Annexe XIX

Inventaire terrestre de printemps

(Hatch, 2019)

Report

Spring Terrestrial Surveys of Lake Moblan Site

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			Kafyeke, Terri Signature numérique de Kafyeke, Terri Date : 2019.01.18 17:44:13 -05'00' Wilson, Kendall Digitally signed by Wilson, Kendall Date: 2019.01.21 09:25:44 -05'00'	Novotni, Jean Signature numérique de Novotni, Jean Date : 2019.01.21 07:41:50 -05'00'	Patoine, Marie-Christine Signature numérique de Patoine, Marie-Christine Date : 2019.01.21 09:43:11 -05'00'	Jin Gao
2019-01-18	1	Final	T. Kafyeke K. Wilson	J. Novotni	M-C. Patoine	Jin Gao
2018-11-07	0	Final	T. Kafyeke; K. Wilson	J. Novotni	M.-C. Patoine	Jin Gao
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			HATCH		Functional Manager	Client

Sommaire exécutif

INVENTAIRE TERRESTRE DE PRINTEMPS SUR LE SITE DU LAC MOBLAN

Rapports d'inventaire biologique Moblan Lithium

CONTEXTE

Dans le cadre du projet minier Moblan Lithium, Guo Ao Lithium Ltd. prépare une étude d'impact sur l'environnement (EIE) pour le Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). Le relevé terrestre du printemps avait pour objectif d'identifier la végétation sur le site, de classer les types de sites écologiques et d'identifier les espèces d'oiseaux, de reptiles, de salamandres et d'anoures présentes. Les résultats informeront le projet d'évaluation environnementale provincial du projet Moblan Lithium. Ces inventaires ont été menés par des équipes de biologistes et de scientifiques de l'environnement en juillet 2018.

MÉTHODOLOGIE

Végétation terrestre

Quinze (15) stations d'inventaires ont été investiguées à l'intérieur de l'aire d'étude restreinte. Les types écologiques ont été classifiés selon le *Guide de reconnaissance des types écologiques des régions écologiques 6 c,d,e,f,g* (Blouin & Berger, 2004).

Avifaune

Les inventaires de l'avifaune ont été réalisés via l'implantation de 18 stations d'écoute sur une période de six (6) jours, en utilisant la méthode décrite dans le protocole *The Ontario Forest Bird Monitoring Program* (Cadman, Dewar, & Welsh, 1998). Pour les oiseaux des marais, deux stations d'écoute ont été inventoriées selon la méthode du *Programme de surveillance des marais du Québec* (Bird Studies Canada & Environment Canada, 2008)

Anoures

L'inventaire d'anoures a été effectué selon la *Méthode d'inventaire des anoures du Québec.* (Bouthilier, Pelletier, & Tessier, 2015)

Salamandres

L'inventaire de salamandres a été effectué selon le *Protocole d'inventaire des salamandres de ruisseaux en situation précaire au Québec* (MFFP, 2018).

Reptiles

L'inventaire des reptiles a été effectué selon le *Protocole d'inventaire des couleuvres au Québec* (MFFP, 2018).

RÉSULTATS ET CONCLUSIONS

Aucune espèce végétale en péril n'a été observée dans la zone d'étude.

La zone d'étude présente une végétation typique du domaine de la pessière à mousse auquel elle appartient; elle est principalement constituée de peuplements d'épinette noire, associés à du lichen, de la sphaigne ou des mousses et éricacées.

Un total de 19 espèces d'oiseaux différentes a été entendu ou observé dans la zone d'étude. Aucune d'entre elles n'est menacée, vulnérable ou susceptible d'être désignée.

Une seule espèce d'anoures a été entendue et observée par hasard: la grenouille des bois, qui n'est pas en péril. Des têtards ont été observés, mais l'espèce n'a pas pu être identifiée (probablement crapaud d'Amérique). Il y a trois espèces d'anoures en péril au Québec et aucune de leurs aires de répartition ne chevauche la zone d'étude. Il est donc peu probable que les têtards appartiennent à une espèce en péril.

Aucune salamandre n'a été observée dans la zone d'étude, mais des ufs de salamandre maculée ont été trouvés dans des mares printanières. Ce n'est pas une espèce en péril.

Finalement, aucun reptile n'a été observé dans la zone d'étude.

IMPORTANT NOTICE TO READER

This report was prepared by Hatch Ltd. ("**Hatch**") for the exclusive use of Guo Ao Lithium Ltd. (the "**Client**") for the sole purpose of assisting the management of the Client to make decisions with respect to the Lake Moblan Site (the "**Site**"), and must not be used for any other purpose, or provided to, relied upon or used by any other person. Any use of or reliance upon this report by another person is done at their sole risk and Hatch does not accept any responsibility or liability in connection with that person's use or reliance.

This report contains the opinion of Hatch using its professional judgment and reasonable care based upon observations of the condition of the Site made at the time of preparation of this report, and information made available to Hatch by the Client or by certain other parties on behalf of the Client (the "**Client or Other Information**").

The use of or reliance upon this report by the Client is subject to the following:

(1) This report is to be read in the context of and subject to the terms of Proposal Number 3464-18-2330 between Hatch and the Client (the "**Agreement**"), including any methodologies, procedures, techniques, assumptions and other relevant terms or conditions specified in the Agreement.

(2) This report is meant to be read as a whole and sections or parts of the report must not be read or relied upon out of context.

(3) Unless expressly stated otherwise in this report, Hatch has not verified the accuracy, completeness or validity of the Client or Other Information, makes no representation regarding the accuracy of such information and does not accept any responsibility or liability in connection with the Client or Other Information.

(4) The condition, stability and safety of the Site may change over time (or may have already changed) due to natural forces or human intervention, and Hatch does not accept any responsibility for the impact that such changes may have on the accuracy or validity of the opinions, conclusions and recommendations set out in this report.

Biological Inventory Team

Hatch Ltd.

Name	Role
Management	
Marie-Christine Patoine, ing. M.Sc.A	ESIA Manager
Elyse Hamel, ing. M.Env.	Project lead
Kathleen Vukovics, B.A.	Environmental surveys lead
Field surveys	
Paul Ashley, M.Sc.	Terrestrial surveys lead
Terri Kafyeke, biol. MEnv	Terrestrial surveys
Kendall Wilson, BES	Terrestrial surveys
Jaimee MacLeod (intern)	Terrestrial surveys
Mapping	
Julianna Villella, B.Sc.	GIS
Sladjana Pavlovic, M.Sc.	GIS

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Appendix A: Vegetation survey data collection sheets

1. Introduction

1.1 Background

Shenzhen Guo AO Lithium. Ltd (hereinafter referred to as "the Client") intends to construct a lithium ore mine and concentrator plant at its Lake Moblan site (hereinafter referred to as "the Site" or "the study area"), located approximately 100 kilometers north of Chibougamau, Quebec. The Site covers approximately 1178 ha (Figure1-1) with a centroid located at UTM (NAD-83) 18N 506620.60 m E and 5620503.70 m N.

As part of the permitting process the Client is required to prepare an Environmental Impact Assessment (EIA) study for the provincial Ministry of Environment ("*Ministère du Développement Durable, de l'Environnement et de la Lutte contre les Changements Climatiques* (MDDELCC)". This report has been prepared as part of a series of environmental and biological reports to assist in the development of the EIA.

Hatch Ltd. has been retained by the Client to prepare this EIA report by the end of the year 2018 in a three-phase approach:

1. **Phase 1 - Gap Analysis:** Hatch Engineering and Environmental Services team reviewed all relevant materials to understand the current state of knowledge and identify the missing information required to produce an EIA report. A gap analysis report was prepared by the Hatch and submitted to Guo Ao Lithium in June 2018. The analysis concluded that previous environmental reports from Golder Associates provided only a high-level assessment of the Site's environment and further biological surveys, inventories and ecological assessments were required to meet the requirements of an EIA.
2. **Phase 2 - Spring/Summer Biological Site Surveys:** In summer 2018 Hatch conducted numerous environmental and biological inventories and assessments to gather baseline data on the Site's environmental and biological characteristics (Table 1-1). Hatch followed industry accepted protocols to delineate and characterize wetlands, classify ecosites, characterize fish habitat and assess populations of amphibians, reptiles, birds and mammals.
3. **Phase 3 - Full EIA Study:** To fulfill the requirements of an EIA, Hatch recognizes that additional environmental monitoring and studies, such as surface and ground water characterization, soil and geotechnical characterization and archeological studies are required. This work is ongoing and will be completed by the end of November 2018 for submission of the EIA report to the MDDELCC by the end of 2018.

This report was prepared in English to ease its comprehension by the members of the Cree nation of Mistissini, who where requested to review and comment on the results.

1.2 Timing and Study Area

The biological surveys were conducted by teams of biologists and environmental scientists between July and September of 2018 within the Project Study Area identified in Figure1-1: Study Area. The dates and details of the surveys are included below in Table 1-1. The present report only concerns the observations from Terrestrial Survey 1.

Table 1-1: Timing and Scopes of Biological Field Surveys

Survey	Scope	Dates
Terrestrial Survey 1	**Vegetation, birds, amphibians, reptiles**	**July 4-12 2018**
Aquatic Survey	Fish and fish habitat	August 10-16, 2018
Water and Sediment Sample Collection	Water and Sediment quality	August 10-16, 2018
Benthic Sample Collection	Benthic community	August 10-16, 2018
Terrestrial Survey 2	Micromammals, wetlands	August 21-27, 2018

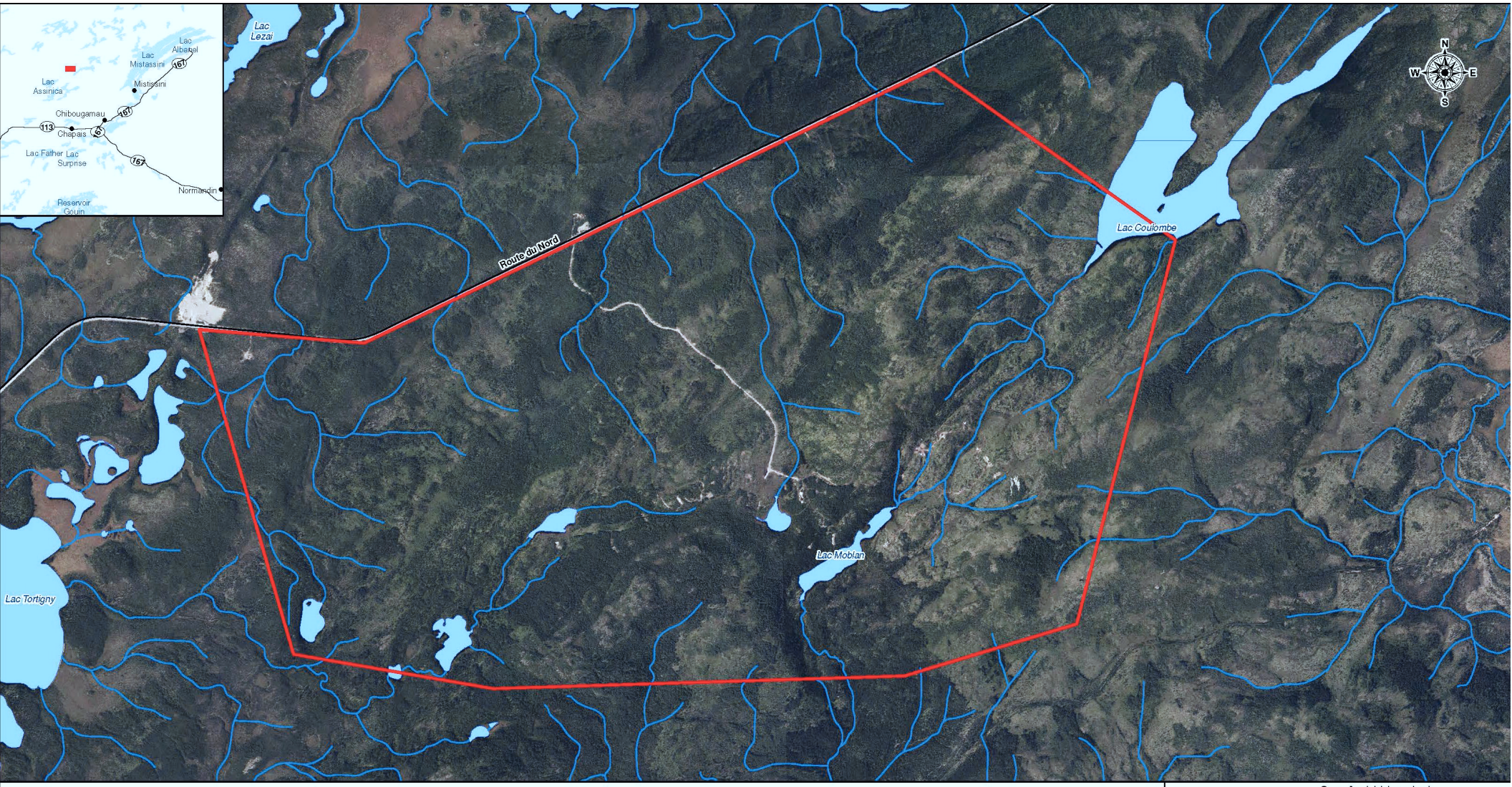
Terrestrial Survey 1 was meant to capture some season-sensitive occurrences such as anuran calls and breeding bird calls, which happen in spring. However, Hatch was assigned the biological surveys in June, at the end of the regular spring period. Considering that the Site is in Northern Québec, and that temperatures in the region were colder than historical averages (Table 1-2), the team decided to mobilize and conduct "spring" surveys on the Site in early July.

Table 1-2: Historical and 2018 temperatures in the Chibougamau-Chapais region

Month	Daily average temperature[1] 1981-2010 (°C)	2018 daily average[2] (°C)
April	-0.3	-5.2
May	8.1	4.9
June	14.1	13.2

It should also be noted that some plant species that were observed incidentally during Terrestrial survey 2 (August 21-27, 2018) were added to this report, to keep the vegetation survey in one single report.

[1] Environment Canada (2018) Canadian Climate Normals 1981-2010 Station Data for Chapais 2
[2] Environment Canada (2018) Daily data reports for Chibougamau-Chapais



Legend

- Study Area
- Road
- Stream
- Lake

Notes:
1. Produced by Hatch, contains information under the Open Government License - Canada
2. Produced by Hatch, contains information under the Open Government License - Québec
3. Spatial referencing NAD 83 UTM Zone 18
4. Imagery Source - Donneés Québec, 2013.

0 250 500 1,000 m

1:20,000

Figure1-1: Study Area

Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Study Area		
Date :	September 13 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	1-1	**Page :**	1 of 1
Prepared By :	HATCH		

2. Terrestrial Vegetation

2.1 Methodology

A three-step approach was taken to survey, classify and delineate vegetation composition in the study area. First, representative survey points were selected using the Relevé Method (MDNR, 2013). In the field, data was collected at each point using data sheets from the *Field Guide to Forest Ecosystems of Northern Ontario Appendices* (hereinafter referred to as the "FENO Guide Appendices") (Taylor et al., 2000)[3]. Finally, the surveyed stations were classified using the ecological type method based on the "*Guide de reconnaissance des types écologiques des régions écologiques 6c, d,e,f,g*" (hereinafter referred to as the "Ecological Type Guide") (Blouin & Berger, 2004).

Survey point selection

The Relevé Method is a standardized survey protocol for vegetation plot selection and sampling. Prior to the site visit, a desktop review was conducted to complete aerial photo interpretation to divide up the landscape of the Study Area into units of visible vegetation similarities. Once onsite, the survey team conducted field assessments of the plant communities using the mapped units.

An attempt was also made to select community occurrences or sample stands such that one captures all the possible variability of the plant community within a given landscape or geographic region, to provide an adequate representation of the community. This was done by distributing relevé plots among occurrences of the community that vary in habitat characteristics such as substrate, slope position, soils, etc. The size and shape of the plot chosen in this instance was a circle with a five-meter radius.

Data collection

On the field, the sampling parameters and data were recorded using five (5) separate data sheets adapted from the FENO Guide Appendices which included Stand Description, Soil Description, Species List & Community Profile, Management/Disturbance, and Wildlife Observations. The data sheets were populated at each survey location and can be found in Appendix A.

Ecological classification

Based on the vegetation species composition and cover percentage, soil type and drainage, each survey plot was given a classification based on Québec's Ecological Type Guide. A total of fifteen (15) vegetation plots were sampled within the Study area between July 5-10, 2018.

The environmental conditions during the surveys can be seen in Table 2-1.

[3] Data sheets from Ontario was used to facilitate data collection in the field, as three members of the team were English-speaking and only one spoke French.

Table 2-1: Environmental Conditions during Terrestrial Vegetation Surveys

Survey Points	Date	Temperature (°C)	Wind (km/hr)	Wind Direction	Cloud Cover (1/10ths)	Precipitation (mm)
1	July 5, 2018	24	1	NW	7/10	0
2	July 5, 2018	24	1	NW	9/10	0
3	July 5, 2018	24	1	N	7/10	0
4	July 5, 2018	27	3-4	N	2/10	0
5	July 6, 2018	9	1	N	10/10	Less than 1mm
6	July 6, 2018	7	3	N	9/10	Less than 1mm
8	July 8, 2018	22	5	NW	9/10	1
9	July 9, 2018	23	5	N	3/10	0
10	July 8, 2018	28	10	W	3/10	0
11	July 8, 2018	27	10	W	2/10	0
15	July 8, 2018	23	10	NW	5/10	0
16	July 10, 2018	11	5	W	10/10	0
17	July[4] 2018	7	2	N	1/10	0
18	July 7, 2018	27	5	W	6/10	0
19	July 7, 2018	26	10	N	6/10	0

Location of the survey plots are presented in Figure 2-3.

2.2 Observations

2.2.1 Full Species List

Throughout the two terrestrial site visits that took place in July and August 2018, the following species were observed and are compiled below in Table 2-2. Traditional Cree use of the flora

[4] The exact date was lost in the records. The survey occurred between July 5 and 10.

observed on site was identified by consultation with the Mistissini community elders and is presented in Table 2-2. Selected photographs from site visits are present in Figure 2-1.

Table 2-2: Full Species List Observed within the Study Area

Common Name in English	Common Name in French	Scientific Name	Common Name in Cree	Cree Traditional Use
Trees				
Balsam fir	Sapin baumier	*Abies balsamea*	Iyaasiht	Works for colds by inhaling vapours.
Balsam poplar	Peuplier baumier	*Populus balsamifera*		
Black spruce	Épinette noire	*Picea mariana*	Inaahtkw	
Jack pine	Pin gris	*Pinus banksiana*	Ushchishk	
Tamarack	Mélèze laricin	*Larix laicina*	Waachinaakan	Cut a branch from Tamarack and peel off skin, boil till round white sticks and scoop the white off the stick and put on rashes, burns and open cuts. Can make tea that helps diabetes.
Trembling aspen	Peuplier faux-tremble	*Populus tremuloides*	Mitus	
White birch	Bouleau blanc	*Betula papyrifera*		
White spruce	Épinette blanche	*Picea glauca*	Minihikw	
Small trees, shrubs and woody vines				
American mountain Ash	Frêne blanc	*Sorbus americana*		
Bebb's willow	Saule de bebb	*Salix bebbiana*		
Bearberry	Raisin d'ours	*Arctostaphylos uva-ursi*		Leaves are used for herbal medicine and edible.
Blue ground-cedar	Lycopode à trois épis	*Diphasiastrum tristachyum*		
Bog cranberry	Canneberge commune	*Vaccinium oxycoccos*		
Bog labrador-tea	Lédon des marais	*Rhododendron tomentosum*	Wiisichipukh	To make tea and helps diabetes.
Bog rosemary	Andromède	*Andromeda polifolia*		
Bog laurel	Kalmia à feuilles d'andromède	*Kalmia polifolia*		
Bunchberry	Quatre-temps	*Cornus canadensis*		
Choke cherry	Cerisier de virginie	*Prunus virginiana*		
Cloudberry	Ronce petit-mûrier	*Rubus chamaemorus*	Shicoudaw	A good source for minerals and vitamins, also can make jam.
Creeping snowberry	Chiogéne hispide	*Gaultheria hispidula*	Pieuminaan	Leaves can be boiled to a tonic to remove cancerous taints. Berries can be eaten raw or cooked.
Downy serviceberry	Amélanchier arborescent	*Amelanchier arborea*		
Fly-honeysuckle	Chèvrefeuille velu	*Lonicera villosa*		
Green alder	Aulne crispé	*Alnus crispa*		
Hobblebush	Viorne à feuilles d'aulne	*Viburnum alnifolium*		
Labrador tea	Thé du Labrador	*Rhododendron groenlandicum*	Kachischepak / Wiisichipukh	
Leatherleaf	Cassandre caliculé	*Chamaedaphne calyculata*		
Lowbush blueberry	Bleuet à feuilles étroites	*Vaccinium angustifolium*		To make jam, good with lake trout and easy snack.
Meadowsweet	Reine-des-prés	*Filipendula ulmaria*		
Mooseberry	Viorne comestible	*Viburnum edule*		
Mountain holly	Némopanthe mucroné	*Ilex mucronata*		
Mountain maple	Érable à épis	*Acer spicatum*		

Common Name in English	Common Name in French	Scientific Name	Common Name in Cree	Cree Traditional Use
Pin cherry	Cerisier de Pennylvanie	*Prunus pensylvanica*		Bark can be boiled to treat sore throats and coughs. The inner bark can be made as a tonic and will help sleep patterns and high blood pressure. Treats sore throats chewing on outer bark.
Red raspberry	Framboisier	*Rubus idaeus*		
Red-berried elderberry	Sureau de baies rouges	*Sambucus racemosa*		
Smooth serviceberry	Amélanchier glabre	*Amelanchier laevis*		Put in muffins, to make jams and to have them fresh or dried berries (warning). Branches are good for fishpoles and tools.
Sheep-laurel	Kalmia à feuilles étroites	*Kalmia angustifolia*	Uschischipak	
Showy mountain-ash	Sorbier décoratif	*Sorbus decora*	Muskuannanatuk/Miskuumischi	
Skunk currant	Gadellier malodorant	*Ribes glandulosum*		
Speckled alder	Aulne rugueux	*Alnus incana*	Atushpi	
Sweet gale	Myrique baumier	*Myrica gale*	Estiminatuck	
Three-leaved gold thread	Coptide du Groenland	*Coptis trifolia*		Chew on roots of the goldthread can soothe sore throat, coughs and headaches. Also treats for mouth sores, diarrhea, colds, influenza and fight addiction to alcohol by making tea from roots.
Trailing arbutus	Épigée rampante	*Epigaea repens*		
Twinflower	Linnée boréale	*Linnaea borealis*		
Woodland strawberry	Fraisier des bois	*Fragaria vesca*		Strawberrry jam.
Ferns and allies				
Bracken fern	Fougère-aigle	*Pteridium aquilinum*		
Cinnamon fern	Osmonde cannelle	*Osmundastrum cinnamomeum*		
Field horsetail	Prêle des champs	*Equisetum arvense var. boreale*	Neeskann, miskouchoe	
Ground cedar	Cèdre de terre	*Diphasiastrum tristachyum*		
Ground pine	Lycopode foncé	*Lycopodium obscurum*		
Interrupted fern	Osmonde de Clayton	*Osmunda claytoniana*		
Meadow horsetail	Prêle des prés	*Equisetum pratense*		
Lady fern	Fougère femelle	*Athyrium filix-femina*		
Oak fern	Gymnocarpe du chêne	*Gymnocarpium dryopteris*		
Running clubmoss	Lycopode à massue	*Lycopodium clavatum*	Pashtnahoagin	
Stiff clubmoss	Lycopode innovant	*Lycopodium annotinum*		
Woodland horsetail	Prêle des bois	*Equisemtum sylvaticum*		
Graminoids				
Black-girdled woolgrass	Scirpe à ceinture noire	*Scirpus atrocintus*		
Canada blue-joint	Calamagrostide du Canada	*Calamagrostis canadensis*		
Carex (genus)	Carex (genre)	*Carex sp.*		
Common spike-rush	Éléocharide des marais	*Eleocharis palustris*		
Dense Cottongrass	Linaigrette à large gaine	*Eriophorum vaginatum*		
Few-seeded sedge	Carex oligosperme	*Carex oligosperma*		

Common Name in English	Common Name in French	Scientific Name	Common Name in Cree	Cree Traditional Use
Fowl bluegrass	Pâturin des marais	*Poa palustris*		
Hair bentgrass	Agrostide scabre	*Agrostis scabra*		
Hard rush	Jonc épars	*Juncus effusus*		
Jointed rush	Jonc articulé	*Juncus articulatus*		
Lake sedge	Carex lacustre	*Carex lacustris*		
Narrow-panicled rush	Jonc brévicaudé	*Juncus brevicaudatus*		
Rush	Jonc	*Juncus sp.*		
Smallfruit bulrush	Scirpe à gaines rouges	*Scirpus microcarpus*		
Common spike-rush	Éléocharide des marais	*Eleocharis palustris*		
Tall cotton-grass	Linaigrette à feuilles étroites	*Eriophorum angustifolium*		
Tufted clubrush	Scirpe cespitosus	*Trichophorum cespitosum*		
Woolgrass	Scirpe souchet	*Scirpus cypernius*		
Forbs				
Balsam ragwort	Séneçon appauvri	*Packera paupercula*		
Bluebead-lily	Clintonie boréale	*Clintonia borealis*		
Bog aster	Aster de tourbière	*Oclemena nemoralis*		
Bog-bean	Fève de bog	*Menyanthes trifloiata*		
Canada anemone	Anémone du Canada	*Anemone canadensis*		
Common yarrow	Achillée millefeuille	*Achillea millefolium*	Miskogotuck, Mishishstock, wabish	
Crowfoot	Renoncule rampante	*Ranunculus sp.*		
Tall meadow-rue	Pigamon pubescent	*Thalictrum pubescens*		
Field hawkweed	Épervière des prés	*Hieracium caespitosum*		
Fireweed	Épilobe à feuilles étroites	*Epilobium angustifolium*		
Fragrant bedstraw	Gaillet odorant	*Galium triflorum*		
Grass-leaved goldenrod	Verge d'or à feuilles de graminée	*Euthamia graminifolia*		
Humped bladderwort	Utriculaire à bosse	*Utricularia gibba*		
Lesser pyrola	Pyrole mineure	*Pyrola minor*		
Mocassin-flower	Cypripède acaule	*Cypripedium acaule*		
Narrow-leaved gentian	Gentiane à feuilles linéaires	*Gentiana linearis*		
Northern bog violet	Violette néphrophylle	*Viola nephrophylla*		
Orange hawkweed	Épervière orangée	*Pilosella aurantiaca*		
Oxeye daisy	Marguerite commune	*Leucanthemum vulgare*		
Pearly everlasting	Immortelle blanche	*Anaphalis margaritacea*		
Rose twisted-stalk	Streptope rose	*Streptopus lanceolatus*		
Rough-stemmed goldenrod	Verge d'or rugueuse	*Solidago rugosa*		
Round-leaved sundew	Droséra à feuilles rondes	*Drosera rotundifolia*		

Common Name in English	Common Name in French	Scientific Name	Common Name in Cree	Cree Traditional Use
Slender white aster	Aster boréal	*Symphyotrichum boreale*		
Star-flower	Trientale boréale	*Lysimachia borealis*		
Sweet coltsfoot	Pétasite arctique	*Petasites frigidus*		
Whitewater crowfoot	Renoncule aquatique	*Ranunculus aquatilis*		
Wild lily-of-the-valley	Maïanthème du Canada	*Maianthemum canadense*		
Wild sarsaparilla	Aralie à tige nue	*Aralia nudicaulis*		
Yellow pond-lily	Grand nénuphar jaune	*Nuphar variegata*		Ones that grows on land, can be chopped up to little pieces boiled to a tonic and helps with colds. During the intake of the tonic they should be put to sleep to sweat out the cold.
Zig zag goldenrod	Verge d'or zigzag	*Solidago flexicaulis*		
Mosses				
Rusty peat moss	Sphaigne brune	*Sphagnum fuscum*	Awasistche	
Common haircap moss	Polytric commun	*Polytrichum commune*		
Feather moss	Hypne	*Hypnum sp.*		
Schreber's big red stem moss	Hypne de Schreber	*Pleurozium schreberi*		
Firemoss	Cératodon pourpre	*Ceratodon purpureus*		
Pin cushion moss	Coussinet des bois	*Leucobryum glaucum*		
Sphagnum moss	Sphaigne	*Sphagnum spp.*	Aschi	Use as baby diapers.
Stair-step moss	Hylocomie brillante	*Hylocomium splendens*		
Lichens				
Cladonia (genus)	Cladonia (genre)	*Cladonia sp.*		
Coral lichen	Genre Sphaerophorus	*Sphaerophorus tuckermanii*		
Pixie cup	Pézize du charbon	*Geopyxis carbonaria*		
Reindeer lichen	Cladonie arbuscule	*Cladonia arbuscula*		
Rock tripe (genus)	Tripe de roche (genre)	*Umbilicaria sp.*		

Photograph-1: Mocassin flower
(*Cypripedium acaule*)

Photograph-2: Small yellow pond-lily
(*Nuphar varegiata)*

Photograph-3: Round-leaved sundew
(*Drosera rotundifolia*)

Photograph-4: Rose twisted stalk
(*Streptopus laceolatus*)

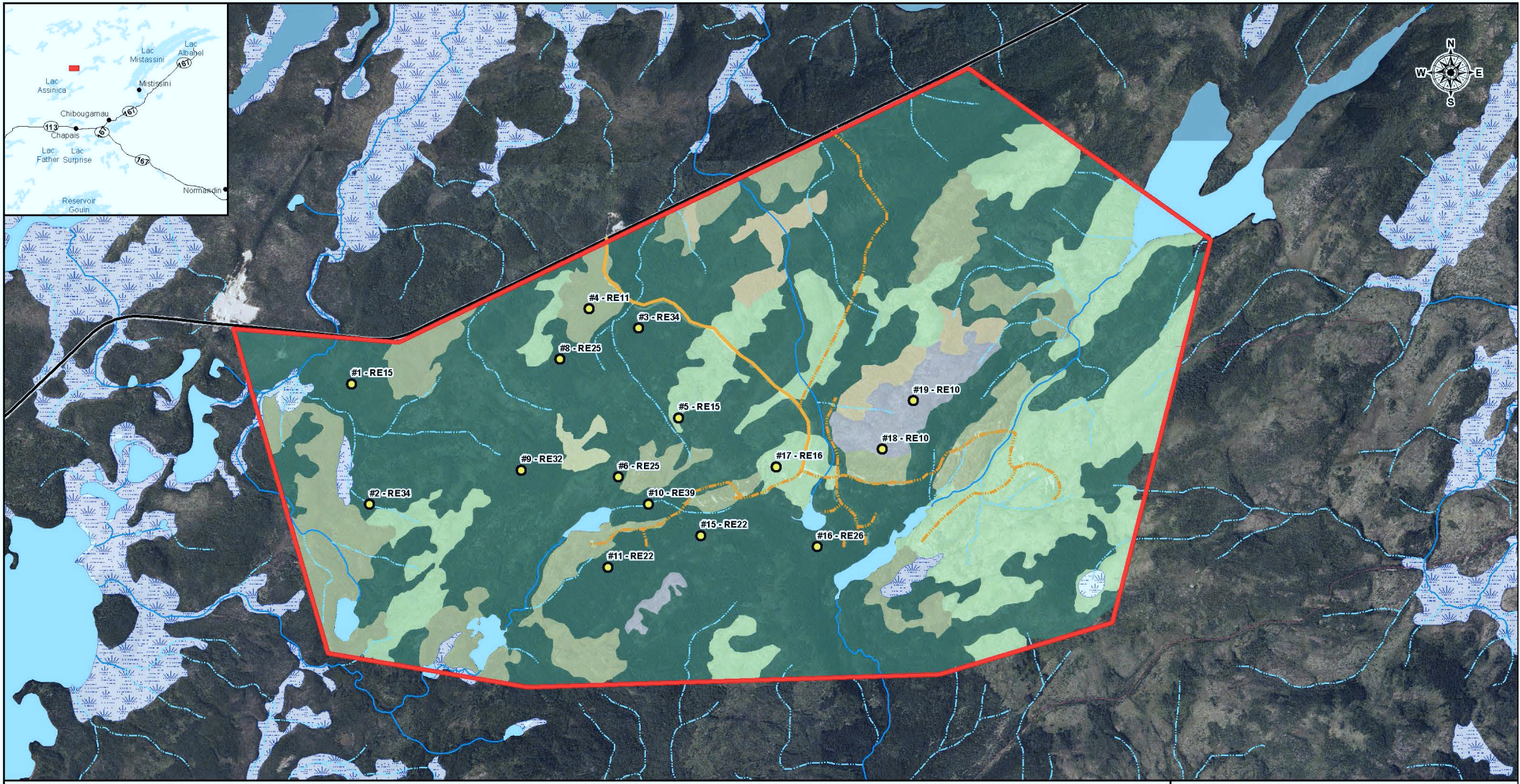
Figure 2-1 : Selected photographs of flora on Site

2.2.2 Ecological Type Observation Points

Table 2-3 provides a summary of the Québec ecological type classification that was established for each survey point, based on the information recorded during the field survey. The classified survey points are shown in Figure 2-3 overlaid with Québec's official forest stand map.

The ecological type does not always correspond to the forest stand from Québec's map, as the ecological type describes the "potential vegetation". This can diverge from the actual trees observed on the field, due to fires, logging, other disturbances and simple variation within an area.

The sections below outline a summary for each station's features: forest cover type, dominant species in each stratum, ecological classification and pictures. For further details including the full vegetation inventory, soil profile, disturbance and wildlife observation, see full data collection sheets in Appendix A.



Legend

- Study Area

Infrastructure

- Access road
- Trails
- Road

Hydrography

- Stream
- Intermittent stream
- Lake
- Wetland

Forest stands

- Spruce
- Pine
- Birch
- Poplar
- Other forested land
- Non-forested land
- Unproductive forested land

Vegetation Type

RE10: Black spruce – lichen stand on very thin deposit, with varied texture and very well to very poorly drained
RE11: Black spruce – lichen stand on thin to thick deposit, with coarse texture and rapidly or well drained
RE15: Black spruce – lichen stand on thin to thick deposit, with medium texture and poor drainage
RE16: Black spruce – lichen stand on thin to thick deposit, with finetexture and poor drainage
RE22: Black spruce – moss or heath stand on thin to thick deposit,with medium texture and well drained
RE25: Black spruce – moss or heath stand on thin to thick deposit,with medium texture and poor drainage
RE26: Black spruce – moss or heath stand on thin to thick deposit,with fine texture and poor drainage
RE32: Black spruce – sphagnum stand on thin to thick deposit,
with medium texture and well drained
RE34: Black spruce – sphagnum stand on thin to thick deposit,with coarse texture and poor drainage
RE39: Black spruce – sphagnum stand sur on organic deposit,poorly drained, ombrotrophic

Notes:
1. Produced by Hatch, contains information under the Open Government License - Canada
2. Produced by Hatch, contains information under the Open Government License - Québec
3. Spatial referencing NAD 83 UTM Zone 18
4. Imagery Source - Donneés Québec, 2013.

0 250 500 1,000 m
1:20,000

Figure 2-2: Ecological Type Classification

Project :	Guo Ao Lithium Ltd. Moblan Lithium Project
Figure Title :	Ecological type classification
Date :	September 26 2018
Version : 1	**Reviewed By :**
Figure : 2-2	**Page :** 1 of 1
Prepared By :	HATCH

Table 2-3: Summary of Ecological Type Classifications

Survey Point Number	Ecological Type	Description	English translation
1	RE15:	Pessière noire à lichens sur dépôt de mince à épais, de texture moyenne et de drainage subhydrique	Black spruce lichen stand on thin to thick deposit, with medium texture and poor drainage
2	RE34:	Pessière noire à sphaignes sur dépôt de mince à épais, de texture grossière et de drainage subhydrique	Black spruce sphagnum stand on thin to thick deposit, with coarse texture and poor drainage
3	RE34:	Pessière noire à sphaignes sur dépôt de mince à épais, de texture grossière et de drainage subhydrique	Black spruce sphagnum stand on thin to thick deposit, with coarse texture and poor drainage
4	RE11:	Pessière noire à lichens sur dépôt de mince à épais, de texture grossière et de drainage xérique ou mésique	Black spruce lichen stand on thin to thick deposit, with coarse texture and rapidly or well drained
5	RE15:	Pessière noire à lichens sur dépôt de mince à épais, de texture moyenne et de drainage subhydrique	Black spruce lichen stand on thin to thick deposit, with medium texture and poor drainage
6	RE25:	Pessière noire à mousses ou à éricacées sur dépôt de mince à épais, de texture fine et de drainage subhydrique	Black spruce moss or heath stand on thin to thick deposit, with medium texture and poor drainage
8	RE25:	Pessière noire à mousses ou à éricacées sur dépôt de mince à épais, de texture fine et de drainage subhydrique	Black spruce moss or heath stand on thin to thick deposit, with medium texture and poor drainage
9	RE32:	Pessière noire à sphaignes sur dépôt de mince à épais, de texture moyenne et de drainage mésique	Black spruce sphagnum stand on thin to thick deposit, with medium texture and well drained
10	RE39:	Pessière noire à sphaignes sur dépôt organique, de drainage hydrique, ombrotrophe	Black spruce sphagnum stand sur on organic deposit, poorly drained, ombrotrophic
11	RE22:	Pessière noire à mousses ou à éricacées sur dépôt de mince à épais, de texture moyenne et de drainage mésique	Black spruce moss or heath stand on thin to thick deposit, with medium texture and well drained

Survey Point Number	Ecological Type	Description	English translation
15	RE22:	Pessière noire à mousses ou à éricacées sur dépôt de mince à épais, de texture moyenne et de drainage mésique	Black spruce moss or heath stand on thin to thick deposit, with medium texture and well drained
16	RE26:	Pessière noire à mousses ou à éricacées sur dépôt de mince à épais, de texture fine et de drainage subhydrique	Black spruce moss or heath stand on thin to thick deposit, with fine texture and poor drainage
17	RE16:	Pessière noire à lichens sur dépôt de mince à épais, de texture fine et de drainage subhydrique	Black spruce lichen stand on thin to thick deposit, with fine texture and poor drainage
18	RE10:	Pessière noire à lichens sur dépôt très mince, de texture variée et de drainage de xérique à hydrique	Black spruce lichen stand on very thin deposit, with varied texture and very well to very poorly drained
19	RE10:	Pessière noire à lichens sur dépôt très mince, de texture variée et de drainage de xérique à hydrique	Black spruce lichen stand on very thin deposit, with varied texture and very well to very poorly drained

2.2.2.1 Survey Point 1

Survey point 1	
Coordinates (UTM Nad-83 18N)	504415.313 m E ; 5620717.817 m N
Forest cover type	Trees
Dominating species	
Tree layer	Jack pine > black spruce
Shrub layer	Sheep laurel > Labrador tea > low sweet blueberry > black spruce
Ground layer	Reindeer lichen > coral lichen > midway peat moss
Classification	
Potential vegetation	RE1
Ecological type	*RE15 Black spruce – lichen stand on thin to thick deposit, with medium texture and poor drainage*

Photograph 2-1: Survey Point 1 - Looking North

Photograph 2-2: Survey Point 1 - Looking East

Photograph 2-3: Survey Point 1 □ Looking South

Photograph 2-4: Survey Point 1 – Looking West

2.2.2.2 Survey point 2

Survey point 2	
Coordinates (UTM Nad-83 18N)	504513.7423 m E ; 5620069.059 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce > white birch > speckled alder
Shrub layer	Sheep laurel > Labrador tea > low sweet blueberry > black spruce
Ground layer	Midway sphagnum > reindeer moss > bunchberry > cloudberry
Classification	
Potential vegetation	RE3
Ecological type	*RE34: Black spruce – sphagnum stand on thin to thick deposit, with coarse texture and poor drainage*

Photograph 2-5: Survey Point 2 – Looking North

Photograph 2-6: Survey Point 2 – Looking East

Photograph 2-7: Survey Point 2 – Looking South

Photograph 2-8: Survey Point 2 – Looking West

2.2.2.3 Survey point 3

Survey point 3	
Coordinates (UTM Nad-83 18N)	505962.2191 m E ; 5621018.815 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce > white birch > Bebb□s willow
Shrub layer	Sheep laurel > Labrador tea > Bebb□s willow
Ground layer	Midway sphagnum > reindeer lichen > coral lichen = creeping snowberry
Classification	
Potential vegetation	RE3
Ecological type	*RE34: Black spruce □ sphagnum stand on thin to thick deposit, with coarse texture and poor drainage*

Photograph 2-9: Survey Point 3 □ Looking North

Photograph 2-10: Survey Point 3 – Looking East

Photograph 2-11: Survey Point 3 – Looking South

Photograph 2-12: Survey Point 3 – Looking West

2.2.2.4 Survey point 4

Survey point 4	
Coordinates (UTM Nad-83 18N)	505697.5071 m E ; 5621123.712 m N
Forest cover type	Trees
Dominating species	
Tree layer	Jack pine >> black spruce
Shrub layer	Sheep laurel > low sweet blueberry > bunchberry
Ground layer	Sphagnum > Reindeer lichen > coral lichen > creeping snowberry
Classification	
Potential vegetation	RE1
Ecological type	*RE11: Black spruce □ lichen stand on thin to thick deposit, with coarse texture and rapidly or well drained*

Photograph 2-13: Survey Point 4 □ Looking North

Photograph 2-14: Survey Point 4 – Looking East

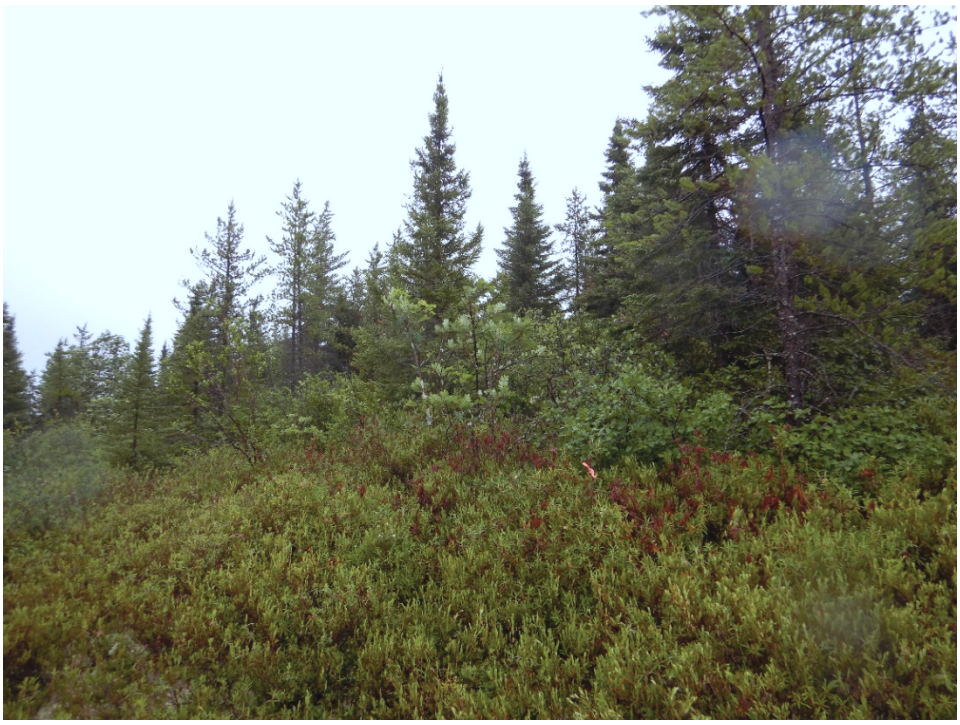
Photograph 2-15: Survey Point 4 – Looking South

Photograph 2-16: Survey Point 4 – Looking West

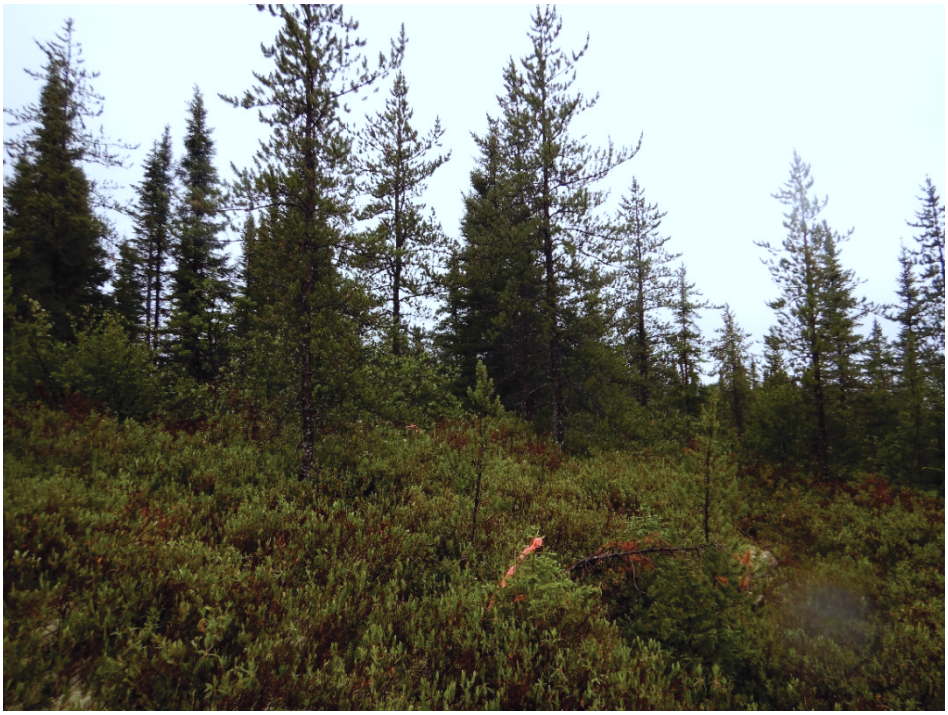
2.2.2.5 Survey point 5

Survey point 5	
Coordinates (UTM Nad-83 18N)	506179.6902 m E ; 5620535.572 m N
Forest cover type	Trees
Dominating species	
Tree layer	Jack pine > black spruce > white birch
Shrub layer	Labrador tea > Sheep laurel > black spruce > beaked willow
Ground layer	Reindeer lichen > coral lichen = sphagnum = red-brown moss
Classification	
Potential vegetation	RE1
Ecological type	*RE 15: Black spruce – lichen stand on thin to thick deposit, with medium texture and poor drainage*

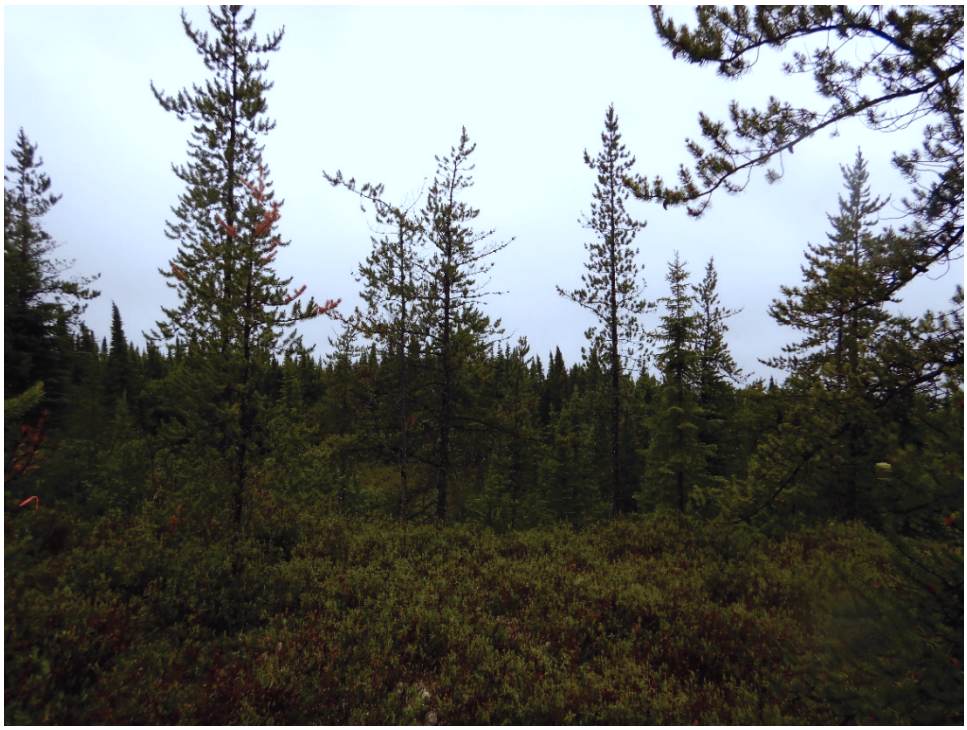
Photograph 2-17: Survey Point 5 – Looking North



Photograph 2-18: Survey Point 5 – Looking East



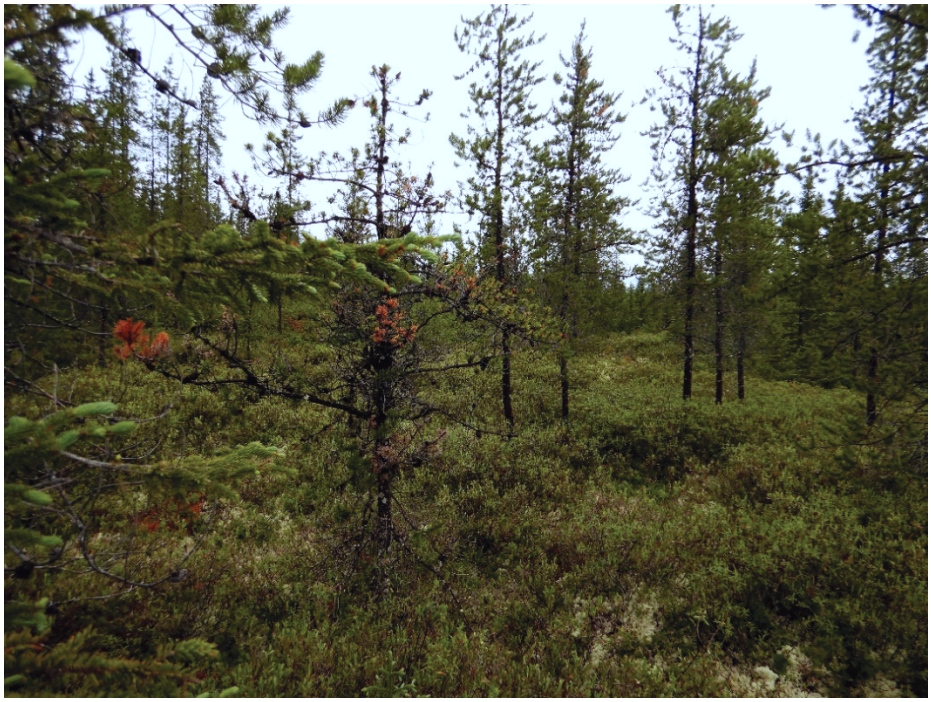
Photograph 2-19: Survey Point 5 – Looking South



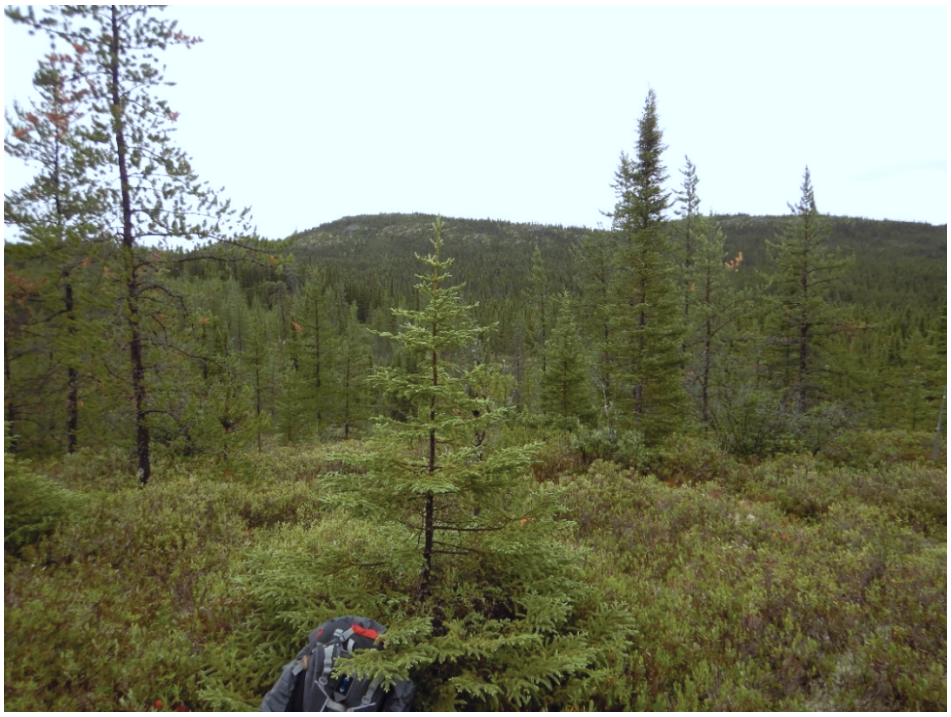
Photograph 2-20: Survey Point 5 – Looking West

2.2.2.6 Survey point 6

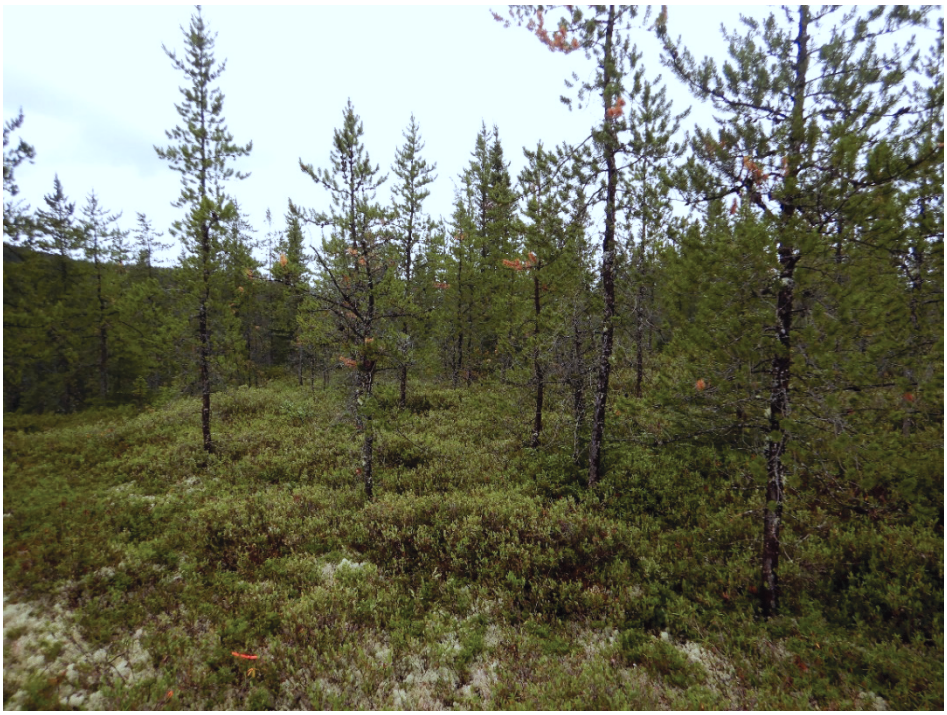
Survey point 6	
Coordinates (UTM Nad-83 18N)	505853.9653 m E ; 5620216.396 N
Forest cover type	Shrubs
Dominating species	
Tree layer	Jack pine > black spruce
Shrub layer	Sheep laurel > Labrador tea > low sweet blueberry > black spruce
Ground layer	Midway peat moss > red-brown moss > coral lichen = reindeer lichen
Classification	
Potential vegetation	RE2
Ecological type	*RE25: Black spruce – moss or heath stand on thin to thick deposit, with medium texture and poor drainage*



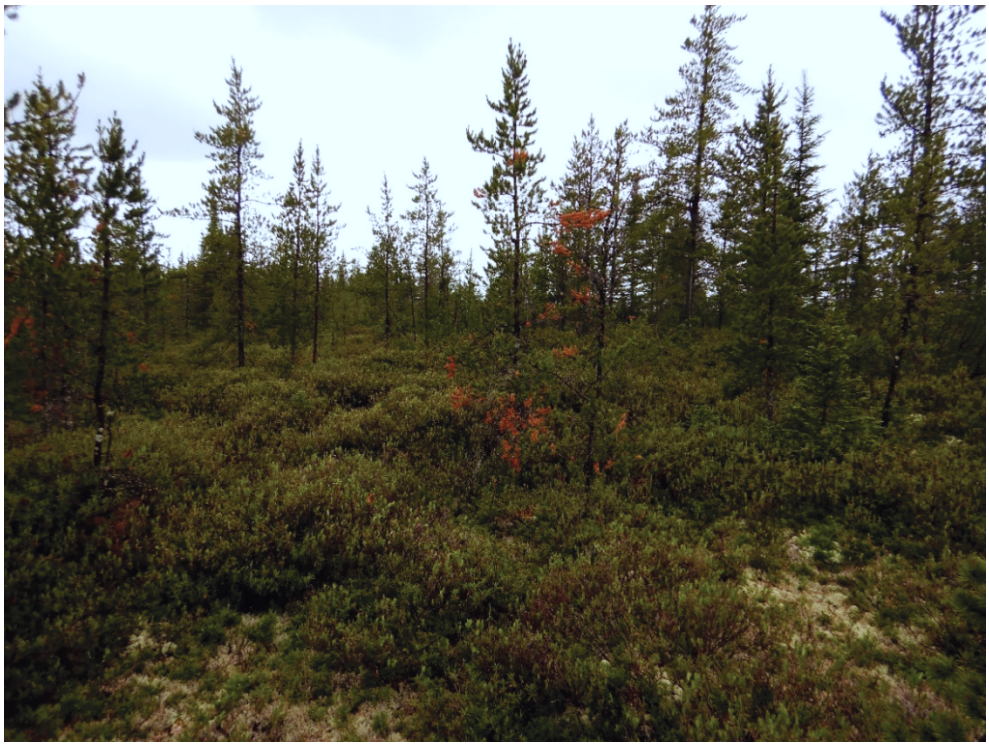
Photograph 2-21: Survey Point 6 – Looking North



Photograph 2-22: Survey Point 6 – Looking East



Photograph 2-23 Survey Point 6 – Looking South



Photograph 2-24: Survey Point 6 – Looking West

2.2.2.7 Survey point 8

Survey point 8	
Coordinates (UTM Nad-83 18N)	505538.4036 m E ; 5620852.107 m N
Forest cover type	Trees
Dominating species	
Tree layer	Jack pine > black spruce > Bebb□s willow > pincherry
Shrub layer	Sheep laurel > Labrador tea > Bebb□s willow = speckled alder
Ground layer	Small red peat moss > reindeer lichen > low sweet blueberry = sheep laurel
Classification	
Potential vegetation	RE2
Ecological type	*RE25: Black spruce □ moss or heath stand on thin to thick deposit, with medium texture and poor drainage*

Photograph 2-25: Survey Point 8 □ Looking North

Photograph 2-26: Survey Point 8 – Looking East

Photograph 2-27: Survey Point 8 – Looking South

Photograph 2-28: Survey Point 8 – Looking West

2.2.2.8 Survey point 9

Survey point 9	
Coordinates (UTM Nad-83 18N)	505331.7732 m E ; 5620253.193 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce > jack pine > white birch > Bebb's willow
Shrub layer	Sheep laurel = Labrador tea > Bebb's willow > white birch
Ground layer	Midway peat moss > reindeer lichen > low sweet blueberry > creeping snowberry
Classification	
Potential vegetation	RE3
Ecological type	*RE32: Black spruce – sphagnum stand on thin to thick deposit, with medium texture and well drained*

Photograph 2-29: Survey Point 9 – Looking North

Photograph 2-30: Survey Point 9 – Looking East

Photograph 2-31: Survey Point 9 – Looking South

Photograph 2-32: Survey Point 9 – Looking West

2.2.2.9 Survey point 10

Survey point 10	
Coordinates (UTM Nad-83 18N)	506017.2917 m E ; 5620070.015 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce >> white birch > showy mountain ash
Shrub layer	Black spruce = speckled alder = white birch > sheep laurel
Ground layer	Midway peat moss > red peat moss > stiff clubmoss = creeping snowberry
Classification	
Potential vegetation	RE3
Ecological type	*RE39: Black spruce – sphagnum stand sur on organic deposit, poorly drained, ombrotrophic*

Photograph 2-33: Survey Point 10 – Looking North

Photograph 2-34: Survey Point 10 – Looking East

Photograph 2-35: Survey Point 10 – Looking South

Photograph 2-36: Survey Point 10 – Looking West

2.2.2.10 Survey point 11

Survey point 11	
Coordinates (UTM Nad-83 18N)	505797.1986 m E ; 5619730.395 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce > white birch > balsam fir > green alder
Shrub layer	Green alder > Bebb's willow = Labrador tea = sheep laurel
Ground layer	Midway peat moss > red-brown moss = creeping snowberry > reindeer lichen
Classification	
Potential vegetation	RE2
Ecological type	*RE22: Black spruce – moss or heath stand on thin to thick deposit, with medium texture and well drained*

Photograph 2-37: Survey Point 11 – Looking North

Photograph 2-38: Survey Point 11 – Looking East

Photograph 2-39: Survey Point 11 – Looking South

Photograph 2-40: Survey Point 11 – Looking West

2.2.2.11 Survey point 15

Survey point 15	
Coordinates (UTM Nad-83 18N)	506298.407 m E ; 5619900.658 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce >> white birch
Shrub layer	Bebb□s willow = green alder > Labrador tea
Ground layer	Bunchberry = low sweet blueberry > black spruce = goldthread
Classification	
Potential vegetation	RE2
Ecological type	*RE22: Black spruce □ moss or heath stand on thin to thick deposit, with medium texture and well drained*

Photograph 2-41: Survey Point 15 – Looking North

Photograph 2-42: Survey Point 15 – Looking East

Photograph 2-43: Survey Point 15 – Looking South

Photograph 2-44: Survey Point 15 – Looking West

2.2.2.12 Survey point 16

Survey point 16	
Coordinates (UTM Nad-83 18N)	506925.7943 m E ; 5619900.658 m N
Forest cover type	Trees
Dominating species	
Tree layer	Black spruce
Shrub layer	Labrador tea > low sweet blueberry > sheep laurel > service berry
Ground layer	Midway peat moss > low sweet blueberry > creeping snowberry > reindeer lichen
Classification	
Potential vegetation	RE2
Ecological type	*RE26: Black spruce – moss or heath stand on thin to thick deposit, with fine texture and poor drainage*

Photograph 2-45: Survey Point 16 – Looking North

Photograph 2-46: Survey Point 16 – Looking East

Photograph 2-47: Survey Point 16 - South

Photograph 2-48: Survey Point 16 – Looking West

2.2.2.13 Survey point 17

Survey point 17	
Coordinates (UTM Nad-83 18N)	506703.7736 m E ; 5620270.685 m N
Forest cover type	Shrubs
Dominating species	
Tree layer	None
Shrub layer	Service berry = sheep laurel > Bebb's willow > Labrador tea
Ground layer	Low sweet blueberry > Labrador tea > reindeer lichen
Classification	
Potential vegetation	RE1
Ecological type	*RE16: Black spruce – lichen stand on thin to thick deposit, with fine texture and poor drainage*

Photograph 2-49: Survey Point 17 – Looking North

Photograph 2-50: Survey Point 17 – Looking East

Photograph 2-51: Survey Point 17 – Looking South

Photograph 2-52: Survey Point 17 – Looking West

2.2.2.14 Survey point 18

Survey point 18	
Coordinates (UTM Nad-83 18N)	507277.0197 m E ; 5620366.857 m N
Forest cover type	Shrubs
Dominating species	
Tree layer	Jack pine > Black spruce > White birch
Shrub layer	Sheep laurel > Labrador tea > Bebb's willow > service berry
Ground layer	Reindeer lichen > midway peat moss = low sweet blueberry > coral lichen
Classification	
Potential vegetation	RE1
Ecological type	*RE10: Black spruce – lichen stand on very thin deposit, with varied texture and very well to very poorly drained*

Photograph 2-53: Survey Point 18 – Looking North

Photograph 2-54: Survey Point 18 – Looking East

Photograph 2-55: Survey Point 18 – Looking South

Photograph 2-56: Survey Point 18 – Looking West

2.2.2.15 Survey point 19

Survey point 19	
Coordinates (UTM Nad-83 18N)	507445.1658 m E ; 5620627.745 m N
Forest cover type	Shrubs
Dominating species	
Tree layer	Black spruce = Jack pine > white birch > showy mountain ash
Shrub layer	Green alder > Labrador tea > showy mountain ash > black spruce
Ground layer	Reindeer lichen > coral lichen > sphagnum
Classification	
Potential vegetation	RE1
Ecological type	*RE10: Black spruce – lichen stand on very thin deposit, with varied texture and very well to very poorly drained*

Photograph 2-57: Survey Point 19 – Looking North

Photograph 2-58: Survey Point 19 – Looking East

Photograph 2-59: Survey Point 19 – Looking South

Photograph 2-60: Survey Point 19 – Looking West

3. Breeding Birds

3.1 Methodology

3.1.1 Forest Bird Monitoring Program (FBMP)

The Forest Bird Monitoring Program (FBMP) methodology titled "*The Ontario Forest Bird Monitoring Program (1987-1997): Goals, methods and species trends observed. Technical Report Series No. 325*" (Cadman et al., 1998) was utilized. The FBMP created by the Canadian Wildlife Services (CWS) monitors populations of birds in interior forest habitat and describes species-habitat associations noted as Forest Bird Inventories (FBI). The program utilizes a point count method to determine abundance of each species utilizing a given location.

The following equipment was used for the surveys:

- Handheld GPS unit (Garmin GPSMAP 64SC)
- Thermometer
- Cell phone clock & timer
- Sibley eGuide to Birds App
- Binoculars

The counts are completed in the early morning from 30-min before dawn until approximately 4 hours after dawn. The weather is ideally clear with no rain and during calm to light winds (<15km/h). The program requires using 10-min point counts to count birds at several listening stations, depending on the size of the Study Area. The point count stations are located at least 250 m apart. At each station, birds within a 100 m circular radius around the station are considered. Ideally, two visits are made, with the first taking place between May 24-June 17 and the second between June 13-July 10, with a minimum of 6 days between visits. Further details of the surveys are included in Table 3-1.

Table 3-1: Environmental conditions during Forest Bird Surveys

Date	Time (24hr)	Survey Points	Temperature (°C)	Wind (km/hr)	Wind Direction	Cloud Cover (1/10ths)
July 5, 2018	8:05-9:10	1, 2	25	5	W	8/10
July 6, 2018	7:10-8:00	3, 4, 5	10	0	N/A	10/10
July 8, 2018	9:00-9:15	6	18	5	W	6/10
July 9, 2018	7:40-8:45	7, 8, 9	18	2	W	9/10
July 10, 2018	7:30-10:00	10, 11	9	5	missing	8/10
July 11, 2018	6:20-8:45	12, 13, 14, 15, 16, 17, 18	10	2	N	6/10

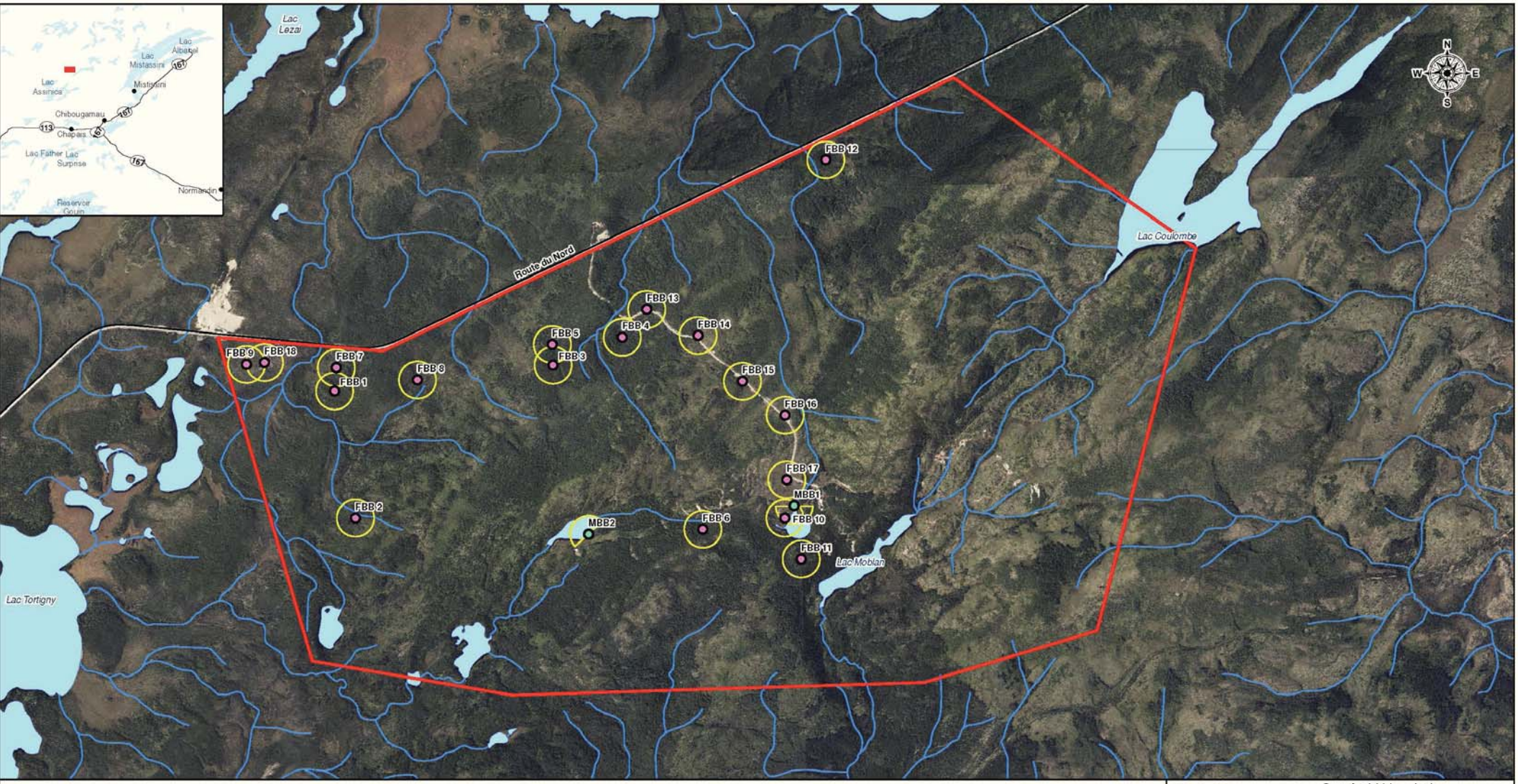
A total of 18 stations were surveyed between June 5 □ 11, 2018 with 13 species total observed/heard throughout the surveys. The locations of the 18 surveys can be seen in Figure 3-1.

3.2 Habitat characterization

The survey points were selected to be spread out geographically and include different ecosystems present in the study area: black spruce stands, jack pine stands, and disturbed areas. The broad categories of habitat are listed in Table 3-2. These categories are not ecological types, they are broader categories that were used before the results of the detailed analysis of vegetation on the site were available.

Table 3-2: Habitats of forest bird inventory stations

Habitat (polygon)	Survey stations
Jack pine dominant	1, 2, 7, 8, 9, 18
Black spruce dominant	3, 4, 5, 12, 13, 14, 15, 16
Mixed stand	6, 10, 11
Anthropogenic disturbance	17



Legend

- Study
- Road
- Stream
- Lake

Breeding Bird Surveys

- Forest Breeding Bird Station Location (FBB#)
- Marsh Breeding Bird Station Location (MBB#)
- Listening Radius (100 m)

Notes:
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3. Spatial referencing NAD 83 UTM Zone 18
4. Imagery Source - Donneés Québec, 2013.

0 250 500 1,000 m

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Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Breeding Bird Survey Stations		
Date :	September 24 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	3-1	**Page :**	1 of 1
Prepared By :	HATCH		

Figure 3-1: Breeding bird survey stations

3.3 Observations

The total list of the thirteen (13) species observed in the study area includes the following:

- Dark-eyed junco (*Junco hyernalis*)
- White-throated sparrow (*Zonotrichia albicollis*)
- Ruby-crowned kinglet (*Regulus calendula*)
- Yellow-rumped warbler (*Setophaga coronate*)
- Red-breasted nuthatch (*Sitta canadensis*)
- Orange-crowned warbler (*Oreothlypis celata*)
- Winter wren (*Troglodytes hiemalis*)
- Nashville warbler (*Oreothlypis ruficapilla*)
- Hermit thrush (*Catharus guttatus*)
- Spruce grouse (*Falcipennis canadensis*)
- Chipping sparrow (*Spizella passerine*)
- Palm warbler (*Setophaga palmarum*)
- Red-eyed vireo (*Vireo olivaceus*)

In addition, the following six (6) birds were observed/heard outside of the FBI and are considered incidental sightings:

- Swainson's thrush (*Catharus ustulatus*)
- Greater yellowlegs (*Tringa melanoleuca*)
- Spotted sandpiper (*Actitis macularius*)
- Common loon (*Gavia immer*)
- Gray jay (*Perisoreus canadensis*)
- Long-eared owl (*Asio otus*)

The complete list of observations throughout the forest bird surveys can be found below in Table 3-3. It should be noted that none of these species are at risk (federally or provincially).

Table 3-3: Forest Breeding Bird Survey Results

Species/Frequency	Station Number	UTM Zone	Easting/Northing	Seen in 1st 5 Minutes <100m	Seen in 1st 5 Minutes >100m	Seen in 2nd 5 Minutes <100m	Seen in 2nd 5 Minutes >100m
Date: July 5, 2018, 8:05 AM - 9:10 AM Temperature: 25 °C Wind Speed: 5 km/hr (W) Cloud Cover: 8/10 Precipitation: None							
Palm Warbler/1	1	18N	0504408/5620727	Y			
White-throated Sparrow/1	1	18N	0504408/5620727	Y			
Dark-eyed Junco/1	1	18N	0504408/5620727			Y	
Red-eyed Vireo/1	1	18N	0504408/5620727			Y	
Dark-eyed Junco/2	2	18N	0504520/5620040			Y	
Date: July 6, 2018, 7:10 AM - 8:00 AM Temperature: 10 °C Wind Speed: None Cloud Cover: 10/10 Precipitation: Drizzle in Early Morning							
Dark-eyed Junco/1	3	18N	0505584/5620867			Y	
White-throated Sparrow/1	3	18N	0505584/5620867			Y	
None	4	18N	0505957/5621018				
Ruby-crowned Kinglet/1	5	18N	0505580/5620979	Y			
White-throated Sparrow/1	5	18N	0505580/5620979	Y			
Yellow-rumped Warbler/1	5	18N	0505580/5620979	Y			
Date: July 8, 2018, 9:00 AM - 9:15 AM Temperature: 18 °C Wind Speed: 5 km/hr (W) Cloud Cover: 6/10 Precipitation: None							
Dark-eyed Junco/1	6	18N	0506391/5619980	Y			
Red-breasted Nuthatch/1	6	18N	0506391/5619980	Y			
Orange-crowned Warbler/1	6	18N	0506391/5619980	Y			
Date: July 9, 2018, 7:40 AM - 8:45 AM Temperature: 18 °C Wind Speed: 2 km/hr (W) Cloud Cover: 9/10 Precipitation: None							
Dark-eyed Junco/1	7	18N	504417/5620853	Y			

Species/Frequency	Station Number	UTM Zone	Easting/Northing	Seen in 1st 5 Minutes <100m	Seen in 1st 5 Minutes >100m	Seen in 2nd 5 Minutes <100m	Seen in 2nd 5 Minutes >100m
Winter Wren/1	7	18N	504417/5620853	Y			
Nashville Warbler/1	7	18N	504417/5620853	Y			
White-throated Sparrow/1	7	18N	504417/5620853	Y			
Dark-eyed Junco/1	8	18N	0504854/5620787	Y			
Hermit Thrush/1	8	18N	0504854/5620787	Y			
Spruce Grouse/1	8	18N	0504854/5620787	Y			
Hermit Thrush/1	9	18N	0503933/5620871	Y			
Dark-eyed Junco/1	9	18N	0503933/5620871	Y			
White-throated Sparrow/1	9	18N	0503933/5620871	Y			
Date: July 10, 2018, 7:30 AM - 10:00 AM Temperature: 9 °C Wind Speed: 5 km/hr Cloud Cover: 8/10 Precipitation: Rain overnight							
White-throated Sparrow/1	10	18N	0506833/5620040	Y			
Winter Wren/1	10	18N	0506833/5620040	Y			
Dark-eyed Junco/1	10	18N	0506833/5620040	Y			
Chipping Sparrow/1	11	18N	0506921/5619819	Y			
Date: July 11, 2018, 6:20 AM - 7:11 AM Temperature: 10 °C Wind Speed: 2 km/hr (N) Cloud Cover: 6/10 Precipitation: None							
White-throated Sparrow/1	12	18N	0507053/5621977	Y			
Dark-eyed Junco/1	12	18N	0507053/5621977	Y			
Palm Warbler/1	13	18N	0506089/5621168	Y			
Red-eyed Vireo/1	14	18N	0506365/5621028	Y			
White-throated Sparrow/1	14	18N	0506365/5621028	Y			
Date: July 11, 2018, 7:19 AM - 7:54 AM Temperature: 10 °C Wind Speed: 2 km/hr (N) Cloud Cover: 6/10 Precipitation: None							

Species/Frequency	Station Number	UTM Zone	Easting/Northing	Seen in 1st 5 Minutes <100m	Seen in 1st 5 Minutes >100m	Seen in 2nd 5 Minutes <100m	Seen in 2nd 5 Minutes >100m
White-throated Sparrow/1	15	18N	0506604/5620780	Y			
White-throated Sparrow/2	16	18N	0506834/5620597	Y			
White-throated Sparrow/1	17	18N	0506843/5620247	Y			
Hermit Thrush/1	17	18N	0506843/5620247	Y			
Yellow Warbler/1	17	18N	0506843/5620247	Y			
Date: July 11, 2018, 8:30 AM - 8:45 AM Temperature: 10 °C Wind Speed: 2 km/hr Cloud Cover: 6/10 Precipitation: None							
Red-breasted Nuthatch/1	18	18N	0504030/5620881	Y			
Dark-eyed Junco/1	18	18N	0504030/5620881	Y			

3.3.1 *Quebec Marsh Bird Monitoring Program (MBMP)*

The Marsh Bird Monitoring Program (MBMP) methodology titled "*Quebec Marsh Monitoring Program*" (2008) was utilized. The MBMP was created by Bird Studies Canada (BSC) and Environment Canada; it is used to monitor populations of birds in wetland habitats and describes species-habitat associations. The program utilizes a point count method to determine abundance of each species utilizing a given location.

The following equipment was used for the surveys:

- Portable waterproof Bluetooth speaker (Ultimate Ears WonderBoom)
- Handheld GPS unit (Garmin GPSMAP 64SC)
- Thermometer
- Cell phone clock & timer
- Sibley eGuide to Birds App
- Binoculars.

The stations are 100-m radius semicircles, positioned along the wetland edge and containing marsh vegetation (i.e. non-woody, emergent plants). Stations surveyed for birds must be at least 250 m apart and those sampled for amphibians must be at least 500 m apart. Surveyors select routes consisting of one to eight stations and must be surveyed within a single evening, by a single surveyor. Morning surveys can begin 30 minutes before sunrise and end no later than 10:00. Evening surveys can begin after 18:00 (6 p.m.) and must be completed by sunset. For the purpose of this study, evening surveys were conducted. To elicit calls from the most secretive marsh bird species, a 15-min "Broadcast for Birds" tape is played throughout the survey time period. Weather must be favorable for surveying birds including good visibility, warm temperatures (at least 16°C), no precipitation and little or no wind. Ideally, two visits are made between May 27-July 12, with a minimum of 10 days between visits.

A total of two surveys were conducted on July 9,2018. The environmental conditions during the two surveys are presented in Table 3-4.

Table 3-4: Environmental conditions of Marsh Bird Surveys

Date	Time (24hr)	Survey Point	Temperature (°C)	Wind (km/hr)	Wind Direction	Cloud Cover (1/10ths)
July 9, 2018	19:10	1	22	1	N/A	0
July 9, 2018	20:30	2	18	1	N/A	0

3.4 Habitat characterization

Survey station 1 is located next to a pond bordered by a wetland, while survey station 2 is located at the edge of a former beaver pond.

3.5 Observations

Throughout the two (2) surveys, no individuals were heard/observed.

4. Anurans

4.1 Methodology

4.1.1 Listening Stations

Anuran surveys were conducted in early July 2018 following the MFFP's standardized protocol, "*Méthode d'inventaire des anoures du Québec*" (Bouthilier, Pelletier, & Tessier, 2015), which translates to *Inventory Method for Anurans in Quebec.*

The following equipment was used for the survey:

- Handheld GPS unit (Garmin GPSMAP 64SC)
- Thermometer
- Cell phone clock and timer.

The survey team conducted three visits at three sites within the Study Area. The listening stations were selected along ponds and streams, and the distance between the points is greater than 800m, as required by the standardized protocol (**Figure 4-1**). According to the protocol, the surveys were timed to occur after sunset and before midnight, on days with low to moderate wind and without precipitation **(Bouthilier, Pelletier, & Tessier, 2015)**.

The environmental conditions during the surveys can be seen in Table 4-1.

Table 4-1: Environmental conditions during Anuran Surveys

Survey Station	Date and Time	Temperature	Wind
Station 1	July 8, 2018 at **H**[5]:50pm July 9, 2018 at 9:16pm July **X**[6], 2018 at 10:05pm	27°C 18°C 23°C	3 2 2-3
Station 2	Y[7] July 9, 2018 at 9.27pm July **X**, 2018 at 9:51pm	- 18°C 21°C	- 2 2
Station 3	Y July 9, 2018 at 9:38pm July **X**, 2018 at 10:05pm	- 18°C 20°C	- 3 2

During each visit#, 5 minutes were spent listening for anuran calls. When no calls were heard, an additional 5 minutes was spent listening, as recommended in the protocol (Bouthilier, Pelletier, & Tessier, 2015). All observations (songs/calls heard) were noted using the abundance rating scale described in the protocol (0-3).

[5] Illegible in field notes, but the survey occurred after sunset and before midnight, as required.
[6] The exact date was lost in field notes, but the inventory occurred between July 4-12, as all others.
[7] These samplings occurred in the same timeframe, but the date and weather data were misplaced.

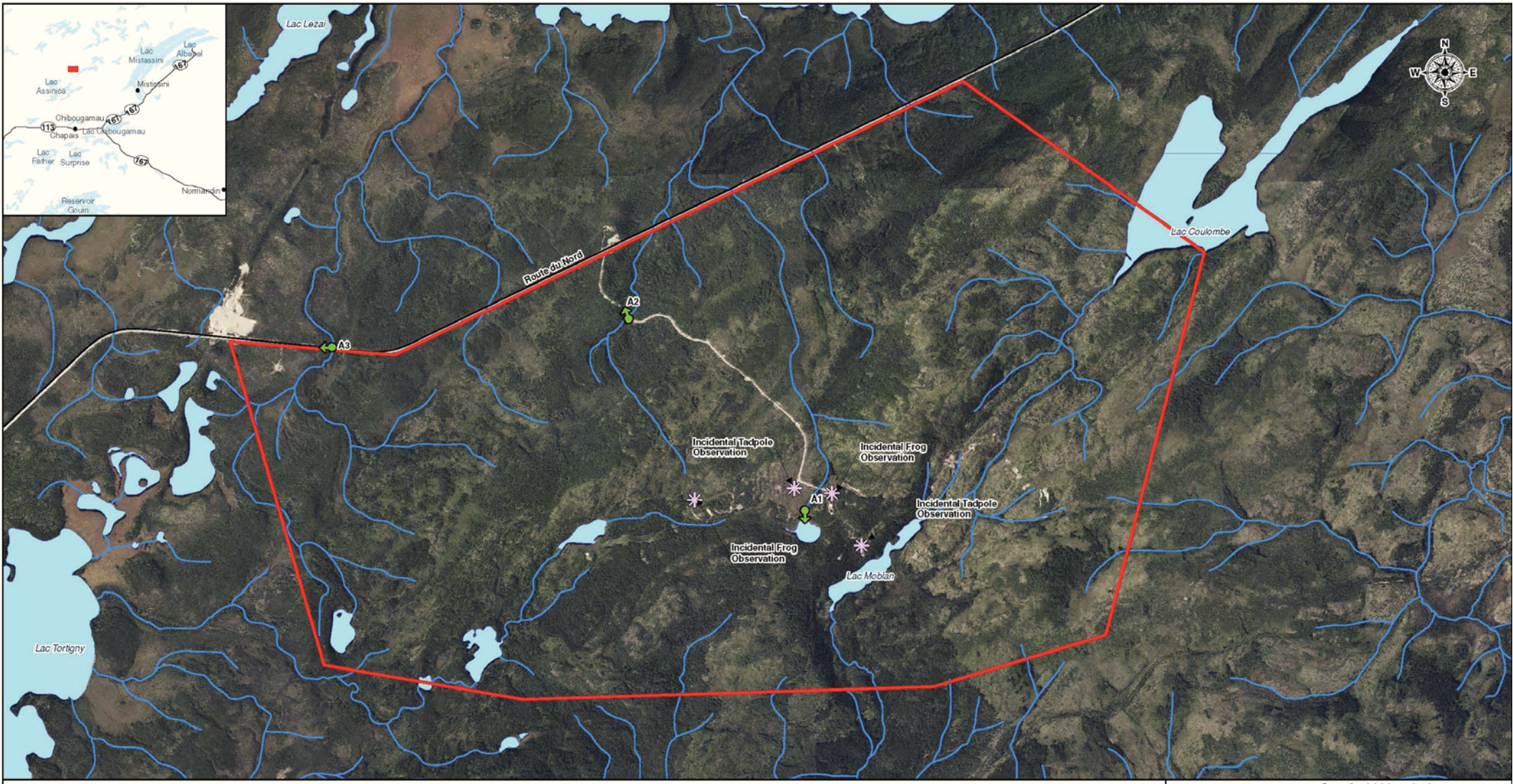
4.2 Habitat characterization

Anuran survey station 1 was next to a pond bordered by a wetland, at the end of the access road leading into the site.

Photograph 4-1 provides a view of Anuran survey station 1.

Photograph 4-1: Station 1 for Anuran Surveys

As can be seen on the map (**Figure 4-1**), anuran survey stations 2 and 3 were located next to streams. Station 2 was at the intersection of a stream and the access road (see Photograph 4-2), whereas station 3 was at the crossroad of a stream and Route du Nord



Legend

- Study Area
- Road
- Stream
- Lake
- Anuran Survey Location (A#)
- Incidental Observations

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4. Imagery Source - Donnees Québec, 2013.

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Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Anuran Survey Station Location		
Date :	October 28 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	4-1	**Page :**	1 of 1
Prepared By :	HATCH		

Figure 4-1: Anuran Survey Station Location

Photograph 4-2: Station 2 for Anuran Surveys

4.3 Observations

A total of 9 anuran surveys were completed using the chosen 3 survey stations as depicted in **Figure 4-1**. Of the 9 surveys completed only one call was heard; a Wood Frog (*Lithobates sylvaticus*) was heard calling at Station 1 on the July 6th survey. No other calling was heard during the rest of the surveys. Results are summarized in **Table 4-2**.

Table 4-2: Anuran Survey Results

Survey Station	Survey	Results
Station 1	1	Wood Frog (1 individual)
	2	No calling heard
	3	No calling heard
Station 2	1	No calling heard
	2	No calling heard
	3	No calling heard
Station 3	1	No calling heard
	2	No calling heard
	3	No calling heard

The wood frog has no conservation status (provincially or federally).

4.3.1 Incidental Observations

As the timing of the surveys was rather late for anuran breeding periods, extra attention was given to incidental observations in suitable anuran habitats. The survey team visually checked for frogs, tadpoles and eggs in all potentially suitable habitats they came across: ponds, wetlands, puddles, streams, etc.

Three (3) incidental observations were recorded during the site visit (Figure 4-1) and included one Wood frog (Photograph 4-3), unidentified species of tadpole (Photograph 4-4), and multiple Wood frog egg clusters (Photograph 4-4).

Photograph 4-3: Incidental Observation - Wood Frog

Photograph 4-4: Incidental Observation: Unidentified Species Tadpoles

Photograph 4-5: Incidental Observation – Wood Frog

Photograph 4-6: Incidental Observation: Unidentified Species tadpoles

5. Salamanders

5.1 Methodology

Salamander surveys were conducted following the MFFP's standardized protocol, "*Protocole d'inventaire des salamandres de ruisseaux en situation précaire au Québec*", which translates to *Inventory Protocol for Stream Salamanders in a Precarious Situation in Quebec.*

The survey team conducted one (1) visit at seven (7) sites within the Study Area. Once the habitat was disturbed from lifting rocks, it was not required by the protocol to revisit the sites.

The following equipment was used for the survey:

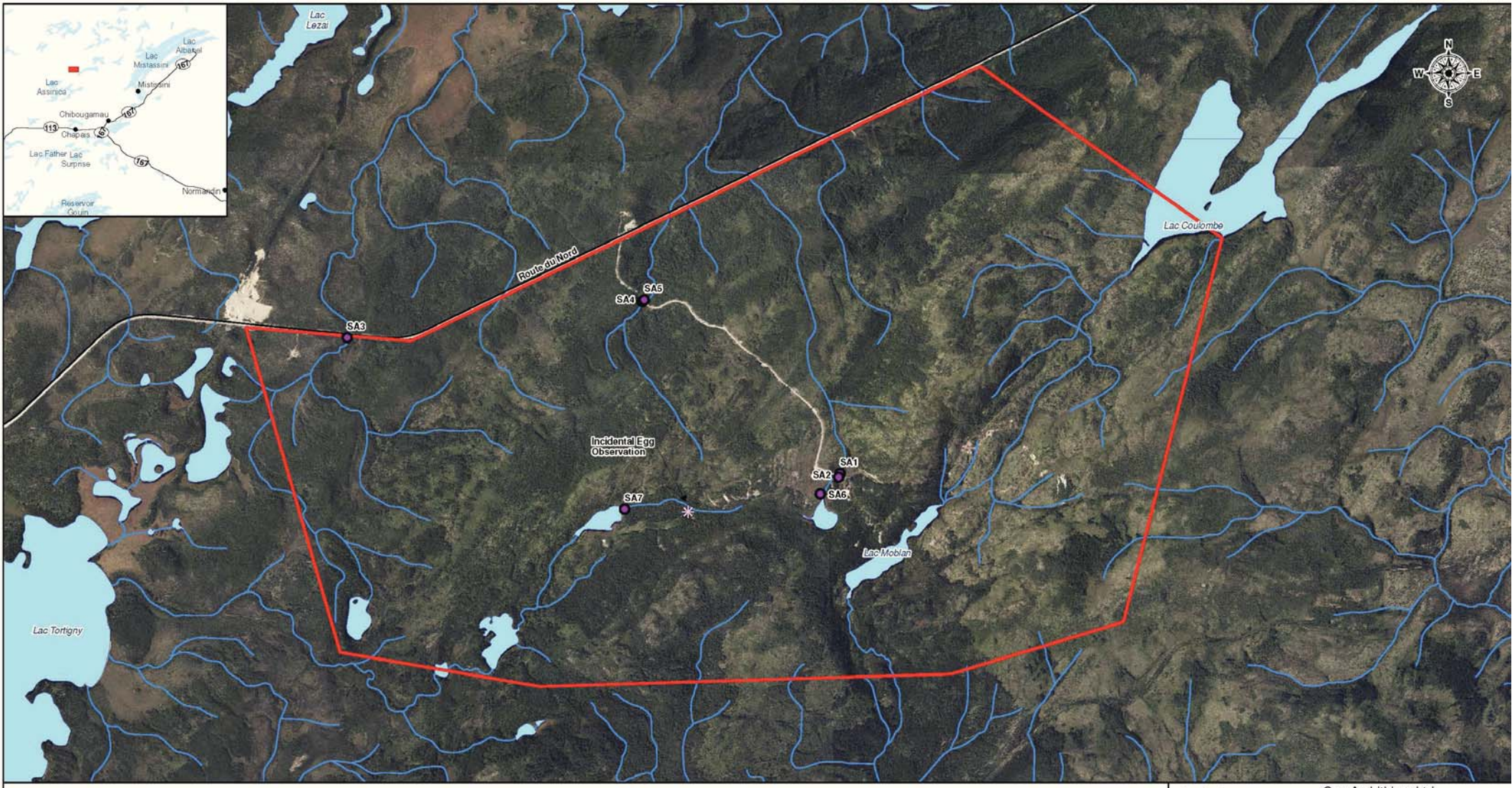
- Handheld GPS unit (Garmin GPSMAP 64SC)
- Cell phone clock and timer
- Thermometer

The environmental conditions at the survey stations can be seen in Table 5-1.

Table 5-1: Environmental conditions at Salamander Survey Stations

Survey Station	Date & Time	Temperature (°C)
Station 1	July 6, 2018 - 8:07-8:15pm	15
Station 2	July 6, 2018 - 8:20-8:32pm	15
Station 3	July 9, 2018 – 7:04-7:20am	20
Station 4	Deemed as not suitable habitat	N/A
Station 5	Deemed as not suitable habitat	N/A
Station 6	July 9, 2018 – 8:06-8:20am	N/A
Station 7	July 9, 2018 – 8:11-8:20pm	24

During each visit, the number of rocks lifted was recorded as well as a number of individuals found. In the event a specimen was encountered, a photograph was taken for identification purposes as outlined in the protocol. The survey stations were selected along streams with a transect distance of 25 metres as required by the standardized protocol (see Figure 5-2).



Legend

- Study Area
- Road
- Stream
- Lake
- Salamander Survey Location (SA#)
- Incidental Observations

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Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Salamander Survey Station Location		
Date :	November 07 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	5-1	**Page :**	1 of 1
Prepared By :	HATCH		

Figure 5-1: Salamander Survey Station Location

5.2 Habitat characterization

The survey streams were selected to reflect the diversity of habitats present in the study area. Table 5-2 describes the general features of the habitat surrounding the streams.

Table 5-2: Characteristics of survey stations

Survey Station	Habitat
Station 1	Disturbed (road/logged)
Station 2	Disturbed (road/logged)
Station 3	Wooded; Jack pine dominant
Station 4	Deemed as not suitable habitat
Station 5	Deemed as not suitable habitat
Station 6	Wooded, black spruce dominant
Station 7	Clearning; stream flowing into a beaver pond

5.3 Observations

The Study Area overall was deemed not to be an ideal habitat for salamanders. It proved to be difficult to find areas to survey and therefore two (2) of the seven (7) selected survey locations were deemed as not suitable habitat. Therefore, only five (5) salamander surveys were conducted within the Study Area.

No salamanders were observed during the survey campaign.

Table 5-3: Salamander Survey Results

Survey Station	Rocks/Logs Lifted	Individuals Found
Station 1	39	0
Station 2	126	0
Station 3	99	0
Station 4	Deemed as not suitable habitat	N/A
Station 5	Deemed as not suitable habitat	N/A
Station 6	21	0
Station 7	176	0

5.3.1 Incidental observations

Since no salamander observations were made during the surveys, extra attention was given to incidental observations in suitable habitats. The survey team visually checked for salamanders and eggs in all potentially suitable habitats they came across.

One incidental observations were recorded during the site visit (Figure 5-3): a cluster of spotted salamander eggs in a small vernal pool.

Figure 5-3: Incidental observation – spotted salamander eggs

6. Snakes

6.1 Methodology

Snake surveys were conducted following the MFFP's standardized protocol, *Protocole d'inventaire des couleuvres au Québec (2018)*, which translates to *Inventory Protocol for Snakes in Quebec* (MFFP, 2018).

The survey team conducted one visit at three sites within the Study Area. Once the habitat was disturbed from lifting rocks, it was not required by the protocol to revisit the sites.

The following equipment was used for the survey:

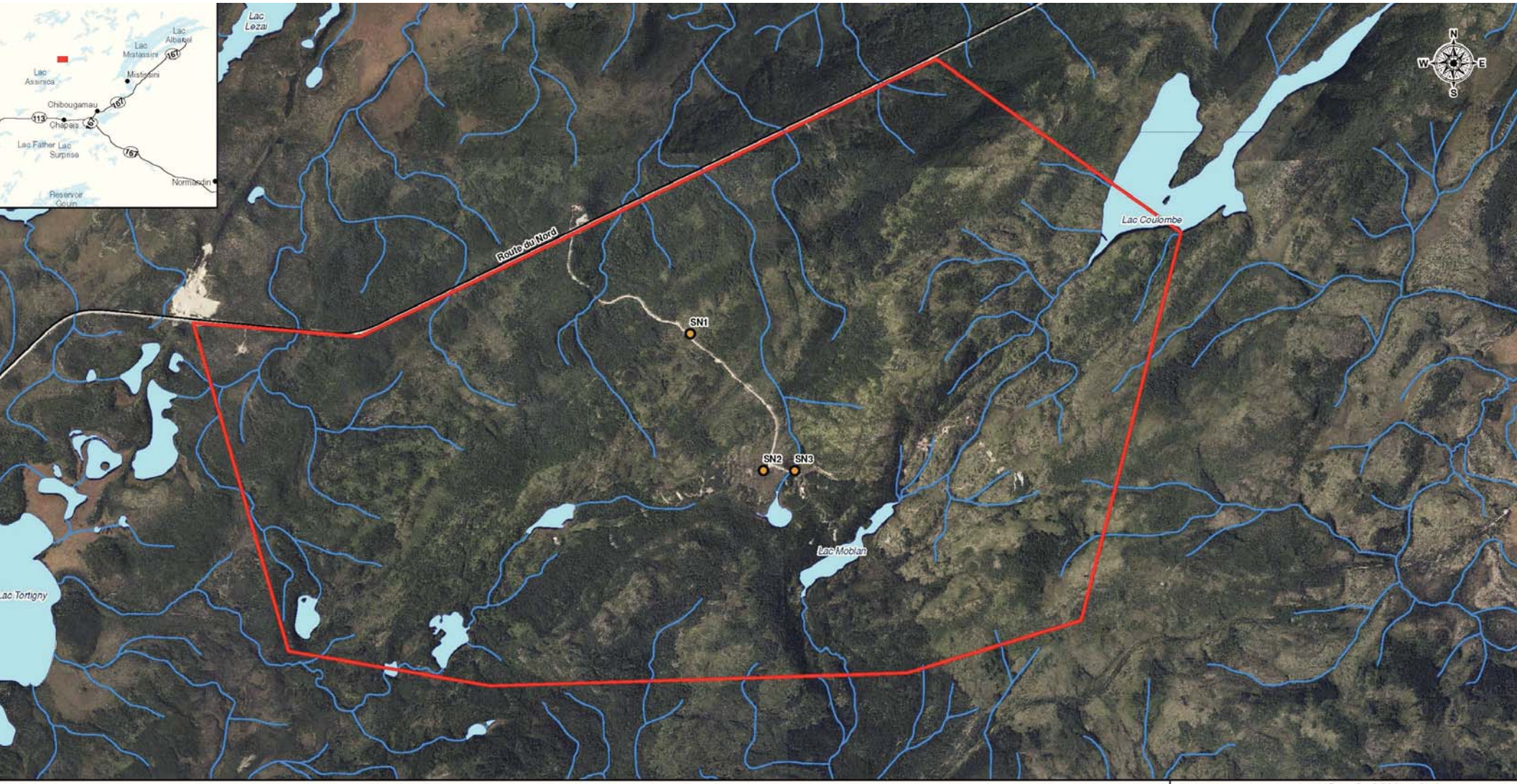
- Handheld GPS unit (Garmin GPSMAP 64SC)
- Cell phone clock and timer
- Thermometer.

The survey stations were transects/perimeters of variable sizes, selected in areas with suitable shelters for snakes (in occurrence, large rocks), as required by the standardized protocol (see Figure 6-1).The environmental conditions during the surveys can be seen in Table 6-1.

Table 6-1: Details of Snake Survey Stations

Survey Station	Date	Time (24h)	Temperature (°C)
Station 1	July 9, 2018	18:52-19:02	23
Station 2	July 10, 2018	7:24-7:30	19
Station 3	July 10, 2018	7:40-7:46	20

During each visit, the number of rocks lifted was recorded as well as a number of individuals found. In the event a specimen was encountered, a photograph was taken for identification purposes as outlined in the protocol.



Legend

- Study Area
- Road
- Stream
- Lake
- Snake Survey Location (SN#)

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Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Snake Survey Station Location		
Date :	September 13 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	6-1	**Page :**	1 of 1
Prepared By :	HATCH		

Figure 6-1: Snake survey station location

6.2 Habitat characterization

As per the protocol, the survey points were selected in relatively open areas with good sun exposure and potential shelters for snakes. In the study area, this translated into cleared, disturbed areas next to the access road.

Photograph 6-1: Snake survey station 1

Photograph 6-2: Snake survey station 2

Photograph 6-3: Snake survey station 3

6.3 Observations

No snakes were observed during the survey campaign, as seen in Table 6-2.

Table 6-2: Snake Survey Results

Survey Station	Rocks/Logs Lifted	No. of Individuals Observed
Station 1	140	0
Station 2	77	0
Station 3	31	0

7. Conclusion

The objectives of the late spring terrestrial survey were to identify the vegetation on site, to classify the ecological types, and to determine the bird, snake, salamander and anuran species that are present. The results will inform the provincial environmental assessment project for the Moblan Lithium project.

The main observations of this survey are summarized as follows:

- No plant species at risk were observed in the study area.
- The study area displays typical vegetation for the spruce-moss domain it belongs to; it mainly consists of black spruce stands, associated with lichen, sphagnum or moss and heath.
- A total of 19 different bird species were heard or observed in the study area. None of them are threatened, vulnerable or likely to be so designated.
- Only one anuran species was heard and incidentally observed: the wood frog, which is not at risk. Tadpoles were observed but the species could not be identified. There are three anuran species at risk in Québec and none of their distribution areas overlap with the study area, so it is unlikely that the tadpoles were from a species at risk.
- No salamanders were observed in the study area, but spotted salamander eggs were found in vernal pools. It is not a species at risk.
- No snakes were observed in the study area.

8. References

Bazoge, A., Lachance, D., & Villeneuve, C. (2015). *Identification et délimitation des milieux humides du Québec méridional.* Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Direction de l'expertise en biodiversité et Direction de l'aménagement et des eaux souterraines.

Bird Studies Canada & Environment Canada. (2008). *The Québec Marsh Monitoring Program - Training kit and instructions for surveying marsh birds and their habitat.* Québec. Retrieved from https://www.birdscanada.org/download/MMPQCmanualEN.pdf

Blouin, J., & Berger, J.-P. (2004). *Guide de reconnaissance des types écologiques des régions écologiques 6c - Plaine du lac Opémisca, 6d - Coteaux du lac Assinica, 6e - Coteaux de la rivière Nestaocano, 6f - Coteaux du lac Mistassini et 6g - Coteaux du lac Manouane.* Ministère des Ressources naturelles, de la Faune et des Parcs, Forêt Québec, Direction des inventaires forestiers, Division de la classification écologique et productivité des stations.

Bouthilier, L., Pelletier, S., & Tessier, N. (2015). *Méthode d'inventaire des anoures du Québec.* MFFP, Direction de la gestion de la faune de l'Estrie, de Montréal, de la Montérégie et de Laval.

Brown, L. (1979). *Grasses: An Identification Guide.* Houghton Mifflin Harcourt.

Cadman, M., Dewar, H., & Welsh, D. (1998). *The Ontario Forest Bird Monitoring Program (1987-1997): Goals, methods and species trends observed. Technical Report series No. 325.* Canadian wildlife service.

Chadde, S. (2011). *Wetland Plants of Michigan.* Createspace Independant Pub.

Gleason, H., & Cronquist, A. (1991). *Manual of Vascular Plants of Northeastern United States and Adjacent Canada.* New York Botanical Garden Pr Dept.

Legasy, K., Bently, C., & Chambers, B. (1996). *Forest Plants of Central Ontario.* Lone Pine Publishing.

Marie-Victorin, F. (1995). *Flore Laurentienne.* Les Presses de l'Université de Montréal.

MDNR. (2013). *Handbook for Collecting Vegetation Plot Data in Minnesota: the Releve Method.* Minnisota Department of Natural Resources.

MFFP. (2018). *Protocole d'inventaire des couleuvres au Québec.* MFFP, Direction de la gestion de la faune de l'Estrie, de Montréal, de la Montérégie et de Laval, Secteur des opérations régionales.

MFFP. (2018). *Protocole d'inventaire des salamandres de ruisseaux en situation précaire du Québec.* MFFP, Direction de la gestion de la faune de l'Estrie, de Montréal, de la Montérégie et de Laval, Secteur des opérations régionales.

MFFP. (2018). *Protocole standardisé pour l'inventaire de la rainette faux-grillon au Québec.* MFFP, Direction de la gestion de la faune de l'Estrie, de Montréal, de la Montérégie et de Laval, Secteur des opérations régionales, Direction de l'expertise sur la faune terrestre, l'herpétofaune et l'avifaune.

Newcomb, L. (1989). *Newcomb's Wildflower Guide.* Little, Brown and Company.

Newmaster, S., Harris, A., & Kershaw, L. (1997). *Wetland Plants of Ontario.* Lone Pine Publishing.

Quinty, F. (2017). Need for a wetland guide for Northern Quebec. *IA's Contribution in Addressing Climate Change - 37th Annual Conference of the International Association for Impact Assessment.* Montréal.

Taylor, K. C., Arnp, R. W., Merchant, B. G., Parton, W. J., & Nieppola, J. (2000). *A Field Guide to Forest Ecosystems of Nertheastern Ontario 2nd Eddition.*

Appendix A

Vegetation survey data collection sheets

Page 1 of 5

Stand Description

Site Name: Lac Moblan

Polygon ID: _____ **Sample Plot #:** 1 **UTM Zone:** 18 U

Surveyors: PA KW TK JM **Easting:** 0505795

Date: (dd/mm/yy) 05 07 18 **Northing:** 5621050

Weather: Temp. °C 24 Wind Sp. 1 Wind Dir. NW
Cloud Cover (1/10ths): 1/10 Precipitation: Nil

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	1	Pj = Sb
2 - 10 m	4	Pj > Sb
0.5 - 2 m	3	sheep laurel > labrador tea > low blueberry > Sb
0 - 0.5 m	4	reindeer lichen > cereal lichen > mid way, peatmoss

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	A	N	N
Standing Snags	O	O	N	N
Deadfall/Logs	O	O	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon
Plot Size (m^2): [ ] 1 [X] 25 [ ] 100 [ ] 400
Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	15	12	5	32	94	12	15
Sb	0	1	1	2	6	12	15
Total	15	13	6	34	100		
Basal Area	30	26	12	66	Mean: 22		
Dead							

Stand Composition: Pj 94 Sb 6

Inclusion/ Complex

BOGS Tf/Tl - Moist Coarse Pine blackspruce conifer V 20 27 22 24 9 20 17 18 22

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Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 1

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: PA, TK, KW, JM

Date (dd/mm/yy): 05 07 18 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	L	13	—	—
A	mS	8	—	7.5 yr 8-1
B	mS	9	6	7.5 yr 4/6
C	mS	7/M	6	10 yr 8/4

Depth to Mottles (cm):	16	Moisture Regime:	5 MOIST
Depth to Gleye (cm):	—	Drainage Class:	imperfect / Poor
Depth to Water (cm):	—	Effective Texture:	mS

Mottle Colour:	7.5 yr 4/6		
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☒ deep (> 120 cm)

Soil Profile

Sphagnum
L 8cm
A 8cm
B mS 9cm
C 7/M

0

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☐ mid	☐ lower	☐ depression
	☒ level		
	Slope %: 0	Slope Type:	
	Aspect:	Slope Shape:	
	Slope Class:		

Organic Soil Description N/A

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

BOGS T+/TL Moist, Coarse; Black Spruce - Pine Conifer

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 1

Surveyors: PA, KW, TK, JM

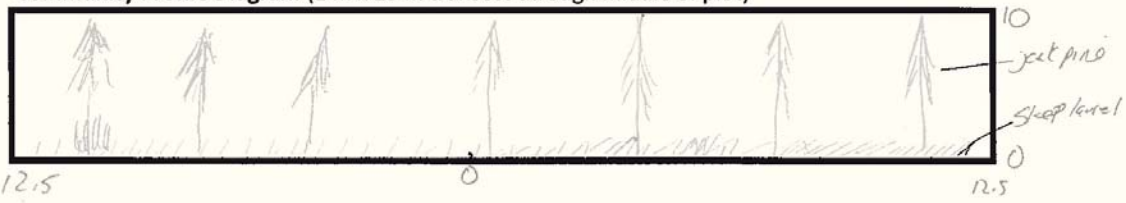
Date (dd/mm/yy): 05 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Sparkled Alder	N	N	O	N	✓	✓	
Sheep laurel	N	N	D	O			
labrador tea	N	N	A	O			
black spruce	R	O	A	R			
Jack pine	R	O	A	R			
low sweet blueberry	N	N	A	A			
Cloud berry	N	N	N	O			
reindeer lichen	N	N	N	D			
coral lichen	N	N	N	A			
creeping snowberry	N	N	N	A			
old man's beard	A	A	A	N			
trembling aspen	N	R	N	N			
Canada Mayflower	N	N	O	O			
bunchberry	N	N	N	O			
bluebead lily	N	N	N	O			
Bebb's willow	N	N	O	N			
Hy honeysuckle	N	N	O	O	↓	↓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: LACMORIAN **Polygon ID:** _____ **Plot #:** 1
Surveyors: PA KW TK JM
Date (dd/mm/yy): 0505 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	~~diameter limit~~	6
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	1
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	2
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	1
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 1
Surveyors: PA KW TK JM
Date (dd/mm/yy): 05 07 18

Potential Wildife Habitat

Vernal Pools	N/O		Snags	Yes
Hibernacula	N/O		Fallen logs	Yes

Wildlife

Species	Ev. Code	#	Notes
Yellow-rumped warbler	VO	1	
HERTH	VO	1	
MOOSE	SC	1	
PAUA	VO	1	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 2 **UTM Zone:** 18U

Surveyors: PA KW TK JM **Easting:** 0506113

Date: (dd/mm/yy) 05 07 18 **Northing:** 5620725

Weather: Temp. °C 24 Wind Sp. 1 Wind Dir. NW

Cloud Cover (1/10ths): 9/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	1	SB > BW
2 - 10 m	4	SB > BW > Speckled alder
0.5 - 2 m	3	Sheep laurel > Labrador tea > L.S blueberry > SB
0 - 0.5 m	3	Mixwww sphagnum > cinder moss > bunchberry > Cloudberry

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	A	N	N
Standing Snags	R	R	N	N
Deadfall/Logs	R	O	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: ☐ plot ☐ polygon

Plot Size (m^2): ☐ 1 ☐ 25 ☒ 100 ☐ 400

Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
SB	18	16	21	55	83	15	16
SpAlder						—	—
BW	2	4	5	11	17	14	18
Total	20	20	26	66	100		
Basal Area	40	40	52	132	Mean: 44		
Dead	—	—	—				

Stand Composition: SB 83 BW 17

Inclusion/ Complex

BOG ~~TK(T) Dry Sandy Jack Pine - Black Spruce dominated~~

65 V 21 17 18 16 15

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Soil Description

Site Name: LAC MORAN

Polygon ID: _____ **Sample Plot #:** 2

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 05 07 12 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

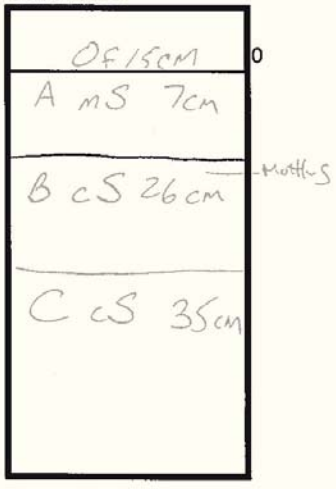
Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	15	—	—
A	mS	7	—	—
B	cS	26	6	—
C	cS	35	6	—

Depth to Mottles (cm):	15	Moisture Regime:	5 moist
Depth to Gleye (cm):	—	Drainage Class:	I/P
Depth to Water (cm):	—	Effective Texture:	mS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☒ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile



Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☒ mid	☐ lower	☐ depression ☐ level
	Slope %:	Slope Type:	
	Aspect:	Slope Shape:	
	Slope Class:		

Organic Soil Description N/A

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

Species List & Community Profile

Site Name: LAC MORAIN

Polygon ID: _____ **Sample Plot #:** 2

Surveyors: AA KW TK JM

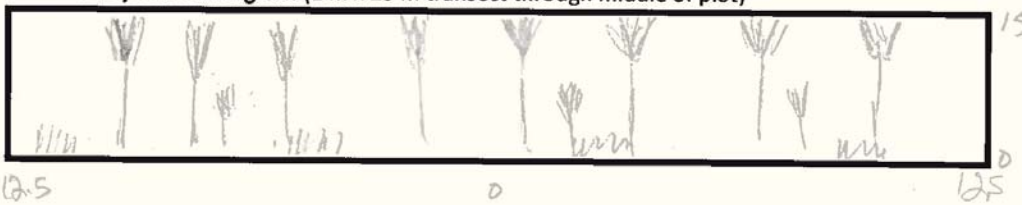
Date (dd/mm/yy): 05 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
bunchberry	N	N	N	A	✓	✓	
black spruce	R	O	O	R			
goldthread	N	N	R	R			
labrador tea	N	N	A	R			
white birch	R	A	R	N			
window peatmoss	N	N	N	D			
creeping snowberry	N	N	N	O			
meadow horsetail	N	N	N	O			
interrupted fern	N	N	O	N			
Bebb's willow	N	N	O	N			
Grey alder	N	N	O	N			
wavy hairgrass	N	N	O	N			
old man's beard	N	N	A	N			
low sweet blueberry	N	N	A	O			
Fly honeysuckle	N	N	O	O	↓	↓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



Management / Disturbance

Site Name: Lac Moblan **Polygon ID:** _____ **Plot #:** 2
Surveyors: _____
Date (dd/mm/yy): 05 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	1
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

Wildlife Observations

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 2
Surveyors: _____
Date (dd/mm/yy): 05 07 18

Potential Wildife Habitat

Vernal Pools	No		Snags	Yes
Hibernacula	No		Fallen logs	Yes

Wildlife

Species	Ev. Code	#	Notes
MOOSE	SC	1	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page / of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 3 **UTM Zone:** 18U

Surveyors: PA KW TK JM **Easting:** 0506146

Date: (dd/mm/yy) 05 07 18 **Northing:** 5620687

Weather: Temp. °C 24 Wind Sp. 1 Wind Dir. N
Cloud Cover (1/10ths): 7/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	1	Sb
2 - 10 m	4	Sb > Bw > Bebb's willow
0.5 - 2 m	3	sheep laurel > labrador tea > Bebb's willow
0 - 0.5 m	3	mixed Sphagnum > reindeer lichen > coral lichen = Cladonia sp.

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	O	N	R
Standing Snags	O	O	N	N
Deadfall/Logs	O	O	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon
Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400
Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species Prism Factor _____

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Bw	17	2	4	23	46	13	12
Sb	8	10	8	22	44	14	15
Bebb's w	1			1	2		
Total	26	12	12	50	16.5 100		
Basal Area	52	24	24	100	Mean: 33		
Dead	—	—	—	—			

Stand Composition: Bw 46 Sb 44 Willow >

Inclusion/ Complex

B222 TH/TI Mixed Rich Conifer Swamp V 7 15

Page 2 of 5

Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 3

UTM Zone: — Easting: — Northing: —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 050718 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	10	—	
A	SiCS	10	6	—
B	SiCS	>1m	6	—
C				—

Depth to Mottles (cm):	15
Depth to Gleye (cm):	—
Depth to Water (cm):	—
Moisture Regime:	Very moist (6)
Drainage Class:	P/T
Effective Texture:	CS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☒ deep (> 120 cm)

Soil Profile

Sphagnum
Of 10cm — 0
A 10cm SiCS — 10cm
B >1m SiCS

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☐ mid	☒ lower	☐ depression ☐ level
	Slope %: —	Slope Type: —	
	Aspect: —	Slope Shape: —	
	Slope Class: —		

Organic Soil Description NA

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

Species List & Community Profile

Site Name: LAC MORCAN

Polygon ID: _____ **Sample Plot #:** 3

Surveyors: PA TK KW JM

Date (dd/mm/yy): 05 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Stat Abhomss	N	N	N	O	✓	✓	
Trembling aspen	R	O	N	N			
Jack pine	O	O	N	N			
bunch berry	N	N	N	A			
schoenus	N	N	N	D			
soft shrub	N	N	N	O			
Labrador tea	N	N	O	A			
short kinnik	N	N	O	O			
Bobb's willow	N	R	O	O			
white birch	R	A	O	O			
L. birchorn	N	N	N	A			
Coral lichen	N	N	N	O			
reindeer lichen	N	N	N	O			
creeping snowberry	N	N	N	O	✓	✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)

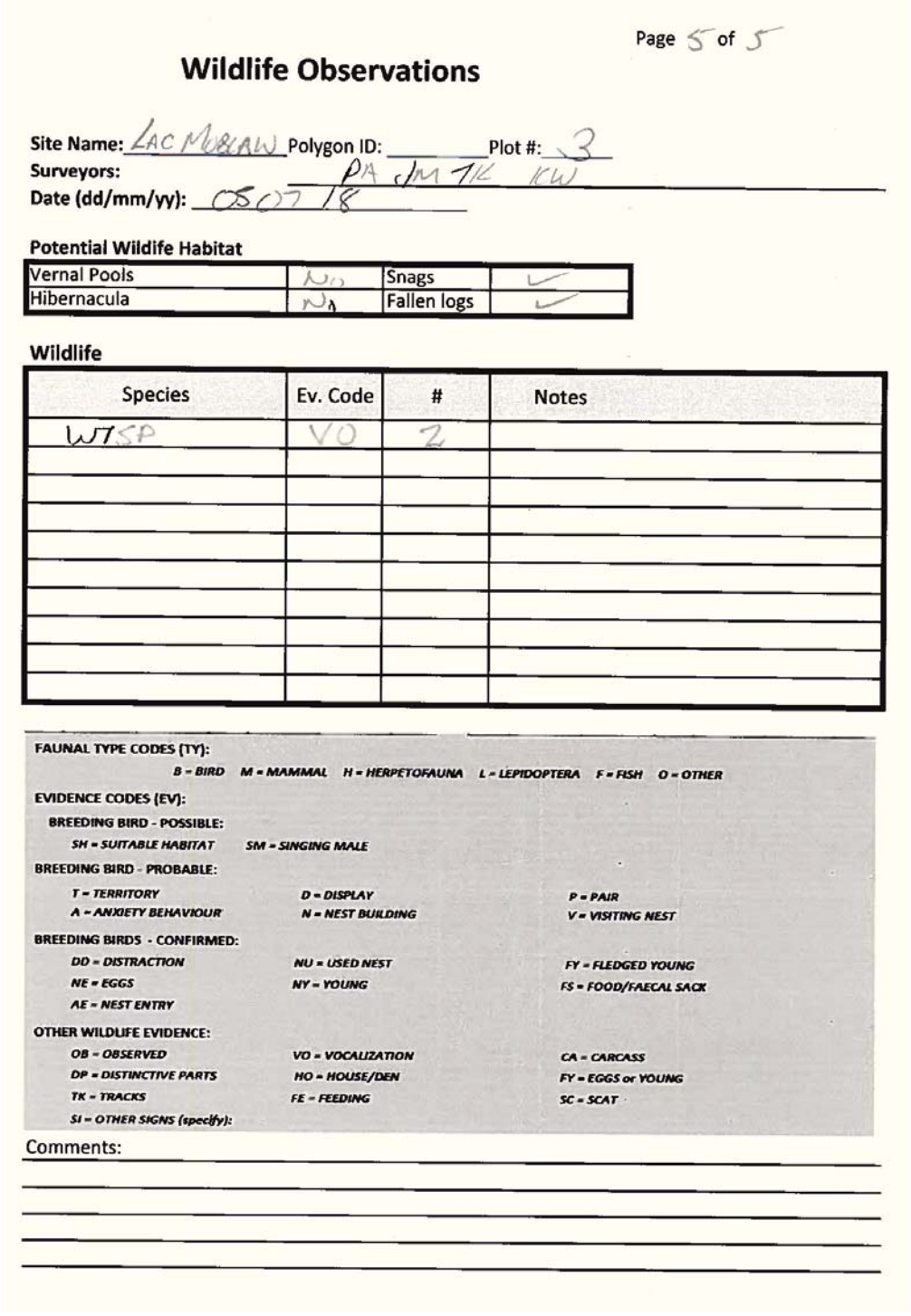
Management / Disturbance

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 3
Surveyors: PA KW TK JM
Date (dd/mm/yy): 05 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	/
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent



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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 3
Surveyors: PA JM TK KW
Date (dd/mm/yy): 05 07 18

Potential Wildlife Habitat

Vernal Pools	N/A	Snags	✓
Hibernacula	N/A	Fallen logs	✓

Wildlife

Species	Ev. Code	#	Notes
WTSP	VO	2	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 4 UTM Zone: 18U

Surveyors: PA TK KW JM Easting: 0505866

Date: (dd/mm/yy) 05 07 18 Northing: 5619896

Weather: Temp. °C 27 Wind Sp. 3-4 Wind Dir. W

Cloud Cover (1/10ths): 2/10 Precipitation: HIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	1	Pj
2 - 10 m	3	Pj >> Sb
0.5 - 2 m	4	sheep laurel > lowbush blueberry > bunchberry
0 - 0.5 m	4	sphagnum > reindeer lichen > coral lichen > cc snowberry

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	A	N	N
Standing Snags	O	A	N	N
Deadfall/Logs	O	A	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon

Plot Size (m^2): ☐ 1 ☐ 25 ☒ 100 ☐ 400

Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species

Prism Factor _____

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	12	15	10	37	1150	14	15
Total	12	15	10	37	100		
Basal Area	24	30	20	74	Mean: 24		
Dead	1	—	—	1			

Stand Composition: Pj 100

Inclusion/ Complex None

B50 - Next page

Soil Description

Site Name: LAC MOBLAN

Polygon ID: ______ **Sample Plot #:** 4

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: ______

Date (dd/mm/yy): 05 07 18 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O			—	
A	cS	5	6	
B	cS	25	6	
C				

Depth to Mottles (cm):	6	Moisture Regime:	Fresh (2)
Depth to Gleye (cm):	—	Drainage Class:	Well
Depth to Water (cm):	—	Effective Texture:	cS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent
Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)	
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)	
	☒ shallow (16 - 30 cm)	☐ deep (> 120 cm)	

Soil Profile

Sphagnum
Of 5 cm
0
A 5 cm
cS
B 25 cm
cS
30
Bedrock

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope: ☐ crest ☐ upper ☐ mid ☐ lower ☐ depression ☐ level		
	Slope %: —	Slope Type: —	
	Aspect: —	Slope Shape: —	
	Slope Class:		

Organic Soil Description NA

Depth (cm):		
vonPost Scale:		
~~Moisture Regime:~~		

B050TH/T1 Dry to fresh, [illegible] : P[illegible] - black [illegible]
V 8720 C 18 /4 71

Ver: 04.03

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 4

Surveyors: PA KW TK JM

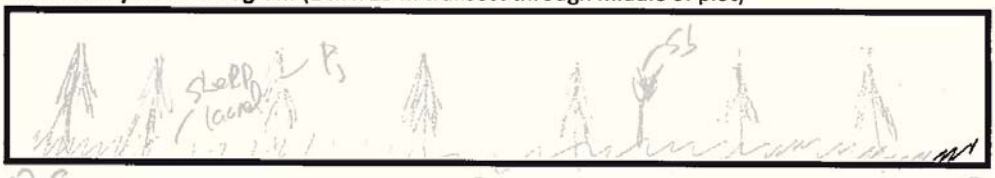
Date (dd/mm/yy): 05 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
dark Pine	O	O	R	R	✓	✓	
Black Spruce	N	R	R	R			
low-sweet blueberry	N	N	A	N			
Sloop laurel	N	N	O	N			
coral lichen	N	N	A	N			
reindeer lichen	N	N	A	N			
bunch berry	N	N	A	N			
midway pathmoss	N	N	D	N	↓	↓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 4
Surveyors: PA KW TK JM
Date (dd/mm/yy): 05 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	4
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	2
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: Lac Moblan Polygon ID: _____ Plot #: 4
Surveyors: PA KW JM TK
Date (dd/mm/yy): 05 07 18

Potential Wildife Habitat

Vernal Pools	No	Snags	Yes
Hibernacula	No	Fallen logs	Yes

Wildlife

Species	Ev. Code	#	Notes

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: ______ Sample Plot #: 5 UTM Zone: 18U

Surveyors: PA KW TK CM Easting: 0505753

Date: (dd/mm/yy) 06 07 18 Northing: 5619940

Weather: Temp. °C 9 Wind Sp. 1 Wind Dir. M
Cloud Cover (1/10ths): 10/10 Precipitation: Drizzle

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	3	Jp > Sb > Bw
2 - 10 m	2	green alder > service berry
0.5 - 2 m	4	labrador tea > sheep laurel > Sb > beaked willow
0 - 0.5 m	4	reindeer lichen > coral lichen = sphagnum = red/brown moss

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	R	N	N
Standing Snags	N	N	N	N
Deadfall/Logs	R	N	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon
Plot Size (m²): ☐ 1 ☐ 25 ☒ 100 ☐ 400
Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species

Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	9	10	8	27	93	14	15
Sb	1			1	3	14	15
Bw		1		1	3	12	10
Total	10	11	8	29	100		
Basal Area	20	22	16	58	Mean: 19		
Dead	–	–	–				

Stand Composition: Pj 93 Sb 3 Bw 3

Inclusion/ Complex –

BO 2237+/+/ . Mineral intermediate cumulo summp 26 27 15 20 23 29

Page 2 of 5

Soil Description

Site Name: LAC MORAN

Polygon ID: _____ Sample Plot #: 5

UTM Zone: — Easting: — Northing: —

Surveyors: PA TK KW JM

Date (dd/mm/yy): 06 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

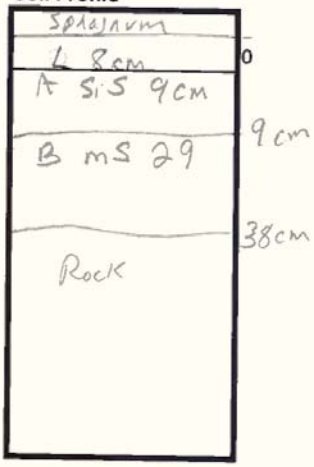
Horizon	Texture	Thickness (cm)	pH	Colour
O			—	
A	SiS	9	6	
B	mS	29	6	
C				

Depth to Mottles (cm):	11	Moisture Regime:	Very Moist 6
Depth to Gleye (cm):	—	Drainage Class:	P/I
Depth to Water (cm):	—	Effective Texture:	Lower mS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☒ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile



Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☑ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope: ☐ crest	☐ upper	
	☐ mid	☒ lower	☐ depression ☐ level
	Slope %: —	Slope Type: —	
	Aspect: —	Slope Shape: —	
	Slope Class: —		

Organic Soil Description N/A

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

223 - Moist Intermediate Fen Swamp

Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 5

Surveyors: PA KW TK JM

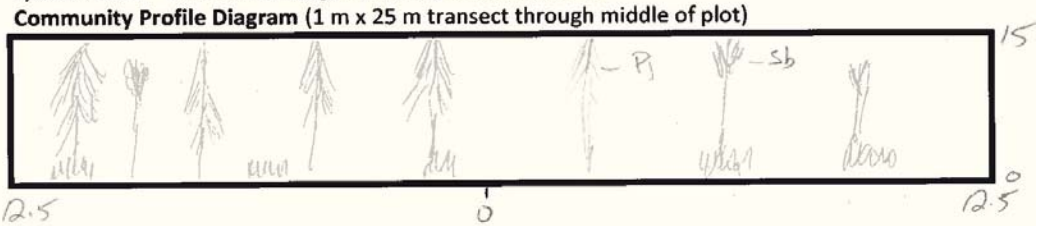
Date (dd/mm/yy): 06 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
bunchberry	N	N	N	O	✓	✓	
speckled alder	N	N	O	N			
showy mountain ash	N	O	N	N			
labrador tea	N	N	O	A			
<2000 tunnel	N	N	O	A			
jack pine	N	O	N	N			
white birch	N	O	N	N			
Serviceberry	N	O	N	N			
pin cherry	N	R	N	N			
low sweet blueberry	N	N	N	O	✓	✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



Management / Disturbance

Site Name: Lac Moblan Polygon ID: 2 Plot #: 5
Surveyors: PA KW TK JM
Date (dd/mm/yy): 06 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	9
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	6
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	1
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	9
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 3
Surveyors: PA KW TK JM
Date (dd/mm/yy): 06 07 18

Potential Wildlife Habitat

Vernal Pools	NO	Snags	NO
Hibernacula	NO	Fallen logs	NO

Wildlife

Species	Ev. Code	#	Notes
HETH	VO	1	
WTSP	VO	1	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 6 **UTM Zone:** 18U

Surveyors: PA KW TK JM **Easting:** 0505765

Date: (dd/mm/yy) 06 07 18 **Northing:** 5619934

Weather: Temp. °C 7 Wind Sp. 3 Wind Dir. N
Cloud Cover (1/10ths): 9/10 Precipitation: DRIZZLE

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m		None
2 - 10 m	2	Pj > Sb
0.5 - 2 m	4	Shrub laurel > labrador tea > l.s. blueberry > Sb
0 - 0.5 m	4	mossy carpet moss > feathermoss > cladonia lichen > reindeer lichen

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	R	N	N
Standing Snags	N	N	N	N
Deadfall/Logs	N	N	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon
Plot Size (m^2): ☐ 1 ☒ 25 ☒ 100 ☐ 400
Plot Shape: ☒ circular ☐ square ☐ rectangle

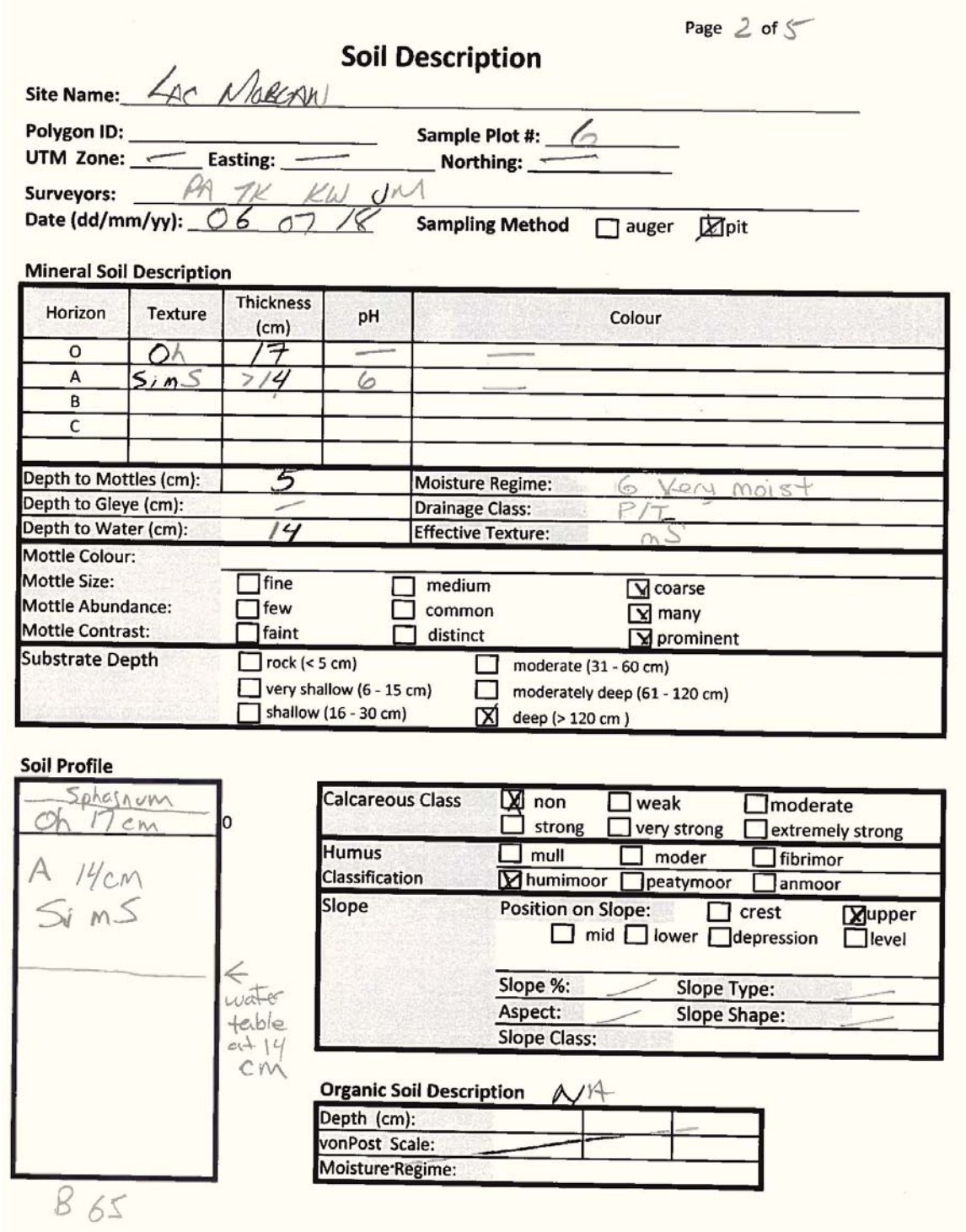
Prism Tree Tally by Species Prism Factor _____

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	2	10	8	20	63	6	10
Sb	8	3	1	12	27	6	10
Total	10	13	9	32	100		
Basal Area	20	26	18	64	Mean: 21		
Dead	—	—	—				

Stand Composition: Pj 63 Sb 27

Inclusion/ Complex – Mixed

~~BOS 14/11~~ V 8, 7, 20, 6 18 14 21
365



Page 2 of 5

Soil Description

Site Name: Lac Moblan

Polygon ID: _____ Sample Plot #: 6

UTM Zone: — Easting: — Northing: —

Surveyors: AA TK KW JM

Date (dd/mm/yy): 06 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Oh	17	—	—
A	SiMS	>14	6	—
B				
C				

Depth to Mottles (cm):	5	Moisture Regime:	6 Very moist
Depth to Gleye (cm):	—	Drainage Class:	P/T
Depth to Water (cm):	14	Effective Texture:	mS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☒ deep (> 120 cm)

Soil Profile

Sphagnum
Oh 17cm
0
A 14cm
SiMS
← water table at 14 cm
B 65

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☐ fibrimor
	☒ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☒ upper
	☐ mid	☐ lower	☐ depression ☐ level
	Slope %: —	Slope Type: —	
	Aspect: —	Slope Shape: —	
	Slope Class:		

Organic Soil Description N/A

Depth (cm):		
vonPost Scale:		
Moisture Regime:		

Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 6

Surveyors: PA TK KW JM

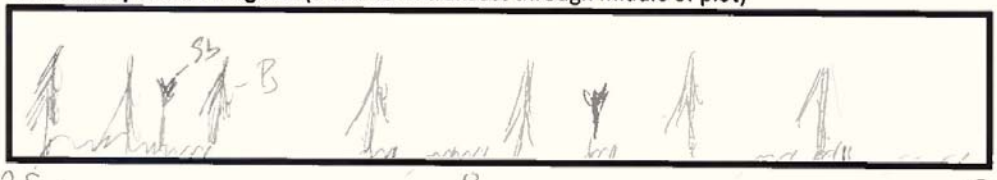
Date (dd/mm/yy): 06 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Black Spruce	N	O	N	N	✓	✓	
Jack Pine	N	O	O	N			
Cloudberry	N	N	N	O			
Low Sweet Blueberry	N	N	N	A			
Labrador tea	N	N	O	A			
Sheep laurel	N	N	O	A			
Reindeer lichen	N	N	N	A			
Coral lichen	N	N	N	A			
Medium Feathermoss	N	N	N	A			
Red/Brown moss	N	N	N	A			

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



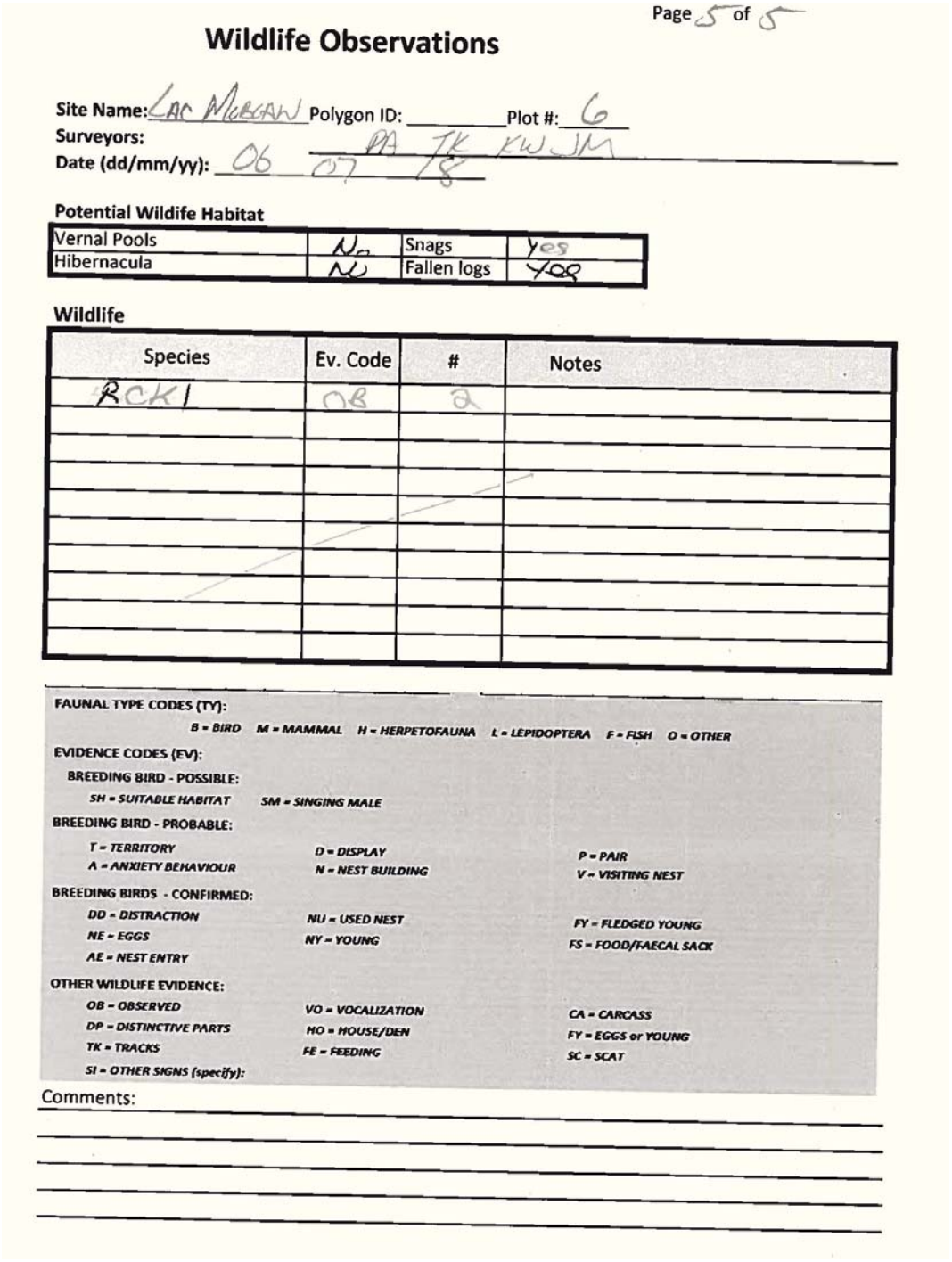
Management / Disturbance

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 6
Surveyors: _____
Date (dd/mm/yy): 06 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	1
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent



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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 6
Surveyors: MA JK KW JM
Date (dd/mm/yy): 06 07 18

Potential Wildife Habitat

Vernal Pools	No	Snags	Yes
Hibernacula	NO	Fallen logs	YES

Wildlife

Species	Ev. Code	#	Notes
RCKI	OB	2	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 8 UTM Zone: 18U

Surveyors: PA TK KW Easting: 0505243

Date: (dd/mm/yy) 08 07 18 Northing: 5621097

Weather: Temp. °C 22 Wind Sp. 5 Wind Dir. NW

Cloud Cover (1/10ths): 9/10 Precipitation: 1mm

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	4	Pj > Sb
2 - 10 m	1	Bebbs willow > Sb > pin cherry
0.5 - 2 m	4	sheep laurel > labrador tea > Bebbs willow = spotted alder
0 - 0.5 m	4	Small reed bentgrass > reindeer lichen > Sb > blueberry = sheep laurel

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	A	N	N
Standing Snags	O	O	N	N
Deadfall/Logs	O	O	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

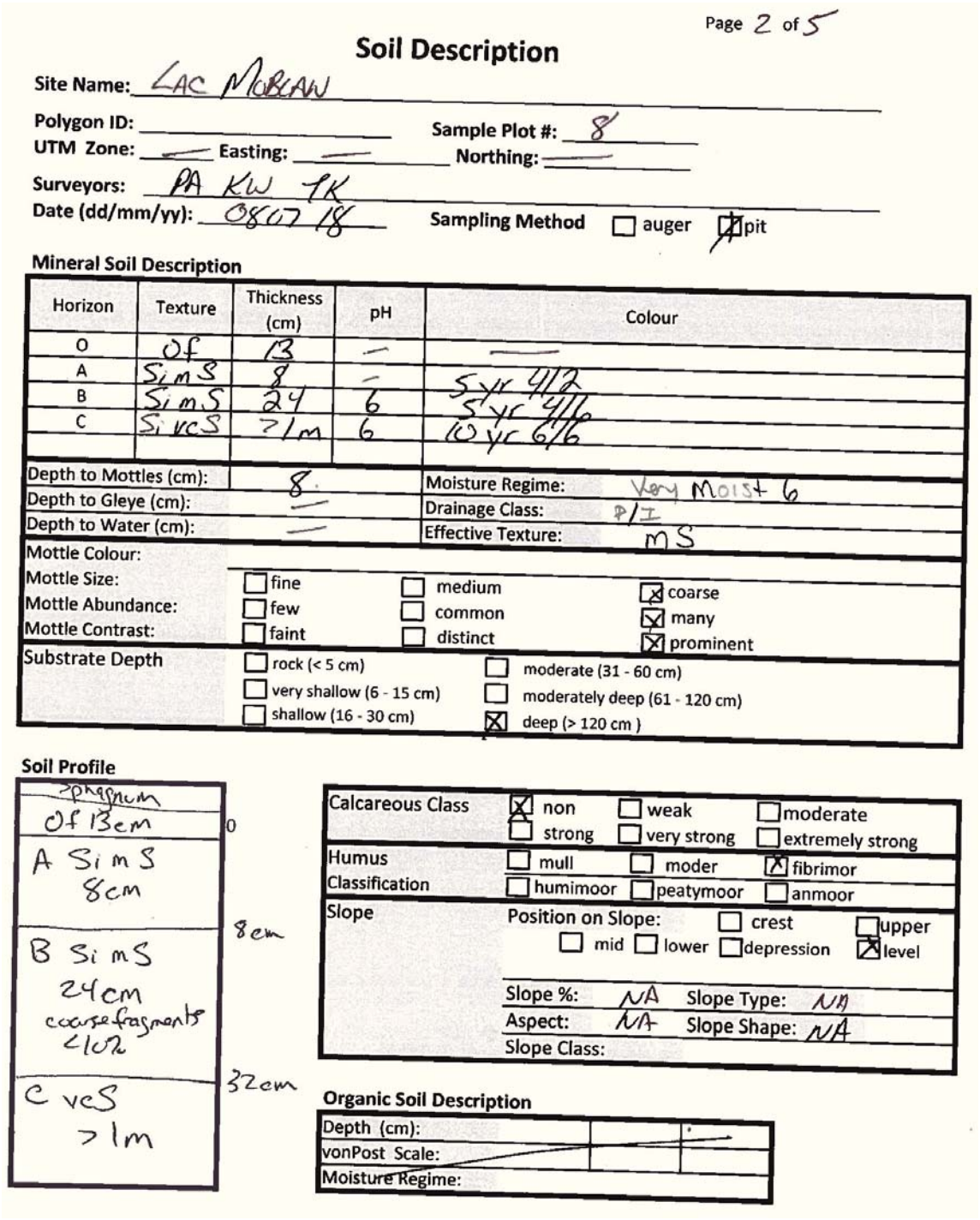
Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	8	7	8	23	96	13	16
Sb			1	1	4	13	16
Total	8	7	9	24	100		
Basal Area	16	14	18	48	Mean: 16		
Dead	—	—	—				

Stand Composition: Pj 96 Sb 4

Inclusion/ Complex

223 Mineral intermediate conifer swamp



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Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 8

UTM Zone: — Easting: — Northing: —

Surveyors: PA KW YK

Date (dd/mm/yy): 08 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	13	—	—
A	SiMS	8	—	5yr 4/2
B	SiMS	24	6	5yr 4/6
C	SivcS	>1m	6	10yr 6/6

Depth to Mottles (cm): 8	Moisture Regime: Very Moist 6
Depth to Gleye (cm): —	Drainage Class: P/I
Depth to Water (cm): —	Effective Texture: mS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☒ deep (> 120 cm)

Soil Profile

Sphagnum
Of 13cm — 0
A SiMS 8cm — 8cm
B SiMS 24cm coarse fragments <10% — 32cm
C vcS >1m

Calcareous Class	☒ non	☐ weak	☐ moderate	
	☐ strong	☐ very strong	☐ extremely strong	
Humus Classification	☐ mull	☐ moder	☒ fibrimor	
	☐ humimoor	☐ peatymoor	☐ anmoor	
Slope	Position on Slope:	☐ crest	☐ upper	
	☐ mid	☐ lower	☐ depression	☒ level
	Slope %: NA	Slope Type: NA		
	Aspect: NA	Slope Shape: NA		
	Slope Class:			

Organic Soil Description

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** ~~8~~ 8

Surveyors: PA KW ~~KW~~ TK JM

Date (dd/mm/yy): 08 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Reindeer lichen	N	N	N	A	✓	✓	
Bunchberry	N	N	N	O			
Sheep laurel	N	N	A	N			
Jack pine	D	A	N	N			
black spruce	O	O	N	N			
Pin cherry	N	O	N	N			
speckled alder	N	O	N	N			
Bebb's willow	N	O	N	N			
Interrupted fern	N	N	O	N			
Fly honeysuckle	N	N	O	N			
Dwarf bery	N	O	N	N			
Labrador tea	~~N~~	N	O	N			
old man's beard	N	A	A	N	↓	↓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)

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Management / Disturbance

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 8
Surveyors: PA KW TK JM
Date (dd/mm/yy): 08 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	2
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 8
Surveyors: PA KW TK JM
Date (dd/mm/yy): 08 07 18

Potential Wildlife Habitat

Vernal Pools	No	Snags	Yes
Hibernacula	No	Fallen logs	Yes

Wildlife

Species	Ev. Code	#	Notes
Snowshoe hare	FE	5	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 9 UTM Zone: 18U

Surveyors: PA KW TK JM Easting: 0505348

Date: (dd/mm/yy) 09 07 18 Northing: 5621036

Weather: Temp. °C 23 Wind Sp. 5 Wind Dir. W

Cloud Cover (1/10ths): 3/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	3	Sb > Pj
2 - 10 m	3	Bw > Sb > Bebb's willow
0.5 - 2 m	3	Lab. tea = sheep laurel > Bebb's willow > Bw
0 - 0.5 m	4	mossy peat moss > reindeer lichen > L.S. blueberry > creeping snowberry

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	O	N	N
Standing Snags	O	N	N	N
Deadfall/Logs	O	O	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species

Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Sb	2	7	3	12	52	14	14
Bw	8	1	1	10	43	10	12
Pj		1		1	5	13	15
Total	10	9	4	33	100		
Basal Area	20	18	8	46	Mean: 15		
Dead	—	—	—				

Stand Composition: Sb 52 Bw 43 Pj 5

Inclusion/ Complex

50

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Soil Description

Site Name: Lac Moblan

Polygon ID: _____ Sample Plot #: 9

UTM Zone: — Easting: — Northing: —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 090718 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	10	—	—
A	mS	6	6	5YR 6/1
B	mS	14	6	5YR 4/6
C				

Depth to Mottles (cm): Bem
Depth to Gleye (cm): —
Depth to Water (cm): —
Moisture Regime: Fresh (2)
Drainage Class: Well
Effective Texture:

Mottle Colour:
Mottle Size: ☐ fine ☐ medium ☒ coarse
Mottle Abundance: ☐ few ☐ common ☒ many
Mottle Contrast: ☐ faint ☐ distinct ☒ prominent

Substrate Depth
☐ rock (< 5 cm) ☐ moderate (31 - 60 cm)
☐ very shallow (6 - 15 cm) ☐ moderately deep (61 - 120 cm)
☒ shallow (16 - 30 cm) ☐ deep (> 120 cm)

Soil Profile

Of 10cm
A 6cm
B 14cm
≤ 20cm
Rock

0

Calcareous Class ☒ non ☐ weak ☐ moderate ☐ strong ☐ very strong ☐ extremely strong

Humus Classification ☐ mull ☐ moder ☒ fibrimor ☐ humimoor ☐ peatymoor ☐ anmoor

Slope
Position on Slope: ☐ crest ☐ upper ☐ mid ☐ lower ☐ depression ☐ level
Slope %: Slope Type:
Aspect: Slope Shape:
Slope Class:

Organic Soil Description NA

Depth (cm):		
vonPost Scale:		
Moisture Regime:		

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 9

Surveyors: PA TK KW JM

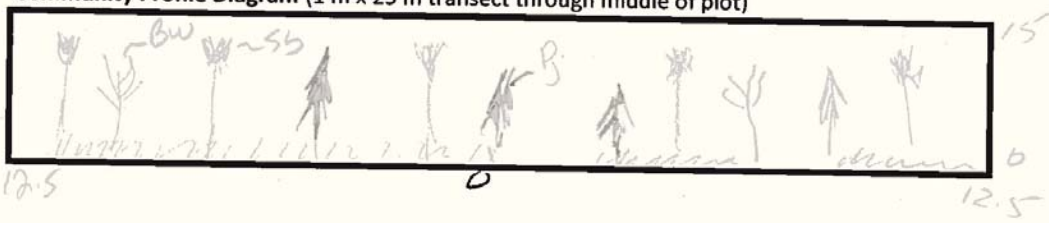
Date (dd/mm/yy): 09 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
black spruce	D	A	N	N	✓	✓	
white birch	O	A	N	N			
jack pine	A	A	N	N			
l.s. blueberry	N	N	N	A			
labrador tea	N	N	O	N			
bunchberry	N	N	N	A			
mossy peatmoss	N	N	N	D			
sleep layer	N	N	D	A			
coral lichen	N	N	N	O			
reindeer lichen	N	N	N	O	↓	↓	

Abundance Codes: N = None R = Rare (1-5) O = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) D = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



Management / Disturbance

Site Name: Lac Moblan Polygon ID: _____ Plot #: 9
Surveyors: PA TK KW JM
Date (dd/mm/yy): 09 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	1
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: Lac Moblan Polygon ID: _____ Plot #: 9
Surveyors: PA KW TK JM
Date (dd/mm/yy): 09 07 18

Potential Wildlife Habitat

Vernal Pools	No	Snags	✓
Hibernacula	No	Fallen logs	✓

Wildlife

Species	Ev. Code	#	Notes
		✓	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 2 of 5

Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 10

UTM Zone: — Easting: — Northing: —

Surveyors: PA TK KW JM

Date (dd/mm/yy): 08 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description NA

Horizon	Texture	Thickness (cm)	pH	Colour
O				
A				
B				NA
C				

Depth to Mottles (cm):	Moisture Regime:
Depth to Gleye (cm):	Drainage Class:
Depth to Water (cm):	Effective Texture:

Mottle Colour:	NA		
Mottle Size:	☐ fine	☐ medium	☐ coarse
Mottle Abundance:	☐ few	☐ common	☐ many
Mottle Contrast:	☐ faint	☐ distinct	☐ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☒ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile

Sphagnum 10cm 0

Oh 7

>60cm

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☐ fibrimor
	☒ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☐ mid	☒ lower	☐ depression ☐ level
	Slope %: 0 Code A	Slope Type:	Simple
	Aspect: NA	Slope Shape:	NA
	Slope Class: <	<1	

Organic Soil Description

Depth (cm):	>60		
vonPost Scale:	Oh7		
Moisture Regime:			

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 11

Surveyors: PA KW TK JM

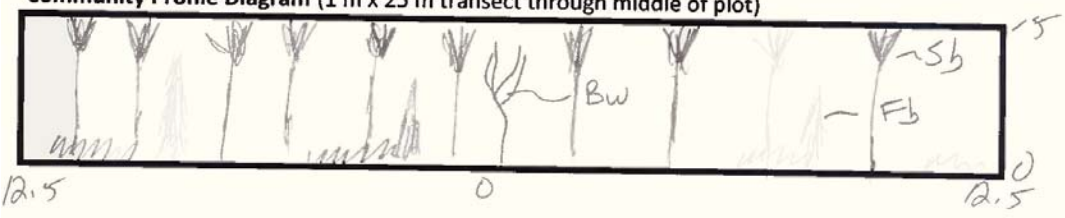
Date (dd/mm/yy): 08 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
midway peatmos	N	N	N	D	✓	✓	
l.s. blueberry	N	N	N	O			
reindeer lichen	N	N	N	A			
labrador tea	N	N	N	O			
sheep laurel	N	N	O	O			
Sb	D	A	O	O			
Bw	N	O	O	N			
interrupted fern	N	N	O	N			
bluebead lily	N	N	N	O			
bunchberry	N	N	N	O			
creeping snowberry	N	N	N	A			
balsam fir	N	O	N	N			
shewy mountain ash	N	O	O	N			
red elderberry	N	N	O	N			
goldthread	N	N	N	O			
old man's beard	N	O	O	N			
wild sasparilla	N	N	R	N			
oak fern	N	N	N	R			
pixie cup	N	N	N	R			
spinulose wood fern	N	N	O	N			
rose berry	N	N	N	O			
green alder	N	N	O	N			

Abundance Codes: N = None R = Rare (1-5) O = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) D = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 11
Surveyors: PA KW TK JM
Date (dd/mm/yy): 08 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	9
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MORAN Polygon ID: _____ Plot #: 11
Surveyors: PA TK KW JM
Date (dd/mm/yy): 08 07 18

Potential Wildife Habitat

Vernal Pools	No	Snags	No
Hibernacula	No	Fallen logs	No

Wildlife

Species	Ev. Code	#	Notes
Red squirrel	FE	1	Middens

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 11 UTM Zone: 18U

Surveyors: AA KW TK JM Easting: 0505856

Date: (dd/mm/yy) 08 07 18 Northing: 5621226

Weather: Temp. °C 27 Wind Sp. 10 Wind Dir. W

Cloud Cover (1/10ths): 2/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	4	Sb > Bw
2 - 10 m	2	balsam fir > green alder
0.5 - 2 m	2	green alder > Bebb's willow = labrador tea = sheep laurel
0 - 0.5 m	4	mudway peatmoss > red/brown moss = cl. stauburn/reindeer lichen.

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	A	O	N
Standing Snags	O	R	R	N
Deadfall/Logs	O	O	R	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species

Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Sb	17	20	19	56	90	15	16
Bw	1	0	5	6	10	13	9
Total	18	20	24	62	100		
Basal Area	36	40	48	124	Mean: 41		
Dead	/	/	/				

Stand Composition: Sb 90 Bw 10

Inclusion/ Complex /

50

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Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 11

UTM Zone: — Easting: — Northing: —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 08 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	18	—	—
A	SiMS	8	6	
B	MS	12+	6	5 YR 5/6
C				

Depth to Mottles (cm):	13	Moisture Regime:	Fresh (2)
Depth to Gleye (cm):	—	Drainage Class:	Well
Depth to Water (cm):	—	Effective Texture:	MS

Mottle Colour: 5 YR 4/6

Mottle Size:	☐ fine	☐ medium	☐ coarse
Mottle Abundance:	☐ few	☐ common	☐ many
Mottle Contrast:	☐ faint	☐ distinct	☐ prominent

Substrate Depth

☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
☒ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile

Of 12cm
0
Ae 8cm
MS
B 17+ cm
MS
± 26cm
Rock

Calcareous Class	☒ non ☐ weak ☐ moderate ☐ strong ☐ very strong ☐ extremely strong
Humus Classification	☐ mull ☐ moder ☒ fibrimor ☐ humimoor ☐ peatymoor ☐ anmoor
Slope	Position on Slope: ☐ crest ☐ upper ☒ mid ☐ lower ☐ depression ☐ level
	Slope %: 50 Slope Type: Simple
	Aspect: N Slope Shape: VL
	Slope Class: J

Organic Soil Description NA

Depth (cm):		
vonPost Scale:		
Moisture Regime:		

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 10

Surveyors: PA TK KW

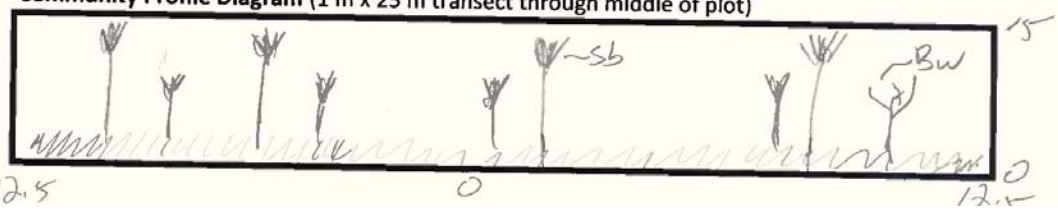
Date (dd/mm/yy): 08 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
goldthread	N	N	N	O	✓	✓	
bunchberry	N	N	N	O			
Serviceberry	N	N	O	N			
old man's beard	N	A	N	N			
oak fern	N	N	N	O			
white birch	N	O	N	N			
balsam fir	N	O	N	N			
black spruce	N	D	N	N			
Sch Pt clubmoss	N	D	N	O			
Midway peatmoss	N	N	N	D			
red brown peatmoss	N	N	N	A	✓	✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



Management / Disturbance

Site Name: Lac Moblan **Polygon ID:** _____ **Plot #:** 10
Surveyors: PA KW TR
Date (dd/mm/yy): 08 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	1
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	1
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

Wildlife Observations

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 10
Surveyors: PA KW TK
Date (dd/mm/yy): 08 07 18

Potential Wildlife Habitat

Vernal Pools	NIL	Snags	✓
Hibernacula	NIL	Fallen logs	✓

Wildlife

Species	Ev. Code	#	Notes

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 15 **UTM Zone:** 18U

Surveyors: PA KW TK JM **Easting:** 0506498

Date: (dd/mm/yy) 08 07 18 **Northing:** 5620887

Weather: Temp. °C 23 Wind Sp. 10 Wind Dir. NW

Cloud Cover (1/10ths): 5/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	4	SB >> BW
2 - 10 m	2	SB >> BW
0.5 - 2 m	2	Bebb's willow = green alder > labrador tea
0 - 0.5 m	4	bunchberry = 15% blueberry > 5% = goldthread

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	A	R	N
Standing Snags	O	O	N	N
Deadfall/Logs	O	O	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
SB	17	8	8	33	94	1.5	15
BW		1		1	3	1.0	15
Green alder			1	1	3	1.5	5
Total	17	9	9	35	100		
Basal Area	34	18	18	70	Mean: 23		
Dead	/	—	—				

Stand Composition: SB 94 BW 6 Green alder 6

Inclusion/ Complex NIL

50

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Soil Description

Site Name: Lac Moblan

Polygon ID: _____ **Sample Plot #:** 15

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 07 07 18 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	15	—	—
A	SiMS	14	—	10 YR 2/1
B	SiMS	21	6	10 YR 3/2 - <7% gravel
C		/		

Depth to Mottles (cm):	15	Moisture Regime:	Very fresh (3)
Depth to Gleye (cm):	—	Drainage Class:	MW - I
Depth to Water (cm):	—	Effective Texture:	mS

Mottle Colour:	2.5 YR 3/6		
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent
Substrate Depth	☐ rock (< 5 cm)	☒ moderate (31 - 60 cm)	
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)	
	☐ shallow (16 - 30 cm)	☐ deep (> 120 cm)	

Soil Profile

Of 15cm	0	
Ah 95 SiMS Ae 5		14cm
B 21cm SiMS		35cm
ROCK		

Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☒ mid	☐ lower	☐ depression ☐ level
	Slope %: 30	Slope Type:	Simple
	Aspect: N	Slope Shape:	
	Slope Class:	F. strong	

Organic Soil Description N/A

Depth (cm):		—
vonPost Scale:	/	
Moisture Regime:	/	

Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 15

Surveyors: PA TK KW JM

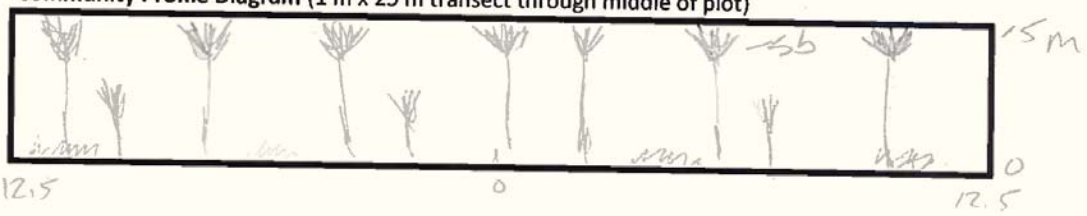
Date (dd/mm/yy): 07 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Sparnum sp	N	N	N	D	✓	✓	
Sheep laurel	N	N	N	A			
bunchberry	N	N	N	A			
Labrador tea	N	N	O	N			
black spruce	O	O	O	O			
Bebb's willow	N	N	O	O			
l.s. blueberry	N	N	N	O			
green alder	N	N	A	N			
coral lichen	N	N	N	O			
reindeer lichen	N	N	N	O			
staff club moss	N	N	N	O			
Canada mayflower	N	N	N	O			
goldthread	N	N	N	O			
bracken fern	N	N	O	N			
Canada blue joint	N	N	O	N			
jack pine	N	O	O	N			
white birch	N	O	O	N			
red/brow peatmoss	N	N	N	A			
interrupted fern	N	N	O	N			
old man's beard	O	O	O	N			
sheep laurel	N	N	O	N			
midway peatmoss	N	N	N	D	✓	✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 15
Surveyors: PA KW TK JM
Date (dd/mm/yy): 07 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	1
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MORAN Polygon ID: _____ Plot #: 15
Surveyors: PA KW TK JM
Date (dd/mm/yy): 07 07 18

Potential Wildife Habitat

Vernal Pools	NIL	Snags	NIL
Hibernacula	NIL	Fallen logs	NIL

Wildlife

Species	Ev. Code	#	Notes
Red Squirrel	FE	1	Middens

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page / of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 10 UTM Zone: 18U

Surveyors: PA TK KW JM Easting: 0505778

Date: (dd/mm/yy) 08 07 18 Northing: 5621396

Weather: Temp. °C 28 Wind Sp. 10 Wind Dir. W

Cloud Cover (1/10ths): 3/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	2	Sb
2 - 10 m	3	Sb >> Bw > showy mountain ash
0.5 - 2 m	4	Sb = speckled alder = Bw > sleep laurel
0 - 0.5 m	4	midway peat moss > reed peat moss > stiff clubmoss = creeping snowberry

Cover Codes: 1 = < 10% 2 = 10-24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	A	O	N
Standing Snags	A	A	O	N
Deadfall/Logs	A	A	O	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species

Prism Factor _____

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Sb	6	2	5	13	52	14	15
Bw	6	4	0	10	40	12	10
Speckled alder		1	1	2	8	–	–
Total	12	7	6	25	100		
Basal Area	24	14	12	50	Mean: 16		
Dead	–	–	–				

Stand Composition: Sb ~~52~~ 52 Bw 40 Gr. alder 8

Inclusion/ Complex NIL

Ag B D7 74/11 · Disme Pa Cut Swamp
26 27 21 23 24 25

Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 16

UTM Zone: — Easting: — Northing: —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 10 07 18 Sampling Method ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O		10	—	
A		7	6	2.5 Y 6/1
B		15	6	5 YR 3/4
C		>1M	—	7.5 YR 4/6

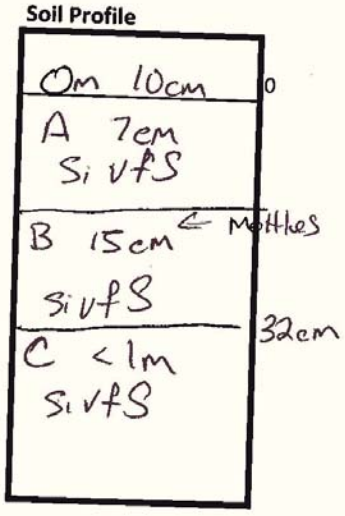
Depth to Mottles (cm): 9
Depth to Gleye (cm): —
Depth to Water (cm): —

Moisture Regime: Very Moist (6)
Drainage Class: Poor - Imperfect
Effective Texture: vfS

Mottle Colour: 5 YR 3/4
Mottle Size: ☐ fine ☐ medium ☒ coarse
Mottle Abundance: ☐ few ☐ common ☒ many
Mottle Contrast: ☐ faint ☐ distinct ☒ prominent

Substrate Depth
☐ rock (< 5 cm) ☐ moderate (31 - 60 cm)
☐ very shallow (6 - 15 cm) ☐ moderately deep (61 - 120 cm)
☐ shallow (16 - 30 cm) ☒ deep (> 120 cm)

Soil Profile



Calcareous Class: ☒ non ☐ weak ☐ moderate ☐ strong ☐ very strong ☐ extremely strong

Humus Classification: ☐ mull ☐ moder ☐ fibrimor ☒ humimoor ☐ peatymoor ☐ anmoor

Slope
Position on Slope: ☐ crest ☒ upper ☐ mid ☐ lower ☐ depression ☐ level
Slope %: E 9-15% Slope Type: simple
Aspect: N Slope Shape: CC
Slope Class: moderate

Organic Soil Description NA

Depth (cm):
vonPost Scale:
Moisture Regime:

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 16

Surveyors: PA KW TK JM

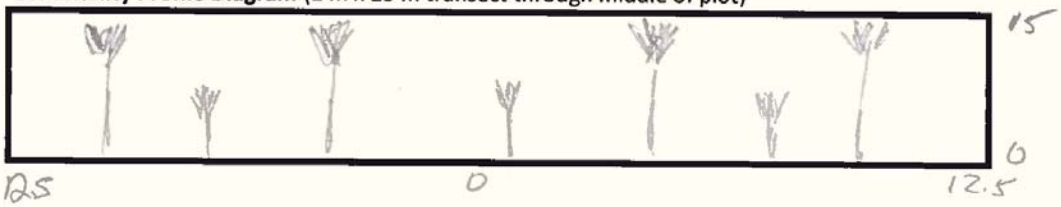
Date (dd/mm/yy): 10 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
black spruce	D	A	N	N	✓	✓	
reindeer lichen	N	N	N	O			
cera / lichen	N	N	N	O			
Bebb's willow	N	O	R	N			
Juno berry	N	O	R	N			
l.s. blueberry	N	N	N	A			
Canadian blueberry	N	N	N	O			
Sheep laurel	N	N	R	N			
shiny mountain ash	N	R	N	N			
Middle peat moss	N	N	N	D			
labrador tea	N	N	O	N			
creeping snowberry	N	N	N	O			
Hue head lily	N	N	N	O			
Spotted dog lichen	N	N	N	O			
white birch	N	R	N	N			
gold thread	N	N	N	O			
old man's beard	A	A	N	N			
Canada may flower	N	N	N	O	↓	↓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 16
Surveyors: PA TK KW JM
Date (dd/mm/yy): 10 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	2
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 16
Surveyors: PA TK KW JM
Date (dd/mm/yy): 10 07 18

Potential Wildife Habitat

Vernal Pools	No	Snags	Yes
Hibernacula	No	Fallen logs	Yes

Wildlife

Species	Ev. Code	#	Notes
WTSP	VO	1	
DEJU	VO	2	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 16 UTM Zone: 18 U

Surveyors: PA TK KW JM Easting: 0506598

Date: (dd/mm/yy) 10 07 18 Northing: 5620811

Weather: Temp. °C 11 Wind Sp. 5 Wind Dir. W

Cloud Cover (1/10ths): 10/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	3	SB
2 - 10 m	2	SB
0.5 - 2 m	3	lab tea > L.S. blueberry > sheep laurel > serviceberry
0 - 0.5 m	4	mid moss > L.S. blueberry > creeping snowberry > reindeer lichen

Cover Codes: 1 = < 10% 2 = 10 -24 % 3 = 25 - 59% 4 = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	A	A	N	N
Standing Snags	O	O	N	N
Deadfall/Logs	A	O	N	N

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon

Plot Size (m^2): ☐ 1 ☐ 25 ☒ 100 ☐ 400

Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species

Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
SB	20	16	15	51	100	15	11
Total	20	16	15	51	100		
Basal Area	40	32	30	102	Mean: 34		
Dead							

Stand Composition: SB 100

Inclusion/ Complex NIL

222

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Soil Description

Site Name: LAC MORGAN

Polygon ID: _____ **Sample Plot #:** 17

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: PA KW PK JM

Date (dd/mm/yy): 06 07 18 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

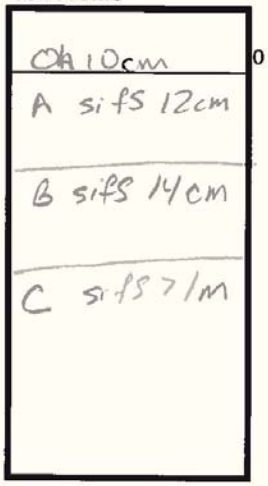
Horizon	Texture	Thickness (cm)	pH	Colour
O	OL	10	—	—
A	SifS	12	—	2.5Y 5/2
B	SifS	14	6	7.5YR 4/6
C	SifS	>1m	6	10YR 7/6

Depth to Mottles (cm):	15	Moisture Regime:	Very moist 6
Depth to Gleye (cm):	—	Drainage Class:	P/I
Depth to Water (cm):	—	Effective Texture:	fS

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☒ deep (> 120 cm)

Soil Profile



Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☐ fibrimor
	☒ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope: ☐ crest ☐ upper ☐ mid ☐ lower ☐ depression ☐ level		
	Slope %:	Slope Type:	
	Aspect:	Slope Shape:	
	Slope Class:		

Organic Soil Description NA

Depth (cm):		
vonPost Scale:		
Moisture Regime:		

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Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 17

Surveyors: PA KW TK JM

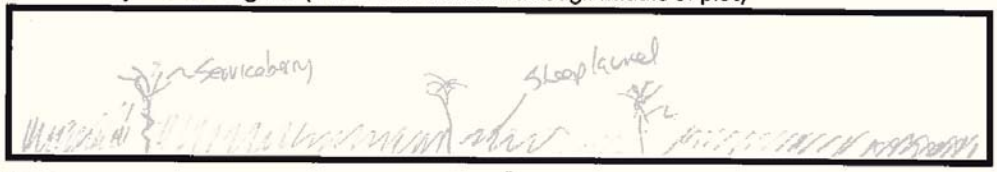
Date (dd/mm/yy): 06 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Sleep laurel	N	N	O	N	✓	✓	
Jack pine	N	R	N	N			
Showy mountain ash	N	R	N	N			
Bebb's willow	N	R	N	N			
Black spruce	N	R	N	N			
White birch	N	O	N	N			
Low sweet blueberry	N	N	A	N			
Speckled alder	N	N	O	N			
Reindeer lichen	N	N	A	N			
Spiral lichen	N	N	A	N			
Canada mayflower	N	N	N	O			
Bluebead lily	N	N	N	R			
Bunchberry	N	N	N	O			
Trembling aspen	N	R	N	N			
Moccasin flower	N	N	N	R	✓	✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: Lac Moblan Polygon ID: _____ Plot #: 17
Surveyors: PA KW TK JM
Date (dd/mm/yy): 06 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

Wildlife Observations

Site Name: LAC MOBLAN **Polygon ID:** _____ **Plot #:** 17
Surveyors: PA KW TC JM
Date (dd/mm/yy): 06 07 18

Potential Wildlife Habitat

Vernal Pools	ND	Snags	ND
Hibernacula	ND	Fallen logs	ND

Wildlife

Species	Ev. Code	#	Notes
WTSP	VO	1	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: Lac Moblan

Polygon ID: _____ **Sample Plot #:** 17 **UTM Zone:** 18U

Surveyors: PA TK KW JM **Easting:** 0506840

Date: (dd/mm/yy) _____ **Northing:** 5620581

Weather: Temp. °C 7 Wind Sp. 2 Wind Dir. N

Cloud Cover (1/10ths): 1/10 Precipitation: Nil

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m		None
2 - 10 m		None
0.5 - 2 m	4	Semi. berry = Sheep laurel > Bebb's willow > labrador tea
0 - 0.5 m	4	low sweet blueberry > lab. tea > reindeer lichen

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	R	A	N
Standing Snags	A	A	N	N
Deadfall/Logs	R	N	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: [X] plot [ ] polygon

Plot Size (m^2): [ ] 1 [ ] 25 [X] 100 [ ] 400

Plot Shape: [X] circular [ ] square [ ] rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
No trees in plot							
Total					100		
Basal Area					Mean:		
Dead							
Stand Composition:	NA						
Inclusion/ Complex	None						

Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 18

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: PA KW TK JM

Date (dd/mm/yy): 07 07 18 **Sampling Method** ☐ auger ☒ pit

Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	OF	15	—	—
A				
B				
C				

Depth to Mottles (cm):	—
Depth to Gleye (cm):	—
Depth to Water (cm):	—
Moisture Regime:	
Drainage Class:	NA
Effective Texture:	

Mottle Colour:			
Mottle Size:	☐ fine	☐ medium	☐ coarse
Mottle Abundance:	☐ few	☐ common	☐ many
Mottle Contrast:	☐ faint	☐ distinct	☐ prominent

Substrate Depth	☒ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☐ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile

OF 15cm

0

Bedrock

Calcareous Class	☒ non	☐ weak	☐ moderate	
	☐ strong	☐ very strong	☐ extremely strong	
Humus Classification	☐ mull	☐ moder	☒ fibrimor	
	☐ humimoor	☐ peatymoor	☐ anmoor	
Slope	Position on Slope:	☐ crest	☒ upper	
	☐ mid	☐ lower	☐ depression	☐ level
	Slope %: 4.5	Slope Type:		
	Aspect: W	Slope Shape:		
	Slope Class:			

Organic Soil Description NA

Depth (cm):	—	
vonPost Scale:		
Moisture Regime:		

Species List & Community Profile

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 19

Surveyors: PA TK KW SM

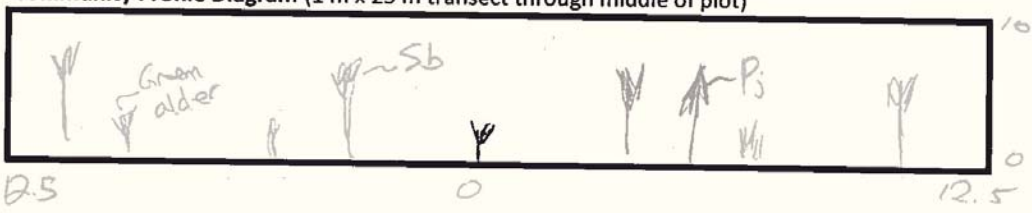
Date (dd/mm/yy): 07 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	>10	2 - 10	0.5 - 2	0 - 0.5			
Sheep laurel	N	N	O	A	✓	✓	
reindeer lichen	N	N	N	A			
Cereal lichen	N	N	N	A			
sphagnum	N	N	N	O			
Canada Mayflower	N	N	N	O			
Bunchberry	N	N	N	O			
Twinflower	N	N	N	R			
Beaked willow	N	N	O	O			
Jack pine	N	N	O	R			
Black spruce	N	N	O	R			
White birch	N	N	R	N			
Trembling aspen	N	N	R	N			
L.S. blueberry	N	N	N	A			
Mucasin flower	N	N	N	R			
Labrador tea	N	N	N	O			
Ground pine	N	N	N	O			
Speckled berry	N	N	O	N			
Pin cherry	N	N	O	N			
Green alder	N	N	O	N			
red thread moss	N	N	N	A	✓	✓	
Cloudberry						✓	
hobble bush						✓	
Wolf claw clubmoss						✓	
Sweet ground cherry						✓	
Mossberry						✓	

Abundance Codes: **N** = None **R** = Rare (1-5) **O** = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) **D** = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



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Management / Disturbance

Site Name: Lac Moblan **Polygon ID:** _____ **Plot #:** 19
Surveyors: PA TK KW JM
Date (dd/mm/yy): 07 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	1 – fuel barrels
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent

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Wildlife Observations

Site Name: LAC MOBLAN Polygon ID: _____ Plot #: 19
Surveyors: PA KW TK JM
Date (dd/mm/yy): 07 07 18

Potential Wildlife Habitat

Vernal Pools	No	Snags	No
Hibernacula	NA	Fallen logs	NA

Wildlife

Species	Ev. Code	#	Notes
Black Bear	SC	1	

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

Page 1 of 5

Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ Sample Plot #: 19 UTM Zone: 18U

Surveyors: PA KW TK JM Easting: 0506838

Date: (dd/mm/yy) 07 07 18 Northing: 5620244

Weather: Temp. °C 26 Wind Sp. 10 Wind Dir. N

Cloud Cover (1/10ths): 6/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m	✓	None
2 - 10 m	2	Sb = Pj > Bw > Mountain ash
0.5 - 2 m	2	green alder > labrador tea > sh. mt ash > Sb
0 - 0.5 m	3	feather lichen > red lichen > sphagnum

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	O	N	N
Standing Snags	R	R	N	N
Deadfall/Logs	R	R	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon

Plot Size (m^2): ☐ 1 ☐ 25 ☒ 100 ☐ 400

Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Sb	1	2	1	4	57	7	10
Pj	1	0	2	3	43	7	10
Total	2	2	3	7	100		
Basal Area	4	4	6	14	Mean: 3.8		
Dead	1						

Stand Composition:

Inclusion/ Complex

Page 2 of 5

Soil Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 19

UTM Zone: — **Easting:** — **Northing:** —

Surveyors: _____

Date (dd/mm/yy): 07 07 18 **Sampling Method** ☐ auger ☒ pit

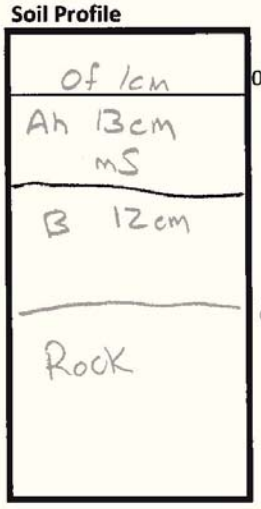
Mineral Soil Description

Horizon	Texture	Thickness (cm)	pH	Colour
O	Of	1		—
A	mS	13	6	2.5Y 2/1
B	mS	12	6	2.5Y 4/4
C				—

Depth to Mottles (cm):	13	Moisture Regime:	Fresh (2).
Depth to Gleye (cm):	—	Drainage Class:	Well (W)
Depth to Water (cm):	—	Effective Texture:	mS
Mottle Colour:	5yr 3/4		
Mottle Size:	☐ fine	☐ medium	☒ coarse
Mottle Abundance:	☐ few	☐ common	☒ many
Mottle Contrast:	☐ faint	☐ distinct	☒ prominent

Substrate Depth	☐ rock (< 5 cm)	☐ moderate (31 - 60 cm)
	☐ very shallow (6 - 15 cm)	☐ moderately deep (61 - 120 cm)
	☒ shallow (16 - 30 cm)	☐ deep (> 120 cm)

Soil Profile



Calcareous Class	☒ non	☐ weak	☐ moderate
	☐ strong	☐ very strong	☐ extremely strong
Humus Classification	☐ mull	☐ moder	☒ fibrimor
	☐ humimoor	☐ peatymoor	☐ anmoor
Slope	Position on Slope:	☐ crest	☐ upper
	☐ mid	☐ lower	☐ depression ☐ level
	Slope %:	Slope Type:	
	Aspect:	Slope Shape:	
	Slope Class:		

Organic Soil Description NA

Depth (cm):			
vonPost Scale:			
Moisture Regime:			

Species List & Community Profile

Site Name: Lac Moblan

Polygon ID: _____ **Sample Plot #:** 18

Surveyors: PA RW TK JM

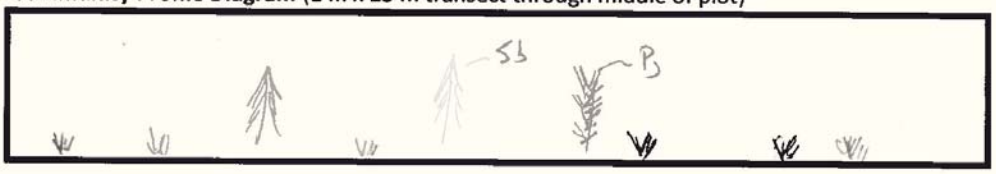
Date (dd/mm/yy): 07 07 18

Species Name/Code	Vegetation Abundance at Height (m)				In Plot	In Poly	Voucher #
	> 10	2 - 10	0.5 - 2	0 - 0.5			
Sheep laurel	N	N	D	A	✓	✓	
reindeer lichen	N	N	N	A	✓	✓	
Coral lichen	N	N	N	A	✓	✓	
sphagnum	N	N	N	D	✓	✓	
Canada may flower	N	N	N	O	✓	✓	
Bunchberry	N	N	N	O	✓	✓	
Twin flower	N	N	N	R	✓	✓	
Bearberry (kinnikinnick)	N	N	O	O	✓	✓	
Jack pine	N	O	O	R	✓	✓	
Black spruce	N	O	O	R	✓	✓	
white birch	N	R	R	N	✓	✓	
trembling aspen	N	R	R	N	✓	✓	
Lg. blueberry	N	N	N	A	✓	✓	
Menziesia flower	N	N	N	R	✓	✓	
Labrador tea	N	N	N	O	✓	✓	
Ground pine	N	N	N	O	✓	✓	
Squashberry	N	N	O	O	✓	✓	
Pin cherry	N	N	O	N	✓	✓	
Green alder	N	N	O	N	✓	✓	
red/brown peatmoss	N	N	N	D	✓	✓	
Spinulose wood fern						✓	
Wiltshire club moss						✓	
Sexton grandfather						✓	
Twinflower						✓	
Bearberry						✓	

Abundance Codes: N = None R = Rare (1-5) O = Occasional (5 - 100 clumps)
A = Abundant (100 to 1000 or 10% coverage) D = Dominant , > 35% coverage)

Species Code: first 4 letters of genus, first 3 letters of species

Community Profile Diagram (1 m x 25 m transect through middle of plot)



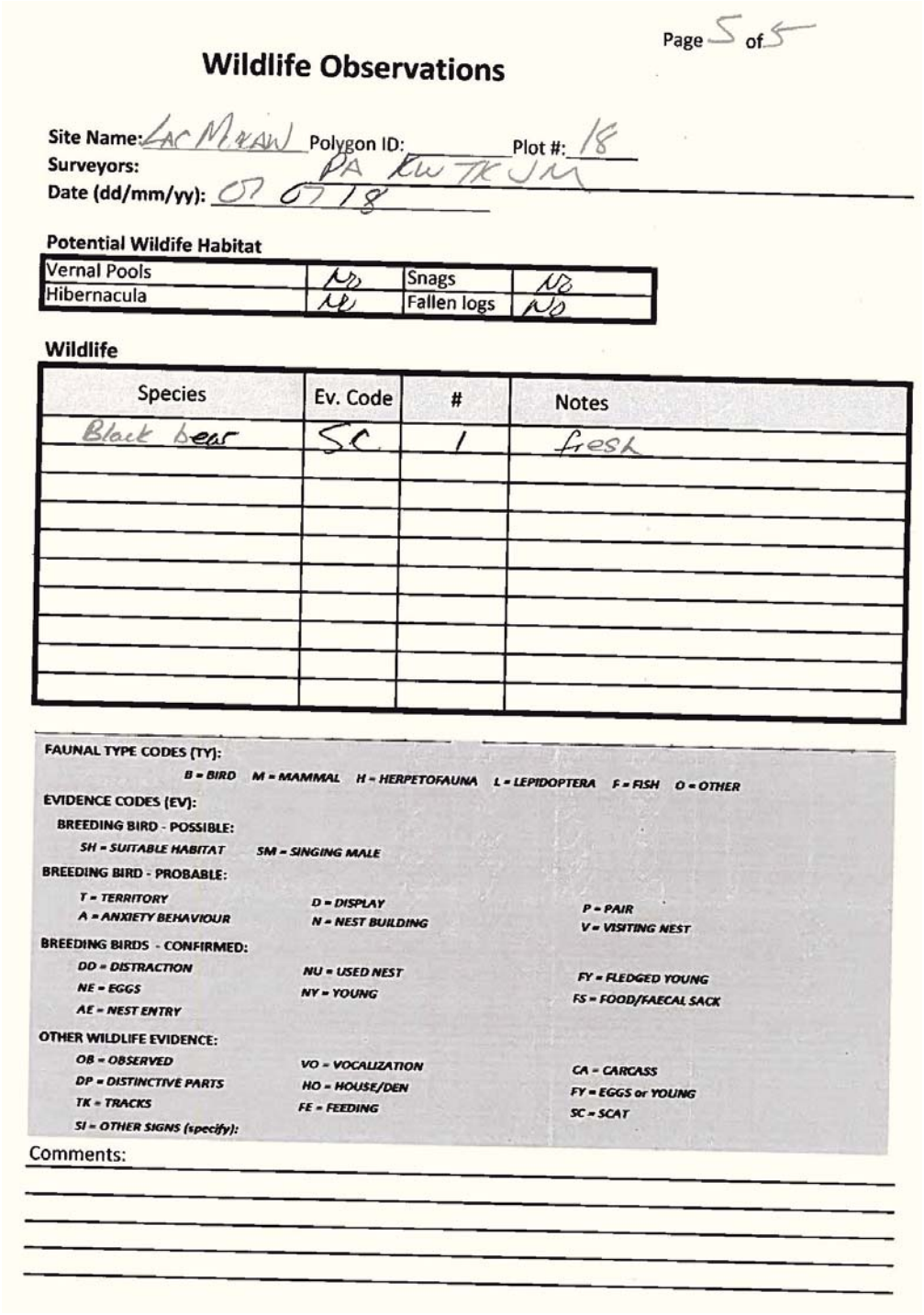
Management / Disturbance

Site Name: Lac Moran **Polygon ID:** _____ **Plot #:** 18
Surveyors: PA KW TK JM
Date (dd/mm/yy): 07 07 18

Management / Disturbance

Disturbance / Extent	0	1	2	3	Score
intensity of logging	none	fuel wood	selective	diameter limit	
extent of logging	none	local	widespread	extensive	
sugar bush operations	none	light	moderate	heavy	
extent of operations	none	local	widespread	extensive	
gaps in canopy	none	small	intermediate	large	
extent of gaps	none	local	widespread	extensive	
livestock grazing	none	light	moderate	heavy	
extent of grazing	none	local	widespread	extensive	
alien species	none	occasional	abundant	dominant	
extent of alien species	none	local	widespread	extensive	
plantings / plantation	none	occasional	abundant	dominant	
extent of plantation	none	local	widespread	extensive	
tracks and trails	none	faint	well marked	tracks	
extent of tracks and trails	none	local	widespread	extensive	
dumping	none	light	moderate	heavy	
extent of dumping	none	local	widespread	extensive	
earth displacement	none	light	moderate	heavy	
extent of displacement	none	local	widespread	extensive	
recreational use	none	light	moderate	heavy	
extent of use	none	local	widespread	extensive	
noise	none	slight	moderate	intense	
extent of noise	none	local	widespread	extensive	
disease/death of trees	none	light	moderate	heavy	
extent of disease/death	none	local	widespread	extensive	
wind throw	none	light	moderate	heavy	1
extent of wind throw	none	local	widespread	extensive	
browse	none	light	moderate	heavy	
extent of browse	none	local	widespread	extensive	
beaver activity	none	light	moderate	heavy	
extent of beaver activity	none	local	widespread	extensive	
flooding	none	light	moderate	heavy	
extent of flooding	none	local	widespread	extensive	
fire	none	light	moderate	heavy	
extent of fire	none	local	widespread	extensive	
ice damage	none	light	moderate	heavy	
extent of damage	none	local	widespread	extensive	
other	none	light	moderate	heavy	
extent	none	local	widespread	extensive	

Score = intensity x extent



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Wildlife Observations

Site Name: LAC MORAN Polygon ID: Plot #: 18
Surveyors: PA KW TK JM
Date (dd/mm/yy): 07 07 18

Potential Wildlife Habitat

Vernal Pools	ND	Snags	ND
Hibernacula	ND	Fallen logs	ND

Wildlife

Species	Ev. Code	#	Notes
Black bear	SC	1	fresh

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRDS - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS or YOUNG
TK = TRACKS FE = FEEDING SC = SCAT
SI = OTHER SIGNS (specify):

Comments:

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Stand Description

Site Name: LAC MOBLAN

Polygon ID: _____ **Sample Plot #:** 18 **UTM Zone:** 18U

Surveyors: PA TK KW JM **Easting:** 0506870

Date: (dd/mm/yy) 07 07 18 **Northing:** 5620366

Weather: Temp. °C 27 Wind Sp. 5 Wind Dir. W
Cloud Cover (1/10ths): 6/10 Precipitation: NIL

Stand Description

Height Class	Cover	Top 4 Species in Order of Decreasing Dominance (>> much greater than; > greater than; = equal to)
> 10 m		None
2 - 10 m	2	Pj > Sb > BW
0.5 - 2 m	3	Sheep laurel > lab tea > Bebb's willow > spruceberry
0 - 0.5 m	4	reindeer lichen > mid wavy peat moss = Ls. blueberry, cool lichen

Cover Codes: **1** = < 10% **2** = 10 -24 % **3** = 25 - 59% **4** = > 60%

Size Class Analysis

Size Class (cm)	< 10	10 - 24	25-50	> 50
Live	O	O	N	N
Standing Snags	N	N	N	N
Deadfall/Logs	R	R	N	N

Abundance Codes: **N** = None **R** = Rare **O** = Occasional **A** = Abundant

Sampling

Sampling Scale: ☒ plot ☐ polygon
Plot Size (m^2): ☐ 1 ☐ 25 ☒ 100 ☐ 400
Plot Shape: ☒ circular ☐ square ☐ rectangle

Prism Tree Tally by Species Prism Factor 2

Species	Tally 1	Tally 2	Tally 3	Total	Relative Average	Average Height	Average Diameter
Pj	1	4	1	6	60	7	10
Sb			4	4	40	7	10
Total	1	4	5	10	100		
Basal Area	2	8	10	20	Mean: 6.7		
Dead							

Stand Composition:

Inclusion/ Complex

BO 105 Very shallow dry to fresh stand