadelphicum</i>	Wood lily	-	S4
<i>Lilium philadelphicum</i> var. <i>andinum</i> f <i>immaculata</i>	Immaculate lily	S1	S1
<i>Lilium philadelphicum</i> var. <i>philadelphicum</i>	Eastern red wood lily	S1	S1
<i>Liparis loeselii</i>	Yellow twayblade	S1	S3
<i>Listera borealis</i>	Northern twayblade	S1	S3
<i>Listera cordata</i>	Heart-leaved twayblade	-	S3
<i>Listera cordata</i> var. <i>cordata</i>	Heart-leaved twayblade	S2	S3
<i>Lobelia dortmanna</i>	Water lobelia	S2	S3
<i>Lomatogonium rotatum</i>	Marsh felwort	S3	S3
<i>Lonicera oblongifolia</i>	Swamp fly honeysuckle	S3	S3
<i>Luzula acuminata</i> var. <i>acuminata</i>	Hairy wood-rush	S1	S3
<i>Luzula multiflora</i>	Many-flowered woodrush	-	S3
<i>Luzula multiflora</i> ssp. <i>frigida</i>	Common woodrush	S3	S3
<i>Luzula multiflora</i> ssp. <i>multiflora</i>	Many-flowered woodrush	S3	S3

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Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Lycopodiella inundata</i>	Northern bog clubmoss	S1	S1
<i>Lycopodium hickeyi</i>	Hickey's club-moss	-	S1
<i>Maianthemum racemosum</i>	False Solomon's-seal	S1	-
<i>Malaxis monophyllos</i> var. <i>brachypoda</i>	White bog adder's-mouth orchid	S1	S1
<i>Malaxis paludosa</i>	Bog adder's-mouth orchid	S1	S3
<i>Micranthes pensylvanica</i>	Swamp saxifrage	S1	S1
<i>Milium effusum</i> var. <i>cisatlanticum</i>	Tall millet-grass	S1	S1
<i>Minuartia rubella</i>	Boreal sandwort	S3	S3
<i>Moehringia macrophylla</i>	Large-leaved sandwort	S3	S3
<i>Muhlenbergia andina</i>	Foxtail muhly	S1	S1
<i>Myriophyllum alterniflorum</i>	Alternate-flowered water milfoil	S1	S2
<i>Najas flexilis</i>	Flexible naiad	S3	S3
<i>Nymphaea leibergii</i>	Small white water-lily	S2	S2
<i>Nymphaea tetragona</i>	Pygmy water-lily	S2	S2
<i>Oxytropis campestris</i>	Late yellow locoweed	-	S4
<i>Packera streptanthifolia</i>	Northern groundsel	S1	S3
<i>Parnassia glauca</i>	Glaucous grass-of-Parnassus	S3	S3
<i>Pedicularis groenlandica</i>	Elephant-head	S2	S2
<i>Pedicularis labradorica</i> var. <i>labradorica</i>	Labrador lousewort	S3	S3
<i>Pedicularis macrodonta</i>	Purple lousewort	S2	S3
<i>Pellaea gastonyi</i>	Gastony's cliffbrake	S2	S2
<i>Pellaea glabella</i> ssp. <i>occidentalis</i>	Western smooth cliff-brake	S1	S1
<i>Persicaria punctata</i>	Dotted smartweed	S2	S2
<i>Phegopteris connectilis</i>	Long beech-fern	S3	S3
<i>Phleum alpinum</i>	Mountain Timothy	S1	-
<i>Pinguicula villosa</i>	Hairy butterwort	S3	S3
<i>Pinguicula vulgaris</i>	Common butterwort	S3	S3
<i>Piptatherum canadense</i>	Canada mountain-ricegrass	S2	S3
<i>Plantago maritima</i> var. <i>juncoides</i>	Seaside plantain	S1	S2
<i>Platanthera dilatata</i> var. <i>dilatata</i>	Scentbottle	S3	S3
<i>Platanthera orbiculata</i>	Large roundleaf orchid	S3	S3
<i>Poa alpina</i> ssp. <i>alpina</i>	Alpine bluegrass	S2	S2
<i>Poa arctica</i> ssp. <i>arctica</i>	Arctic blue grass	S2	S2
<i>Poa arctica</i> ssp. <i>lanata</i>	Lanate bluegrass	SNA	-
<i>Polygala paucifolia</i>	Pink fringed milkwort	S3	S3
<i>Potamogeton amplifolius</i>	Large-leaved pondweed	SH	SH
<i>Potamogeton epihydrus</i>	Ribbon-leaf pondweed	S2	S2
<i>Potamogeton nodosus</i>	Longleaf pondweed	-	S1
<i>Potamogeton obtusifolius</i>	Blunt-leaved pondweed	S3	S3
<i>Potamogeton robbinsii</i>	Flatleaf	S3	S3
<i>Potamogeton strictifolius</i>	Upright narrow-leaved pondweed	S3	S3

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Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Potentilla arenosa</i> ssp. <i>arenosa</i>	Bluff cinquefoil	S1	S1
<i>Potentilla bimundorum</i>	Cut-leaved cinquefoil	S2	S2
<i>Potentilla rubricaulis</i>	Red-stemmed cinquefoil	S3	S3
<i>Prenanthes alba</i>	White lettuce	S3	S3
<i>Primula mistassinica</i>	Bird's-eye primrose	S3	S3
<i>Puccinellia distans</i> ssp. <i>hauptiana</i>	Haupt's alkali-grass	S2	S2
<i>Pyrola grandiflora</i>	Arctic wintergreen	SH	SH
<i>Ranunculus hyperboreus</i>	Northern buttercup	S2	S2
<i>Ranunculus pedatifidus</i> var. <i>affinis</i>	Northern buttercup	S3	S3
<i>Rhinanthus minor</i> ssp. <i>minor</i>	Yellow-rattle	S2	S3
<i>Rhododendron tomentosum</i>	Labrador-tea	S3	-
<i>Rhynchospora alba</i>	White beaked-rush	S3	S3
<i>Rhynchospora capillacea</i>	Hair-like beaked-rush	S3	S3
<i>Rhynchospora fusca</i>	Sooty beaked-rush	S1	S1
<i>Ribes oxyacanthoides</i> ssp. <i>setosum</i>	Bristly gooseberry	S2	S2
<i>Rosa blanda</i>	Smooth wild rose	S1	S1
<i>Rosa x dulcissima</i>	Hybrid rose	S1	S1
<i>Ruppia cirrhosa</i>	Widgeon-grass	S3	S3
<i>Ruppia maritima</i>	Beaked ditch-grass	S3	S3
<i>Sagina nodosa</i> ssp. <i>borealis</i>	Knotted pearlwort	S3	S2
<i>Salix arctophila</i>	Northern willow	S2	S2
<i>Salix brachycarpa</i> var. <i>psammophila</i>	Sand-dune small-fruit willow	S3	S3
<i>Salix commutata</i>	Under-green willow	S1	S1
<i>Salix glauca</i> var. <i>villosa</i>	Gray-leaf willow	S2	S2
<i>Salix planifolia</i> ssp. <i>tyrrellii</i>	Tyrrell's willow	S2	S2
<i>Salix silicicola</i>	Blanket-leaf willow	S2	S2
<i>Salix turnorii</i>	Turnor's willow	S2	S2
<i>Salix x brachypurpurea</i>	Hybrid willow	SH	SH
<i>Sambucus racemosa</i> ssp. <i>pubens</i>	Red elderberry	S2	S2
<i>Sceptridium multifidum</i>	Leathery grape-fern	S3	-
<i>Schoenoplectus subterminalis</i>	Subterminal bulrush	S1	SH
<i>Scutellaria lateriflora</i>	Mad dog skullcap	S3	S3
<i>Selaginella selaginoides</i>	Low spike-moss	S3	S2
<i>Silene acaulis</i>	Moss campion	S2	S2
<i>Silene antirrhina</i>	Sleepy catchfly	S1	S2

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Scientific Name	Common Name	SKCDC Rank (2018)	SKCDC Rank (2021)
<i>Silene menziesii</i>	Menzies' catchfly	S3	S3
<i>Sisyrinchium mucronatum</i>	Mucronate blue-eyed-grass	S3	S3
<i>Sisyrinchium septentrionale</i>	Northern blue-eyed-grass	-	S3
<i>Sorbus scopulina</i>	Western mountain-ash	S3	S3
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	Western Canada sand-spurry	S1	S1
<i>Spiraea lucida</i>	Shining-leaved meadow-sweet	S2	S2
<i>Spiranthes lacera</i> var. <i>lacera</i>	Northern slender ladies'-tresses	S3	S3
<i>Stellaria longipes</i> ssp. <i>arenicola</i>	Sand chickweed	S3	S3
<i>Streptopus amplexifolius</i>	Clasping-leaf twisted-stalk	S3	S3
<i>Subularia aquatica</i> var. <i>americana</i>	Water awlwort	S3	S3
<i>Tanacetum huronense</i>	Floccose tansy	-	S3
<i>Tanacetum huronense</i> var. <i>bifarium</i>	Lake Huron tansy	S2	S2
<i>Tanacetum huronense</i> var. <i>floccosum</i>	Floccose tansy	S3	S3
<i>Taraxacum ceratophorum</i>	Horned dandelion	S3	S3
<i>Thelypteris palustris</i> var. <i>pubescens</i>	Marsh fern	S1	S1
<i>Torreyochloa pallida</i> var. <i>fernaldii</i>	Pale manna grass	S3	S3
<i>Trichophorum clintonii</i>	Clinton's bulrush	S1	S1
<i>Trientalis europaea</i> ssp. <i>arctica</i>	Arctic starwort	S2	S2
<i>Trillium cernuum</i>	Nodding trillium	S2	S2
<i>Trisetum spicatum</i>	Spike trisetum	S3	S3
<i>Utricularia cornuta</i>	Horned bladderwort	S3	S3
<i>Utricularia minor</i>	Lesser bladderwort	S2	-
<i>Viburnum lentago</i>	Nannyberry	S2	S3
<i>Viola blanda</i>	Sweet white violet	S2	S2
<i>Viola labradorica</i>	Northern blue violet	S1	S1
<i>Viola macloskeyi</i>	Smooth white violet	S1	S2
<i>Viola pedatifida</i>	Crowfoot violet	S3	S3
<i>Viola pubescens</i> var. <i>scabriuscula</i>	Downy yellow violet	S2	S2
<i>Viola selkirkii</i>	Long-spurred violet	S3	S3
<i>Viola sororia</i>	Downy blue violet	S1	S1
<i>Wolffia columbiana</i>	Columbia water-meal	-	S1
<i>Woodsia alpina</i>	Alpine cliff fern	S1	S1
<i>Woodsia glabella</i>	Smooth woodsia	S3	S3
<i>Woodsia oregana</i> ssp. <i>cathcartiana</i>	Oregon woodsia	-	S3
<i>Woodsia oregana</i> ssp. <i>oregana</i>	Oregon woodsia	S2	S2
<i>Woodsia scopulina</i> ssp. <i>scopulina</i>	Rocky mountain woodsia	SH	SH

Bolded species rankings have changed between 2018 and 2021.

Source: Scientific, common names, and provincial rankings from SKCDC (2018, 2021).

SKCDC = Saskatchewan Conservation Data Centre. S1 = Critically imperiled/extremely rare; S2 = Imperiled/very rare; S3 = Vulnerable/rare to uncommon; S4 = Apparently secure; SH = Historical occurrence; SNR= Rank is not yet assigned or species has not yet been assessed (not ranked); SNA = Species not yet ranked; '-' = Species not on list.

Appendix A, Table 2

Vascular Plant Species Observed During Terrestrial and Aquatic Vegetation Inventory Surveys in the
Vegetation Study Area, June and August 2018

Scientific Name	Common Name	SKCDC Rank
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4
<i>Arceuthobium americanum</i>	American mistletoe	S4
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4
<i>Athyrium filix-femina</i> var. <i>cyclosum</i>	Northern lady-fern	S4
<i>Betula glandulosa</i>	Dwarf birch	S4
<i>Betula papyrifera</i>	Paper birch	S5
<i>Betula pumila</i>	Swamp birch	S4
<i>Calamagrostis</i> sp.	Reedgrass	-
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4
<i>Calamagrostis stricta</i>	Northern reed grass	S5
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4
<i>Carex brunnescens</i>	Brownish sedge	S4
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4
<i>Carex concinna</i>	Beautiful sedge	S3
<i>Carex deflexa</i>	Bent sedge	S4
<i>Carex diandra</i>	Two-stamened sedge	S4
<i>Carex foenea</i>	Hay sedge	S4
<i>Carex heleonastes</i>	Hudson Bay sedge	S3
<i>Carex limosa</i>	Mud sedge	S4
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S4
<i>Carex utriculata</i>	Northwest territory sedge	S4
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4
<i>Cicuta bulbifera</i>	Water hemlock	S4
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4
<i>Comarum palustre</i>	Marsh cinquefoil	S4
<i>Cornus canadensis</i>	Bunchberry	S4
<i>Cyperaceae</i> sp.	Sedges	-
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4
<i>Epilobium palustre</i>	Marsh willowherb	S4
<i>Equisetum arvense</i>	Common horsetail	S5
<i>Equisetum pratense</i>	Meadow horsetail	S4
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4

Appendix A, Table 2

Vascular Plant Species Observed During Terrestrial and Aquatic Vegetation Inventory Surveys in the
Vegetation Study Area, June and August 2018

Scientific Name	Common Name	SKCDC Rank
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4
<i>Geocaulon lividum</i>	Northern comandra	S4
<i>Geranium bicknellii</i>	Bicknell's geranium	S4
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4
<i>Isoetes echinospora</i>	Spiny-spored quillwort	S4
<i>Kalmia polifolia</i>	Pale laurel	S4
<i>Larix laricina</i>	Tamarack	S5
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4
<i>Lobelia dortmanna</i>	Water lobelia	S3^a
<i>Lycopodium annotinum</i>	Stiff club-moss	S4
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4
<i>Menyanthes trifoliata</i>	Bog buckbean	S4
<i>Mitella nuda</i>	Bishop's-cap	S4
<i>Myrica gale</i>	Sweet gale	S4
<i>Nuphar variegata</i>	Yellow cowlily	S4
<i>Phalaris arundinacea</i>	Reed canary grass	S4
<i>Picea glauca</i>	White spruce	S5
<i>Picea mariana</i>	Black spruce	S5
<i>Pinus banksiana</i>	Jackpine	S5
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5
<i>Populus tremuloides</i>	Trembling aspen	S5
<i>Potamogeton alpinus</i>	Northern pondweed	S4
<i>Potentilla norvegica</i>	Rough cinquefoil	S4
<i>Prunus pensylvanica</i>	Pin cherry	S4
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4
<i>Ribes americanum</i>	Wild black currant	S4
<i>Ribes glandulosum</i>	Skunk currant	S4
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4
<i>Ribes lacustre</i>	Bristly black currant	S4
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4
<i>Rubus chamaemorus</i>	Cloudberry	S4
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5
<i>Rubus pubescens</i>	Dewberry	S4
<i>Rumex triangulivalvis</i>	Triangular-valved dock	S5
<i>Salix</i> sp.	Willow	-
<i>Salix bebbiana</i>	Long-beaked willow	S4
<i>Salix discolor</i>	Pussy willow	S4
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4
<i>Salix pyrifolia</i>	Balsam willow	S4
<i>Salix scouleriana</i>	Scouler's willow	S4

Appendix A, Table 2

Vascular Plant Species Observed During Terrestrial and Aquatic Vegetation Inventory Surveys in the Vegetation Study Area, June and August 2018

Scientific Name	Common Name	SKCDC Rank
<i>Salix serissima</i>	Autumn willow	S4
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4
<i>Scutellaria galericulata</i>	Marsh skullcap	S4
<i>Sparganium angustifolium</i>	Narrow-leaved bur-reed	S4
<i>Stachys pilosa</i> var. <i>pilosa</i>	Hairy hedge-nettle	S4
<i>Stellaria longifolia</i>	Long-leaved stitchwort	S4
<i>Stellaria longipes</i> ssp. <i>longipes</i>	Long-leaved starwort	S4
<i>Stuckenia pectinata</i>	Sago pondweed	S4
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Maystar	S4
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging nettle	S4
<i>Vaccinium myrtilloides</i>	Blueberry	S4
<i>Vaccinium oxycoccos</i>	Small cranberry	S4
<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	Mountain cranberry	S4
<i>Viburnum edule</i>	Low bush-cranberry	S4
<i>Viburnum opulus</i> var. <i>americanum</i>	High bush-cranberry	S4
<i>Viola adunca</i> var. <i>adunca</i>	Early blue violet	S5
<i>Viola canadensis</i> var. <i>rugulosa</i>	Western Canada violet	S4
<i>Viola nephrophylla</i>	Northern bog violet	S4
<i>Viola palustris</i>	Marsh violet	S4
<i>Viola renifolia</i>	Kidney-leaved white violet	S4

Source: All scientific, common names and provincial ranks from SKCDC (2018); with exception (see footnote a).

Bold text indicates provincially-rare (S1 to S3) species.

SKCDC = Saskatchewan Conservation Data Centre; S3 = vulnerable/rare to uncommon, S4 = apparently secure, S5 = secure/common.

^aSpecies rank from SKCDC (2021).

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2018

Scientific Name	Common Name	SKCDC Rank	Transects												
			VI_001	VI_002	VI_003	VI_004	VI_005	VI_006	VI_007	VI_008	VI_009	VI_010	VI_011	VI_012	VI_013
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	X	X	-	-	-	X	-	-	-	-	-	-	-
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	-	X	X	X	-	X	X	-	-	-	-	X	X
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	X	-	-	-	-	-	-	-	-	-	-	-
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	-	-	-	-	-	-	-	-	X	-	-
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	X	-	-	X	-	-	X	X	X	-	X	-	-
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula papyrifera</i>	Paper birch	S5	X	X	X	-	X	X	X	X	-	-	-	-	-
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	X	X	-	-	X	X	-	-	-	-	-	-	-
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	-	-	-	X	X	-	-	-	-	-	-	-
<i>Carex brunnescens</i>	Brownish Sedge	S4	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	-	X	-	-	-	-	-	-	-
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	X	-	-	-	-	-	-	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	X	-	-	X	-	-	-	-	-
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	X	-	-	-	X	X	-	X	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	X	-	-	-	-	-	-	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	-	X	-	-	-	X	X	-	-	-	-	-	-
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Comarum palustre</i>	Marsh cinquefoil	S4	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cornus canadensis</i>	Bunchberry	S4	-	X	X	-	-	X	X	-	-	-	-	-	-
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	X	-	-	-	-	-	-	-	-	-	-	-
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	-	-	-	-	X	-	-	X	-	-	-	-	-
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-	-	-	X	-	-
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	X	X	-	-	-	X	-	X	-	-	-	-	-
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	-	-	-	-	X	-	-	-	-	-	-	-	-
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	X	-	-	-	X	X	-	-	-	-	-
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	X	-	-	-	-	-	-	X	-	-
<i>Kalmia polifolia</i>	Pale laurel	S4	X	-	-	-	X	X	-	X	-	-	-	-	-
<i>Larix laricina</i>	Tamarack	S5	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	X	-	-	-	-	X	-	-	-	-	-	-
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	X	-	-	-	X	-	-	X	-	-	-	-	-
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Myrica gale</i>	Sweet gale	S4	-	X	-	-	X	-	-	-	-	-	-	-	-
<i>Phalaris arundinacea</i>	Reed canary grass	S4	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Picea glauca</i>	White spruce	S5	-	X	-	X	-	-	-	-	-	-	-	X	X
<i>Picea mariana</i>	Black spruce	S5	X	X	X	X	X	X	X	X	-	-	-	X	X
<i>Pinus banksiana</i>	Jackpine	S5	X	X	-	X	-	X	X	X	X	-	X	X	X
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Populus tremuloides</i>	Trembling aspen	S5	-	X	-	-	-	X	-	-	-	-	-	-	-
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	X	-	-	X	X	-	-	-	-	-	-
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	X	X	X	X	X	X	X	X	-	-	-	X	X
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus chamaemorus</i>	Cloudberry	S4	X	-	-	-	X	X	-	X	-	-	-	-	-
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rumex trianguivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix</i> sp.	Willow	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix bebbiana</i>	Long-beaked willow	S4	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Salix discolor</i>	Pussy willow	S4	-	-	X	-	-	-	X	-	-	-	-	-	-
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4	X	X	-	-	-	X	-	-	-	-	-	-	-
<i>Salix pyrifolia</i>	Balsam willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix scouleriana</i>	Scouler's willow	S4	-	X	-	X	-	-	X	-	-	-	-	-	-
<i>Salix serissima</i>	Autumn willow	S4	X	-	-	-	-	-	-	X	-	-	-	-	-
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Scutellaria galericulata</i>	Marsh skullcap	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stachys pilosa</i> var. <i>pilosa</i>	Hairy hedge-nettle	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stellaria longifolia</i>	Long-leaved stitchwort	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stellaria longipes</i> ssp. <i>longipes</i>	Long-leaved starwort	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Maystar	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging nettle	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vaccinium myrtilloides</i>	Blueberry	S4	X	X	X	X	-	X	X	X	X	-	X	X	X
<i>Vaccinium oxycoccos</i>	Small cranberry	S4	X	-	-	-	X	X	-	X	-	-	-	-	-
<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	Mountain cranberry	S4	X	X	X	X	X	X	X	X	X	-	X	X	X
<i>Viburnum edule</i>	Low bush-cranberry	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Viburnum opulus</i> var. <i>americanum</i>	High bush-cranberry	S4	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Viola adunca</i> var. <i>adunca</i>	Early blue violet	S5	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Viola canadensis</i> var. <i>rugulosa</i>	Western Canada violet	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Viola nephrophylla</i>	Northern bog violet	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Viola palustris</i>	Marsh violet	S4	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Viola renifolia</i>	Kidney-leaved white violet	S4	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2018

Scientific Name	Common Name	SKCDC Rank	Transects													
			VI_014	VI_016	VI_018	VI_019	VI_020	VI_021	VI_022	VI_023	VI_026	VI_029	VI_033	VI_034	VI_037	
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	-
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	-
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	X	-	X	X	X	X	X	X	X	-	-	-	-	-
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	X	-	-	X	-	-	-	-	-	X	-	-
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	X	-	X	X	-	X	X	X	X	X	X	X	X	-
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula papyrifera</i>	Paper birch	S5	-	X	-	-	X	X	X	X	-	-	-	-	-	X
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex brunnescens</i>	Brownish Sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	X
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Comarum palustre</i>	Marsh cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Comus canadensis</i>	Bunchberry	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	-	-	-	-	X	-	-	-	-	-	-	-
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	X
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	-	-	-	-	-	-	X	X	X	X	-
<i>Kalmia polifolia</i>	Pale laurel	S4	-	X	-	-	X	-	-	-	-	-	-	-	-	X
<i>Larix laricina</i>	Tamarack	S5	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	X	-	X	-	-	-	-	-	-	-
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	-	-	-	X	-	X	-	-	-	-	-	-	-
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Myrica gale</i>	Sweet gale	S4	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Phalaris arundinacea</i>	Reed canary grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Picea glauca</i>	White spruce	S5	-	-	X	-	-	-	-	-	-	-	-	-	-	-
<i>Picea mariana</i>	Black spruce	S5	-	X	-	-	X	X	-	X	-	-	-	-	-	X
<i>Pinus banksiana</i>	Jackpine	S5	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Populus tremuloides</i>	Trembling aspen	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	-	-	-	-	X	-	-	-	-	-	-	-
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	-	X	X	-	X	X	-	X	-	-	-	-	-	X
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus chamaemorus</i>	Cloudberry	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	X
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rumex trianguivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix</i> sp.	Willow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix bebbiana</i>	Long-beaked willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix discolor</i>	Pussy willow	S4	-	-	X	-	-	-	X	-	-	-	-	-	-	-

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2018

Scientific Name	Common Name	SKCDC Rank	Transects													
			VI_045	VI_046	VI_047	VI_053	VI_054	VI_055	VI_059	VI_060	VI_063	VI_073	VI_074	VI_075	VI_076	
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	-	-	X	X	-	X	X	X	X	-	-	-	-	
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	-	-	-	-	-	-	X	-	-	-	-	-	
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	X	-	-	-	X	X	X	-	-	-	-	
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	-	-	-	X	-	-	X	X	X	-	-	-	-	
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	X	X	-	-	-	-	-	-	-	
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Betula papyrifera</i>	Paper birch	S5	-	-	X	X	X	X	-	X	X	-	-	-	-	
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	-	-	-	-	X	X	-	-	-	-	-	-	-	
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	X	X	-	-	-	-	-	-	-	
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex brunnescens</i>	Brownish Sedge	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	-	-	-	-	-	-	-	X	-	
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-	-	-	-	X	-	
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	X	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Comarum palustre</i>	Marsh cinquefoil	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Cornus canadensis</i>	Bunchberry	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	X	-	-	-	-	-	-	-	-	-	-	
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	X	-	-	-	-	-	-	
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Kalmia polifolia</i>	Pale laurel	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Larix laricina</i>	Tamarack	S5	-	-	-	-	-	-	-	-	-	-	X	X	-	
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	-	X	-	-	-	-	-	-	-	-	X	X	-	
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Myrica gale</i>	Sweet gale	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Phalaris arundinacea</i>	Reed canary grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Picea glauca</i>	White spruce	S5	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Picea mariana</i>	Black spruce	S5	X	X	-	-	-	X	X	-	-	-	X	X	X	
<i>Pinus banksiana</i>	Jackpine	S5	X	-	X	X	X	X	X	X	X	-	-	-	X	
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Populus tremuloides</i>	Trembling aspen	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	X	-	-	-	-	-	-	-	
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Rubus chamaemorus</i>	Cloudberry	S4	X	X	-	-	-	-	-	-	-	X	X	X	X	
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Rumex trianguivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix</i> sp.	Willow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix bebbiana</i>	Long-beaked willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix discolor</i>	Pussy willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Salix pyrifolia</i>	Balsam willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix scouleriana</i>	Scouler's willow	S4	-	-	-	-	-	X	X	-	-	-	-	-	-	
<i>Salix serissima</i>	Autumn willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4														

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2011

Scientific Name	Common Name	SKCDC Rank	Transects													
			VI_077	VI_078	VI_079	VI_080	VI_081	VI_082	VI_083	VI_084	VI_086	VI_087	VI_088	VI_089	VI_090	
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	-	-	-	-	X	-	-	-	-
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	-	-	-	X	X	X	-	-	-	-	-	-	-	-
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	-	-	-	X	X	X	X	-	-	-	-	-	-	-
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula papyrifera</i>	Paper birch	S5	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	-
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	-
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	X	X	-	-	-	-	X	-	-	-	-	-	-
<i>Carex brunnescens</i>	Brownish Sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Comarum palustre</i>	Marsh cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cornus canadensis</i>	Bunchberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Kalmia polifolia</i>	Pale laurel	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Larix laricina</i>	Tamarack	S5	-	-	-	-	-	-	-	-	X	-	-	X	-	-
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	X	-	-	-	-	-	-	X	-	-	-	-	-
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Myrica gale</i>	Sweet gale	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	X
<i>Phalaris arundinacea</i>	Reed canary grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Picea glauca</i>	White spruce	S5	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<i>Picea mariana</i>	Black spruce	S5	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Pinus banksiana</i>	Jackpine	S5	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Populus tremuloides</i>	Trembling aspen	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	X	X	X	X	X	-	-	X	X	X	X	X	X	X
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus chamaemorus</i>	Cloudberry	S4	X	X	X	-	-	-	-	X	X	X	X	X	X	X
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rumex triangulivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-	X	-	-	-	-	-
<i>Salix</i> sp.	Willow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix bebbiana</i>	Long-beaked willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salix discolor</i>	Pussy willow	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2011

Scientific Name	Common Name	SKCDC Rank	Transects													
			VI_091	VI_092	VI_093	VI_094	VI_095	VI_096	VI_097	VI_098	VI_099	VI_100	VI_101	VI_102	VI_103	
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-							X	X					
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4										X				
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4								X	X			X		
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4					X									
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4														
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4														
<i>Arceuthobium americanum</i>	American mistletoe	S4														
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4									X			X	X	
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4														
<i>Betula glandulosa</i>	Dwarf birch	S4			X					X						
<i>Betula papyrifera</i>	Paper birch	S5			X	X					X	X		X	X	
<i>Betula pumila</i>	Swamp birch	S4			X					X		X	X			
<i>Calamagrostis</i> sp.	Reedgrass	-														
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4			X					X	X	X	X			
<i>Calamagrostis stricta</i>	Northern reed grass	S5									X					
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4			X					X		X	X			
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4			X					X		X	X			
<i>Carex brunnescens</i>	Brownish Sedge	S4			X					X	X	X				
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4			X					X						
<i>Carex concinna</i>	Beautiful sedge	S3														
<i>Carex deflexa</i>	Bent sedge	S4														
<i>Carex diandra</i>	Two-stamened sedge	S4			X											
<i>Carex foenea</i>	Hay sedge	S4														
<i>Carex heleonastes</i>	Hudson Bay sedge	S3														
<i>Carex limosa</i>	Mud sedge	S4			X							X				
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4			X											
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3													X	
<i>Carex utriculata</i>	Northwest territory sedge	S4								X						
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	X	X	X	X	X	X	X	X	X	X	X		X	
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4								X	X					
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4									X					
<i>Cicuta bulbifera</i>	Water hemlock	S4								X						
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4														
<i>Comarum palustre</i>	Marsh cinquefoil	S4			X					X		X	X			
<i>Cornus canadensis</i>	Bunchberry	S4								X	X				X	
<i>Cyperaceae</i> sp.	Sedge	-			X											
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4													X	
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4														
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4														
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	X	X	X	X	X	X	X			X	X		X	
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4														
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4														
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4														
<i>Epilobium palustre</i>	Marsh willowherb	S4			X					X	X					
<i>Equisetum arvense</i>	Common horsetail	S5														
<i>Equisetum pratense</i>	Meadow horsetail	S4									X					
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4								X	X		X			
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	X	X	X	X	X	X	X				X		X	
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4			X					X						
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4								X						
<i>Geocaulon lividum</i>	Northern comandra	S4														
<i>Geranium bicknellii</i>	Bicknell's geranium	S4														
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4														
<i>Kalmia polifolia</i>	Pale laurel	S4	X	X	X	X	X	X	X	X	X	X	X		X	
<i>Larix laricina</i>	Tamarack	S5			X			X	X	X		X	X		X	
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4									X					
<i>Lycopodium annotinum</i>	Stiff club-moss	S4														
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4								X	X					
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4														
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4			X	X	X	X	X			X	X		X	
<i>Menyanthes trifoliata</i>	Bog buckbean	S4			X											
<i>Mitella nuda</i>	Bishop's-cap	S4														
<i>Myrica gale</i>	Sweet gale	S4	X			X	X			X		X	X			
<i>Phalaris arundinacea</i>	Reed canary grass	S4														
<i>Picea glauca</i>	White spruce	S5									X			X		
<i>Picea mariana</i>	Black spruce	S5	X	X	X	X	X	X	X	X		X	X		X	
<i>Pinus banksiana</i>	Jackpine	S5				X	X			X	X		X	X	X	
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5									X					
<i>Populus tremuloides</i>	Trembling aspen	S5									X				X	
<i>Potentilla norvegica</i>	Rough cinquefoil	S4								X	X					
<i>Prunus pensylvanica</i>	Pin cherry	S4														
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4									X					
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	X	X	X	X	X	X	X	X	X	X	X	X		
<i>Ribes americanum</i>	Wild black currant	S4								X						
<i>Ribes glandulosum</i>	Skunk currant	S4									X					
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4									X					
<i>Ribes lacustre</i>	Bristly black currant	S4														
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4								X	X					
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5														
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4								X	X	X	X			
<i>Rubus chamaemorus</i>	Cloudberry	S4	X	X	X	X	X	X	X	X		X	X		X	
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5									X					
<i>Rubus pubescens</i>	Dewberry	S4														
<i>Rumex trianguivalvis</i>	Triangular-valved dock	S5														
<i>Salix</i> sp.	Willow	-														
<i>Salix bebbiana</i>	Long-beaked willow	S4			X					X						
<i>Salix discolor</i>	Pussy willow	S4														
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4			X					X	X	X	X			
<i>Salix pyrifolia</i>	Balsam willow	S4			X											
<i>Salix scouleriana</i>	Scouler's willow	S4								X	X					
<i>Salix serissima</i>	Autumn willow	S4														
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4			X											
<i>Scutellaria galericulata</i>	Marsh skullcap	S4								X	X					
<i>Stachys pilosa</i> var. <i>pilosa</i>	Hairy hedge-nettle	S4														
<i>Stellaria longifolia</i>	Long-leaved stitchwort	S4			X					X						
<i>Stellaria longipes</i> ssp. <i>longipes</i>	Long-leaved starwort	S4			X											
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Maystar	S4								X	X					
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging nettle	S4								X	X					
<i>Vaccinium myrtilloides</i>	Blueberry	S4								X	X			X	X	
<i>Vaccinium oxycoccos</i>	Small cranberry	S4	X	X	X	X	X	X	X	X		X	X		X	
<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	Mountain cranberry	S4	X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>Viburnum edule</i>	Low bush-cranberry	S4														

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2018

Scientific Name	Common Name	SKCDC Rank	Transects													
			VI_104	VI_105	VI_106	VI_107	VI_108	VI_109	VI_110	VI_111	VI_112	VI_113	VI_114	VI_115	VI_116	
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	-	-	-	-	-	-	-	-	X	X	X	X	X	
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	-	-	-	-	X	X	X	X	X	X	X	-	-	
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	-	-	-	-	-	-	-	X	X	-	-	-	
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	X	-	X	X	-	-	-	-	X	X	-	-	-	
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-	-	-	X	X	X	
<i>Betula papyrifera</i>	Paper birch	S5	-	X	-	-	X	X	X	X	X	X	-	X	-	
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	-	-	-	-	-	X	X	X	
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	-	-	-	-	-	-	-	-	X	X	X	X	X	
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	-	-	-	-	-	-	-	X	-	X	X	X	
<i>Carex brunnescens</i>	Brownish Sedge	S4	-	X	-	-	-	-	-	-	-	X	-	-	-	
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-	-	-	-	X	-	
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	-	X	-	-	-	-	-	-	-	-	X	X	X	
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	X	-	-	-	-	-	-	X	X	X	X	X	
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	-	X	-	-	-	-	-	-	X	X	X	X	X	
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Comarum palustre</i>	Marsh cinquefoil	S4	-	-	-	-	-	-	-	-	-	X	-	-	-	
<i>Cornus canadensis</i>	Bunchberry	S4	-	X	-	-	-	-	-	-	X	X	X	X	X	
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	-	-	-	-	-	-	-	-	-	-	X	X	-	
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-	-	X	-	-	-	
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	-	X	-	-	-	-	-	-	X	X	X	X	X	
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Kalmia polifolia</i>	Pale laurel	S4	-	X	-	-	-	-	-	-	-	-	X	X	X	
<i>Larix laricina</i>	Tamarack	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	-	-	-	-	-	-	-	X	X	X	-	-	
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	-	-	-	-	X	X	-	-	-	
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	-	X	-	-	-	-	-	-	-	-	X	X	X	
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Myrica gale</i>	Sweet gale	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Phalaris arundinacea</i>	Reed canary grass	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Picea glauca</i>	White spruce	S5	-	-	-	-	X	X	X	X	X	X	-	-	-	
<i>Picea mariana</i>	Black spruce	S5	-	X	-	-	X	-	-	X	X	X	X	X	X	
<i>Pinus banksiana</i>	Jackpine	S5	X	X	X	X	X	X	X	X	X	X	X	X	X	
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-	-	X	-	-	-	
<i>Populus tremuloides</i>	Trembling aspen	S5	-	-	-	-	-	-	-	-	X	X	-	-	-	
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	-	X	-	-	X	X	X	X	X	X	X	X	X	
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-	-	X	-	-	-	
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	-	-	-	X	X	-	-	-	
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-	X	-	-	X	-	
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	-	-	-	-	X	X	X	X	
<i>Rubus chamaemorus</i>	Cloudberry	S4	-	X	-	-	-	-	-	-	X	-	X	X	X	
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	-	-	-	-	X	-	-	-	
<i>Rumex trianguivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix</i> sp.	Willow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix bebbiana</i>	Long-beaked willow	S4	-	-	-	-	-	-	-	-	X	X	X	X	X	
<i>Salix discolor</i>	Pussy willow	S4	-	X	-	-	-	-	-	-	-	-	-	-	-	
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4	-	X	X	-	-	-	-	-	X	X	X	X	X	
<i>Salix pyrifolia</i>	Balsam willow	S4	-	-	-	-	-	-	-	-	X	-	-	-	-	
<i>Salix scouleriana</i>	Scouler's willow	S4	-	-	-	-	-	-	-	X	X	X	-	-	-	
<i>Salix serissima</i>	Autumn willow	S4	-	-	X	-	-	-	-	-	-	-	-	-	-	
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4														

Appendix A, Table 3
Species Occurrences Within the Terrestrial Vegetation Inventory Surveys in the Vegetation Study Area, June to August 2018

Scientific Name	Common Name	SKCDC Rank	Transects							
			VI_117	VI_118	VI_119	VI_120	VI_121	VI_122	VI_123	VI_124
<i>Agrostis scabra</i> var. <i>scabra</i>	Hair grass	S4	-	-	-	-	-	-	-	-
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Western river alder	S4	-	-	-	-	-	-	-	-
<i>Alnus viridis</i> ssp. <i>crispa</i>	Green alder	S4	X	X	-	-	-	-	-	-
<i>Andromeda polifolia</i> var. <i>polifolia</i>	Bog-rosemary	S4	-	-	-	-	-	-	-	-
<i>Apocynum androsaemifolium</i>	Spreading dogbane	S4	-	-	-	-	-	-	-	-
<i>Aralia nudicaulis</i>	Wild sarsaparilla	S4	-	X	-	-	-	-	-	-
<i>Arceuthobium americanum</i>	American mistletoe	S4	-	-	-	-	-	-	-	-
<i>Arctostaphylos uva-ursi</i>	Bearberry	S4	-	-	X	X	X	X	X	X
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Northern lady-fern	S4	-	-	-	-	-	-	-	-
<i>Betula glandulosa</i>	Dwarf birch	S4	-	-	-	-	-	-	-	-
<i>Betula papyrifera</i>	Paper birch	S5	X	X	-	-	-	-	-	-
<i>Betula pumila</i>	Swamp birch	S4	-	-	-	-	-	-	-	-
<i>Calamagrostis</i> sp.	Reedgrass	-	-	-	-	-	-	-	-	-
<i>Calamagrostis canadensis</i> var. <i>canadensis</i>	Blue-joint reedgrass	S4	-	-	-	-	-	-	-	-
<i>Calamagrostis stricta</i>	Northern reed grass	S5	-	-	-	-	-	-	-	-
<i>Caltha palustris</i> var. <i>palustris</i>	Yellow marsh-marigold	S4	-	-	-	-	-	-	-	-
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	S4	-	-	-	-	-	-	-	-
<i>Carex brunnescens</i>	Brownish Sedge	S4	-	-	-	-	-	-	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Hoary sedge	S4	-	-	-	-	-	-	-	-
<i>Carex concinna</i>	Beautiful sedge	S3	-	-	-	-	-	-	-	-
<i>Carex deflexa</i>	Bent sedge	S4	-	-	-	-	-	-	-	-
<i>Carex diandra</i>	Two-stamened sedge	S4	-	-	-	-	-	-	-	-
<i>Carex foenea</i>	Hay sedge	S4	-	-	-	-	-	-	-	-
<i>Carex heleonastes</i>	Hudson Bay sedge	S3	-	-	-	-	-	-	-	-
<i>Carex limosa</i>	Mud sedge	S4	-	-	-	-	-	-	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal-bog sedge	S4	-	-	-	-	-	-	-	-
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-fruited sedge	S3	-	-	-	-	-	-	-	-
<i>Carex utriculata</i>	Northwest territory sedge	S4	-	-	-	-	-	-	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	S4	-	-	-	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Narrow-leaf fireweed	S4	-	-	-	-	-	-	-	-
<i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>	Narrow-leaf fireweed	S4	-	-	-	-	-	-	-	-
<i>Cicuta bulbifera</i>	Water hemlock	S4	-	-	-	-	-	-	-	-
<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted water-hemlock	S4	-	-	-	-	-	-	-	-
<i>Comarum palustre</i>	Marsh cinquefoil	S4	-	-	-	-	-	-	-	-
<i>Cornus canadensis</i>	Bunchberry	S4	-	-	-	-	-	-	-	-
<i>Cyperaceae</i> sp.	Sedge	-	-	-	-	-	-	-	-	-
<i>Cypripedium acaule</i>	Stemless lady's-slipper	S4	-	-	-	-	-	-	-	-
<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>	Tufted hair grass	S4	-	-	-	-	-	-	-	-
<i>Diphasiastrum complanatum</i>	Trailing club-moss	S4	-	-	-	-	-	-	-	-
<i>Drosera rotundifolia</i>	Round-leaved sundew	S4	-	-	-	-	-	-	-	-
<i>Dryopteris carthusiana</i>	Spinulose wood fern	S4	-	-	-	-	-	-	-	-
<i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>	Black crowberry	S4	-	-	-	-	-	-	-	-
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Hairy willow-herb	S4	-	-	-	-	-	-	-	-
<i>Epilobium palustre</i>	Marsh willowherb	S4	-	-	-	-	-	-	-	-
<i>Equisetum arvense</i>	Common horsetail	S5	-	-	-	-	-	-	-	-
<i>Equisetum pratense</i>	Meadow horsetail	S4	-	-	-	-	-	-	-	-
<i>Equisetum sylvaticum</i>	Woodland horsetail	S4	-	X	-	-	-	-	-	-
<i>Eriophorum vaginatum</i> var. <i>vaginatum</i>	Tussock cotton-grass	S4	-	-	-	-	-	-	-	-
<i>Galium trifidum</i> ssp. <i>trifidum</i>	Small bedstraw	S4	-	-	-	-	-	-	-	-
<i>Galium triflorum</i>	Sweet-scented bedstraw	S4	-	-	-	-	-	-	-	-
<i>Geocaulon lividum</i>	Northern comandra	S4	-	-	-	-	-	-	-	-
<i>Geranium bicknellii</i>	Bicknell's geranium	S4	-	-	-	-	-	-	-	-
<i>Hudsonia tomentosa</i> var. <i>tomentosa</i>	Sand golden-heather	S4	-	-	-	-	X	-	-	X
<i>Kalmia polifolia</i>	Pale laurel	S4	-	-	-	-	-	-	-	-
<i>Larix laricina</i>	Tamarack	S5	-	-	-	-	-	-	-	-
<i>Linnaea borealis</i> ssp. <i>americana</i>	American twinflower	S4	-	-	-	-	-	-	-	-
<i>Lycopodium annotinum</i>	Stiff club-moss	S4	-	-	-	-	-	-	-	-
<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S4	-	-	-	-	-	-	-	-
<i>Maianthemum stellatum</i>	Starflower false Solomon's-seal	S4	-	-	-	-	-	-	-	-
<i>Maianthemum trifolium</i>	Three-leaf Solomon's-seal	S4	-	-	-	-	-	-	-	-
<i>Menyanthes trifoliata</i>	Bog buckbean	S4	-	-	-	-	-	-	-	-
<i>Mitella nuda</i>	Bishop's-cap	S4	-	-	-	-	-	-	-	-
<i>Myrica gale</i>	Sweet gale	S4	-	-	-	-	-	-	-	-
<i>Phalaris arundinacea</i>	Reed canary grass	S4	-	-	-	-	-	-	-	-
<i>Picea glauca</i>	White spruce	S5	X	X	-	-	-	-	-	-
<i>Picea mariana</i>	Black spruce	S5	-	-	-	-	-	-	-	-
<i>Pinus banksiana</i>	Jackpine	S5	X	X	X	X	X	X	X	X
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	-	-	-	-	-	-	-	-
<i>Populus tremuloides</i>	Trembling aspen	S5	-	-	-	-	-	-	-	-
<i>Potentilla norvegica</i>	Rough cinquefoil	S4	-	-	-	-	-	-	-	-
<i>Prunus pensylvanica</i>	Pin cherry	S4	-	-	-	-	-	-	-	-
<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	Pink wintergreen	S4	-	-	-	-	-	-	-	-
<i>Rhododendron groenlandicum</i>	Common labrador tea	S4	X	X	-	-	-	-	-	-
<i>Ribes americanum</i>	Wild black currant	S4	-	-	-	-	-	-	-	-
<i>Ribes glandulosum</i>	Skunk currant	S4	-	-	-	-	-	-	-	-
<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>	Northern black currant	S4	-	-	-	-	-	-	-	-
<i>Ribes lacustre</i>	Bristly black currant	S4	-	-	-	-	-	-	-	-
<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>	Bristly gooseberry	S4	-	-	-	-	-	-	-	-
<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly rose	S5	-	-	-	-	-	-	-	-
<i>Rubus arcticus</i> ssp. <i>acaulis</i>	Nagoon berry	S4	-	-	-	-	-	-	-	-
<i>Rubus chamaemorus</i>	Cloudberry	S4	-	-	-	-	-	-	-	-
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	American red raspberry	S5	-	-	-	-	-	-	-	-
<i>Rubus pubescens</i>	Dewberry	S4	-	-	-	-	-	-	-	-
<i>Rumex triangulivalvis</i>	Triangular-valved dock	S5	-	-	-	-	-	-	-	-
<i>Salix</i> sp.	Willow	-	-	-	-	-	-	-	-	-
<i>Salix bebbiana</i>	Long-beaked willow	S4	-	-	-	-	-	-	-	-
<i>Salix discolor</i>	Pussy willow	S4	-	-	-	-	-	-	-	-
<i>Salix planifolia</i> ssp. <i>planifolia</i>	Plane-leaf willow	S4	-	-	-	-	-	-	-	-
<i>Salix pyrifolia</i>	Balsam willow	S4	-	-	-	-	-	-	-	-
<i>Salix scouleriana</i>	Scouler's willow	S4	-	-	-	-	-	-	-	-
<i>Salix serissima</i>	Autumn willow	S4	-	-	-	-	-	-	-	-
<i>Scheuchzeria palustris</i>	American Scheuchzeria	S4	-	-	-	-	-	-	-	-
<i>Scutellaria galericulata</i>	Marsh skullcap	S4	-	-	-	-	-	-	-	-
<i>Stachys pilosa</i> var. <i>pilosa</i>	Hairy hedge-nettle	S4	-	-	-	-	-	-	-	-
<i>Stellaria longifolia</i>	Long-leaved stitchwort	S4	-	-	-	-	-	-	-	-
<i>Stellaria longipes</i> ssp. <i>longipes</i>	Long-leaved starwort	S4	-	-	-	-	-	-	-	-
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Maystar	S4	-	-	-	-	-	-	-	-
<i>Urtica dioica</i> ssp. <i>gracilis</i>	Stinging nettle	S4	-	-	-	-	-	-	-	-
<i>Vaccinium myrtilloides</i>	Blueberry	S4	X	X	X	X	X	X	X	X
<i>Vaccinium oxycoccos</i>	Small cranberry	S4	-	-	-	-	-	-	-	-
<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	Mountain cranberry	S4	X	X	-	X	-	-	X	-
<i>Viburnum edule</i>	Low bush-cranberry	S4	-	-	-	-	-	-	-	-
<i>Viburnum opulus</i> var. <i>americanum</i>	High bush-cranberry	S4	-	-	-	-	-	-	-	-
<i>Viola adunca</i> var. <i>adunca</i>	Early blue violet	S5	-	-	-	-	-	-	-	-
<i>Viola canadensis</i> var. <i>rugulosa</i>	Western Canada violet	S4	-	-	-	-	-	-	-	-
<i>Viola nephrophylla</i>	Northern bog violet	S4	-	-	-	-	-	-	-	-
<i>Viola palustris</i>	Marsh violet	S4	-	-	-	-	-	-	-	-
<i>Viola renifolia</i>	Kidney-leaved white violet	S4	-	-	-	-	-	-	-	-

Source: All scientific, common names and provincial ranks from SKCDC (2018).
Bold text indicates provincially-rare (S1 to S3) species.
SKCDC = Saskatchewan Conservation Data Centre; S3 = vulnerable/rare to uncommon, S4 = apparently secure, S5 = secure/common.

Appendix A, Table 4

Observations Recorded for the Aquatic Vegetation Inventory Surveys Conducted in the Vegetation Study Area, August 2018

Survey Point ID	Depth (m)	Plant Species Observed	UTM Coordinates ^a	
			Easting	Northing
A1	3.3	-	602918	6393864
A2	2.6	-	602989	6393870
A3	2.1	-	603055	6393869
A4	1.6	-	603125	6393864
A5	3.2	-	602918	6393799
A6	2.4	-	602985	6393795
A7	2.3	-	603055	6393803
A8	2.2	-	603124	6393797
A9	2.9	-	602922	6393734
A10	2.5	-	602986	6393724
A11	2.3	-	603058	6393728
A12	2.2	-	603128	6393732
A13	2.8	-	602917	6393656
A14	2.4	-	602985	6393659
A15	2.2	-	603055	6393654
A16	2.0	Spiny-spored quillwort (<i>Isoetes echinospora</i>)	603127	6393660
A17	3.7	-	602917	6393585
A18	2.3	-	602987	6393587
A19	2.1	-	603058	6393589
A20	1.3	-	603127	6393589
A21	2.1	-	602918	6393520
A22	<0.5	-	602980	6393508
A23	<0.5	-	602929	6393469
B1	1.5	-	603478	6394430
B2	1.0	-	603543	6394424
B3	<0.5	-	603615	6394424
B4	<0.5	-	603686	6394427
B5	1.5	-	603479	6394359
B6	1.0	-	603546	6394354
B7	<0.5	-	603616	6394354
B8	<0.5	-	603685	6394359
B9	1.3	-	603482	6394286
B10	<0.5	-	603545	6394292
B11	<0.5	Northern pondweed (<i>Potamogeton alpinus</i>)	603618	6394285
B12	<0.5	Northern pondweed	603687	6394286
B13	1.4	-	603479	6394218
B14	<0.5	-	603552	6394216
B15	<0.5	-	603617	6394215
B16	<0.5	-	603684	6394217
B17	0.9	-	603477	6394148
B18	<0.5	-	603547	6394146
B19	<0.5	-	603615	6394149

Appendix A, Table 4

Observations Recorded for the Aquatic Vegetation Inventory Surveys Conducted in the Vegetation Study Area, August 2018

Survey Point ID	Depth (m)	Plant Species Observed	UTM Coordinates ^a	
			Easting	Northing
B20	<0.5	Narrow-leaved bur-reed (<i>Sparganium angustifolium</i>), Sago pondweed (<i>Stuckenia pectinata</i>), Yellow cowlily (<i>Nuphar variegata</i>)	603686	6394146
B21	<0.5	-	603480	6394077
B22	<0.5	-	603546	6394076
B23	<0.5	-	603615	6394078
C1	1.7	-	604456	6394564
C2	1.6	-	604525	6394568
C3	1.6	-	604602	6394569
C4	1.5	-	604322	6394504
C5	1.5	-	604390	6394504
C6	1.5	-	604456	6394501
C7	1.5	-	604528	6394499
C8	1.6	Spiny-spored quillwort	604597	6394499
C9	1.6	Sago pondweed	604670	6394500
C10	1.6	Spiny-spored quillwort	604738	6394494
C11	1.5	-	604315	6394423
C12	1.5	Sago pondweed	604387	6394424
C13	1.4	-	604456	6394424
C14	1.4	-	604525	6394430
C15	1.5	-	604596	6394427
C16	1.5	-	604668	6394423
C17	1.5	Narrow-leaved bur-reed	604734	6394429
C18	1.3	-	604315	6394358
C19	1.3	-	604385	6394355
C20	1.5	Spiny-spored quillwort	604457	6394357
C21	1.4	Spiny-spored quillwort	604528	6394359
C22	1.3	-	604597	6394356
C23	0.9	-	604667	6394353
C24	1.1	Sago pondweed	604736	6394353
C25	0.8	-	604317	6394290
C26	1.0	-	604385	6394285
C27	1.2	-	604461	6394281
C28	0.8	-	604527	6394288
C29	0.9	-	604596	6394291
C30	0.9	Narrow-leaved bur-reed	604665	6394284
C31	1.0	-	604740	6394283
C32	<0.5	-	604739	6394221
D1	1.2	Water lobelia (<i>Lobelia dortmanna</i>)	603402	6391316
D3	0.8	Narrow-leaved bur-reed	603447	6391340
D4	1.9	-	603332	6391297
D5	1.4	-	603365	6391302
D6	1.4	-	603379	6391305

Appendix A, Table 4

Observations Recorded for the Aquatic Vegetation Inventory Surveys Conducted in the Vegetation Study Area, August 2018

Survey Point ID	Depth (m)	Plant Species Observed	UTM Coordinates ^a	
			Easting	Northing
D7	3.2	-	603403	6391289
D8	1.9	Sago pondweed	603278	6391282
D9	2.9	-	603313	6391275
D10	3.0	-	603336	6391277
D11	3.5	-	603356	6391267
D12	3.4	-	603384	6391275
D13	3.5	-	603413	6391278
D14	3.4	-	603294	6391243
D15	3.4	-	603312	6391251
D16	3.7	-	603332	6391247
D17	3.8	-	603355	6391248
D18	4.0	-	603381	6391255
D19	3.7	-	603409	6391257
D20	3.9	-	603287	6391224
D21	3.7	-	603307	6391222
D22	3.8	-	603332	6391226
D23	3.9	-	603358	6391225
D24	3.9	-	603384	6391223
D25	3.8	-	603410	6391218
D26	3.8	-	603289	6391202

Source: All scientific and common names from SKCDC (2018).

Bold text indicates rare species.

a) UTM = NAD83, Zone 12U.

Appendix A, Table 5

Definitions for Boreal Wetland Classifications and their Corresponding Sub-categories

Boreal Wetland Classification	Definition	Sub-category	Definition
Bog	Raised surface relative to surrounding terrain; only hydrologic input is rain water; poor/very poor nutrient regime; mesic; trees (if present) <10 m in height and <60% canopy cover, dominated by black spruce (<i>Picea mariana</i>); ericaceous shrub layer (i.e., <i>Vaccinium</i> spp., <i>Rhododendron groenlandicum</i> , and <i>Kalmia polifolia</i>), <i>Sphagnum</i> moss on ground layer.	Treed	Trees >25% cover
		Shrubby	Shrubs >25% cover
		Open	Mosses/herbs/forbs >25% cover
Fen Poor	Some mineral rich water inputs; mesic/hygic moisture regimes; more species rich than bogs; trees (if present) <10 m in height (usually <2 m) and <60% canopy cover, dominated by both black spruce and tamarack (<i>Larix laricina</i>); shrub layer mixture of ericaceous shrubs, dwarf willows (<i>Salix</i> spp.), and shrubby birch (<i>Betula</i> spp.); graminoids can be more dominant.	Treed	Trees >25% cover
		Shrubby	Shrubs >25% cover
		Graminoid	Mosses/herbs/forbs >25% cover
Fen Rich	Medium/rich water inputs from surface and groundwater; hygic to hydric moisture regime; tree layer with trees <10 m in height and <60% canopy cover, dominated by either black spruce or tamarack; shrub layer containing shrubby birch only.	Treed	Trees >25% cover
		Shrubby	Shrubs >25% cover
		Graminoid	Mosses/herbs/forbs >25% cover
Swamp	Wetlands with woody vegetation >1m, treed vegetation can be deciduous (i.e., <i>Betula</i> spp.) and/or coniferous (i.e., black spruce or tamarack); standing water with hummocky microtopography; poor to rich nutrient regime.	Black Spruce	Fibric/woody peat accumulation; tree layer >10 m in height and >60% canopy closure, black spruce dominant; roots in contact with mineral-rich water; ground layer mix of feather and <i>Sphagnum</i> mosses
		Tamarack	Tree layers >10 m in height and >60% canopy closure, tamarack dominant
		Shrub	Trees <25% cover, shrubs >25%; shrub cover primarily taller >2 m; species rich understory with herbs/forbs
		Hardwood	Trees >25% cover, hardwood dominated (white birch [<i>Betula papyrifera</i>] in transitional zones/aspen [<i>Populus tremuloides</i>] in floodplains); trees >10 m in height and >60% canopy closure
		Mixedwood	Wetlands with hardwood (white birch) and/or conifers (tamarack, black spruce), neither dominant (<80% single tree type in canopy); trees ≥10 m in height and >60% canopy closure, rich/very rich nutrient regimes
Marsh	Periodic/persistent flooding or slow moving surface water; dominated by herbaceous or forb vegetation.	Emergent	Vegetation >25% emergent species
		Graminoid	Vegetation >25% graminoid/forb species
Shallow Open Water	<25% herbaceous/woody vegetation present (submerged or floating-leaved vegetation may be present); persistent water table well above surface with flooded conditions.	Aquatic Bed	Floating/submerged aquatic vegetation >25% cover
		Mudflats	Exposed mud/sand/gravel/rock >25% cover
		Shallow/Open Water	No vegetation present, permanent/semi-permanent water table

Source: Wetland classifications and sub-categories as per Smith et al. (2007).

APPENDIX B

VEGETATION PHOTOGRAPHS

**APPENDIX B: VEGETATION PHOTOGRAPHS
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Photo 1. A regenerating/recently burned forest stand, August 2018



Photo 2. A mature/old-growth jack pine (*Pinus banksiana*) stand, June 2018



Photo 3. Hudson Bay sedge (*Carex heleonastes*), November 2018



Photo 4. Beautiful sedge (*Carex concinna*), November 2018



Photo 5. Water lobelia (*Lobelia dortmanna*), August 2018



Photo 6. An infestation of American mistletoe (*Arceuthobium americanum*), featuring the characteristic witches' brooms, August 2018



Photo 7. A shrubby bog class type (Smith et al. 2007) and a BS18 ecosite (McLaughlin et al. 2010), featuring black spruce (*Picea mariana*) as the dominant tree species with ericaceous shrubs (cover > 25%) in the understory, June 2018



Photo 8. A treed bog class type and a BS17 ecosite, featuring black spruce as the dominant tree species (cover > 25%) with ericaceous shrubs in the understory, June 2018



Photo 9. A graminoid poor fen class type and a BS24 ecosite, featuring a lack of trees/shrubs with abundant cover (> 25%) of herbs/forbs in the understory, June 2018



Photo 10. A shrubby rich fen class type and a BS23 ecosite, featuring abundant shrub cover from willows (*Salix* spp.), June 2018



Photo 11. A treed poor fen class type and a BS21 ecosite, featuring tamarack (*Larix laricina*) as the dominant tree species, June 2018



Photo 12. A black spruce swamp class type and a BS16 ecosite, featuring black spruce as the dominant tree species, June 2018



Photo 13. A hardwood swamp class type and a BS16 ecosite, featuring western river alder (*Alnus incana* ssp. *tenuifolia*) as one of the dominant tree species, June 2018