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## NATURAL HERITAGE STUDY

for

Ferguson Lake Road Reconstruction  
Township of Greater Madawaska  
Renfrew County

**November 2020**



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**Submitted To:**  
Greenview Environmental Management  
13 Commerce Court  
Bancroft, ON  
K0L 1C0

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Renfrew County

Prepared by Ainley Group

November 2020

Prepared By:

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## 1.0 INTRODUCTION

Ainley Group was retained by Greenview Environmental Management (Greenview) to conduct a Natural Heritage Study (NHS) relating to the proposed reconstruction of Ferguson Lake Road from Kennelly Mountain Road to 200 m south of Campground Side Road, within the Township of Greater Madawaska, Renfrew County (**Figure 1**).

The proposed reconstruction may require modifications to the roadway footprint (i.e. straightening of existing curves) to accommodate design speed upgrades (Greenview is reviewing 60/70 kph, 70 kph, and 90 kph road alignments). The 60/70 kph reconstruction alignment and existing site conditions at the time of field investigations are shown on **Figures 2 - 21**.

## 2.0 PURPOSE OF THE REPORT AND SCOPE OF WORK

This report is being prepared to document the environmental features of the project limits and to provide an overview of potential impacts from the undertaking on the study area environment in consideration of Provincial and municipal planning policies.

The scope of work for this investigation was completed per the Ainley Group proposal dated January 20, 2020, and any subsequent updates based on project limit revisions identified by Greenview. The following aspects have been addressed through desktop review and field investigations as part of the NHS for the proposed development on the subject property:

- Vegetation and vegetation communities per the Ecological Land Classification (ELC).
- Fish and fish habitat review.
- Migratory breeding bird surveys.
- Eastern Whip-poor-will surveys.
- Species at risk (SAR) bat surveys.
- General SAR / SAR habitat review for other species noted during the background review.
- Significant features on the subject property and surrounding lands.
- Birds, wildlife, and herpetofaunal species and habitat.

It should be noted that for the purposes of the NHS, the study limits extended 50 m beyond the edge of the 90 kph alignment at those locations where the alignment is proposed to shift outside of the existing road alignment.

## 3.0 SOURCES OF EXISTING BASELINE INFORMATION

The following resources were identified and used to review background data on terrestrial and aquatic species within or in close proximity to the study area as part of the existing conditions and impact assessment.

- MNRF – Land Information Ontario (LIO) / Natural Heritage Make-a-Map review for natural heritage data.
- MNRF – Pembroke District Office – SAR, fisheries, and natural heritage information provided by MNRF Management Biologist on June 29, July 15, and September 8, 2020 (**Appendix A**).
- Natural Heritage Information Centre (NHIC) – SAR information provided by NHIC on July 13, 2020 (**Appendix A**).
- Ebird - review for bird species observation data.
- Ontario Breeding Bird Atlas (OBBA) – review for bird species observation data.
- Ontario Reptile and Amphibian Atlas (ORAA) – review for herpetofaunal species observation data.
- iNaturalist – review for wildlife and vegetation species observation data.
- Aerial Photographs – Review aerial photographs of the study area.

Details pertaining to the above information sources and available information were utilized to compile existing conditions information in the study area, and are summarized in the existing conditions section of the report.

The sections below summarize the above information sources and available information.

#### MNRF LIO / Natural Heritage Make-a-Map (MNRF, 2020)

Mapping available from LIO and Natural Heritage Make-a-map identified ten (10) watercourses, including Constant Creek, and unnamed tributaries of Constant Creek and Ferguson Lake, within the project limits. Two (2) evaluated wetlands Ferguson Lake Wetland (Provincially Significant), and McNulty's Lake Wetland (non-Provincially significant), were identified within the project limit boundaries, as well as several other unevaluated wetlands. No Areas of Natural or Scientific Interest (ANSIs) were identified within the subject property boundaries. Information provided by the NHIC also indicated terrestrial fauna species of concern present within the area, including Butternut (END), Pale-bellied Frost Lichen (END), Barn Swallow (THR), Eastern Meadowlark (THR), Eastern Wood-pewee (SC), Hill's Pondweed (SC), Snapping Turtle (SC), and a restricted species in proximity to the project limits.

#### MNRF Pembroke District Office – June 29, July 15, and September 8, 2020

The Pembroke District MNRF provided information on SAR, fisheries, and natural heritage features including mitigation measures and timing windows to protect SAR and fish habitat. Additional information pertaining to SAR is provided in **Section 6.6.1**, and correspondence from the MNRF is provided in **Appendix A**.

Natural Heritage Information Centre – July 13, 2020

The NHIC provided information on SAR occurrences within the project limits. Species identified by NHIC include; American Ginseng (END), Butternut (END), Blanding’s Turtle (THR), Barn Swallow (THR), Eastern Meadowlark (THR), and Snapping Turtle (SC). Additional information pertaining to SAR is provided in **Section 6.6.1**, and correspondence from the MNR is provided in **Appendix A**.

Ebird (Cornell Lab of Ornithology, 2020)

Ebird was reviewed to determine observations of bird species (including SAR) which have historically occurred in the study area.

Ontario Breeding Bird Atlas (Bird Studies Canada, 2020)

OBBA was reviewed to determine observations of bird species (including SAR) which have historically occurred in the study area.

Ontario Reptile and Amphibian Atlas (Ontario Nature, 2020)

ORAA was reviewed to determine observations of herpetofaunal species (including SAR) which have historically occurred in the study area.

iNaturalist (California Academy of Sciences and the National Geographic Society, 2020)

iNaturalist was reviewed to determine observations of wildlife and vegetation species (including SAR) which have historically occurred in the study area.

Aerial Photographs

Aerial photographs of the study area were reviewed to observe current conditions as well as changes in the study area to better understand the site ecology. The available imagery shows changes to the alignment of Ferguson Lake Road in the area of Campground Side Road between 2013 and 2016. No other notable changes are evident.

#### **4.0 DATA COLLECTION METHODOLOGY**

The following field survey protocols were completed to assess and document the presence of vegetative, wildlife, migratory and breeding birds, and herpetofaunal species within the study area. During the field survey, emphasis was placed on species at risk with the potential to occur within the study area. Field surveys for respective ecological features were completed in accordance with the following methodology:

## **Vegetation**

Vegetation field surveys for species composition, and community mapping in accordance with the Ecological Land Classification system, were completed within the study area at those locations where the proposed alignment was interpreted to leave the existing road footprint (i.e. areas where vegetation removal will be required). These surveys were completed on June 9, 12, and 16 and July 8, 2020. Photographs of the identified vegetation communities are shown in **Appendix B**, and ELC field forms are included in **Appendix C**.

## **Migratory and Breeding Birds**

Surveys of breeding birds were completed according to the protocol developed by the *Ontario Breeding Bird Atlas* (OBBA, 2001), including both point counts and incidental observations. The following is a general list of the guidelines that were followed:

- Point counts undertaken for five-minute intervals.
- Representative locations in different habitats were selected for point count surveys.
- Point count locations were established so as to prevent duplicate counts.
- Incidental site observations were also recorded.
- At least two site visits were completed between May 24 and July 10, with all initial visits completed by the third week in June.
  - Surveys were completed on June 5 and July 8, 2020.

In addition to the above, species specific (Bobolink / Eastern Meadowlark / Eastern Whip-poor-will) surveys were completed as outlined below.

### **Bobolink / Eastern Meadowlark Surveys (per MNRF protocol; MNRF, 2011)**

- Establishment of point count stations (shown on **Figures 12 - 21**) at approximately 250 m intervals.
- Point count surveys at the identified stations were completed under field conditions with no precipitation, no or low wind speed, and good visibility. Weather conditions including wind, cloud cover, precipitation, and temperature were recorded during field events. GPS coordinates were recorded for each point count location.
- Surveys commenced at dawn and continued until no later than 9 am.
- Point count surveys included stopping at each point count location (within habitat suitable for Bobolink / Eastern Meadowlark) to undertake ten (10) minutes of observations (visual and auditory), with information recorded.
- Completion of three (3) sets of point count surveys with surveys taking place between the last week of May and the first week of July, and each separated by a week or more.
  - Surveys were completed on June 5 and 16, and July 8, 2020.

### **Eastern Whip-poor-will Surveys (per MNRF protocol; MNRF, 2013)**

- Establishment of point count stations (shown on **Figures 12 - 21**) at 300 m to 500 m intervals.
- Surveys commenced a minimum of 30 minutes after sunset during the appropriate phase of the lunar cycle (50% or more of the visible moon face illuminated).
- Point count surveys included stopping at each point count location to undertake six (6) minutes of passive listening, with information recorded.
- Completion of four (4) sets of point count surveys with surveys taking place in June and July (two in June, two in July).
  - Surveys were completed on June 4 and 8, and July 7 and 8, 2020.

Migratory breeding bird, and species specific surveys were completed during appropriate weather conditions, and time of day. Point observation counts were completed per the dates described above. Incidental observation recordings were completed during all other field visits.

### ***Wildlife***

Observations of wildlife were recorded during field visits to assess vegetation, migratory and breeding birds, and herpetofaunal surveys completed within the study area during June and July 2020. Any wildlife observations were noted along with locational information of the sighting. Specific attention was given to the evaluation for the presence of SAR during the field visits, including SAR turtles, birds, and vegetation.

Further information pertaining to wildlife surveys completed at the site is provided below. During the survey, reference for specific habitat requirements for each species was per the *MNR - Significant Wildlife Habitat Technical Guide* (2000).

### **Turtles**

Field reviews and site reconnaissance was conducted on June 4 and 8, 2020, to assess for SAR turtles, their habitat and nesting potential within the study area.

### **Bats**

The potential for presence of bat species / specialized habitat (maternity roost colonies) was assessed through a three-step process, with steps completed per *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011). Details regarding bat surveys methodology are outlined in **Section 6.6.5** but generally included a review of ELC communities in the study area to determine where appropriate bat habitat may be. In all suitable ELC units where the road alignment was anticipated to leave the platform, randomized plots were completed to determine snag density per ha. In ELC communities which met the minimum snag / cavity density ( $\geq 10$  snags / ha) further review was completed whereby the location of suitable snag /

cavity trees was compared to the proposed development footprint to determine if the proposed development may have an impact on these suitable location(s)..

### **Surface Water Features**

Field surveys to investigate the presence of fish and fish habitat were completed by Ainley Group on June 4, 8, and 17, and July 8, 2020. The surveys were conducted to establish the locations exhibiting fish habitat, and included a review of fish and fish habitat within the identified study area.

The detailed site surveys included the identification of:

- Fish and fish habitat characteristics;
- Watercourse morphology, including type of watercourse, length, widths, depths and associated wetlands;
- Subsections of the watercourse, including runs, pools, riffles;
- Water quality features including temperature, conductivity, dissolved oxygen, resistivity, salinity and pH;
- Habitat features, including woody debris, undercut banks, boulder clusters, organic debris, and aquatic macrophytes;
- Terrestrial groundwater seepage areas, watercourse substrate, bank stability, riparian and aquatic vegetation;
- Critical habitat areas (spawning, nursery, rearing, migratory and food supply areas);
- Physical barriers; and,
- Potential habitat compensation or enhancement opportunities.

## **5.0 PLANNING POLICIES AND FRAMEWORK**

The following planning policies and framework were reviewed and applied to establish the suitability of the proposed development in consideration of environmental impacts to the subject land and adjacent properties.

### **5.1 Provincial Planning Policy**

The Provincial Policy Statement (PPS) (MMAH, 2020) outlines policies related to natural heritage features (Section 2.1) and water resources (Section 2.2). The *Planning Act* requires that planning decisions shall be consistent with the PPS.

According to the PPS, development and site alteration shall not be permitted in:

- Habitat of endangered or threatened species, except in accordance with provincial and federal requirements,

- Significant wetlands (in coastal areas or in Ecoregions 5E, 6E and 7E), and
- Significant coastal wetlands.

Similarly, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, development and site alteration shall not be permitted within:

- Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E, and 7E,
- Significant woodlands (Ecoregions 6E and 7E, excluding islands in Lake Huron and the St. Marys River),
- Significant valley lands (Ecoregions 6E and 7E, excluding islands in Lake Huron and the St. Marys River),
- Significant wildlife habitat,
- Significant Areas of Natural and Scientific Interest (ANSI), and
- Coastal wetlands in Ecoregions 5E, 6E, and 7E.

In addition, development and site alteration is not permissible on lands adjacent to the natural features and areas identified above unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that no negative impacts on natural features and functions will occur. Development and site alternation shall not be permitted in fish habitat except in accordance with federal and Ontario-specific requirements.

## **5.2 Ontario Endangered Species Act**

In June 2007, Ontario enacted a provincial Endangered Species Act to protect “species at risk” (SAR) in Ontario. A “species at risk” is defined as any naturally-occurring plant or animal in danger of extinction or of disappearing from the province. Species are added to the Species at Risk in Ontario (SARO) List once they are evaluated and classified as “at risk”. Protection under the Act means this species is protected from being killed, harmed, harassed, or captured. Damaging or destroying the habitat of endangered or threatened species is also prohibited under the Act. Additionally, in order to conform to the PPS no development or site alteration is permitted in the significant habitat of a species of conservation concern (MMAH, 2020).

## **5.3 Modernization of Approvals**

On July 1, 2013, regulatory changes for modernizing approvals for the Endangered Species Act (Ontario Regulation 176/13) came into effect. The regulation applies to all species on the SARO list as of January 24, 2014. The requirements of the regulation include common elements of minimizing adverse effects, mitigation plans, monitoring, and reporting and recording. The regulations have streamlined the approvals process by organizing control of activities into four categories; Elimination, Rules in Regulation, Registration and Review and Approval.

The regulations allow common, low risk and frequency activities to be governed by a standard set of rules instead of requiring a permit. Activities that fall under the eligibility conditions are permitted to proceed without the acquisition of a permit or licence while abiding by the

regulations. Activities that do not meet the eligibility criteria and may have adverse effects on SAR require approval. The current governing authority for provincial SAR is the Ministry of Environment, Conservation, and Parks (MECP).

#### **5.4 Ministry of Natural Resources and Forestry**

As the study area is not located within the boundaries of a Conservation Authority, development within hazard areas (i.e. wetlands, watercourses, unstable slopes, etc.) remain the jurisdiction of the MNRF.

As such, MNRF is to provide technical support to the Ministry of Municipal Affairs and Housing on any matters related to the features identified within **Section 5.1**.

### **6.0 EXISTING CONDITIONS**

Existing conditions reviews of the subject property were completed on June 4, 8, 9, 12, 16, and 17, and July 8, 2020. In summary, the project limits was noted to consist of a mix of deciduous, mixed, and coniferous forest, meadow, agricultural, and swamp communities. In addition to Constant Creek, eight (8) locations (culvert or adjacent to roadway) are interpreted to support fish and fish habitat. Background data sources have identified an escarpment feature (Ferguson Lake Escarpment) within the study limits; however, this feature is not identified as a significant natural heritage feature (i.e. ANSI). Adjacent properties include a mix of residential, agricultural, and vacant land uses. The existing conditions of the subject property are shown on **Figures 2 - 11**, in the photographic log (**Appendix B**), and are detailed in the following sections.

It should be noted that access to any lands within the study area was completed under the permission of Greenview.

#### **6.1 Land Use, Topography, and Drainage**

The predominant land use within the study limits is forested lands; however, areas of agricultural and residential land use were also observed.

The topography of the study limits is generally steeply sloped to the west and south (escarpment feature) while lands to the north and east, and in the vicinity of Constant Creek and Ferguson Lake, are generally flat with minimal topographic variation. Elevations within the study limits range from approximately 250 metres above sea level (masl; along escarpment feature) to approximately 185 masl.

Drainage on the subject property is generally to the north and east through sheet flow, but also includes flow through the identified watercourses, which eventually outlet to Constant Creek or Ferguson Lake.

#### **6.2 Surficial and Bedrock Geology**

The subject property is identified as within the Algonquin Highlands physiographic region (Chapman and Putnam, 1984). The landform features of the study area consist of a relatively

hilly landscape with agricultural fields, forested areas, watercourses, and residential features within the project limits.

Bedrock geology of the area is described as a mixture of clastic metasedimentary rocks (i.e. limestone, chert), and carbonate metasedimentary rocks (i.e. marble, skarn) (Lumbers, 1976).

Surficial deposits in the study area are described to be a mixture of glaciofluvial deposits (i.e. river deposits and delta topset facies), ice contact stratified deposits (i.e. sand and gravel, minor silt, clay and till), precambrian bedrock, and organic deposits (i.e. peat, muck, marl) (Ontario Geological Survey, 2010).

### 6.3 Vegetation and Vegetation Communities

The study area is located in the 5E Georgian Bay Ecozone within the Ontario Shield Ecozone, which is typically dominated by deciduous, coniferous, mixed, and sparse forest (MNR, 2009). Field surveys were completed by Ainley Group on June 9, 12, and 16 and July 8, 2020 to document vegetative species and communities. The review was limited to those locations within the project limits where the proposed alignment will leave the existing road footprint (i.e. areas where vegetation removal will be required). Vegetation within the subject property was identified and categorized in accordance with the Ecological Land Classification (ELC) for Southern Ontario (Lee et. al., 1998), with vegetative communities assigned ELC codes consistent with recently amended ELC classification tables (2013). Field investigation sheets for the ELC mapping are provided in **Appendix C**.

Vegetation communities within the assessed areas can generally be broken down into three (3) groups; treed, wetland, and open/disturbed.

Within the open group are the communities;

- Mixed Meadow (MEMM3)
- Transportation (CVI\_1)
- Perennial Cover Crop (OAGM2).

Within the treed group are the communities;

- Dry-Fresh Poplar Deciduous Forest (FODM3-1)
- Dry-Fresh Beech Deciduous Forest (FODM4-1)
- Dry-Fresh Sugar Maple-Beech Deciduous Forest (FODM5-2)
- Dry-Fresh Sugar Maple-Basswood Deciduous Forest (FODM5-6)
- Fresh-Moist Poplar Deciduous Forest (FODM8-1)
- Dry-Fresh White Pine-Sugar Maple Mixed Forest (FOMM2-2)
- Dry-Fresh Sugar Maple-Hemlock Mixed Forest (FOMM5-2)
- Fresh-Moist White Spruce-Hardwood Mixed Forest (FOMM10-2).

Within the wetland group are the following communities;

- White Cedar-Conifer Mineral Coniferous Swamp (SWCM1-2)
- White Cedar-Hardwood Mineral Mixed Swamp (SWMM1-1)
- Speckled Alder Mineral Deciduous Thicket Swamp (SWTM1-1)
- Red-osier Dogwood Mineral Deciduous Thicket Swamp (SWTM2-1).

Two (2) endangered SAR vegetation, Butternut (*Juglans cinerea*) and American Ginseng (*Panax quinquefolius*), were identified by MNR / NHIC as having the potential to exist within the study limits. Of these species, only Butternut was observed during the field investigations in 2020. The SAR vegetation identified by MNR / NHIC, as well as those observed within the study limits is discussed in detail within **Section 6.6**.

The following sections provide a detailed summary of the vegetation and vegetative communities observed within areas where the proposed alignment will leave the existing road footprint during the field investigations in 2020. A complete listing of all vegetative species found in each community listed below is included in the species list (**Appendix C**). An aerial view of the subject property and respective vegetation communities is shown in **Figures 2 - 11**. A photographic log showing the vegetative composition of each community is included in **Appendix B**.

### **6.3.1 Mixed Meadow (MEMM3)**

This community was observed in blocks 1, 2, and 3 in the southern portion of the study limits. It is characterized by mixed herbaceous and small woody plant species, with minimal tree cover. This community is dominated by Black Raspberry (*Rubus occidentalis*) and Scouring Rush (*Equisetum hyemale*), with other present species including Tufted Vetch (*Vicia cracca*), grasses, and Oxeye Daisy (*Leucanthemum vulgare*).

### **6.3.2 Transportation (CVI 1)**

This community is represented by Ferguson Lake Road and the immediate right-of-way and was observed throughout the study limits. The community is characterized by a mix of herbaceous and woody species typical of disturbed areas. Vegetation in this community was observed to include species such as Common Vipers Bugloss (*Echium vulgare*), Large-leaved Aster (*Eurybia macrophylla*), Poison Ivy (*Toxicodendron radicans*), Wild Parsnip (*Pastinaca sativa*), and Ground Juniper (*Juniperus horizontalis*).

### **6.3.3 Perennial Cover Crop (OAGM2)**

This community was observed in blocks 13, 16, and 17, and is characterized by graminoid and forb species typical of an agricultural “hay” field. Vegetation in this community was observed to include species such as Red Clover (*Trifolium pretense*), Smooth Brome (*Bromus inermis*), Tall Buttercup (*Ranunculus acris*), Orchard Grass (*Dactylis glomerata*), and Wild Carrot (*Daucus*

*carota*).

#### **6.3.4 Dry-Fresh Poplar Deciduous Forest (FODM3-1)**

This community was observed in block 8, in the central portion of the study limits, and is characterized by deciduous trees with a canopy cover of 60% or greater. Vegetation in this community is dominated by Large-toothed Aspen (*Populus grandidentata*), American Beech (*Fagus grandifolia*), and Sugar Maple (*Acer saccharum*). Other less dominant species observed include Ironwood (*Ostrya virginiana*), Moose Maple (*Acer pensylvanicum*), and White Rattlesnakeroot (*Nabalus albus*).

#### **6.3.5 Dry-Fresh Beech Deciduous Forest (FODM4-1)**

This community was observed in blocks 1, 6, and 9, within the central and southern parts of the study limits, and is characterized by deciduous tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by American Beech, Sugar Maple, and Red Oak (*Quercus rubra*). Other less dominant species observed include Ironwood, White Birch (*Betula papyrifera*), Moose Maple, and White Ash (*Fraxinus americana*).

#### **6.3.6 Dry-Fresh Sugar Maple-Beech Deciduous Forest (FODM5-2)**

This community was observed in block 5, within the central part of the study limits, and is characterized by deciduous tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Sugar Maple, American Beech, and Ironwood. Other less dominant species observed include White Birch, American Basswood (*Tilia americana*), Maidenhair Fern (*Adiantum pedatum*), and Canada Mayflower (*Maianthemum canadense*).

#### **6.3.7 Dry-Fresh Sugar Maple-Basswood Deciduous Forest (FODM5-6)**

This community was observed in block 17, at the northern end of the study limits, and is characterized by deciduous tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Sugar Maple, American Basswood, and Ironwood. Other less dominant species observed include Red Trillium (*Trillium erectum*), Nodding Trillium (*Trillium cernuum*), Staghorn Sumac (*Rhus typhina*), and Smooth Serviceberry (*Amelanchier laevis*).

#### **6.3.8 Fresh-Moist Poplar Deciduous Forest (FODM8-1)**

This community was observed in blocks 1, 2, and 3, at the southern end of the study limits, and is characterized by deciduous tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Trembling Aspen (*Populus tremuloides*), Red Ash (*Fraxinus pensylvanica*), Black Cherry (*Prunus serotina*), and Scouring Rush. Other less dominant species observed include Prickly Gooseberry (*Ribes cynosbati*), Gray Dogwood (*Cornus racemosa*), Virginia Creeper (*Parthenocissus quinquefolia*), and Chokecherry (*Prunus virginiana*).

### **6.3.9 Dry-Fresh White Pine-Sugar Maple Mixed Forest (FOMM2-2)**

This community was observed in block 5, in the central portion of the study limits, and is characterized by mixed (deciduous and coniferous) tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Sugar Maple, White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), and Ironwood. Other less dominant species observed include Eastern Hemlock (*Tsuga canadensis*), Red Oak, Fly Honeysuckle (*Lonicera canadensis*), and Canada Mayflower.

### **6.3.10 Dry-Fresh Sugar Maple-Hemlock Mixed Forest (FOMM3-3)**

This community was observed in blocks 10 and 15, in the central and northern portions of the study limits, and is characterized by mixed (deciduous and coniferous) tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Sugar Maple, Eastern Hemlock, and White Cedar (*Thuja occidentalis*). Other less dominant species observed include Ironwood, Blue Cohosh (*Caulophyllum thalictroides*), White Ash, Maidenhair Fern, and Moose Maple.

### **6.3.11 Dry-Fresh Poplar Mixed Forest (FOMM5-2)**

This community was observed in blocks 4 and 5, in the southern portion of the study limits, and is characterized by mixed (deciduous and coniferous) tree species with a canopy cover of 60% or greater. Vegetation in this community is dominated by Trembling Aspen, Red Pine, and White Birch. Other less dominant species observed include American Basswood, Balsam Fir (*Abies balsamea*), Zigzag Goldenrod (*Solidago flexicaulis*), Scouring Rush, and Red Clover.

### **6.3.12 Fresh-Moist White Spruce-Hardwood Mixed Forest (FOMM10-2)**

This community was observed in block 14, in the northern half of the study limits, and is characterized by coniferous trees with a canopy cover of 60% or greater. Vegetation in this community is dominated by White Spruce (*Picea glauca*) and Trembling Aspen. Other less dominant species observed include Red Ash, Large-leaved Aster, Black Raspberry, Balsam Poplar (*Populus balsamea*), and Prickly Ash (*Zanthoxylum americanum*).

### **6.3.13 White Cedar-Conifer Mineral Coniferous Swamp (SWCM1-2)**

This community was observed in block 4, in the southern half of the study limits, and is a wetland feature characterized by coniferous trees with a canopy cover of 25% or greater. Vegetation in this community is dominated by White Cedar and Yellow Birch (*Betula alleghaniensis*). Other less dominant species observed include Balsam Fir, Balsam Poplar, Scouring Rush, Fowl Mannagrass (*Glyceria striata* var. *striata*), and Broad-leaved Cattails (*Typha latifolia*).

### **6.3.14 White Cedar-Hardwood Mineral Mixed Swamp (SWMM1-1)**

This community was observed in blocks 7 and 15, in the central and northern parts of the study limits, and is a wetland feature characterized by mixed (deciduous and coniferous) tree species with a canopy cover of 25% or greater. Vegetation in this community is dominated by White Cedar, Eastern Hemlock, Black Ash (*Fraxinus nigra*), and Red Ash. Other less dominant species observed include Yellow Birch, White Birch, Broad-leaved Cattail, Spotted Jewelweed (*Impatiens capensis*), and Sensitive Fern (*Onoclea sensibilis*).

### **6.3.15 Speckled Alder Mineral Deciduous Thicket Swamp (SWTM1-1)**

This community was observed in block 14, in the northern part of the study limits, and is a wetland feature characterized by deciduous shrub species with a canopy cover of 25% or greater. Vegetation in this community is dominated by Speckled Alder (*Alnus incana*), with other present species including Red Ash, Sensitive Fern, Cinnamon Fern (*Osmundastrum cinnamomeum*), and Reed Canarygrass (*Phalaris arundinacea*).

### **6.3.16 Red-osier Dogwood Mineral Deciduous Thicket Swamp (SWTM2-1)**

This community was observed in blocks 11 and 13, in the northern half of the study limits, and is a wetland feature characterized by deciduous shrub species with a canopy cover of 25% or greater. Vegetation in this community is dominated by Red-osier Dogwood (*Cornus sericea*), Speckled Alder, and Peach-leaved Willow (*Salix amygdaloides*). Other less dominant species observed include Silver Maple (*Acer Saccharinum*), White Cedar, Riverbank Grape (*Vitis riparia*), Sensitive Fern, and Marsh Horsetail (*Equisetum palustre*).

## **6.4 Surface Water Features, Fish and Fish Habitat, and Aquatic SAR**

Mapping available from LIO and Natural Heritage Make-a-map identified ten (10) watercourses, including Constant Creek, and unnamed tributaries of Constant Creek and Ferguson Lake, within the project limits. During a review of the study area, Ainley Group identified nine (9) of these locations as fish habitat; however, it is understood that none of the proposed work will require modifications at the locations where Constant Creek crosses Ferguson Lake Road, so these locations were not included for detailed fisheries assessment. **Sections 6.4.1 to 6.4.8** provide a description of the locations that were identified to exhibit characteristics of fish and fish habitat.

Further to the information below, a review of available DFO and MNRF information was completed by Ainley Group in an effort to determine the potential for aquatic SAR within the project limits. Upon completion of the review, no aquatic SAR fish / mussel species were identified.

#### **6.4.1 Culvert CV-00454 (Stn 3+590)**

This culvert conveys an unnamed tributary of Ferguson Lake east under Ferguson Lake Road. During the June 2020 field visit, the wetted channel upstream (much of which is within a White Cedar swamp) consisted of run and flat features. Run features had an average width and depth of 1.17 m and 0.08 m, respectively. Flat features had an average width and depth of 20 m (wetland area) and 0.3 m, respectively. Substrate consisted of gravel and sand within the run features, and muck and detritus in the flat features. The upstream portions of the water feature are bounded by a mixed forest.

Downstream of the culvert, the wetted channel consisted of pool, riffle, and flat features. Pool features had an average width and depth of 0.55 m and 0.28 m, respectively. Riffle features had an average width and depth of 0.5 m and 0.09 m, respectively. Flat features had an average width and depth of 0.55 m, and 0.28 m, respectively. Substrate consisted of sand and detritus in the pool features, detritus in the riffle features, and muck and detritus in the flats features. The downstream channel flows through a White Cedar swamp.

This location is interpreted to provide permanent, direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.2 Culvert CV-00455 (Stn 4+000)**

This culvert contributes to (i.e. is within 30 m of) roadside and wetland drainage along the west side of Ferguson Lake Road. During the June 2020 field visit, the wetted channel consisted of run and riffle features, much of which is within a steeply graded roadside ditch. Run features had an average width and depth of 0.62 m and 0.04 m, respectively. Riffle features had an average width and depth of 0.6 m and 0.04 m, respectively. Substrate consisted of gravel and sand within the run features, and boulder, cobble, and gravel in the riffle features. The watercourse is bounded by a deciduous forest, and flows from an upstream White Cedar swamp.

The culvert at this location is not anticipated to directly support fish or fish habitat; however is anticipated to indirectly contribute to fish habitat within the adjacent watercourse. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.3 Culvert CV-00456 (Stn 4+625)**

This culvert conveys an unnamed tributary of Ferguson Lake east under Ferguson Lake Road. During the June 2020 field visit, the wetted channel upstream consisted of run, riffle, and pool features. Run features had an average width and depth of 3.0 m and 0.25 m, respectively. Riffle features had an average width and depth of 0.76 m and 0.16 m, respectively. Pool features had an average width and depth of 1.1 m and 0.35 m, respectively. Substrate

consisted of boulder, cobble, and gravel through all features upstream of the culvert. The upstream portions of the water feature are bounded by a deciduous forest.

Downstream of the culvert, the wetted channel consisted of pool and riffle features. Pool features had an average width and depth of 1.3 m and 0.3 m, respectively. Riffle features had an average width and depth of 0.76 m and 0.16 m, respectively. Substrate consisted of boulder, cobble, and gravel through all features downstream of the culvert. The downstream portions of the water feature are bounded by a deciduous forest.

Numerous barriers to migration (i.e. waterfalls) were observed downstream of the culvert.

This location is interpreted to provide permanent, direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents mixed cold water fish habitat, with an associated no in-water operational timing window from October 1 to July 15, in any calendar year.

#### **6.4.4 Culvert CV-00460 (Stn 5+515)**

This culvert conveys an unnamed tributary of Constant Creek east under Ferguson Lake Road. During the June 2020 field visit, the culvert and adjacent environment was observed to be dry. Flow at this location is interpreted to be ephemeral, and is directed through riparian habitat (i.e. ferns, grasses, sedges) to the adjacent Constant Creek, which is located approximately 15 m away.

This location is interpreted to provide ephemeral, in-direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.5 Culvert CV-00461 (Stn 5+718)**

This culvert conveys roadside drainage towards Constant Creek east under Ferguson Lake Road. During the June 2020 field visit, the culvert and upstream ditch was observed to be dry. A pool feature was observed approximately 6 m downstream of the culvert. The pool had a wetted depth of 0.15 m and width of 2.5 m. Substrate within the channel consisted of muck and detritus. Flow at this location is interpreted to be ephemeral, with the channel directed through riparian habitat, and ultimately into Constant Creek.

This location is interpreted to provide ephemeral, in-direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.6 Culvert CV-00463 (Stn 6+020)**

These culverts (twin CSPs) convey an unnamed tributary of Constant Creek west under Ferguson Lake Road. During the June 2020 field visit, the wetted channel upstream consisted of

run and flats features. Run features had an average width and depth of 1.0 m and 0.25 m, respectively. Flats features had an average width and depth of 3.0 m and 0.28 m, respectively. Substrate consisted of sand within run features, and detritus and muck within flats features. The upstream portions of the water feature flow through a wetland feature, with a beaver pond observed approximately 100 m upstream.

Downstream of the culvert, the wetted channel consisted of pool, run and flats features. Pool features had an average width and depth of 5.5 m and 0.4 m, respectively. Run features had an average width and depth of 1.5 m and 0.4 m, respectively. Flats features had an average width and depth of 5.0 m and 0.3 m, respectively. Substrate consisted of detritus, muck, and sand within the pool features, sand within run features, and detritus and muck within flats features. The downstream portions of the water feature flow through a thicket swamp and ultimately into Constant Creek.

This location is interpreted to provide permanent, direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.7 Watercourse Adjacent Ferguson Lake Road (Stn 6+875)**

Although not associated with a culvert under Ferguson Lake Road, an unnamed tributary of Constant Creek flows parallel with the road (within 10 m to 12 m) in the area of Stn 6+875. During the June 2020 field visit, the wetted channel consisted of pool and flats features. Pool features had an average width and depth of 2.5 m and 0.1 m, respectively. Flats features had an average width and depth of 2.0 m and 0.2 m, respectively. Substrate consisted of sand, muck, and detritus within the watercourse features. The surveyed portions of the water feature flow through a wetland feature (alder swamp), and outlet into Constant Creek.

This location is interpreted to provide permanent, direct fish habitat. Correspondence from the MNRF (**Appendix A**) indicates that this location represents warm/cool water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

#### **6.4.8 Culvert CV-00468 (Stn 7+865)**

This culvert conveys an unnamed tributary of Constant Creek east under Ferguson Lake Road. During the June 2020 field visit, the wetted channel upstream consisted of riffle, and pool features. Riffle features had an average width and depth of 0.6 m and 0.06 m, respectively. Pool features had an average width and depth of 1.0 m and 0.16 m, respectively. Substrate consisted of boulder, cobble, and gravel through all features upstream of the culvert. The upstream portions of the water feature are bounded by a deciduous forest.

Downstream of the culvert, the wetted channel consisted of pool and riffle features. Pool features had an average width and depth of 0.65 m and 0.18 m, respectively. Riffle features had an average width and depth of 0.5 m and 0.05 m, respectively. Substrate consisted of

cobble, gravel, and sand within the pool features, and boulders, cobble, and gravel within the riffle features downstream of the culvert. The downstream portions of the water feature are bounded by a perennial cover crop field.

The watercourse at this location was observed to be a localized system that transitions to underground flow approximately 25 m downstream of the culvert. The culvert outlet was observed to be perched by approximately 0.07 m.

This location is interpreted to provide permanent, direct fish habitat. Correspondence from the MNR (Appendix A) indicates that this location represents mixed cold water fish habitat, with an associated no in-water operational timing window from March 15 to July 15, in any calendar year.

Measures to limit impacts to the fish and fish habitat identified above are discussed in **Section 8.0**.

## **6.5 Birds, Wildlife, and Herpetofaunal Species and Habitat**

The following sections detail the species formerly reported to occur within the study area, as well as those observed during field investigations in June and July, 2020.

### **6.5.1 Bird Species**

Point count and incidental bird species observations were documented within the study area during the field investigations completed on June 4, 5, 8, 9, 12, and 16, and July 7 and 8, 2020.

A total of forty-five (45) bird species were observed (visually or audibly) within the study area. A summary of the species list (common names) is included below:

American Crow	Chipping Sparrow
American Goldfinch	Common Grackle
American Robin	Common Yellowthroat
Baltimore Oriole	Eastern Bluebird
Barn Swallow	Eastern Meadowlark
Black and White Warbler	Eastern Phoebe
Black-capped Chickadee	Eastern Whip-poor-will
Black-throated Blue Warbler	Eastern Wood Pewee
Black-throated Green Warbler	European Starling
Blue Jay	Great Blue Heron
Brown Thrasher	Great Crested Flycatcher
Canada Goose	Hairy Woodpecker
Chestnut-sided Warbler	Hermit Thrush

Mallard	Swamp Sparrow
Mourning Dove	Veery
Northern Flicker	Warbling Vireo
Ovenbird	White-breasted Nuthatch
Pied-billed Grebe	White-throated Sparrow
Red-eyed Vireo	Winter Wren
Red-winged Blackbird	Yellow-bellied Sapsucker
Rose-breasted Grosbeak	Yellow-rumped Warbler
Sandhill Crane	Yellow Warbler
Song Sparrow	

The following provides a summary, including provincial designation, of any SAR birds (listed above) which were observed on or adjacent to the project limits.

- Eastern Meadowlark (*Sturnella magna*) – Threatened
- Eastern Whip-poor-will (*Antrostomus vociferous*) – Threatened
- Barn Swallow (*Hirundo rustica*) - Threatened
- Eastern Wood Pewee (*Contopus virens*) - Special Concern

Additional information to SAR birds with the potential to occur within the study area is provided in **Section 6.6**.

### **6.5.2 Wildlife / Herpetofaunal Species**

Wildlife species within the study area were documented via direct observation and interpretation of sign (i.e. tracks, scat, vocalizations, etc.). Observations of wildlife species during the environmental investigations by Ainley Group in June and July 2020 included; White-tailed Deer (*Odocoileus virginianus*), Red Squirrel (*Tamiasciurus hudsonicus*), Eastern Chipmunk (*Tamias striatus*), Black Squirrel (*Sciurus carolinensis*), and Coyote (*Canis latrans*) scat. In addition, the subject property and adjacent lands are anticipated to provide habitat for other typical mammals of southern Ontario including Snowshoe Hare (*Lepus americanus*), Beaver (*Castor canadensis*), Muskrat (*Ondatra zibethicus*), Black Bear (*Ursus americanus*) and other small to medium sized mammals.

Herpetofaunal species within the study area were documented when observed according to the field survey protocols specified within **Section 4.0**. Incidental observations that occurred during the field survey were documented. Herpetofaunal species observed included Snapping Turtle (*Chelydra serpentina*), Green Frog (*Lithobates clamitans*), and American Bullfrog (*Lithobates catesbeianus*). Given the presence of watercourse and wetland features (including Ferguson Lake PSW), additional herpetofaunal species are anticipated to be present.

Additional information pertaining to SAR wildlife reported during previous investigations and during the field surveys in 2020 is provided in **Section 6.6**.

## **6.6 Significant Natural Heritage Functions / Features**

As part of the EIS, and in accordance with the PPS (MMHA, 2020), natural heritage functions and features were reviewed for the subject property including the following:

- Significant habitat of endangered and threatened species;
- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat; and,
- Significant areas of natural and scientific interest.

### **6.6.1 Species at Risk**

To evaluate potential for species at risk on the subject property a site assessment for SAR was completed, including request for background information from the MECP and NHIC. Based on information provided by agencies and / or background data records, the following species have been documented to occur either within the project limits or nearby.

- Little Brown Bat (*Myotis lucifugus*) - Endangered
- Northern Long-eared Myotis (*Myotis septentrionalis*) - Endangered
- Tri-coloured Bat (*Perimyotis subflavus*) - Endangered
- Eastern Small-footed Myotis (*Myotis leibii*) - Endangered
- American Ginseng (*Panax quinquefolius*) - Endangered
- Butternut (*Juglans cinerea*) – Endangered
- Pale-bellied Frost Lichen (*Physconia subpallida*) - Endangered
- Bobolink (*Dolichonyx oryzivorus*) – Threatened
- Blanding's Turtle (*Emydoidea blandingii*) - Threatened
- Barn Swallow (*Hirundo rustica*) – Threatened
- Eastern Meadowlark (*Sturnella magna*) – Threatened
- Eastern Whip-poor-will (*Antrostomus vociferous*) - Threatened
- Eastern Wood Pewee (*Contopus virens*) - Special Concern
- Snapping Turtle (*Chelydra serpentina*) – Special Concern

- Northern Map Turtle (*Graptemys geographica*) – Special Concern
- Wood Thrush (*Hylocichla mustelina*) – Special Concern
- Golden-winged Warbler (*Vermivora chrysoptera*) – Special Concern
- Canada Warbler (*Cardellina canadensis*) – Special Concern
- Evening Grosbeak (*Coccothraustes vespertinus*) – Special Concern
- Hill's Pondweed (*Potamogeton hillii*) – Special Concern
- Bald Eagle (*Haliaeetus leucocephalus*) – Special Concern

During the field visits completed by Ainley Group in 2020, five (5) SAR, were observed on or adjacent to the study limits as follows:

- Butternut
- Barn Swallow
- Eastern Meadowlark
- Eastern Whip-poor-will
- Eastern Wood-pewee

The location of SAR observations (both those by Ainley Group and those identified in background data sources) has been kept confidential due to the sensitive nature of the data.

As noted in **Section 6.4**, no aquatic SAR (i.e. fishes and mussels) have been identified within the background data available for the project limits.

As part of the evaluation, habitat requirements of the SAR identified with the potential to exist were compared against the habitat types present and species observations within the study limits. The results of this assessment are provided in **Tables 1 and 2**.

Given the potential for bats in the general project area, the presence of bat species / specialized habitat (maternity roost colonies) was assessed per *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011).

Step 1 included a review of the ELC vegetation communities found within the project limits, and resulted in the identification of forest types suitable for bat maternity colonies (identified as deciduous and mixed forest and swamp within the criteria schedule). These included vegetation communities of Dry-Fresh Beech Deciduous Forest (FODM4-1), Fresh-Moist Poplar Deciduous Forest (FODM8-1), White Cedar-Conifer Mineral Coniferous Swamp (SWCM1-2), Dry-Fresh Poplar Mixed Forest (FOMM5-2), Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2), Dry-Fresh White Pine – Sugar Maple Mixed Forest (FOMM2-2), White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1), Dry-Fresh Poplar Deciduous Forest (FODM3-1), Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOMM3-3), Fresh-Moist White Spruce – Hardwood Mixed Forest (FOMM10-2), and Dry-Fresh Sugar Maple – Basswood Deciduous Forest (FODM5-6) (**Figures 2 - 11**).

Step 2 included a snag density assessment. This assessment was used to determine the density of snags with a diameter at breast height (DBH) greater than 0.25 m using a random plot analysis. The results of this assessment indicated a snag density (trees >0.25 m DBH) greater than 10 snags/hectare (i.e. meeting the minimum snag density required for maternity colony use) in the following ELC communities:

- Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)
- White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1)
- Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOMM3-3)
- Fresh-Moist White Spruce – Hardwood Mixed Forest (FOMM10-2)

It should be noted that the snag density assessment was only completed within portions of the project limits where the proposed alignment is interpreted to leave the existing roadway platform.

In addition to the potential for use by maternity colonies, forest and swamp communities within the project limits may also be used by day roosting bats. Day roost locations are considered to change frequently (on a daily basis, or every several days) suggesting that bats may use a number of different trees during the summer period. Impacts to this species could occur should they be roosting during vegetation removal. Overall impacts to the habitat of SAR bats is not anticipated, as vegetation removal will generally be limited in comparison to the extensive tracts of forest which existing within the landscape. It is anticipated that bats will seek out habitat within these adjacent lands. Regardless, SAR bats are anticipated to have the potential to be present in woody vegetation within the project limits from April 1 to September 30. As such, it is recommended that any vegetation clearing be completed outside of this timing window.

Vegetation clearing is anticipated to be a requirement for any locations where the proposed alignment leaves the existing alignment. Such clearing has the potential to impact endangered SAR vegetation such as American Ginseng and Butternut.

With respect to American Ginseng, NHIC provided information with respect to element occurrences within the general study area. The proposed improvements are not interpreted to be located in proximity to these element occurrences, and no observations of this species were noted by Ainley Group during the 2020 field investigations. Should it be determined that the works will impact areas associated with the element occurrences then the MECP should be contacted to discuss permit requirements.

A total of thirty-seven (37) Butternut were observed and assessed (by a certified Butternut Health Assessor; BHA) within the areas where works were anticipated to be beyond the existing roadway platform (i.e. within the Ainley identified blocks). Of these trees, there are thirty-two (32) Category 1 trees, two (2) Category 2 trees, and three (3) Category 3 trees. A BHA Report to document these findings is being prepared concurrent to this NHS report. Following finalization and submission of the BHA report to MECP, and following the 30-day review period, the following will apply:

- **Category 1 trees** – Are considered non-retainable and are not protected under the *ESA*, and can be removed without further approvals. These trees will not have implications on the design.
- **Category 2 trees** – Are considered retainable, and require approvals if works are to proceed within 25 m of these trees. It is anticipated that impacts to these trees can be permitted by Registering the Activity under *O.Reg. 242/08*, with completion of a corresponding compensation program. Depending on the size of the trees to be impacted (killed, harmed, or taken), there are varying ratios of compensation plantings (Butternut and companion species) that are required.
- **Category 3 trees** – Are considered as potentially archivable, and if these will be impacted, will require discussion with MECP and likely proceeding with the permitting process.

Turtle habitat is interpreted to be present within the connected wetlands, watercourses, and waterbodies within the project limits. Although infilling of these features is not anticipated to occur, works are likely to result in disturbance to the road shoulder and embankment at these features. The granular materials used in road shoulder and embankment construction are often sought after by nesting turtle species as a location to lay their eggs. As such, any disturbance to road shoulders and embankments during the nesting and incubation period has the potential to impact turtles. In order to limit the potential for impacts, shoulder or embankment works should be completed outside of the nesting and incubation period (May 15 to September 30). Alternatively, turtles can be excluded from these areas via temporary wildlife fence provided the fence is installed prior to May 15 and is maintained in good working order until September 30. Further to the above, wetland, watercourse, and waterbodies may also provide habitat for hibernating turtles. Activities which alter water levels have the potential to impact turtles should they occur during the hibernation period (September 30 to April 1). As such, works should not alter water levels in adjacent wetland, watercourse, and waterbodies during the hibernation period.

A review for grassland SAR birds was completed per the description in **Section 4.0**. Eastern Meadowlark was observed within the study limits, and is known to have a habitat preference that includes shrubby overgrown fields, and weedy borders or croplands. It is understood that the currently preferred alignment (60 kph alignment) will not encroach upon suitable habitat within the project limits; however, should alignment preferences change and require encroachment upon suitable habitat, then consultation should be completed with MECP to determine any approval requirements.

A review for Eastern Whip-poor-will (per **Section 4.0**) resulted in the observation of this species at several locations within the project limits. Observations were generally located greater than 100 m from the existing roadway, with the exception of one (1) observation. Further, vegetation clearing associated with the currently preferred alignment (60 kph alignment) is not proposed to extend into the areas of observation. The general habitat description for Eastern Whip-poor-will (MECP, 2019) notes that activities considered generally not compatible include;

- Large scale development or other activities that result in significant alteration or clearing of vegetation.
- Indiscriminate application of pesticides within habitat.

It is recommended that consultation be completed with MECP to discuss the location of Eastern Whip-poor-will observations and the preferred alignment to determine any approval requirements.

In regards to the above noted Barn Swallow observation, this included a single individual flyover in the area with agricultural buildings. Although, agricultural fields within the study limits may provide a location for foraging individuals, none of the identified alignments are proposed to encroach upon these features, nor will they require the removal of habitat which may support nesting individuals (i.e. barns). As such, regardless of the final alignment chosen, impacts to this species are anticipated to be minimal as a result of the proposed reconstruction of Ferguson Lake Road.

The remaining SAR are anticipated have low potential to be impacted by the proposed road reconstruction based on the results of field surveys, species specific habitat preferences, the existing on-site vegetation, and site conditions, or are special concern species for which the *ESA* provides no formal protection of individuals or their habitat.

Measures to limit impacts to those species identified with the potential to be impacted by the development are discussed in **Section 8.0**.

### **6.6.2 Significant Wetlands and Coastal Wetlands**

Ferguson Lake PSW surrounds Ferguson Lake and is located within the study limits on the northeast side of Ferguson Lake Road from approximately Stn. 5+260 to Stn. 5+330. The proposed road alignment in this area does not appear to encroach upon the PSW; however, in an effort to limit the potential for impacts to this feature, intrusion into the feature for any reason (i.e. staging equipment, etc.) should be avoided and appropriate erosion and sediment controls should be employed.

Per the Natural Heritage Reference Manual (MNRF, 2010), a coastal wetland is defined as:

- a) any *wetland* that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence Rivers); or
- b) any other *wetland* that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located 2 kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large water body to which the tributary is connected.

Based on this description, no Coastal Wetlands are present within the project limits.

In addition to the above, one (1) evaluated wetland, McNulty's Wetland, is present within the wetland feature extending from Constant Creek, through culverts CV-00463 (Stn 6+020) and

beyond McNulty Lake. Although this wetland was not evaluated to be provincially significant, and therefore does not receive protection under the PPS, it has been identified by MNR as locally significant (**Appendix A**). Similar to the Ferguson Lake PSW, the proposed road alignment in this area does not appear to encroach upon the wetland; however, in an effort to limit the potential for impacts to this feature intrusion into the feature for any reason (i.e. staging equipment, etc.) should be avoided and appropriate erosion and sediment controls should be employed.

### 6.6.3 Significant Woodlands

Significant Woodlands within the region have been mapped by Renfrew County (2020). No Significant Woodlands have been identified within the study limits, and no impacts to Significant Woodlands are anticipated as a result of the undertaking.

### 6.6.4 Valleylands or Areas of Natural and Scientific Interest (ANSI)

Valleylands within the region have been mapped by Renfrew County (2020). No Valleylands have been identified within the study limits, and no impacts to Valleylands are anticipated as a result of the undertaking.

Areas of Natural and Scientific Interest (ANSIs) in the region are mapped by the County of Renfrew (2020). No ANSIs have been mapped within the project limits; therefore, no impacts to ANSIs are anticipated as a result of the undertaking.

In addition to the above, one (1) candidate ANSI, Ferguson Lake Escarpment, has been identified by MNR on the southwest side of Ferguson Lake Road, extending from approximately Stn. 3+400 to Stn. 5+750, as shown below (provided by MNR; **Appendix A**).



As a candidate ANSI this feature does not receive formal protection under the PPS; however, general avoidance of the feature should be undertaken where possible.

### **6.6.5 Significant Wildlife Habitat**

In accordance with the *NHRM* (OMNR, 2010), there are four categories of significant wildlife habitat including the following:

- Rare vegetation communities or specialized habitat for wildlife.
- Habitat of species of conservation concern.
- Animal movement corridors.
- Habitats of seasonal concentrations of animals.

Criteria for confirmed significant wildlife habitat are provided in *Significant Wildlife Habitat Criteria Schedules For Ecoregion 5E* (OMNR, 2015).

Deer Wintering areas in the region are provided on mapping by the County of Renfrew (2020). Mapping indicates that much of the project limits falls along the western edge of a large deer wintering area which extends from approximately Kennelly Mountain Road, east to Goshen and to north of Highway 132. Additional information provided by MNRF notes that much of the road falls within a Stratum II (non-core) wintering area and that the significance of the feature in many ways depends on the nature of the project (i.e. upgrades to a road versus a new road). The MNRF Significant Wildlife Technical Guide (2000) notes that deer wintering yards generally consist of a core area of mainly coniferous trees (pines, hemlock, cedar, and spruce), with a canopy cover > 60%, which becomes the primary habitat of deer during severe winters (Stratum I habitat). In milder winters, the area adjacent to the core area is also used, and is typically comprised of mixed or deciduous forest, with accessible and available browse. These adjacent lands are known as Stratum II habitat, and cover the entirety of the wintering area. Stratum II areas are generally used when snow depths are less than 30 cm in depth, and may be used for the duration of the winter during mild conditions. Stratum I areas are identified as the deer yard core, and are located within the Stratum II area.

Amphibian Breeding Habitat (Wetlands) is confirmed where the presence of a breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals, or 2 or more of the listed frog/toad species with call level codes of 3, or a wetland with breeding Bullfrogs. While amphibian monitoring was not included in the scope for the natural heritage study, Bullfrogs were observed calling within Constant Creek during Eastern Whip-poor-will surveys. The Bullfrogs were observed at Eastern Whip-poor-will Monitoring Station 5. As such, Constant Creek and any associated wetland community at this location is considered to be Significant Wildlife Habitat; however, impacts to such features are not anticipated to occur as a result of the undertaking.

As noted in **Section 6.6.1**, a review for potential maternity colonies was completed by Ainley Group per *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011), as a result

of the vegetation communities identified within the study limits. This assessment was used to determine the density of snags with a diameter at breast height (DBH) greater than 0.25 m using a random plot analysis. The results of this assessment indicated a snag density (trees >0.25 m DBH) greater than 10 snags/hectare in the following ELC communities:

- Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)
- White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1)
- Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOMM3-3)
- Fresh-Moist White Spruce – Hardwood Mixed Forest (FOMM10-2)

These communities are found in the following blocks, as identified by Ainley Group:

- Block 5
- Block 7
- Block 10
- Block 14
- Block 15
- Block 16

It should be noted that the snag density assessment was only completed within portions of the project limits where the proposed alignment leaves the existing.

Based on the above, candidate significant wildlife habitat is present within the project limits. Should vegetation clearing be required within these areas then the approvals requirements should be discussed with MECP.

No other areas of significant wildlife habitat were observed or identified within the study limits.

## **7.0 PROPOSED DEVELOPMENT**

The information within this NHS report has been compiled to support the EA process associated with the proposed reconstruction of Ferguson Lake Road from Kennelly Mountain Road to 200 m south of Campground Side Road. The proposed reconstruction may include modifications to the roadway footprint (i.e. straightening of existing curves) to accommodate any design speed upgrades. As a part of the process, Greenview is reviewing 60/70 kph, 70 kph, and 90 kph road alignments.

Information from Greenview notes the following dimensions for the reconstructed road; however, it is noted that tightening of slopes may be required where constraints exist.

- 3.3 m lane widths,
- 0.5 m paved shoulder,

- 0.5 m gravel shoulder,
- 2.0 m 4:1 foreslope, and
- Backslope extending at 3:1 to tie into the existing surface.

Generally speaking, based on information from Greenview, as the design speed increases, the extent of deviation from the existing alignment also increases (i.e. deviation from the existing alignment increases from the 60 kph alignment to the 90 kph alignment). Associated with this increased deviation are development requirements such as increased vegetation removal, increased grading requirements, and culvert extension within identified fish habitat. These additional requirements may result in the potential for increased impacts associated with the alignment shift. The following provides a summary of the key features of each of the proposed alignments.

#### 60/70 kph Alignment

- Deviation from the existing alignment in Blocks 1, 2, 3, 4, 6, 8, 9, 10, 11, 13, 15, and 16.
- Deviation from the existing alignment is generally 10 m or less.
- Enhanced grading anticipated to be required in Blocks 1, 6, 8, 9, 13, and 15 where steep slopes are noted adjacent to the existing alignment.
- Potential for culvert extension requirements at CV-00468 (Stn 7+865) which has been identified as fish habitat.

#### 70 kph Alignment

- Deviation from the existing alignment in Blocks 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 15, 16, .
- Deviation from the existing alignment is generally 20 m or less.
- Enhanced grading anticipated to be required in Blocks 1, 6, 7, 8, 9, 10, 13, and 15 where steep slopes are noted adjacent to the existing alignment.
- Potential for culvert extension requirements at CV-00456 (Stn 4+625), and CV-00468 (Stn 7+865) which have been identified as fish habitat.

#### 90 kph Alignment

- Deviation from the existing alignment in Blocks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17.
- Deviation from the existing alignment is generally 50 m or less.
- Enhanced grading anticipated to be required in Blocks 1, 5, 6, 7, 8, 9, 10, 13, 15, and 17, where steep slopes are noted adjacent to the existing alignment

- Extensive enhanced grading anticipated in Blocks 1, 5, 8, and 17, associated with the furthest proposed alignment shifts.
- Potential for culvert extension requirements at CV-00456 (Stn 4+625), CV-00461 (Stn 5+718), and CV-00468 (Stn 7+865) which have been identified as fish habitat.
- Potential for encroachment into fish habitat identified at a watercourse adjacent to Ferguson Lake Road (Stn 6+875).

Typical construction aspects of the proposed development are likely to include removal/clearing of vegetation for construction purposes, ditching, roadway and shoulder grading and paving, and culvert replacement / rehabilitation.

Environmental constraints are shown on **Figures 12 - 21**.

## 8.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section of the report describes the potential impacts on the natural heritage environment associated with each of the proposed road alignment options. It also outlines proposed mitigation measures, in consideration of standard development practices, in order to minimize or prevent negative impacts from the undertaking.

### 8.1.1 Erosion and Sediment Control

#### Potential Impacts

Road reconstruction, excavation, and grading activities, may result in the release of sediment into the adjacent natural features. In addition, exposed soils and/or stockpiles of excess material (such as earth, rock) can result in sediment transport to these areas during rain events.

The extent of exposed soils is anticipated to increase as the alignment design speed increases, with particular potential in areas where the 90 kph alignment will require a completely new footprint within areas of high topographic relief. Extensive grading will be required in these areas to accommodate the new road footprint.

#### Mitigation

In order to mitigate the transport of sediment during construction, environmental protection measures should be incorporated into the road re-construction process. To ensure protection of the surrounding natural environment the following should be undertaken during development:

Mitigation	Applicable Proposed Road Alignments
Prior to construction, all erosion and control measures proposed for the site should be identified in an Erosion and Sediment Control	<ul style="list-style-type: none"> <li>● 60/70 kph alignment</li> </ul>

<b>Mitigation</b>	<b>Applicable Proposed Road Alignments</b>
<p>Plan. The finalized plan is to be relayed to the contractor with all requirements communicated.</p>	<ul style="list-style-type: none"> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Contractor shall prepare and provide a spill response measures and contingency plan, to be reviewed and approved by the Contract Administrator.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>All construction activities including maintenance procedures will be controlled to prevent entry of deleterious substances into the natural environment. Vehicular maintenance and refueling will be conducted at least 30 m from waterways.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>During construction and grading activities, silt fence or other suitable erosion and sediment controls should be placed along the downgradient boundary of the construction zone to reduce the potential for sedimentation. Consideration should be given to applying multiple layers of silt fence or other erosion control barriers (i.e. straw bales, coir fibre logs) in areas of steep slope. The erosion control barrier should remain in place until the grading area becomes sufficiently vegetated to limit erosion and sedimentation potential. Once the site is stabilized, the erosion control barriers can be removed.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>The areal limits of exposed soils associated with grading areas should be minimized to the extent possible.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

<b>Mitigation</b>	<b>Applicable Proposed Road Alignments</b>
<p>Any exposed steep slope areas should be stabilized with vegetation and / or erosion control blankets / commercial seed mats to limit the potential sediment transport via overland flow.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Prior to the commencement of construction activities all erosion and sediment control measures are to be inspected and certified by a qualified third-party inspector.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>The Contract Administrator (CA) should complete inspections of the erosion control features at regular intervals during construction, and at an increased frequency wherever there is the high potential for sedimentation (i.e. heavy rain events). Any deficiencies identified by the CA are to be immediately corrected by the Contractor.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Daily inspection of the erosion control features by the Contractor.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>A minimum of 200 m of stand-by prefabricated silt fence barrier (in addition to those controls identified above) is to be maintained onsite prior to commencement of grading operations and throughout the duration of construction.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent entry of sediment to the adjacent environment.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

## 8.1.2 Surface Water Contamination and Debris Accumulation

### Potential Impacts

During construction activities, the potential for accidental fuel or lubricant spillage, debris accumulation, and subsequent contamination to surface water is increased.

During construction within the project limits, temporary diversion of surface water may be required to facilitate dewatering activities, and the installation of coffer dams (as required) for any culvert replacement or rehabilitation.

### Mitigation

To prevent the contamination of any surface water features (i.e. Constant Creek, Ferguson Lake and associated unnamed tributaries) within and adjacent to the project area during construction, precautions should be taken to avoid accidental spillage or discharge of chemical contaminants (e.g., gasoline, oils and lubricants).

Mitigation	Applicable Proposed Road Alignments
Refueling is to be carried out a minimum of 30 m from wetland / watercourse features in a controlled manner so as to prevent fuel spillage.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
All machinery should be kept out of the setbacks associated with the various features, and an emergency spill response kit should be on site at all times. In the event that a spill occurs, proper containment, clean up and reporting, in accordance with provincial requirements, should be undertaken.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
The Contractor will be required to take all necessary precautions to prevent the accumulation of litter and construction debris in any natural areas within and outside of the construction grading limits. All materials used or generated (e.g. organics, soils, debris, stockpiles) should be disposed of or stored in a manner that mitigates their entry to surface water features.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

### 8.1.3 Vegetation

#### Potential Impacts

Construction activities will result in the removal of vegetation. Vegetation removal requirements will increase as the proposed alignment speed increases, thereby exacerbating impacts. In addition, thirty-seven (37) Butternuts were observed in the assessment blocks identified by Ainley Group. Potential impacts to this and other SAR vegetation is discussed in **Section 8.1.6**.

#### Mitigation

Vegetation removal is expected during construction; however, measures should be taken to limit vegetation removal to the extent possible, in an effort to maintain the ecological integrity of the landscape. This is particularly important for any road re-construction which may occur adjacent to the identified significant features.

Mitigation	Applicable Proposed Road Alignments
<p>As part of tree removal during construction, appropriate tree felling and grubbing procedures (i.e. Best Management Practices) should be utilized in order to minimize impacts on surrounding vegetation. Documents such as the Ontario Woodlot Association's <i>A Landowner's Guide to Careful Logging</i> (2009), and Archibald <i>et al.</i> (1997) <i>Forest Management Guidelines for the Protection of the Physical Environment</i> can be reviewed for such techniques.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Migratory breeding birds are protected under the <i>Migratory Birds Convention Act, 1994</i>. Under this act it is unlawful to kill or destroy migratory breeding birds or active nests. To avoid impacts to migratory birds, vegetation removal (as necessary) during development of the subject property should be avoided between mid-April and late-August (migratory bird breeding and nesting period; Environment and Climate Change Canada, 2018). If works are required within this timing window, then the area should be cleared of nests by a qualified biologist prior to the activity being undertaken.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

#### 8.1.4 Wildlife and Bird Migration

##### Potential Impacts

Potential impacts to wildlife and bird migration are anticipated to predominantly be associated with clearing, excavation, and grading activities, and are expected to be temporary in nature. None of the proposed road alignments are anticipated to have any long term impacts on wildlife and bird migration; however, the 60/70 alignment is considered to be more advantageous as it will require the least amount of clearing, excavation, and grading activities.

##### Mitigation:

Mitigation	Applicable Proposed Road Alignments
To limit potential impacts, care should be taken during construction to avoid incidental contact with wildlife.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

#### 8.1.5 Significant Wildlife Habitat

##### Potential Impacts

Candidate significant wildlife habitat for bat maternity colonies has been identified within the study limits, particularly within the following vegetation communities:

- Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)
- White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1)
- Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOMM3-3)
- Fresh-Moist White Spruce – Hardwood Mixed Forest (FOMM10-2)

Per the MNRF’s Significant Wildlife Habitat Mitigation Support Tool (MNRF, 2014), impacts associated with road construction include both destruction of forest habitat that includes tree cavities used as nurseries, as well as disturbance of bats at these sites. However, it should be noted that the construction of new roads through extensively forested areas may make the site more suitable for foraging bats (MNRF, 2014).

Based on the location of the proposed 60/70, 70, and 90 kph alignments, the potential for impacts (associated with vegetation clearing) exists as follows:

<b>Block</b>	<b>Alignments Requiring Vegetation Clearing within Candidate Significant Wildlife Habitat for Bats</b>
5	90 kph
7	90 kph
10	70 kph 90 kph
14	90 kph (minor clearing anticipated)
15	60/70 kph 70 kph 90 kph
16	70 kph 90 kph

Further to the above, much of the project limits falls within a Stratum II deer wintering area. Per MNRF information, the significance of this feature greatly depends on the nature of the project (upgrades to an existing road versus construction of a new road). Impacts which may be associated with the reconstruction work could include habitat fragmentation, habitat access, and increased road mortality.

Mitigation:

The following mitigation measures should be employed to limit potential impacts to the identified Significant Wildlife Habitat:

<b>Mitigation</b>	<b>Applicable Proposed Road Alignments</b>
In an effort to mitigate potential impacts to bat species which may utilize snag / cavity trees within the development footprint, the removal of woody vegetation should be avoided between April 1 and September 30 to reduce the likelihood to harming bat species.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

<p>Should vegetation clearing be required in any or all of the above noted blocks, then a review of the clearing footprint should be completed to determine the number of snag / cavity trees requiring removal. These removal requirements should then be discussed with MECP to determine any necessary approvals.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Where possible vegetation removal should be minimized and the reconstructed roadway should be maintained within the existing alignment to limit the potential for habitat fragmentation, and issues with access to habitat with the Stratum II deer wintering area.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

### 8.1.6 Species At Risk (SAR)

#### Potential Impacts

As discussed in **Section 6.4.1** and **Table 2**, there is the potential for impacts to the following SAR:

- Little Brown Bat - Endangered
- Northern Long-eared Myotis - Endangered
- Tri-coloured Bat - Endangered
- Eastern Small-footed Myotis - Endangered
- American Ginseng - Endangered
- Butternut – Endangered
- Blanding’s Turtle - Threatened
- Eastern Meadowlark – Threatened
- Eastern Whip-poor-will - Threatened
- Eastern Wood Pewee - Special Concern
- Snapping Turtle – Special Concern
- Wood Thrush – Special Concern
- Golden-winged Warbler – Special Concern
- Canada Warbler – Special Concern

- Evening Grosbeak – Special Concern

With respect to the Special Concern species identified above, neither individuals nor their habitat is afforded protection under the *ESA*.

Mitigation

Mitigation measures for protection of SAR are required, and should include the following:

Mitigation	Applicable Proposed Road Alignments
Where possible, road reconstruction should respect a 25 m setback from any of the identified retainable Butternut trees. Any reconstruction that may impact the identified retainable Butternut trees (i.e. fall within 25 m) should be completed in accordance with Section 23.7 of O. Reg. 242/08.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
Mitigation measures for the protection of SAR bat species and their habitat, as outlined in <b>Section 8.1.5</b> , should be incorporated in any detailed design for the road reconstruction.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
Vegetation clearing should be avoided in areas of historical American Ginseng observations. If clearing is required, then permit requirements for the encroachment or removal of isolated populations will need to be discussed.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
Encroachment into wetland areas should be avoided to the extent possible for the protection of potential turtle habitat.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
The turtle nesting season is identified as May 15 <sup>th</sup> to September 30 <sup>th</sup> . If works are to occur during the nesting season, temporary wildlife fencing should be installed (prior to May 15 <sup>th</sup> ) and maintained at locations exhibiting turtle	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> </ul>

<p>nesting potential, including all connected wetlands, watercourses, and waterbodies within the project limits.</p>	<ul style="list-style-type: none"> <li>• 90 kph alignment</li> </ul>
<p>Stockpiled earth / granular materials in proximity to the areas identified as turtle habitat should be covered with geotextile, or be placed behind an exclusionary barrier, between May 15<sup>th</sup> and June 30<sup>th</sup> to prevent turtle nesting.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Works should not alter water levels within the adjacent wetlands between September 30 and April 1 in any calendar year.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Should the preferred alignment require encroachment upon suitable habitat for Eastern Meadowlark, then consultation should be completed with MECP to determine any approval requirements.</p>	<ul style="list-style-type: none"> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Should the preferred alignment require encroachment upon habitat with Eastern Whip-poor-will observations, then consultation should be completed with MECP to determine any approval requirements.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>The construction contractor should be familiar with the SAR noted in this report. If SAR are identified during construction, all works in the immediate area should cease and the MECP must be contacted for direction to proceed.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>Harassment to SAR should not occur during construction activities.</p>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

### 8.1.7 Environmentally Sensitive Areas

#### Potential Impacts

Ferguson Lake PSW surrounds Ferguson Lake and is located within the study limits on the northeast side of Ferguson Lake Road from approximately Stn. 5+260 to Stn. 5+330. Within this area, none of the proposed road alignments (60/70 kph, 70 kph, or 90 kph) appear to encroach upon the PSW; however, impacts to this feature could occur should intrusion into the feature for any reason (i.e. staging equipment, etc.) be required.

In addition to the above feature, one candidate ANSI – Ferguson Lake Candidate ANSI and one regionally significant wetland – McNulty Lake Wetland, are also present within the study limits; however, neither feature receives formal protection. Regardless, encroachment or intrusion into these features should be avoided to the furthest extent possible.

#### Mitigation

Mitigation measures to limit impacts to the form and function of Ferguson Lake PSW include the following:

Mitigation	Applicable Proposed Road Alignments
Erosion and sediment controls, as outlined in <b>Section 8.1.1</b> should be employed.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
Works should avoid the encroachment or intrusion of machinery or roads reconstruction related materials into Ferguson Lake PSW.	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

### 8.1.8 Fisheries, Associated Habitat, and In-Water Works

#### Potential Impacts

Per **Section 6.4**, Ainley Group reviewed (8) locations of fish habitat within the study limits that have the potential to be impacted by road reconstruction.

During construction, potential impacts to the above noted watercourses and fish habitat may originate from exposed soils, equipment maintenance and refuelling, and stockpiles of excess material being located adjacent to watercourses during rain events. Suspension of sediments

can have direct negative effects on resident fish such as respiratory stress, reduced feeding efficiency, and impairment of physiologic processes such as growth and reproduction. Indirect effects may include changes in the diversity of food source, and the loss of spawning and nursery habitat. Elevated levels of suspended sediments may result in a shift in fish population diversity and density, as various species will leave the area for more suitable environments.

Mitigation

Mitigation	Applicable Proposed Road Alignments
<p>Any development within or adjacent to fish habitat should respect the MNR identified timing windows for no in-water work, including:</p> <ul style="list-style-type: none"> <li>• October 1<sup>st</sup> to July 15<sup>th</sup> at location CV-00456 (Stn 4+625)</li> <li>• March 15<sup>th</sup> to July 15<sup>th</sup> at locations CV-00454 (Stn 3+590), CV-00455 (Stn 4+000), CV-00460 (Stn 5+515), CV-00461 (Stn 5+718), CV-00463 (Stn 6+020), Watercourse adjacent Ferguson Lake Road (Stn 6+875), and CV-00468 (Stn 7+865)</li> </ul>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>
<p>To limit the potential impacts caused by the proposed development, and to avoid causing the death of fish or harmful alteration, disruption, or destruction of fish habitat, the best management practices as identified by DFO's Measures to Protect Fish and Fish Habitat should also be implemented as warranted (DFO, 2019) which may include the following general mitigation and protection principles:</p> <ul style="list-style-type: none"> <li>○ Prevent the death of fish</li> <li>○ Maintain riparian vegetation</li> <li>○ Carry out works, undertakings, and activities on land</li> <li>○ Ensure proper sediment control</li> </ul>	<ul style="list-style-type: none"> <li>• 60/70 kph alignment</li> <li>• 70 kph alignment</li> <li>• 90 kph alignment</li> </ul>

<ul style="list-style-type: none"><li>○ Prevent entry of deleterious substances in water</li></ul> <p>If these measures cannot be met then a DFO Request for Review submission should be completed.</p>	
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The following Table 3 provides a summary of constraints, and anticipated approvals required with respect to natural heritage features within the study limits. Information within the table has been withheld to a degree to limit the availability of sensitive information.

**Table 3**  
**Environmental Constraints Summary**  
**Ferguson Lake Road**

Feature	Location	Coordinates	Fish Species (MNRF)	Mitigation	Approvals / Comments	Information Source (Feature)
<i>Migratory Birds</i>	Throughout study limits			No vegetation clearing between early April and Late August.	No approvals anticipated if following mitigation.	Environment Canada
<i>Fish Habitat</i>	Station 7+865 / Unnamed tributary of Constant Creek	18T 352279, 5020052	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 6+875 / Adjacent to an unnamed tributary of Constant Creek	18T 353048, 5019505	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 6+020 / Unnamed tributary of Constant Creek	18T 353713, 5019007	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 5+718 / Roadside drainage to Constant Creek	18T 353699, 5018738	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 5+515 / Unnamed tributary of Constant Creek	18T 353883, 5018616	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 4+625 / Unnamed tributary of Ferguson Lake	18T 354524, 5018099	D/S Constant Lake: Banded killifish, Blackchin shiner, Blacknose shiner, Bluntnose minnow, Brook Stickleback, Brown bullhead, Cisco, Common shiner, Emerald shiner, Fathead minnow, Iowa darter, Northern pike, Northern redbelly dace, Pumpkinseed, Rockbass, Smallmouth bass, Walleye, White sucker, Yellow perch	No in-water work between October 1 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 4+000 / Roadside drainage	18T 354915, 5017705	N/A	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 3+590 / Unnamed tributary of Ferguson Lake	18T 355298, 5017572	N/A	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
<i>Environmentally Sensitive Areas</i>	Ferguson Lake Escarpment Candidate ANSI	Located on SW side of Ferguson Lake Road, extending from approximately 3+400 to 5+750			General avoidance if possible. No formal status of feature, but should discuss with MNRF.	MNRF
	Ferguson Lake PSW	Located on the northeast side of the road from approximately 5+260 - 5+330		Avoid intrusion. Erosion and sediment controls.	Avoid intrusion into PSW	

Environmental Constraints Summary  
Ferguson Lake Road

Feature	Location	Coordinates	Fish Species (MNRF)	Mitigation	Approvals / Comments	Information Source (Feature)
	Deer Wintering Areas	Project limits falls along the western edge of a large deer wintering area which extends from approximately Kennely Mountain Road, east to Goshen and to north of Highway 132. Deer wintering area within project limits is identified as Stratum II.		Where possible vegetation removal should be minimized and the reconstructed roadway should be maintained within the existing alignment to limit the potential for habitat fragmentation, issues with access to habitat, and increased road mortality associated with the Stratum II deer wintering area.	General avoidance where possible. Should the preferred alignment require extensive vegetation removal then discussions with MNRF should be undertaken.	
<b>SAR</b>						
<i>Turtles (Snapping and Blanding's)</i>	Data Sensitivity prohibits release of this information			Avoid encroachment into wetlands where possible. If works are to occur along the granular shoulder, install temporary wildlife fencing prior to May 15 in any calendar year. Works should not alter water levels in adjacent wetlands between September 30 and April 1 in any calendar year.		Ainley / MNRF
<i>Grassland Birds (Bobolink / Eastern meadowlark)</i>	Data Sensitivity prohibits release of this information				Confirm approval requirements from MECP based on preferred alternative.	
<i>Eastern Whip-poor-will</i>	Data Sensitivity prohibits release of this information				Confirm approval requirements from MECP based on preferred alternative.	
<i>Butternut</i>	Data Sensitivity prohibits release of this information			Avoid Category 3 trees, and 25 m buffer to the extent possible.	Cat. 1 - No approvals necessary. Cat. 2 - Removal of up to 10 trees available under O.Reg. 242/08. Compensation plantings required (generally streamlined approval process). Cat. 3 - Removal of Cat. 3 trees will require a permit from MECP (6 months + duration)	Ainley / MNRF
<i>American Ginseng</i>	Data Sensitivity prohibits release of this information			Avoid areas with known population areas.	MECP permit required for encroachment or removal of isolated populations.	Ainley / MNRF
<i>Bats</i>	Data Sensitivity prohibits release of this information			Vegetation removal should occur outside of the period of April 1 to September 30.	Confirm approval requirements from MECP based on preferred alternative.	

## 9.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the review of the background information, consultation with regulatory authorities, and the field visits completed in 2020, the following conclusions and recommendations are made.

### 9.1 Conclusions

- Sixteen (16) vegetation communities were identified within the study limits.
- Nine (9) locations of fish habitat were identified within the study limits; however, it is understood that none of the proposed work will require modifications at the locations where Constant Creek crosses Ferguson Lake Road, so these locations were not included for detailed fisheries assessment.
- During the field visits completed by Ainley Group in 2020, five (5) SAR, were observed on or adjacent to the study limits as follows:
  - Butternut
  - Barn Swallow
  - Eastern Meadowlark
  - Eastern Whip-poor-will
  - Eastern Wood-pewee
- The proposed alignments have the potential to impact the following SAR:
  - Little Brown Bat - Endangered
  - Northern Long-eared Myotis - Endangered
  - Tri-coloured Bat - Endangered
  - Eastern Small-footed Myotis - Endangered
  - American Ginseng - Endangered
  - Butternut – Endangered
  - Blanding’s Turtle - Threatened
  - Eastern Meadowlark – Threatened
  - Eastern Whip-poor-will - Threatened
  - Eastern Wood Pewee - Special Concern
  - Snapping Turtle – Special Concern
  - Wood Thrush – Special Concern
  - Golden-winged Warbler – Special Concern

- Canada Warbler – Special Concern
- Evening Grosbeak – Special Concern
- Candidate significant wildlife habitat for bat maternity colonies has been identified within the study limits, particularly within the following vegetation communities:
  - Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)
  - White Cedar – Hardwood Mineral Mixed Swamp (SWMM1-1)
  - Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOMM3-3)
  - Fresh-Moist White Spruce – Hardwood Mixed Forest (FOMM10-2)
- Much of the project limits falls within a Stratum II deer wintering area. Per MNRF information, the significance of this feature greatly depends on the nature of the project (upgrades to an existing road versus construction of a new road). Impacts which may be associated with the reconstruction work could include habitat fragmentation, habitat access, and increased road mortality.
- Ferguson Lake PSW surrounds Ferguson Lake and is located within the study limits on the northeast side of Ferguson Lake Road from approximately Stn. 5+260 to Stn. 5+330. Within this area, none of the proposed road alignments (60/70 kph, 70 kph, or 90 kph) appear to encroach upon the PSW; however, impacts to this feature could occur should intrusion into the feature for any reason (i.e. staging equipment, etc.) be required.
- One candidate ANSI – Ferguson Lake Candidate ANSI and one regionally significant wetland – McNulty Lake Wetland, are present within the study limits; however, neither feature receives formal protection.

## 9.2 Recommendations

- Prior to construction, all erosion and control measures proposed for the site should be identified in an Erosion and Sediment Control Plan. The finalized plan is to be relayed to the contractor with all requirements communicated.
- Contractor shall prepare and provide a spill response measures and contingency plan, to be reviewed and approved by the Contract Administrator.
- All construction activities including maintenance procedures will be controlled to prevent entry of deleterious substances into the natural environment. Vehicular maintenance and refueling will be conducted at least 30 m from waterways.
- During construction and grading activities, silt fence or other suitable erosion and sediment controls should be placed along the downgradient boundary of the construction zone to reduce the potential for sedimentation. Consideration should be given to applying multiple layers of silt fence or other erosion control barriers (i.e. straw bales, coir fibre logs) in areas of steep slope. The erosion control barrier should remain in place until the grading area becomes sufficiently vegetated to limit erosion and

sedimentation potential. Once the site is stabilized, the erosion control barriers can be removed.

- The areal limits of exposed soils associated with grading areas should be minimized to the extent possible.
- Any exposed steep slope areas should be stabilized with vegetation and / or erosion control blankets / commercial seed mats to limit the potential sediment transport via overland flow.
- Prior to the commencement of construction activities all erosion and sediment control measures are to be inspected and certified by a qualified inspector.
- The Contract Administrator (CA) should complete inspections of the erosion control features at regular intervals during construction, and at an increased frequency wherever there is the high potential for sedimentation (i.e. heavy rain events). Any deficiencies identified by the CA are to be immediately corrected by the Contractor.
- Daily inspection of the erosion control features by the Contractor.
- A minimum of 200 m of stand-by prefabricated silt fence barrier (in addition to those controls identified above) is to be maintained onsite prior to commencement of grading operations and throughout the duration of construction.
- Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent entry of sediment to the adjacent environment.
- Refueling is to be carried out a minimum of 30 m from wetland / watercourse features in a controlled manner so as to prevent fuel spillage.
- All machinery should be kept out of the setbacks associated with the various features, and an emergency spill response kit should be on site at all times. In the event that a spill occurs, proper containment, clean up and reporting, in accordance with provincial requirements, should be undertaken.
- The Contractor will be required to take all necessary precautions to prevent the accumulation of litter and construction debris in any natural areas within and outside of the construction grading limits. All materials used or generated (e.g. organics, soils, debris, stockpiles) should be disposed of or stored in a manner that mitigates their entry to surface water features.
- As part of tree removal during construction, appropriate tree felling and grubbing procedures (i.e. Best Management Practices) should be utilized in order to minimize impacts on surrounding vegetation. Documents such as the Ontario Woodlot Association's *A Landowner's Guide to Careful Logging* (2009), and Archibald *et al.* (1997) *Forest Management Guidelines for the Protection of the Physical Environment* can be reviewed for such techniques.

- Migratory breeding birds are protected under the *Migratory Birds Convention Act, 1994*. Under this act it is unlawful to kill or destroy migratory breeding birds or active nests. To avoid impacts to migratory birds, vegetation removal (as necessary) during development of the subject property should be avoided between mid-April and late-August (migratory bird breeding and nesting period; Environment and Climate Change Canada, 2018). If works are required within this timing window, then the area should be cleared of nests by a qualified biologist prior to the activity being undertaken.
- To limit potential impacts, care should be taken during construction to avoid incidental contact with wildlife.
- In an effort to mitigate potential impacts to bat species which may utilize snag / cavity trees within the development footprint, the removal of woody vegetation should be avoided between April 1 and September 30 to reduce the likelihood to harming bat species.
- Should vegetation clearing be required in any of the candidate significant wildlife habitat for bats, then a review of the clearing footprint should be completed to determine the number of snag / cavity trees requiring removal. These removal requirements should then be discussed with MECP to determine any necessary approvals.
- Where possible vegetation removal should be minimized and the reconstructed roadway should be maintained within the existing alignment to limit the potential for habitat fragmentation, and issues with access to habitat associated with the Stratum II deer wintering area.
- Where possible, road reconstruction should respect a 25 m setback from any of the identified retainable Butternut trees. Any reconstruction that may impact the identified retainable Butternut trees (i.e. fall within 25 m) should be completed in accordance with Section 23.7 of O. Reg. 242/08.
- Vegetation clearing should be avoided in areas of historical American Ginseng observations. If clearing is required, then permit requirements for the encroachment or removal of isolated populations will need to be discussed.
- Encroachment into wetland areas should be avoided to the extent possible for the protection of potential turtle habitat.
- The turtle nesting season is identified as May 15<sup>th</sup> to September 30<sup>th</sup>. If works are to occur during the nesting season, temporary wildlife fencing should be installed (prior to May 15<sup>th</sup>) and maintained at locations exhibiting turtle nesting potential, including all connected wetlands, watercourses, and waterbodies within the project limits.
- Stockpiled earth / granular materials in proximity to the areas identified as turtle habitat should be covered with geotextile, or be placed behind an exclusionary barrier, between May 15<sup>th</sup> and June 30<sup>th</sup> to prevent turtle nesting.

- Works should not alter water levels within the adjacent wetlands between September 30 and April 1 in any calendar year.
- Should the preferred alignment require encroachment upon suitable habitat for Eastern Meadowlark, then consultation should be completed with MECP to determine any approval requirements.
- Should the preferred alignment require encroachment upon habitat with Eastern Whip-poor-will observations, then consultation should be completed with MECP to determine any approval requirements.
- The construction contractor should be familiar with the SAR noted in this report. If SAR are identified during construction, all works in the immediate area should cease and the MECP must be contacted for direction to proceed.
- Harassment to SAR should not occur during construction activities.
- Encroachment or intrusion into sensitive features, including Ferguson Lake PSW, Ferguson Lake Candidate ANSI, and McNulty Lake Wetland should be avoided to the extent possible.
- Any development within or adjacent to fish habitat should respect the MNRF identified timing windows for no in-water work, including:
  - October 1<sup>st</sup> to July 15<sup>th</sup> at location CV-00456 (Stn 4+625)
  - March 15<sup>th</sup> to July 15<sup>th</sup> at locations CV-00454 (Stn 3+590), CV-00455 (Stn 4+000), CV-00460 (Stn 5+515), CV-00461 (Stn 5+718), CV-00463 (Stn 6+020), Watercourse adjacent Ferguson Lake Road (Stn 6+875), and CV-00468 (Stn 7+865)
- To limit the potential impacts caused by the proposed development, and to avoid causing the death of fish or harmful alteration, disruption, or destruction of fish habitat, the best management practices as identified by DFO's Measures to Protect Fish and Fish Habitat should also be implemented as warranted (DFO, 2019) which may include the following general mitigation and protection principles:
  - Prevent the death of fish
  - Maintain riparian vegetation
  - Carry out works, undertakings, and activities on land
  - Ensure proper sediment control
  - Prevent entry of deleterious substances in water

If these measures cannot be met then a DFO Request for Review submission should be completed.

## 10.0 CLOSURE

Ainley Group has prepared this Natural Heritage Study per the terms of reference in an effort to describe the proposed Ferguson Lake Road reconstruction, summarize potential impacts due to the undertaking, and identify mitigation measures and monitoring commitments to limit potential impacts, and to identify any future studies required.

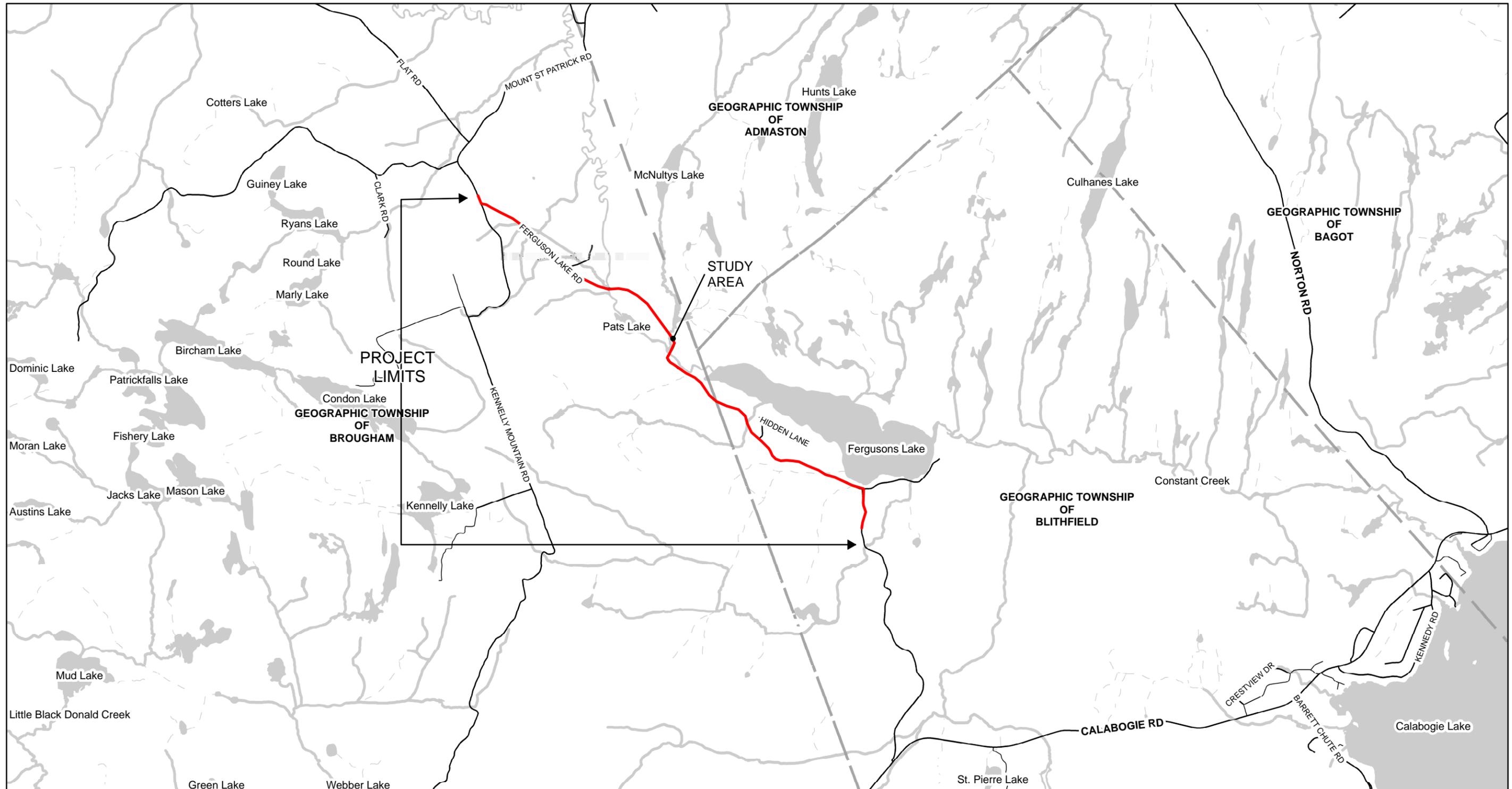
Based on the results of the background review, field studies, and an assessment of impacts, it appears that the alignment which will result in the least amount of impacts is the 60/70 alignment; however, it should be noted that all alignments will result in some impacts (to varying degrees) to natural heritage features within the study limits.

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## **FIGURES**



SOURCE: LAND INFORMATION ONTARIO (MNR)

Legend	
<span style="color: red;">---</span>	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
<span style="color: green;">---</span>	PROPOSED 60KPH ALIGNMENT
<span style="color: magenta;">---</span>	EXISTING ALIGNMENT
<span style="color: orange;">---</span>	ELC COMMUNITY BOUNDARIES
<span style="color: cyan;">---</span>	INTERMITTENT
<span style="color: blue;">---</span>	PERMANENT
CVI_1	TRANSPORTATION
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST
FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
MEMM3	DRY-FRESH MIXED MEADOW
OAGM2	PERENNIAL COVER CROPS
SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 2
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend			
<span style="color: red;">---</span>	BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
<span style="color: green;">---</span>	PROPOSED 60KPH ALIGNMENT	FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
<span style="color: magenta;">---</span>	EXISTING ALIGNMENT	FODM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
<span style="color: orange;">---</span>	ELC COMMUNITY BOUNDARIES	FODM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
<span style="color: blue;">---</span>	INTERMITTENT	FODM5-2	DRY-FRESH POPLAR MIXED FOREST
<span style="color: blue;">---</span>	PERMANENT	FODM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
CVI_1	TRANSPORTATION	MEMM3	DRY-FRESH MIXED MEADOW
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST	OAGM2	PERENNIAL COVER CROPS
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST	SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
		SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
		SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 3
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend			
<span style="color: red;">---</span>	BLOCKS (POTENTIAL ALIGNMENT SHIFT)		
<span style="color: green;">---</span>	PROPOSED 60KPH ALIGNMENT		
<span style="color: magenta;">---</span>	EXISTING ALIGNMENT		
<span style="color: orange;">---</span>	ELC COMMUNITY BOUNDARIES		
<span style="color: cyan;">---</span>	INTERMITTENT		
<span style="color: blue;">---</span>	PERMANENT		
CVI_1	TRANSPORTATION		
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST	FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST	FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
		FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
		FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
		FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
		MEMM3	DRY-FRESH MIXED MEADOW
		OAGM2	PERENNIAL COVER CROPS
		SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
		SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
		SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
		SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 4
EXISTING CONDITIONS	

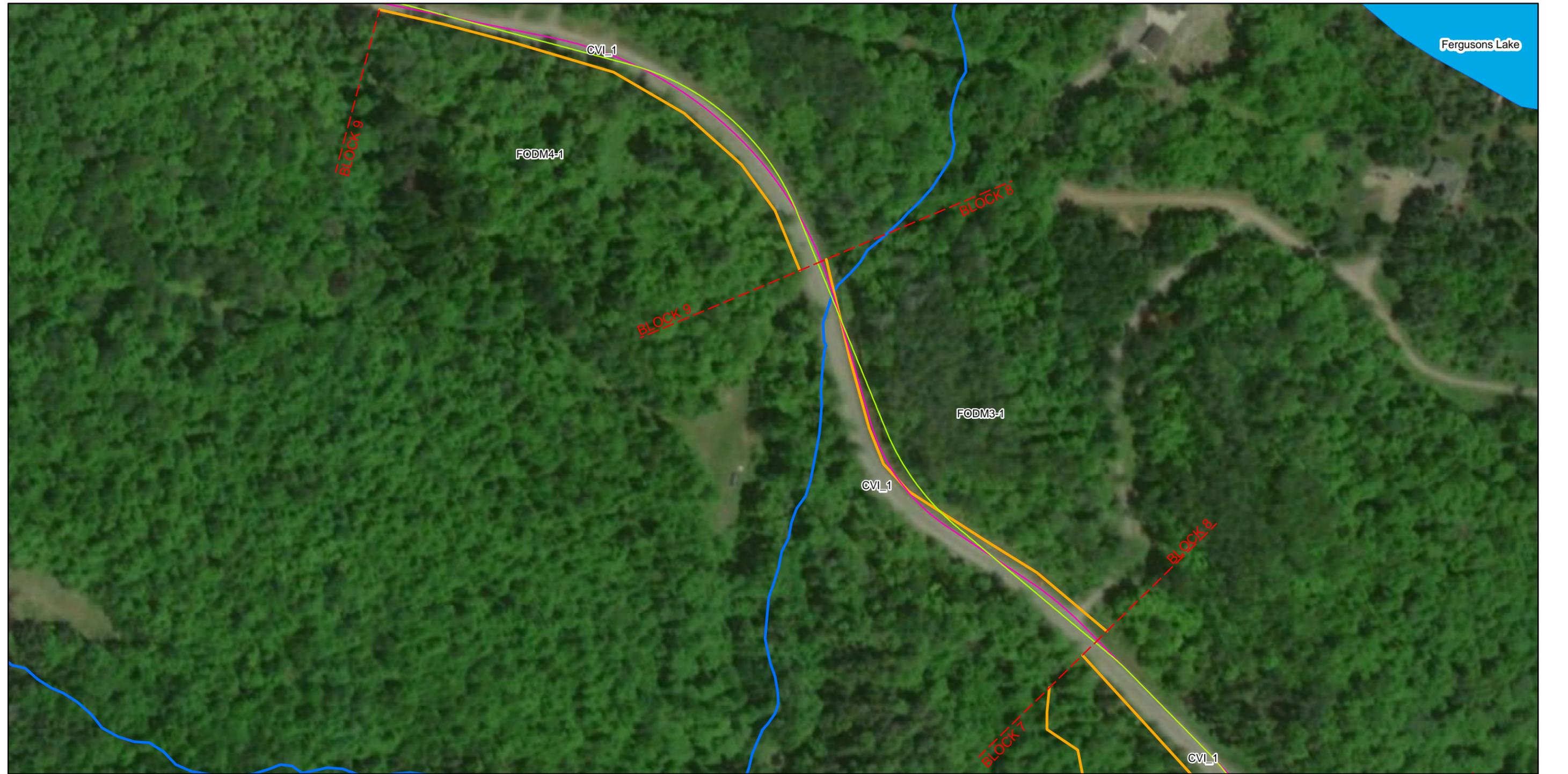


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend	
--- BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6 DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
--- PROPOSED 60KPH ALIGNMENT	FODM8-1 FRESH-MOIST POPLAR DECIDUOUS FOREST
--- EXISTING ALIGNMENT	FODM2-2 DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
--- ELC COMMUNITY BOUNDARIES	FODM3-3 DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
--- INTERMITTENT	FODM5-2 DRY-FRESH POPLAR MIXED FOREST
--- PERMANENT	FODM10-2 FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
CVI_1 TRANSPORTATION	MEMM3 DRY-FRESH MIXED MEADOW
FODM3-1 DRY-FRESH POPLAR DECIDUOUS FOREST	OAGM2 PERENNIAL COVER CROPS
FODM4-1 DRY-FRESH BEECH DECIDUOUS FOREST	SWCM1-2 WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
FODM5-2 DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	SWMM1-1 WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
	SWTM1-1 SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
	SWTM2-1 RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 5
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend			
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
	PROPOSED 60KPH ALIGNMENT	FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
	EXISTING ALIGNMENT	FODM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
	ELC COMMUNITY BOUNDARIES	FODM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
	INTERMITTENT	FODM5-2	DRY-FRESH POPLAR MIXED FOREST
	PERMANENT	FODM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
	TRANSPORTATION	MEMM3	DRY-FRESH MIXED MEADOW
	DRY-FRESH POPLAR DECIDUOUS FOREST	OAGM2	PERENNIAL COVER CROPS
	DRY-FRESH BEECH DECIDUOUS FOREST	SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
		SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
		SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 6
EXISTING CONDITIONS	

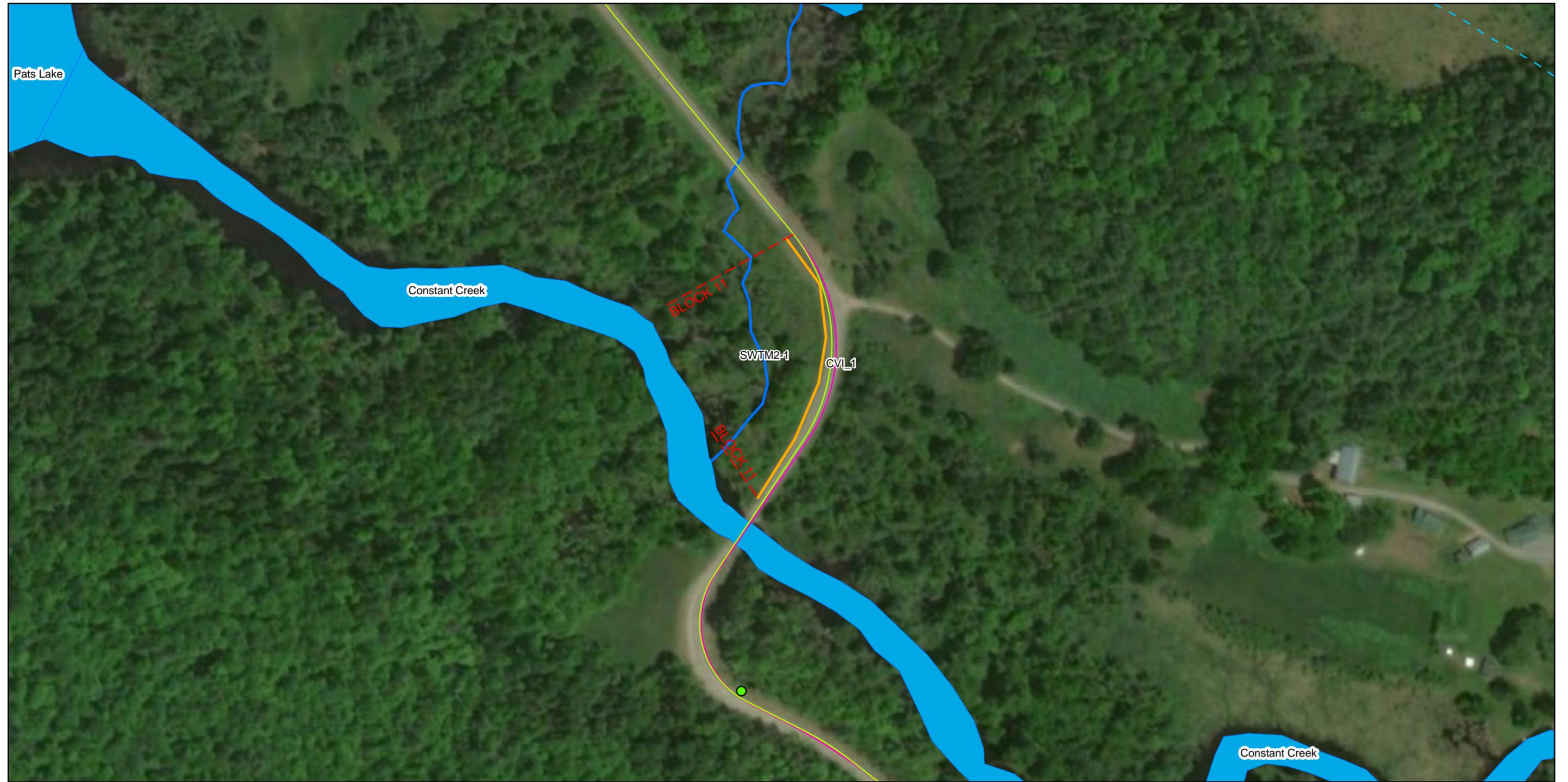


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend			
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
	PROPOSED 60KPH ALIGNMENT	FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
	EXISTING ALIGNMENT	FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
	ELC COMMUNITY BOUNDARIES	FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
	INTERMITTENT	FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
	PERMANENT	FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
	TRANSPORTATION	MEMM3	DRY-FRESH MIXED MEADOW
	DRY-FRESH POPLAR DECIDUOUS FOREST	OAGM2	PERENNIAL COVER CROPS
	DRY-FRESH BEECH DECIDUOUS FOREST	SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
		SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
		SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 7
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

**Legend**

--- BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6 DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST	MEMM3 DRY-FRESH MIXED MEADOW
--- PROPOSED 60KPH ALIGNMENT	FODM8-1 FRESH-MOIST POPLAR DECIDUOUS FOREST	OAGM2 PERENNIAL COVER CROPS
--- EXISTING ALIGNMENT	FOMM2-2 DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST	SWCM1-2 WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
--- ELC COMMUNITY BOUNDARIES	FOMM3-3 DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST	SWMM1-1 WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
--- INTERMITTENT	FOMM5-2 DRY-FRESH POPLAR MIXED FOREST	SWTM1-1 SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
--- PERMANENT	FOMM10-2 FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST	SWTM2-1 RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP
CVI_1 TRANSPORTATION		
FODM3-1 DRY-FRESH POPLAR DECIDUOUS FOREST		
FODM4-1 DRY-FRESH BEECH DECIDUOUS FOREST		
FODM5-2 DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST		

**METRIC**

DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD



FIGURE 8

EXISTING CONDITIONS



Legend	
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
	PROPOSED 60KPH ALIGNMENT
	EXISTING ALIGNMENT
	ELC COMMUNITY BOUNDARIES
	INTERMITTENT
	PERMANENT
CVI_1	TRANSPORTATION
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST
FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
MEMM3	DRY-FRESH MIXED MEADOW
OAGM2	PERENNIAL COVER CROPS
SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 9
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend	
<span style="color: red;">---</span>	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
<span style="color: green;">---</span>	PROPOSED 60KPH ALIGNMENT
<span style="color: magenta;">---</span>	EXISTING ALIGNMENT
<span style="color: orange;">---</span>	ELC COMMUNITY BOUNDARIES
<span style="color: cyan;">---</span>	INTERMITTENT
<span style="color: blue;">---</span>	PERMANENT
CVI_1	TRANSPORTATION
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST
FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
MEMM3	DRY-FRESH MIXED MEADOW
OAGM2	PERENNIAL COVER CROPS
SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 10
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

Legend			
<span style="color: red;">---</span>	BLOCKS (POTENTIAL ALIGNMENT SHIFT)	FODM5-6	DRY-FRESH SUGAR MAPLE-BASSWOOD DECIDUOUS FOREST
<span style="color: green;">---</span>	PROPOSED 60KPH ALIGNMENT	FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST
<span style="color: magenta;">---</span>	EXISTING ALIGNMENT	FOMM2-2	DRY-FRESH WHITE PINE-SUGAR MAPLE MIXED FOREST
<span style="color: orange;">---</span>	ELC COMMUNITY BOUNDARIES	FOMM3-3	DRY-FRESH SUGAR MAPLE-HEMLOCK MIXED FOREST
<span style="color: cyan;">---</span>	INTERMITTENT	FOMM5-2	DRY-FRESH POPLAR MIXED FOREST
<span style="color: blue;">---</span>	PERMANENT	FOMM10-2	FRESH-MOIST WHITE SPRUCE-HARDWOOD MIXED FOREST
CVI_1	TRANSPORTATION	MEMM3	DRY-FRESH MIXED MEADOW
FODM3-1	DRY-FRESH POPLAR DECIDUOUS FOREST	OAGM2	PERENNIAL COVER CROPS
FODM4-1	DRY-FRESH BEECH DECIDUOUS FOREST	SWCM1-2	WHITE CEDAR-CONIFER MINERAL CONIFEROUS FOREST
FODM5-2	DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST	SWMM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP
		SWTM1-1	SPECKLED ALDER MINERAL DECIDUOUS THICKET SWAMP
		SWTM2-1	RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N ↑
	FIGURE 11
EXISTING CONDITIONS	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

**Legend**

-  WHIP-POOR-WILL SURVEY LOCATIONS
-  MIGRATORY BREEDING BIRD SURVEY LOCATIONS
-  EXISTING ALIGNMENT
-  FISH HABITAT
-  PROPOSED 60KPH ALIGNMENT
-  BLOCKS (POTENTIAL ALIGNMENT SHIFT)
-  CANDIDATE SIGNIFICANT WILDLIFE HABITAT
-  INTERMITTENT WATERCOURSE
-  PERMANENT WATERCOURSE
-  UNEVALUATED WETLAND
-  EVALUATED PROVINCIAL WETLAND
-  EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 12
CONSTRAINTS AND OPPORTUNITIES	



Legend	
	WHIP-POOR-WILL SURVEY LOCATIONS
	MIGRATORY BREEDING BIRD SURVEY LOCATIONS
	EXISTING ALIGNMENT
	FISH HABITAT
	PROPOSED 60KPH ALIGNMENT
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
	CANDIDATE SIGNIFICANT WILDLIFE HABITAT
	INTERMITTENT WATERCOURSE
	PERMANENT WATERCOURSE
	UNEVALUATED WETLAND
	EVALUATED PROVINCIAL WETLAND
	EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	
	FIGURE 13
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

N.T.S

Legend	
	WHIP-POOR-WILL SURVEY LOCATIONS
	MIGRATORY BREEDING BIRD SURVEY LOCATIONS
	EXISTING ALIGNMENT
	FISH HABITAT
	PROPOSED 60KPH ALIGNMENT
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
	CANDIDATE SIGNIFICANT WILDLIFE HABITAT
	INTERMITTENT WATERCOURSE
	PERMANENT WATERCOURSE
	UNEVALUATED WETLAND
	EVALUATED PROVINCIAL WETLAND
	EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 14
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNRF)

**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 15
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

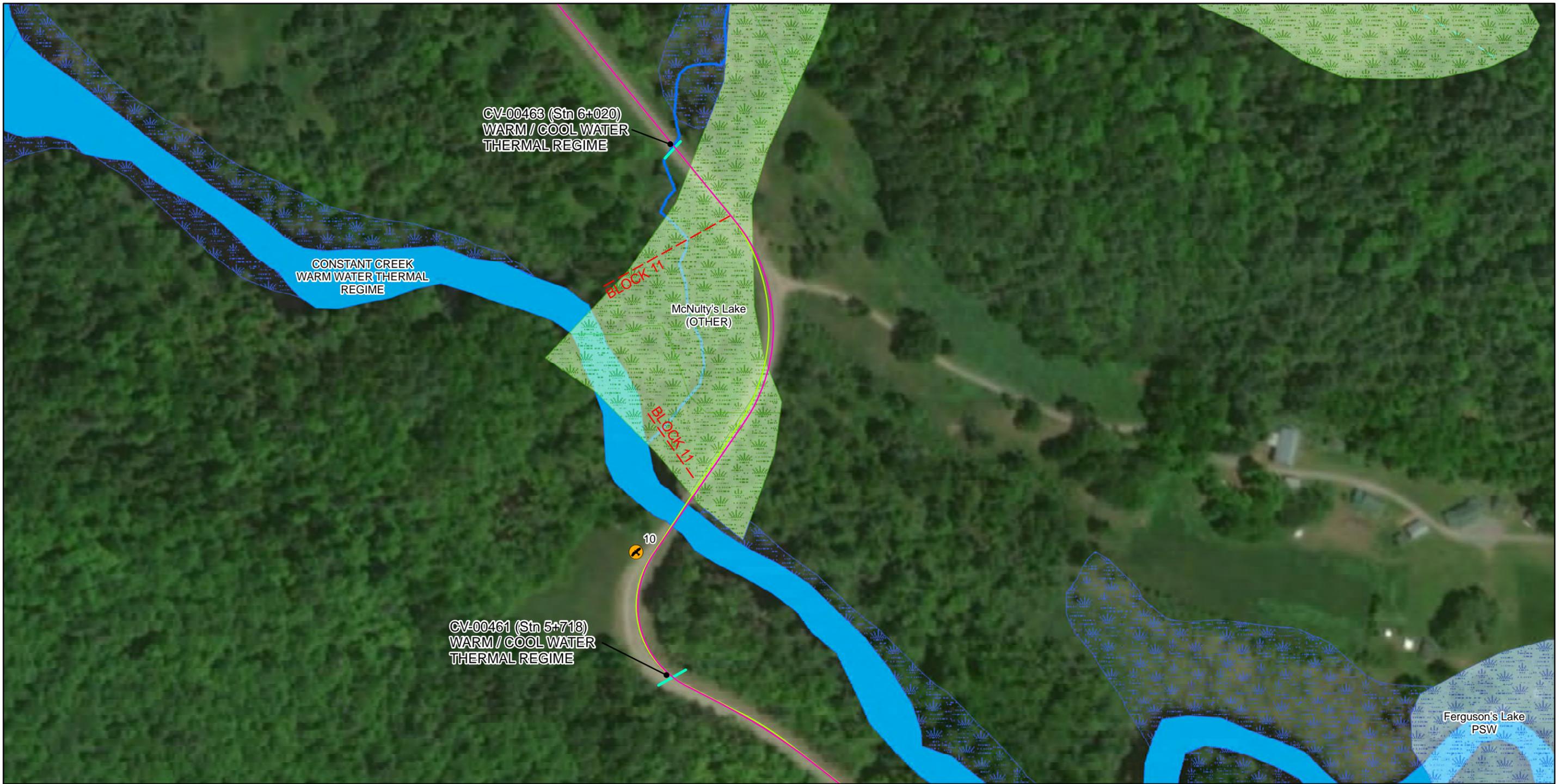
FERGUSON LAKE ROAD	N 
	FIGURE 16
CONSTRAINTS AND OPPORTUNITIES	



Legend	
	WHIP-POOR-WILL SURVEY LOCATIONS
	MIGRATORY BREEDING BIRD SURVEY LOCATIONS
	EXISTING ALIGNMENT
	FISH HABITAT
	PROPOSED 60KPH ALIGNMENT
	BLOCKS (POTENTIAL ALIGNMENT SHIFT)
	CANDIDATE SIGNIFICANT WILDLIFE HABITAT
	INTERMITTENT WATERCOURSE
	PERMANENT WATERCOURSE
	UNEVALUATED WETLAND
	EVALUATED PROVINCIAL WETLAND
	EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	
	FIGURE 17
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 18
CONSTRAINTS AND OPPORTUNITIES	



**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 19
CONSTRAINTS AND OPPORTUNITIES	



**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 20
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

**Legend**

 WHIP-POOR-WILL SURVEY LOCATIONS	 CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 MIGRATORY BREEDING BIRD SURVEY LOCATIONS	 INTERMITTENT WATERCOURSE
 EXISTING ALIGNMENT	 PERMANENT WATERCOURSE
 FISH HABITAT	 UNEVALUATED WETLAND
 PROPOSED 60KPH ALIGNMENT	 EVALUATED PROVINCIAL WETLAND
 BLOCKS (POTENTIAL ALIGNMENT SHIFT)	 EVALUATED OTHER WETLAND

**METRIC**  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETERS  
 UNLESS OTHERWISE SHOWN

FERGUSON LAKE ROAD	N 
	FIGURE 21
CONSTRAINTS AND OPPORTUNITIES	



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community  
 Source: Land Information Ontario (MNR)

N.T.S

## **TABLES**



**Table 1**  
**Ferguson Lake Road Reconstruction**  
**Species At Risk Summary**

Common Name	Species Name	S Rank	Provincial Status	Habitat Requirements
Little Brown Bat	<i>Myotis lucifugus</i>	S4	Endangered	Roost in buildings or trees but often select attics, barns, or abandoned buildings.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	S3	Endangered	Northern long-eared bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines.
Tri-colored Bat	<i>Perimyotis subflavus</i>	S3?	Endangered	Found in a variety of forest habitats, often forming day roosts or maternity colonies in older forests and occasionally barns or other structures. The species forages over water and along streams and forests.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	Endangered	These bats can be found roosting in a variety of habitats ranging from rock outcrops, buildings, bridges, caves, mines, or hollow trees. Roost locations often change on a daily basis
American Ginseng	<i>Panax quinquefolius</i>	S2	Endangered	Typically found in rich, moist, well drained, and relatively mature deciduous forests dominated by Sugar Maple, White Ash, and American Basswood.
Butternut	<i>Juglans cinerea</i>	S3?	Endangered	Found alone or in small groups, in mixed hardwood stands or along fence lines or open fields / agricultural areas. Prefers moist well drained soil, and is rarely found on dry rocky soil.
Pale-bellied Frost Lichen	<i>Physconia subpallida</i>	S2	Endangered	Habitat includes the bark of hardwood trees such as White ash, Black walnut, American elm, and Ironwood; sensitive to pollution.
Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	Threatened	Dense grasses or hayfields south of the boreal forest of Ontario, where they build their small nests on the ground. Feed off insects that are found in these grassy environments.
Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	Threatened	Shallow water marshes, bogs, ponds or swamps, or coves in larger lakes with soft muddy bottoms and aquatic vegetation; basks on logs, stumps, or banks; surrounding natural habitat is important in summer as they frequently move from aquatic habitat to terrestrial habitats; hibernates in bogs.
Barn Swallow	<i>Hirundo rustica</i>	S4B	Threatened	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water.
Eastern Meadowlark	<i>Sturnella magna</i>	S4B	Threatened	Moderately tall grasslands, pastures, hayfields, alfalfa fields, weedy borders of croplands, orchards, airports, roadsides, shrubby overgrown fields and any other open areas present. Commonly seen sitting on small trees, fence posts or shrubs.
Eastern Whip-poor-will	<i>Antrostomus vociferous</i>	S4B	Threatened	Dry, open, deciduous woodlands of small to medium trees; oak or beech with lots of clearing and shaded leaf-litter; wooded edges, forest clearings with little herbaceous growth; pine plantations; associated with >100 ha forests; may require 500 to 1000 ha to maintain population.
Eastern Wood-pewee	<i>Contopus virens</i>	S4B	Special Concern	Found in the mid-canopy layer of forest clearings and edges of deciduous and mixed forest. Most abundant in mature forest stands with little understory.
Snapping Turtle	<i>Chelydra serpentina</i>	S3	Special Concern	Permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size approx. 28ha.
Northern Map Turtle	<i>Graptemys geographica</i>	S3	Special Concern	Inhabits rivers and lakeshores where emergent rocks and fallen trees are present for the turtles to bask on. High-quality water that can support mollusc life is necessary for the females diet. In the winter, they select deep slow-moving sections of river to hibernate.
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	Special Concern	Found in mature deciduous and mixed forest. Limited to moist stands with well-developed undergrowth and tall trees.
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	S4B	Special Concern	Prefer to nest in areas with young shrubs surrounded by mature forest, including recently disturbed areas such as logged areas or utility corridors.
Canada Warbler	<i>Cardellina canadensis</i>	S4B	Special Concern	Found in a wide range of coniferous and deciduous forests, typically in forest types that are wet with a well developed dense shrub layer. Nests are often found on or near the ground.
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S4B	Special Concern	During the breeding season this species can be found in open, mature mixed forests dominated by fir species, White Spruce and/or Trembling Aspen. Outside of the breeding season, this species strongly depends on seed crops from fir and spruce.
Hill's Pondweed	<i>Potamogeton hillii</i>	S2S3	Special Concern	Typically found in slow-moving streams, ditches, ponds, lakes, and wetlands that are clear with alkaline waters.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S2N, S4B	Special Concern	Nest in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. They usually nest in large trees such as pine and poplar. During the winter, Bald Eagles sometimes congregate near open water such as the St. Lawrence River, or in places with a high deer population where carcasses might be found.



**Table 3**  
**Environmental Constraints Summary**  
**Ferguson Lake Road**

Feature	Location	Coordinates	Fish Species (MNRF)	Mitigation	Approvals / Comments	Information Source (Feature)
<i>Migratory Birds</i>	Throughout study limits			No vegetation clearing between early April and Late August.	No approvals anticipated if following mitigation.	Environment Canada
<i>Fish Habitat</i>	Station 7+865 / Unnamed tributary of Constant Creek	18T 352279, 5020052	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 6+875 / Adjacent to an unnamed tributary of Constant Creek	18T 353048, 5019505	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 6+020 / Unnamed tributary of Constant Creek	18T 353713, 5019007	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 5+718 / Roadside drainage to Constant Creek	18T 353699, 5018738	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 5+515 / Unnamed tributary of Constant Creek	18T 353883, 5018616	D/S: Constant Creek: Central mudminnow, Johnny darter, Largemouth bass, Pumpkinseed	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 4+625 / Unnamed tributary of Ferguson Lake	18T 354524, 5018099	D/S Constant Lake: Banded killifish, Blackchin shiner, Blacknose shiner, Bluntnose minnow, Brook Stickleback, Brown bullhead, Cisco, Common shiner, Emerald shiner, Fathead minnow, Iowa darter, Northern pike, Northern redbelly dace, Pumpkinseed, Rockbass, Smallmouth bass, Walleye, White sucker, Yellow perch	No in-water work between October 1 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 4+000 / Roadside drainage	18T 354915, 5017705	N/A	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
	Station 3+590 / Unnamed tributary of Ferguson Lake	18T 355298, 5017572	N/A	No in-water work between March 15 and July 15	If watercourse alteration, infilling, or culvert modifications including lengthening are to occur, review for potential DFO approvals.	Ainley / MNRF
<i>Environmentally Sensitive Areas</i>	Ferguson Lake Escarpment Candidate ANSI	Located on SW side of Ferguson Lake Road, extending from approximately 3+400 to 5+750			General avoidance if possible. No formal status of feature, but should discuss with MNRF.	MNRF
	Ferguson Lake PSW	Located on the northeast side of the road from approximately 5+260 - 5+330		Avoid intrusion. Erosion and sediment controls.	Avoid intrusion into PSW	

Environmental Constraints Summary  
Ferguson Lake Road

Feature	Location	Coordinates	Fish Species (MNRF)	Mitigation	Approvals / Comments	Information Source (Feature)
	Deer Wintering Areas	Project limits falls along the western edge of a large deer wintering area which extends from approximately Kennely Mountain Road, east to Goshen and to north of Highway 132. Deer wintering area within project limits is identified as Stratum II.		Where possible vegetation removal should be minimized and the reconstructed roadway should be maintained within the existing alignment to limit the potential for habitat fragmentation, issues with access to habitat, and increased road mortality associated with the Stratum II deer wintering area.	General avoidance where possible. Should the preferred alignment require extensive vegetation removal then discussions with MNRF should be undertaken.	
<b>SAR</b>						
<i>Turtles (Snapping and Blanding's)</i>	Data Sensitivity prohibits release of this information			Avoid encroachment into wetlands where possible. If works are to occur along the granular shoulder, install temporary wildlife fencing prior to May 15 in any calendar year. Works should not alter water levels in adjacent wetlands between September 30 and April 1 in any calendar year.		Ainley / MNRF
<i>Grassland Birds (Bobolink / Eastern meadowlark)</i>	Data Sensitivity prohibits release of this information				Confirm approval requirements from MECP based on preferred alternative.	
<i>Eastern Whip-poor-will</i>	Data Sensitivity prohibits release of this information				Confirm approval requirements from MECP based on preferred alternative.	
<i>Butternut</i>	Data Sensitivity prohibits release of this information			Avoid Category 3 trees, and 25 m buffer to the extent possible.	Cat. 1 - No approvals necessary. Cat. 2 - Removal of up to 10 trees available under O.Reg. 242/08. Compensation plantings required (generally streamlined approval process). Cat. 3 - Removal of Cat. 3 trees will require a permit from MECP (6 months + duration)	Ainley / MNRF
<i>American Ginseng</i>	Data Sensitivity prohibits release of this information			Avoid areas with known population areas.	MECP permit required for encroachment or removal of isolated populations.	Ainley / MNRF
<i>Bats</i>	Data Sensitivity prohibits release of this information			Vegetation removal should occur outside of the period of April 1 to September 30.	Confirm approval requirements from MECP based on preferred alternative.	

# **APPENDIX A**

## **Correspondence and Background Data**

## David Davison

---

**From:** Trute, Lauren (MNRF) <Lauren.Trute@ontario.ca>  
**Sent:** September-08-20 2:12 PM  
**To:** David Davison  
**Cc:** 'Samantha Wilson'; 'Scott Reynolds'  
**Subject:** RE: Information Request - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska

Hi David,

Both ends of the road are outside of stratum II (wintering area, non-core), while the middle portion is in stratum II. There is a screen capture below. Blue is stratum II, pink is stratum I (core). The significance in many ways will depend on the nature of the project. Upgrades to an existing road v.s. new road, fragmentation, access, road mortality, etc. The project area is outside of core deer yard, which is the more significant feature.

Does that help with your assessment?

Lauren



---

**From:** David Davison <davison@ainleygroup.com>  
**Sent:** September-03-20 3:31 PM  
**To:** Trute, Lauren (MNRF) <Lauren.Trute@ontario.ca>  
**Cc:** 'Samantha Wilson' <wilson.s@ainleygroup.com>; 'Scott Reynolds' <reynolds@ainleygroup.com>  
**Subject:** RE: Information Request - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska

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Hi Lauren,

I'm just following up on some emails below between yourself and Sam Wilson. I have noted on Renfrew County mapping that much of our project limits falls within a deer wintering area. The Significant Wildlife Habitat Mitigation Support Tool notes that not all mapped deer yards are considered significant wildlife habitat and advises contacting MNRF to determine if the area of interest is significant. Are you able to tell me if the project limits fall within a significant deer wintering area?

Thanks very much for your help,  
Dave

David Davison, B.Sc. (Env)  
Environmental Planner



Ainley Graham & Associates Limited  
139 Front Street, Unit 100  
Belleville, Ontario, K8N 2Y6  
Tel: (613) 966-4243 ext. 109  
Fax: (613) 966-1168  
Cell: (613) 242-0283  
[davison@ainleygroup.com](mailto:davison@ainleygroup.com)

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**From:** Samantha Wilson [<mailto:wilson.s@ainleygroup.com>]  
**Sent:** July-16-20 8:35 AM  
**To:** 'Scott Reynolds' <[reynolds@ainleygroup.com](mailto:reynolds@ainleygroup.com)>; David Davison <[davison@ainleygroup.com](mailto:davison@ainleygroup.com)>  
**Subject:** FW: Information Request - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska

Fyi.

Sam Wilson, B.Sc.  
Environmental Technician



Ainley Graham & Associates Limited  
2724 Fenton Road  
Ottawa, Ontario, K1T 3T7  
Tel: (613) 822-1052 ext. 223  
Fax: (613) 822-1573  
Cell: (613) 848-5888  
[wilson.s@ainleygroup.com](mailto:wilson.s@ainleygroup.com)

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**From:** Trute, Lauren (MNRF) [<mailto:Lauren.Trute@ontario.ca>]  
**Sent:** July-15-20 8:57 PM  
**To:** Samantha Wilson  
**Cc:** Trute, Lauren (MNRF)  
**Subject:** Information Request - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska

Hi Sam,

Here is the available information for the stream crossings and other features along Ferguson Lake Road. I liked your table a lot, however didn't have a lot to share for most sites, so I thought the map with the screen captures might be more useful to you. The first screen cap shows wetlands, and the second has fisheries information.

- Ferguson Lake is Cold Water – species list is shown below on the second screen capture
- Constant Creek, which flows into Ferguson Lake is warm water, with Central Mudminnow, Johnny Darter, Largemouth bass and Pumpkinseed
- Between sites 3 & 4 there is a purple circle with a fish on it – this was a survey point that was electrofished in 2009. Central Mudminnow, Johnny Darter, Largemouth Bass and Pumpkinseed were caught.
- McNulty Lake, to the north, has Northern Pike and Rock Bass
- Pat's Lake was once stocked with Brook Trout (see attached survey from 1971), but does not have habitat to sustain a population.

For timing, the tributary at #6, at Ferguson Lake is presumed to be mixed cold water (with bass) - no in-water work Oct 1 – July 15. The remainder are warm/cool with bass – no in-water work March 15 – July 15.

Other items of interest (see first screen capture):

- Ferguson lake Escarpment and Constant Creek Swamp and Fen (to the east) are both candidate Life Science ANSIs
- Ferguson Lake PSW is adjacent to the site
- The wetland on McNulty's Lake is a Locally Significant Wetland

If you haven't already done so, I would highly recommend contacting MECP as soon as possible for SAR information, as there several SAR species within the study site, and that will also inform SWH and will influence timing of work.

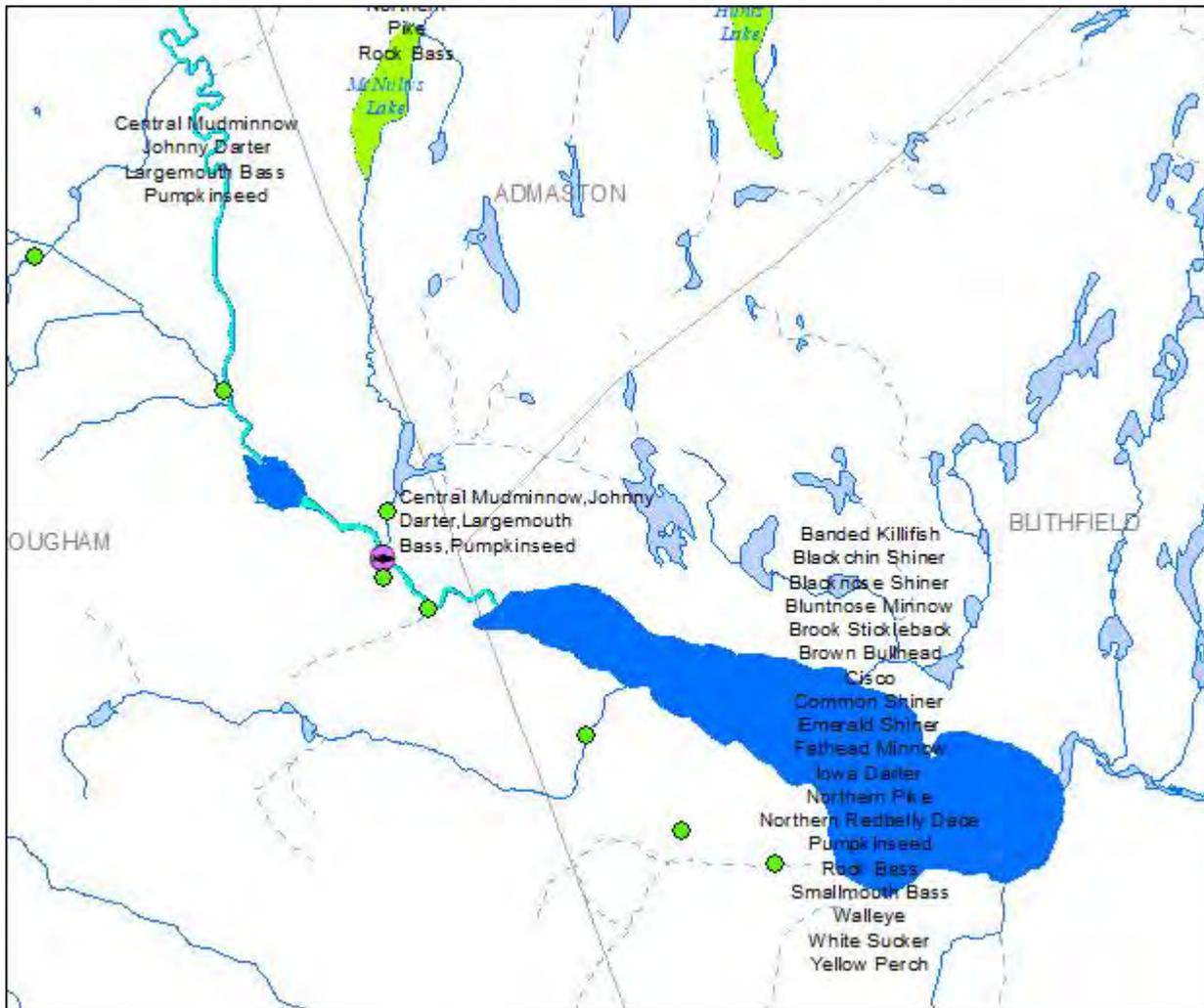
We are still working from home, so access to some files is currently limited, however if you require the information on the PSWs and the candidate ANSIs I will do my best to get that to you in some format.

I have also attached MNRF's new (2018) info request guide. My apologies for not sending earlier, but I was unaware it had been developed until today. Long story short, the process is to direct consultants/proponents to available online resources first (i.e. LIO, FishONLine) for scoping, and to do the info request after to fill in any missing information or sort out nuances of specific projects. From what I have learned, this is happening in most districts now, so just a heads up for you as well if you haven't encountered it yet.

Please let me know if you need anything further for this file.

Thanks,  
Lauren





**From:** Samantha Wilson <[wilson.s@ainleygroup.com](mailto:wilson.s@ainleygroup.com)>

**Sent:** July-10-20 1:15 PM

**To:** Trute, Lauren (MNRF) <[Lauren.Trute@ontario.ca](mailto:Lauren.Trute@ontario.ca)>

**Cc:** 'Scott Reynolds' <[reynolds@ainleygroup.com](mailto:reynolds@ainleygroup.com)>; [dan.hagan@greenview-environmental.ca](mailto:dan.hagan@greenview-environmental.ca); David Davison <[davison@ainleygroup.com](mailto:davison@ainleygroup.com)>

**Subject:** Information Request - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska

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Hi Lauren,

We are working with Greenview Environmental to complete a Natural Heritage and Environmental Impact Study on Ferguson Lake Road from Kennelly Mountain Road to 200 m south of Campground Side Road.

We have determined that there are eight (8) locations within the study area which are interpreted to represent fish habitat. We are requesting any available fisheries information on these eight locations, which I have identified in the attached table. We also request any additional information available from MNRF within the identified study limits pertaining to natural heritage features such as ANSI's, PSW's, significant woodlands, significant wildlife habitat, etc.

Please let me know if you require any additional information or if you have any questions.

Thanks,

Sam Wilson, B.Sc.  
Environmental Technician



Ainley Graham & Associates Limited  
2724 Fenton Road  
Ottawa, Ontario, K1T 3T7  
Tel: (613) 822-1052 ext. 223  
Fax: (613) 822-1573  
Cell: (613) 848-5888  
[wilson.s@ainleygroup.com](mailto:wilson.s@ainleygroup.com)

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**From:** Trute, Lauren (MNRF) <[Lauren.Trute@ontario.ca](mailto:Lauren.Trute@ontario.ca)>  
**Sent:** June 29, 2020 10:24 PM  
**To:** Dan Hagan (Greenview) <[dan.hagan@greenview-environmental.ca](mailto:dan.hagan@greenview-environmental.ca)>; Wagner, Kristen (MNRF) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>  
**Cc:** Tyler Peters (Greenview) <[tyler.peters@greenview-environmental.ca](mailto:tyler.peters@greenview-environmental.ca)>; Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>  
**Subject:** RE: Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

Hello Dan et al,

I just want to flag for you the importance of connecting with MECP regarding species at risk as soon as possible, especially if there will any field work involved. There are 2 SAR plant species (Butternut and Panax – please note data sensitivity for that species) confirmed along and immediately adjacent to the road, along with Blanding's turtle.

Given that the work is proposed to begin next year, do you have any additional information on water crossings (type, location, sizing), and anything else that will help me better provide you with the information you need (fisheries, SWH, etc).

Thanks,  
Lauren

---

**From:** Dan Hagan (Greenview) <[dan.hagan@greenview-environmental.ca](mailto:dan.hagan@greenview-environmental.ca)>  
**Sent:** June-29-20 1:58 PM  
**To:** Wagner, Kristen (MNRF) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>  
**Cc:** Tyler Peters (Greenview) <[tyler.peters@greenview-environmental.ca](mailto:tyler.peters@greenview-environmental.ca)>; Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>; Trute, Lauren (MNRF) <[Lauren.Trute@ontario.ca](mailto:Lauren.Trute@ontario.ca)>  
**Subject:** RE: Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

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Good afternoon, Kristen –

Best of luck with everything! I'm looking forward to working with Lauren and any other representatives from the MNRF Pembroke District Office on this project.

Please contact me at any time, and be well.

Sincerely,

**Dan Hagan, P. Geo.**

Senior Project Manager / Geologist



613.332.0057 x 105

[www.greenview-environmental.ca](http://www.greenview-environmental.ca)

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**From:** Wagner, Kristen (MNRF) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>

**Sent:** Monday, June 29, 2020 1:25 PM

**To:** Dan Hagan (Greenview) <[dan.hagan@greenview-environmental.ca](mailto:dan.hagan@greenview-environmental.ca)>

**Cc:** Tyler Peters (Greenview) <[tyler.peters@greenview-environmental.ca](mailto:tyler.peters@greenview-environmental.ca)>; Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>; Trute, Lauren (MNRF) <[Lauren.Trute@ontario.ca](mailto:Lauren.Trute@ontario.ca)>

**Subject:** RE: Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

Thank you so much for working with us on this one, Dan. I have cc'd Lauren Trute on this email. She is the Management Biologist who will be reviewing this file.

At this time I still do not have a name for my replacement; if things do not change, you might see comments coming directly from Lauren.

Thanks again!

**Kristen Wagner, B.Sc.**

District Planner

**Ministry of Natural Resources & Forestry | Pembroke District**

31 Riverside Dr.

Pembroke, ON K8A 8R6

[kristen.wagner@ontario.ca](mailto:kristen.wagner@ontario.ca) | Phone: (613) 732-5522 | Fax: (613) 732-2972



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---

**From:** Dan Hagan (Greenview) <[dan.hagan@greenview-environmental.ca](mailto:dan.hagan@greenview-environmental.ca)>

**Sent:** June-25-20 1:05 PM

**To:** Wagner, Kristen (MNRF) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>

**Cc:** Tyler Peters (Greenview) <[tyler.peters@greenview-environmental.ca](mailto:tyler.peters@greenview-environmental.ca)>; Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>

**Subject:** RE: Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

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Good afternoon, Ms. Wagner –

Thanks for reaching out to us about this project. My name is Dan Hagan, and I will be performing the function of Project Manager on this project for the Township of Greater Madawaska.

First off - I want to wish you the best of luck as you head toward maternity leave – congratulations!

With respect to the timing on the Ontario Ministry of Natural Resources and Forestry's (MNR) review and response regarding our project, we can 100% work with you. We expect that the MNR's input on this project to be one of the most important voices of all the agencies involved. With that in mind, would it be possible for the MNR Pembroke Office to provide us with comments for the end of July 2020?

Whatever the case, myself, Greenview, and the Township of Greater Madawaska are prepared to work with you and your colleagues at the MNR Pembroke Office in any way we can.

You can reach me via this email address at your convenience.

Thank you again, and we look forward to speaking with you further.

Sincerely,

**Dan Hagan, P. Geo.**

Senior Project Manager / Geologist



613.332.0057 x 105

[www.greenview-environmental.ca](http://www.greenview-environmental.ca)

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---

**From:** Wagner, Kristen (MNR) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>

**Sent:** June-25-20 11:55 AM

**To:** Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>

**Subject:** RE: Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

Thank you, Celine. I will have this reviewed.

I'm not sure if I should be speaking with you about this, or if there is someone you can direct me to. I am currently in the process of wrapping up files before I start mat leave (mid-next week). As of now I don't have a replacement.

Is there any leniency on July 6 as a hard deadline for comments? Our Ministry is still working remotely, so it has caused some delays in our ability to review.

Please let me know the best person to speak to about this, as we are interested in providing comments – my situation just makes it a little tricky.

Thanks!

**Kristen Wagner, B.Sc.**  
District Planner

**Ministry of Natural Resources & Forestry | Pembroke District**

31 Riverside Dr.  
Pembroke, ON K8A 8R6

[kristen.wagner@ontario.ca](mailto:kristen.wagner@ontario.ca) | Phone: (613) 732-5522 | Fax: (613) 732-2972



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**From:** Celine Boutin (Greenview) <[celine.boutin@greenview-environmental.ca](mailto:celine.boutin@greenview-environmental.ca)>  
**Sent:** June-22-20 1:58 PM  
**To:** Wagner, Kristen (MNRF) <[Kristen.Wagner@ontario.ca](mailto:Kristen.Wagner@ontario.ca)>  
**Cc:** Solutions - Greenview <[solutions@greenview-environmental.ca](mailto:solutions@greenview-environmental.ca)>  
**Subject:** Notice of Study Commencement - Reconstruction of Ferguson Lake Road, Township of Greater Madawaska, ON (102.20.025)

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Good day;

Please see the attached for your review.

Thank you,

**Celine Boutin**

Office Administrator



613.332.0057 x 101  
[www.greenview-environmental.ca](http://www.greenview-environmental.ca)

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Version: 2016.0.8048 / Virus Database: 4793/15886 - Release Date: 08/14/18

Internal Virus Database is out of date.

## David Davison

---

**From:** NHIC-Requests (MNRF) <nhicrequests@ontario.ca>  
**Sent:** July-13-20 11:13 AM  
**To:** David Davison  
**Cc:** NHIC-Requests (MNRF)  
**Subject:** RE: 20501-1 - Ferguson Lake Road - Data Access Request  
**Attachments:** NHICReport\_MakeAMap\_18UR5120\_etc.xlsx; \_Certification\_.htm

Hello David,  
My sincere apologies for not responding to your inquiry sooner!!

You are likely aware that the NHIC makes available our data on the Make A Map Natural Heritage Areas online mapping application. Currently there is a glitch with the NHIC data displaying on MakeAMap, Land Information Ontario is working on resolving the problem. I have attached the results that should be showing for the 1km squares overlapping your project area. This level of information is suitable for preliminary site screening.

While we do have a process for clients to request licensed access to the underlying data, this process pre-dates the ESA moving to MECP, and currently is not well suited to servicing all preliminary site screening/local landuse projects in the province (previously as you likely know, it was the MNRF Districts within our ministry that helped with local site screening). The license agreements are also generally with the primary proponent, as they have the 'need to know'. If your client is the township or county, they can apply for on-going access for their jurisdictional area. While we do not yet have a license agreement with the Township of Greater Madawaska, we do have a license agreement with Renfrew County.

Is your client a municipality?

Sincerely,  
Tanya Taylor  
Ontario Natural Heritage Information Centre  
Ministry of Natural Resources and Forestry  
300 Water Street, 2nd Floor North  
Peterborough, ON K9J 3C7  
[NHICrequests@ontario.ca](mailto:NHICrequests@ontario.ca) | 705.755.2159

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**From:** David Davison <davison@ainleygroup.com>  
**Sent:** July 7, 2020 9:46 AM  
**To:** NHIC-Requests (MNRF) <nhicrequests@ontario.ca>  
**Subject:** 20501-1 - Ferguson Lake Road - Data Access Request

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Good Morning,

Please find the attached data access request form for a portion of Ferguson Lake Road in the Township of Greater Madawaska, within the County of Renfrew. The project limits extend from Kennelly Mountain Road to 200 m south of Campground Side Road.

Regards,

David Davison, B.Sc. (Env)  
Environmental Planner



Ainley Graham & Associates Limited

139 Front Street, Unit 100

Belleville, Ontario, K8N 2Y6

Tel: (613) 966-4243 ext. 109

Fax: (613) 966-1168

Cell: (613) 242-0283

[davison@ainleygroup.com](mailto:davison@ainleygroup.com)

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### NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092852	NATURAL AREA	Ferguson's Lake					18UR5816	
1092852	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5816	
1092852	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5816	
1092853	NATURAL AREA	Constant Creek Swamp and Fens					18UR5817	
1092853	NATURAL AREA	Ferguson's Lake					18UR5817	
1092853	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5817	
1092853	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5817	
1092854	NATURAL AREA	Constant Creek Swamp and Fens					18UR5818	
1092854	NATURAL AREA	Ferguson's Lake					18UR5818	
1092854	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5818	
1092854	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5818	
1092845	NATURAL AREA	Constant Creek Swamp and Fens					18UR5719	
1092845	NATURAL AREA	Ferguson's Lake					18UR5719	
1092845	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5719	
1092845	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5719	
1092855	NATURAL AREA	Constant Creek Swamp and Fens					18UR5819	
1092855	NATURAL AREA	Ferguson's Lake					18UR5819	
1092855	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5819	
1092855	SPECIES	Snapping Turtle		S4	SC	SC	18UR5819	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
			Chelydra serpentina					
1092946	NATURAL AREA	Constant Creek Swamp and Fens					18UR5820	
1092946	NATURAL AREA	Ferguson's Lake					18UR5820	
1092946	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5820	
1092946	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5820	
1092946	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5820	
1092937	NATURAL AREA	Ashdad Fens					18UR5721	
1092947	NATURAL AREA	Ashdad Fens					18UR5821	
1092947	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5821	
1092947	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5821	
1092830	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5614	
1092830	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	18UR5614	
1092840	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5714	
1092840	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	18UR5714	
1092811	NATURAL AREA	Ferguson Lake Escarpment					18UR5415	
1092821	NATURAL AREA	Ferguson Lake Escarpment					18UR5515	
1092821	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5515	
1092831	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5615	
1092841	NATURAL AREA	Constant Creek Swamp and Fens					18UR5715	
1092841	NATURAL AREA	Ferguson's Lake					18UR5715	
1092841	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5715	
1092841	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5715	
1092802	NATURAL AREA						18UR5316	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092812	NATURAL AREA	Ferguson Lake Escarpment					18UR5416	
1092812	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5416	
1092822	NATURAL AREA	Constant Creek Swamp and Fens					18UR5516	
1092822	NATURAL AREA	Ferguson Lake Escarpment					18UR5516	
1092822	NATURAL AREA	Ferguson's Lake					18UR5516	
1092822	SPECIES	Harpoon Clubtail	Phanogomphus descriptus	S3			18UR5516	
1092822	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5516	
1092822	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5516	
1092832	NATURAL AREA	Constant Creek Swamp and Fens					18UR5616	
1092832	NATURAL AREA	Ferguson's Lake					18UR5616	
1092832	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5616	
1092832	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5616	
1092832	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5616	
1092842	NATURAL AREA	Constant Creek Swamp and Fens					18UR5716	
1092842	NATURAL AREA	Ferguson's Lake					18UR5716	
1092842	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5716	
1092842	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5716	
1092803	NATURAL AREA	Ferguson Lake Escarpment					18UR5317	
1092813	NATURAL AREA	Ferguson Lake Escarpment					18UR5417	
1092813	SPECIES	Butternut	Juglans cinerea	S2?	END	END	18UR5417	
1092813	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5417	
1092823	NATURAL AREA	Constant Creek Swamp and Fens					18UR5517	
1092823	NATURAL AREA	Ferguson Lake Escarpment					18UR5517	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092823	NATURAL AREA	Ferguson's Lake					18UR5517	
1092823	SPECIES	Harpoon Clubtail	Phanogomphus descriptus	S3			18UR5517	
1092823	SPECIES	Butternut	Juglans cinerea	S2?	END	END	18UR5517	
1092823	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5517	
1092823	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5517	
1092833	NATURAL AREA	Constant Creek Swamp and Fens					18UR5617	
1092833	NATURAL AREA	Ferguson's Lake					18UR5617	
1092833	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5617	
1092833	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5617	
1092833	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5617	
1092843	NATURAL AREA	Constant Creek Swamp and Fens					18UR5717	
1092843	NATURAL AREA	Ferguson's Lake					18UR5717	
1092843	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5717	
1092843	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5717	
1092804	NATURAL AREA	Ferguson Lake Escarpment					18UR5318	
1092804	NATURAL AREA	McNulty's Lake					18UR5318	
1092804	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5318	
1092814	NATURAL AREA	Ferguson Lake Escarpment					18UR5418	
1092814	NATURAL AREA	Ferguson's Lake					18UR5418	
1092814	SPECIES	Butternut	Juglans cinerea	S2?	END	END	18UR5418	
1092814	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5418	
1092824	NATURAL AREA	Ferguson's Lake					18UR5518	
1092824	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5518	
1092834	NATURAL AREA	Ferguson's Lake					18UR5618	
1092834	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5618	
1092834	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18UR5618	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092844	NATURAL AREA	Constant Creek Swamp and Fens					18UR5718	
1092844	NATURAL AREA	Ferguson's Lake					18UR5718	
1092844	NATURAL AREA	CONSTANT CREEK SWAMP AND FEN CONSERVATION RESERVE					18UR5718	
1092844	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5718	
1092844	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18UR5718	
1092805	NATURAL AREA	Ferguson Lake Escarpment					18UR5319	
1092805	NATURAL AREA	McNulty's Lake					18UR5319	
1092805	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5319	
1092815	NATURAL AREA	McNulty's Lake					18UR5419	
1092815	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5419	
1092896	NATURAL AREA	McNulty's Lake					18UR5320	
1092896	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5320	
1092897	NATURAL AREA	McNulty's Lake					18UR5321	
1092897	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5321	
1092907	NATURAL AREA	McNulty's Lake					18UR5421	
1092907	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	18UR5421	
1092771	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			18UR5015	
1092771	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2			18UR5015	
1092771	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18UR5015	
1092781	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			18UR5115	
1092781	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2			18UR5115	
1092781	SPECIES	Hill's Pondweed	Potamogeton hillii	S2S3	SC	SC	18UR5115	
1092781	SPECIES	Pale-bellied Frost Lichen	Physconia subpallida	S3	END	END	18UR5115	
1092781	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18UR5115	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092791	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5215	
1092772	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5016	
1092772	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5016	
1092772	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5016	
1092782	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5116	
1092782	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5116	
1092782	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5116	
1092792	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5216	
1092773	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5017	
1092773	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5017	
1092773	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5017	
1092773	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5017	
1092773	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5017	
1092783	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5117	
1092783	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5117	
1092783	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5117	
1092783	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5117	
1092793	NATURAL AREA	Ferguson Lake Escarpment				18UR5217	
1092793	SPECIES	Horned Clubtail	Arigomphus cornutus	S3		18UR5217	
1092774	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1092774	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092774	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5018	
1092784	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5118	
1092784	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5118	
1092784	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5118	
1092784	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5118	
1092784	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES			18UR5118	
1092794	NATURAL AREA	Ferguson Lake Escarpment				18UR5218	
1092770	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5014	
1092770	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5014	
1092770	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5014	
1092780	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR		18UR5114	
1092780	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5114	
1092780	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR		18UR5114	
1092790	SPECIES	Arrowhead Spiketail	Cordulegaster obliqua	S2		18UR5214	
1092775		Colonial Waterbird Nesting Area		SNR		18UR5019	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
	WILDLIFE CONCENTRATION AREA							
1092775	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18UR5019	
1092775	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5019	
1092775	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5019	
1092775	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5019	
1092785	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5119	
1092795	NATURAL AREA	Ferguson Lake Escarpment					18UR5219	
1092795	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5219	
1092866	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5020	
1092876	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	18UR5120	
1092876	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5120	
1092886	SPECIES	Butternut	Juglans cinerea	S2?	END	END	18UR5220	
1092886	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5220	
1092867	SPECIES	Barn Swallow	Hirundo rustica	S4B	THR	THR	18UR5021	
1092867	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5021	
1092877	SPECIES	Eastern Meadowlark	Sturnella magna	S4B	THR	THR	18UR5121	
1092877	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5121	
1092887	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				18UR5221	

Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status
<b>RESTRICTED SPECIES</b>	American Ginseng	<i>Panax quinquefolius</i>	S2	END	END
SPECIES	Barn Swallow	<i>Hirundo rustica</i>	S4B	THR	THR
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B	THR	THR
<b>RESTRICTED SPECIES</b>	American Ginseng	<i>Panax quinquefolius</i>	S2	END	END
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B	THR	THR
<b>RESTRICTED SPECIES</b>	American Ginseng	<i>Panax quinquefolius</i>	S2	END	END
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC
SPECIES	Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	THR	END
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC
<b>RESTRICTED SPECIES</b>	American Ginseng	<i>Panax quinquefolius</i>	S2	END	END
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
<b>RESTRICTED SPECIES</b>	American Ginseng	<i>Panax quinquefolius</i>	S2	END	END
SPECIES	Butternut	<i>Juglans cinerea</i>	S2?	END	END
SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC

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# Bird Observations

Date Range:

Jan-Dec, 1900-2020

**Calabogie Peaks Resort**

Updated ~1 day(s) ago.

67 species (+4 other taxa)

[Jan](#) | [Feb](#) | [Mar](#) | [Apr](#) | [May](#) | [Jun](#) | [Jul](#) | [Aug](#) | [Sep](#) | [Oct](#) | [Nov](#) | [Dec](#)

- [Canada Goose](#)  
- [Mallard](#)  
- [Hooded Merganser](#)  
- [Common Merganser](#)  
- [Ruffed Grouse](#)  
- [Wild Turkey](#)  
- [Rock Pigeon](#)  
- [Ruby-throated Hummingbird](#)  
- [Ring-billed Gull](#)  
- [Herring Gull](#)  
- [gull sp.](#)  
- [Common Loon](#)  
- [Great Blue Heron](#)  
- [Turkey Vulture](#)  
- [Osprey](#)  

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- [Bald Eagle](#)  
- [Broad-winged Hawk](#)  
- [Great Horned Owl](#)  
- [Yellow-bellied Sapsucker](#)  
- [Downy Woodpecker](#)  
- [Hairy Woodpecker](#)  
- [Downy/Hairy Woodpecker](#)  
- [Pileated Woodpecker](#)  

67 species (+4 other taxa)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

- [Northern Flicker](#)  
- [American Kestrel](#)  
- [Merlin](#)  
- [Eastern Wood-Pewee](#)  
- [Eastern Phoebe](#)  
- [Great Crested Flycatcher](#)  
- [Eastern Kingbird](#)  

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

- [Philadelphia Vireo](#)  
- [Red-eyed Vireo](#)  
- [Blue Jay](#)  
- [American Crow](#)  
- [Common Raven](#)  
- [Black-capped Chickadee](#)  
- [Barn Swallow](#)  
- [Golden-crowned Kinglet](#)  
- [Red-breasted Nuthatch](#)  
- [White-breasted Nuthatch](#)  
- [Brown Creeper](#)  
- [House Wren](#)  
- [Winter Wren](#)  
- [European Starling](#)  
- [Gray Catbird](#)  

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

- [Swainson's Thrush](#)  
- [American Robin](#)  
- [Bohemian Waxwing](#)  
- [Cedar Waxwing](#)  
- [Evening Grosbeak](#)  
- Common/Hoary Redpoll  
- [Red Crossbill](#)  
- [Pine Siskin](#)  
- [American Goldfinch](#)  
- finch sp.  
- [Snow Bunting](#)  
- [Chipping Sparrow](#)  
- [Dark-eyed Junco](#)  

67 species (+4 other taxa)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

[White-throated Sparrow](#)



[Song Sparrow](#)



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

[Black-and-white Warbler](#)



[Nashville Warbler](#)



[American Redstart](#)



[Northern Parula](#)



[Magnolia Warbler](#)



[Chestnut-sided Warbler](#)



[Black-throated Blue Warbler](#)



[Pine Warbler](#)



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[Wilson's Warbler](#)



**KEY:** = insufficient data | = rare to widespread

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## Species list in taxonomic order for square 18UR51

### All species

Number of rows of data displayed below: 23.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
1	Blanding's Turtle	2	1989	2019
3	Midland Painted Turtle	9	1986	2017
4	Northern Map Turtle	10	2009	2009
6	Snapping Turtle	4	1986	2001
12	Eastern Gartersnake	12	1985	2019
14	Eastern Ribbonsnake	1	2006	2006
18	Milksnake	4	2009	2018
19	Northern Watersnake	3	1985	1990
21	Red-bellied Snake	8	1977	2018
23	Ring-necked Snake	2	1982	1982
24	Smooth Greensnake	1	1985	1985
25	American Bullfrog	2	1984	2001
27	Gray Treefrog	25	1984	2009
28	Green Frog	11	1981	2009
29	Mink Frog	11	1977	1988
30	Northern Leopard Frog	14	1981	2009
32	Spring Peeper	37	1984	2009
34	Wood Frog	13	1984	2009
35	American Toad	8	1984	2009
38	Blue-spotted Salamander	4	1984	1987
40	Red-spotted Newt	9	1985	2015
41	Eastern Red-backed Salamander	1	1988	1988
48	Spotted Salamander	6	1986	1987

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## Species list in taxonomic order for square 18UR52

### All species

Number of rows of data displayed below: 15.

Species #	Common Name	# of Records	Earliest Yr _____	Latest Yr
1	Blanding's Turtle	3	2013	2018
3	Midland Painted Turtle	5	1990	2018
4	Northern Map Turtle	6	2009	2009
6	Snapping Turtle	8	1984	2017
12	Eastern Gartersnake	8	1972	2015
18	Milksnake	2	1989	1989
19	Northern Watersnake	1	1990	1990
21	Red-bellied Snake	1	1973	1973
24	Smooth Greensnake	1	1989	1989
27	Gray Treefrog	12	2004	2009
28	Green Frog	4	1972	2004
30	Northern Leopard Frog	4	1986	1996
32	Spring Peeper	10	1996	2004
34	Wood Frog	4	1996	1996
35	American Toad	5	2004	2004

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[TEA home page](#) | [Main atlas page](#)

Atlas summary: Species list for square 18UR51

Region	Square	Species
24	18UR51	Canada Goose
24	18UR51	Wood Duck
24	18UR51	American Black Duck
24	18UR51	Mallard
24	18UR51	Hooded Merganser
24	18UR51	Ruffed Grouse
24	18UR51	Wild Turkey
24	18UR51	Common Loon
24	18UR51	American Bittern
24	18UR51	Great Blue Heron
24	18UR51	Green Heron
24	18UR51	Turkey Vulture
24	18UR51	Northern Harrier
24	18UR51	Sharp-shinned Hawk
24	18UR51	Cooper's Hawk
24	18UR51	Red-shouldered Hawk
24	18UR51	Broad-winged Hawk
24	18UR51	Red-tailed Hawk
24	18UR51	Virginia Rail
24	18UR51	Spotted Sandpiper
24	18UR51	Common Snipe
24	18UR51	American Woodcock
24	18UR51	Mourning Dove
24	18UR51	Black/Yellow-billed Cuckoo
24	18UR51	Black-billed Cuckoo
24	18UR51	Barred Owl
24	18UR51	Ruby-throated Hummingbird
24	18UR51	Belted Kingfisher
24	18UR51	Yellow-bellied Sapsucker
24	18UR51	Downy Woodpecker
24	18UR51	Hairy Woodpecker
24	18UR51	Black-backed Woodpecker
24	18UR51	Northern Flicker
24	18UR51	Pileated Woodpecker
24	18UR51	Olive-sided Flycatcher
24	18UR51	Eastern Wood-Pewee
24	18UR51	Alder Flycatcher
24	18UR51	Least Flycatcher
24	18UR51	Eastern Phoebe
24	18UR51	Great Crested Flycatcher
24	18UR51	Eastern Kingbird
24	18UR51	Blue-headed Vireo
24	18UR51	Warbling Vireo
24	18UR51	Red-eyed Vireo
24	18UR51	Blue Jay

24	18UR51	American Crow
24	18UR51	Common Raven
24	18UR51	Tree Swallow
24	18UR51	Cliff Swallow
24	18UR51	Barn Swallow
24	18UR51	Black-capped Chickadee
24	18UR51	Red-breasted Nuthatch
24	18UR51	White-breasted Nuthatch
24	18UR51	Brown Creeper
24	18UR51	House Wren
24	18UR51	Winter Wren
24	18UR51	Golden-crowned Kinglet
24	18UR51	Ruby-crowned Kinglet
24	18UR51	Eastern Bluebird
24	18UR51	Veery
24	18UR51	Swainson's Thrush
24	18UR51	Hermit Thrush
24	18UR51	Wood Thrush
24	18UR51	American Robin
24	18UR51	Gray Catbird
24	18UR51	European Starling
24	18UR51	Cedar Waxwing
24	18UR51	Golden-winged Warbler
24	18UR51	Nashville Warbler
24	18UR51	Yellow Warbler
24	18UR51	Chestnut-sided Warbler
24	18UR51	Magnolia Warbler
24	18UR51	Black-throated Blue Warbler
24	18UR51	Yellow-rumped Warbler
24	18UR51	Black-throated Green Warbler
24	18UR51	Blackburnian Warbler
24	18UR51	Pine Warbler
24	18UR51	Black-and-white Warbler
24	18UR51	American Redstart
24	18UR51	Ovenbird
24	18UR51	Northern Waterthrush
24	18UR51	Mourning Warbler
24	18UR51	Common Yellowthroat
24	18UR51	Canada Warbler
24	18UR51	Chipping Sparrow
24	18UR51	Field Sparrow
24	18UR51	Savannah Sparrow
24	18UR51	Song Sparrow
24	18UR51	Swamp Sparrow
24	18UR51	White-throated Sparrow
24	18UR51	Dark-eyed Junco
24	18UR51	Scarlet Tanager

24	18UR51	Rose-breasted Grosbeak
24	18UR51	Indigo Bunting
24	18UR51	Bobolink
24	18UR51	Red-winged Blackbird
24	18UR51	Eastern Meadowlark
24	18UR51	Common Grackle
24	18UR51	Brown-headed Cowbird
24	18UR51	Baltimore Oriole
24	18UR51	Purple Finch
24	18UR51	Red Crossbill
24	18UR51	White-winged Crossbill
24	18UR51	Pine Siskin
24	18UR51	American Goldfinch
24	18UR51	Evening Grosbeak

Atlas summary: Species list for square 18UR52

Region	Square	Species
24	18UR52	Canada Goose
24	18UR52	Wood Duck
24	18UR52	Blue-winged Teal
24	18UR52	Ring-necked Duck
24	18UR52	Hooded Merganser
24	18UR52	Ruffed Grouse
24	18UR52	Wild Turkey
24	18UR52	Common Loon
24	18UR52	Pied-billed Grebe
24	18UR52	American Bittern
24	18UR52	Great Blue Heron
24	18UR52	Green Heron
24	18UR52	Turkey Vulture
24	18UR52	Sharp-shinned Hawk
24	18UR52	Northern Goshawk
24	18UR52	Red-shouldered Hawk
24	18UR52	Broad-winged Hawk
24	18UR52	Red-tailed Hawk
24	18UR52	American Kestrel
24	18UR52	Virginia Rail
24	18UR52	Killdeer
24	18UR52	Rock Pigeon
24	18UR52	Common Snipe
24	18UR52	American Woodcock
24	18UR52	Mourning Dove
24	18UR52	Black-billed Cuckoo
24	18UR52	Great Horned Owl
24	18UR52	Barred Owl
24	18UR52	Ruby-throated Hummingbird
24	18UR52	Belted Kingfisher
24	18UR52	Yellow-bellied Sapsucker
24	18UR52	Downy Woodpecker
24	18UR52	Hairy Woodpecker
24	18UR52	Northern Flicker
24	18UR52	Pileated Woodpecker
24	18UR52	Eastern Wood-Pewee
24	18UR52	Alder Flycatcher
24	18UR52	Least Flycatcher
24	18UR52	Eastern Phoebe
24	18UR52	Great Crested Flycatcher
24	18UR52	Eastern Kingbird
24	18UR52	Yellow-throated Vireo
24	18UR52	Blue-headed Vireo
24	18UR52	Warbling Vireo
24	18UR52	Red-eyed Vireo

24	18UR52	Gray Jay
24	18UR52	Blue Jay
24	18UR52	American Crow
24	18UR52	Common Raven
24	18UR52	Tree Swallow
24	18UR52	Cliff Swallow
24	18UR52	Barn Swallow
24	18UR52	Black-capped Chickadee
24	18UR52	Red-breasted Nuthatch
24	18UR52	White-breasted Nuthatch
24	18UR52	House Wren
24	18UR52	Winter Wren
24	18UR52	Golden-crowned Kinglet
24	18UR52	Veery
24	18UR52	Swainson's Thrush
24	18UR52	Hermit Thrush
24	18UR52	Wood Thrush
24	18UR52	American Robin
24	18UR52	Gray Catbird
24	18UR52	Brown Thrasher
24	18UR52	European Starling
24	18UR52	Cedar Waxwing
24	18UR52	Nashville Warbler
24	18UR52	Yellow Warbler
24	18UR52	Chestnut-sided Warbler
24	18UR52	Magnolia Warbler
24	18UR52	Cape May Warbler
24	18UR52	Black-throated Blue Warbler
24	18UR52	Yellow-rumped Warbler
24	18UR52	Black-throated Green Warbler
24	18UR52	Blackburnian Warbler
24	18UR52	Pine Warbler
24	18UR52	Black-and-white Warbler
24	18UR52	American Redstart
24	18UR52	Ovenbird
24	18UR52	Northern Waterthrush
24	18UR52	Common Yellowthroat
24	18UR52	Canada Warbler
24	18UR52	Chipping Sparrow
24	18UR52	Field Sparrow
24	18UR52	Savannah Sparrow
24	18UR52	Song Sparrow
24	18UR52	Swamp Sparrow
24	18UR52	White-throated Sparrow
24	18UR52	Dark-eyed Junco
24	18UR52	Scarlet Tanager
24	18UR52	Rose-breasted Grosbeak

24	18UR52	Indigo Bunting
24	18UR52	Bobolink
24	18UR52	Red-winged Blackbird
24	18UR52	Eastern Meadowlark
24	18UR52	Common Grackle
24	18UR52	Brown-headed Cowbird
24	18UR52	Baltimore Oriole
24	18UR52	Purple Finch
24	18UR52	House Finch
24	18UR52	White-winged Crossbill
24	18UR52	Pine Siskin
24	18UR52	American Goldfinch
24	18UR52	Evening Grosbeak
24	18UR52	House Sparrow

# **APPENDIX B**

## **Photographic Log**



Photograph 1 – ELC Community FODM4-1 – Dry-Fresh Beech Deciduous Forest (June 9, 2020).



Photograph 2 – ELC Community MEMM3 – Dry-Fresh Mixed Meadow (July 8, 2020).



Photograph 3 – ELC Community FODM8-1 – Fresh-Moist Poplar Deciduous Forest (July 8, 2020).



Photograph 4 – ELC Community SWCM1-2 – White Cedar – Conifer Mineral Coniferous Swamp (June 9, 2020).



Photograph 5 – ELC Community FOMM5-2 – Dry-Fresh Poplar Mixed Forest (June 9, 2020).



Photograph 6 – ELC Community FODM5-2 – Dry-Fresh Sugar Maple – Beech Deciduous Forest (June 9, 2020).



Photograph 7 – ELC Community FOMM2-2 – Dry-Fresh White Pine – Sugar Maple Mixed Forest (July 8, 2020).



Photograph 8 – ELC Community SWMM1-1 – White Cedar – Hardwood Mineral Mixed Swamp (June 9, 2020).



Photograph 9 – ELC Community FODM3-1 – Dry-Fresh Poplar Deciduous Forest (June 9, 2020).



Photograph 10 – ELC Community FOMM3-3 – Dry-Fresh Sugar Maple – Hemlock Mixed Forest (June 9, 2020).



Photograph 11 – ELC Community SWTM2-1 – Red-osier Dogwood Mineral Deciduous Thicket Swamp (June 9, 2020).



Photograph 12 – ELC Community CVI\_1 – Transportation (June 9, 2020).



Photograph 13 – ELC Community OAGM2 – Perennial Cover Crops (June 9, 2020).



Photograph 14 – ELC Community SWTM1-1 – Speckled Alder Mineral Deciduous Thicket Swamp (June 9, 2020).



Photograph 15 – ELC Community FOMM10-2 – Fresh-Moist White Spruce – Hardwood Mixed Forest (July 8, 2020).



Photograph 16 – ELC Community FODM5-6 – Dry-Fresh Sugar Maple – Basswood Deciduous Forest (June 9, 2020).



Photograph 17 – Culvert CV-00454 (Stn 3+590) – Culvert inlet and upstream channel (June 4, 2020).



Photograph 18 – Culvert CV-00454 (Stn 3+590) – Culvert outlet and downstream channel (June 4, 2020).



Photograph 19 – Culvert CV-00455 (Stn 4+000) – Culvert outlet and adjacent channel (June 4, 2020).



Photograph 20 – Culvert CV-00456 (Stn 4+625) – Upstream channel (June 4, 2020).



Photograph 21 – Culvert CV-00456 (Stn 4+625) – Culvert outlet and downstream channel (June 4, 2020).



Photograph 22 – Culvert CV-00460 (Stn 5+515) – Culvert outlet and adjacent riparian habitat (June 4, 2020).



Photograph 23 – Culvert CV-00461 (Stn 5+718) – Culvert outlet and downstream channel (June 4, 2020).



Photograph 24 – Culvert CV-00463 (Stn 6+020) – Upstream channel (June 4, 2020).



Photograph 25 – Culvert CV-00463 (Stn 6+020) – Downstream channel (June 4, 2020).



Photograph 26 – Watercourse Adjacent to Ferguson Lake Road (Stn 6+875) – Channel leading to Constant Creek (June 4, 2020).



Photograph 27 – Culvert CV-00468 (Stn 6+875) – Upstream channel (June 8, 2020).



Photograph 28 – Culvert CV-00468 (Stn 6+875) – Culvert outlet and downstream channel (June 8, 2020).

# **APPENDIX C**

## **Vegetation Species List**

Appendix C - Vegetation Species List  
 Natural Heritage Study  
 Ferguson Lake Road Reconstruction  
 Township of Greater Madawaska, Renfrew County

Scientific Name	Common Name	SARA	SARO	S Rank	N Rank	G Rank	Exotic Status	Coefficient of Conservation	Coefficient of Wetness	CVL 1	OAGM2	FODM4-1	MEMM3	FODM8-1	SWCM1-2
<i>Abies balsamea</i>	Balsam Fir			S5	N5	G5		5	-3		x			x	x
<i>Acer pensylvanicum</i>	Striped Maple			S4	N5	G5		7				x			
<i>Acer saccharinum</i>	Silver Maple			S5	N5	G5		5	-3						
<i>Acer saccharum</i>	Sugar Maple			S5	N5	G5		4	3	x		x		x	
<i>Acer spicatum</i>	Mountain Maple			S5	N5	G5		6	3						
<i>Achillea millefolium</i>	Common Yarrow			SNA	NNR	G5	SE5?		3		x				
<i>Actaea pachypoda</i>	White Baneberry			S5	N5	G5		6	5			x			x
<i>Adiantum pedatum</i>	Northern Maidenhair Fern			S5	N5	G5		7	3						
<i>Alisma triviale</i>	Northern Water-plantain			S5	N5	G5		1	-5						x
<i>Alnus incana</i> sp. <i>rugosa</i>	Speckled Alder			S5	N5	G5T5		6	-3						x
<i>Amelanchier laevis</i>	Smooth Serviceberry			S5	N5	G5		5	5						
<i>Amphicarpaea bracteata</i>	American Hog-peanut			S5	N5	G5		4	0			x			
<i>Anemonastrum canadense</i>	Canada Anemone			S5	N5	G5		3	-3	x		x	x		x
<i>Antennaria neglecta</i>	Field Pussytoes			S5	N5	G5		3	5						
<i>Apocynum androsaemifolium</i>	Spreading Dogbane			S5	N5	G5		3	5	x	x		x		
<i>Aquilegia canadensis</i>	Red Columbine			S5	N5	G5		5	3			x			
<i>Aralia nudicaulis</i>	Wild Sarsaparilla			S5	N5	G5		4	3						x
<i>Arctium minus</i>	Common Burdock			SNA	NNA	GNR	SE5		3			x			
<i>Aruncus dioicus</i>	Common Goatsbeard			SNA	N5	G5	SE1		3			x	x		
<i>Asclepias syriaca</i>	Common Milkweed			S5	N5	G5		0	5	x	x	x	x		
<i>Asteraceae</i> spp.	Asters			S5	N5	G5					x				
<i>Betula alleghaniensis</i>	Yellow Birch			S5	N5	G5		6	0						x
<i>Betula papyrifera</i>	Paper Birch			S5	N5	G5		2	3	x	x	x		x	x
<i>Bromus inermis</i>	Smooth Brome			SNA	NNA	G5	SE5		5	x	x				
<i>Galiumglossis canadensis</i>	Bluegiant Redgrass			S5	N5	G5		4	-5		x				
<i>Carex stricta</i>	Tussock Sedge			S5	N5	G5		4	-5						
<i>Carex vaginata</i>	Sheathed Sedge			S5	N5	G5		10	-5						
<i>Carya cordiformis</i>	Bitternut Hickory			S5	N5	G5		6	0						
<i>Caulophyllum thalictroides</i>	Blue Cohosh			S5	N5	G5		5	5			x			
<i>Cicuta subifera</i>	Spotted Noddy-chemlock			S5	N5	G5		5	-5						x
<i>Cirsium arvense</i>	Canada Thistle			SNA	NNA	G5	SE5		3				x		
<i>Clematis virginiana</i>	Virginia Clematis			S5	N5	G5		3	0		x	x			x
<i>Clintonia borealis</i>	Yellow Clintonia			S5	N5	G5		7	0						
<i>Convolvulus arvensis</i>	Field Bindweed			SNA	NNA	GNR	SE5		7	x		x			
<i>Copis trifolia</i>	Goldthread			S5	N5	G5		7	-3						
<i>Cornus racemosa</i>	Grey Dogwood			S5	N5	G5		2	0					x	
<i>Cornus sericea</i>	Red-osier Dogwood			S5	N5	G5		2	-3	x		x		x	x
<i>Corylus cornuta</i>	Beaked Hazelnut			S5	N5	G5		5	3			x		x	
<i>Craegus</i> spp.	Hawthorn sp.			S5	N5	G5									
<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper			S5	N5	G5		5	0			x		x	
<i>Dactylis glomerata</i>	Orchard Grass			SNA	NNA	GNR	SE5		3		x				
<i>Daucus carota</i>	Wild Carrot			SNA	NNA	GNR	SE5		5	x	x				
<i>Dirca palustris</i>	Eastern Leatherwood			S4	N4	G4		7	0			x			
<i>Dryopteris marginalis</i>	Marginal Wood Fern			S5	N5	G5		5	3			x			
<i>Echium vulgare</i>	Common Viper's Bugloss			SNA	NNA	G5	SE5		7	x			x		
<i>Equisetum fluviatile</i>	Water Horsetail			S5	N5	G5		7	-5						x
<i>Equisetum hyemale</i>	Common Scouring-rush			S5	N5	G5		2	0			x	x	x	x
<i>Equisetum palustre</i>	Marsh Horsetail			S5	N5	G5		10	-3						
<i>Equisetum pratense</i>	Meadow Horsetail			S5	N5	G5		8	-3		x	x	x		
<i>Equisetum scirpoides</i>	Dwarf Scouring-rush			S5	N5	G5		7	0						
<i>Equisetum sylvaticum</i>	Woodland Horsetail			S5	N5	G5		7	-3						
<i>Erigeron strigosus</i>	Rough Fleabane			S5	N5	G5		4	3		x		x		x
<i>Erythronium americanum</i>	Yellow Trout-lily			S5	N5	G5		5	5			x			
<i>Eurybia macrophylla</i>	Large-leaved Aster			S5	N5	G5		5	5	x	x				
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed			S5	N5	G5		3	-5						
<i>Fagus grandifolia</i>	American Beech			S4	N5	G5		6	3			x			
<i>Fragaria virginiana</i>	Wild Strawberry			S5	N5	G5		2	3	x		x	x		
<i>Fraxinus americana</i>	White Ash			S4	N5	G5		4	3			x	x	x	
<i>Fraxinus nigra</i>	Black Ash			S3	N5	G5		7	-3			x	x		x
<i>Fraxinus pennsylvanica</i>	Red Ash			S4	N5	G5		3	-5	x	x			x	
<i>Galium mollug</i>	Smooth Bedstraw			SNA	NNA	GNR	SE5		-5		x				
<i>Galium palustre</i>	Common Marsh Bedstraw			S5	N5	G5		5	-5						x
<i>Galium triflorum</i>	Three-flowered Bedstraw			S5	N5	G5		4	3			x	x		
<i>Glyceria striata</i>	Fowl Mannagrass			S5	N5	G5		3	-5						x
<i>Gymnocarpium dryopteris</i>	Common Oak Fern			S5	N5	G5		7	3						x
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica			S5	N5	G5		8	5						
<i>Hydrocharis morsus-ranae</i>	European Frog-bit			SNA	NNA	GNR	SE5		-5						x
<i>Hydotesmum glutinosum</i>	Large Tick-trefoil			S4	N4N5	G5		6	5			x			
<i>Hypericum perforatum</i>	Common St. John's-wort			SNA	NNA	G-TNR	SE5		5						
<i>Impatiens capensis</i>	Spotted Jewelweed			S5	N5	G5		4	-3						x
<i>Juglans cinerea</i>	Butternut	END	END	S2?	N2	G3		6	3			x	x		
<i>Juncus tenuis</i>	Path Rush			S5	N5	G5		0	0						
<i>Juniperus horizontalis</i>	Creeping Juniper			S5	N5	G5		10	3	x		x		x	
<i>Laportea canadensis</i>	Canada Wood Nettle			S5	N5	G5		6	-3						
<i>Leucanthemum vulgare</i>	Oxeye Daisy			S5	N5	G5		3	-5		x				
<i>Lithospermum officinale</i>	European Gromwell			SNA	NNA	GNR	SE5		5			x		x	
<i>Lonicera canadensis</i>	Canada Fly Honey-suckle			S5	N5	G5		6	3			x		x	
<i>Lycopus americanus</i>	American Water-horehound			S5	N5	G5		4	-5						
<i>Lysimachia borealis</i>	Northern Starflower			S5	N5	G5		6	0						
<i>Lysimachia ciliata</i>	Fringed Yellow Loosestrife			S5	N5	G5		6	0						
<i>Lythrum salicaria</i>	Purple Loosestrife			SNA	NNA	G5	SE5		-5						
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley			S5	N5	G5		5	3				x		
<i>Maianthemum stellatum</i>	Star-flowered False Solomon's Seal			S5	N5	G5		6	0						
<i>Mateuccia struthiopteris</i>	Ostrich Fern			S5	N5	G5		5	0						
<i>Melicope albus</i>	White Sweet-clover			SNA	NNA	G5	SE5		3	x	x				x
<i>Mentha canadensis</i>	Canada Mint			S5	N5	G5		3	-3			x			
<i>Mitchella repens</i>	Partridgeberry			S5	N5	G5		6	3						
<i>Mitella diphylla</i>	Two-leaved Mitrewort			S5	N5	G5		5	3						
<i>Mitella nuda</i>	Naked Mitrewort			S5	N5	G5		6	-3						
<i>Glycyote arvensis</i>	Field Forget-me-not			SNA	NNA	GNR	SE4		6						x
<i>Nabalus albus</i>	White Rattlesnakeroot			S5	N5	G5		6	3			x			
<i>Onoclea sensibilis</i>	Sensitive Fern			S5	N5	G5		4	-3						x
<i>Osmunda regalis</i>	Royal Fern			S5	N5	G5		7	-5						
<i>Osmundastrum cinnamomeum</i>	Cinnamon Fern			S5	N5	G5		7	-3						
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam			S5	N5	G5		4	3			x			
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel			S5	N5	G5		0	3		x	x			
<i>Parthenocissus quinquefolia</i>	Virginia Creeper			S4?	N4?	G5		6	3		x	x		x	
<i>Pastinaca sativa</i>	Wild Parsnip			SNA	NNA	GNR	SE5		5		x	x			
<i>Phalaris arundinacea</i>	Reed Canarygrass			S5	NNR	G5TNR		0	-3		x	x			
<i>Picea glauca</i>	White Spruce			S5	N5	G5		6	3						
<i>Pilosella aurantiaca</i>	Orange Hawkweed			SNA	NNA	GNR	SE5		5			x			
<i>Pilosella caespitosa</i>	Meadow Hawkweed			SNA	NNA	GNR	SE5		5			x			
<i>Pinus resinosa</i>	Red Pine			S5	N5	G5		8	3						
<i>Pinus strobus</i>	Eastern White Pine			S5	N5	G5		4	3		x	x	x	x	
<i>Pinus sylvestris</i>	Scots Pine			SNA	NNA	GNR	SE5		4						
<i>Populus balsamifera</i>	Balsam Poplar			S5	NNR	G5		4	-3	x	x				x
<i>Populus grandidentata</i>	Large-toothed Aspen			S5	N5	G5		5	5	x					
<i>Populus tremuloides</i>	Trembling Aspen			S5	N5	G5		2	0		x	x	x	x	
<i>Potentilla recta</i>	Sulphur Cinquefoil			SNA	NNA	GNR	SE5		5						
<i>Prunus serotina</i>	Black Cherry			S5	N5	G5		3	3						
<i>Prunus virginiana</i>	Chokecherry			S5	N5	G5		2	3	x		x		x	
<i>Pteridium aquilinum</i>	Bracken Fern			S5	N5	G5		2	3						
<i>Quercus rubra</i>	Northern Red Oak			S5	N5	G5		6	3	x		x	x	x	x
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup			S5	N5	G5		2	0						
<i>Ranunculus acris</i>	Common Buttercup			SNA	NNA	G5	SE5		1		x	x			
<i>Rhus typhina</i>	Staghorn Sumac			S5	N5	G5		2	3	x	x				
<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry			S5	N5	G5		4	-3						
<i>Ribes lacustre</i>	Bristly Black Currant			S5	N5	G5		7	3						x
<i>Rosa acicularis</i>	Prickly Rose			S5	N5	G5		5	3	x					
<i>Rosa blanda</i>	Smooth Rose			S5	N5	G5		3	3						
<i>Rosa rugosa</i>	Rugosa Rose			SNA	NNA	GNR	SE1		3	x					
<i>Rubus occidentalis</i>	Black Raspberry			S5	N5	G5		2	5	x			x		
<i>Rubus odoratus</i>	Purple-flowering Raspberry			S5	N5	G5		3	5			x			
<i>Rudbeckia triloba</i>	Brown-eyed Susan			SNA	NNA	G5	SE4		5		x	x			
<i>Salix amygdaloides</i>	Peach-leaved Willow			S5	N5	G5		6	3		x				
<i>Sambucus canadensis</i>	Common Elderberry			S5	N5	G5		5	-3						x
<i>Scirpus microcarpus</i>	Red-tinged Bulrush			S5	N5</										

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Scientific Name	Common Name	SARA	SARO	S Rank	N Rank	G Rank	Exotic Status	Coefficient of Conservation	Coefficient of Wetness	CVI. 1	OAGM2	FODM4-1	MEMM3	FODM8-1	SWCM1-2
<i>Taraxacum officinale</i>	Common Dandelion			SNA	N5	G5	SE5		3		x	x			x
<i>Thalictrum dioicum</i>	Early Meadow-rue			S5	N5	G5		6	-3						
<i>Thalictrum pubescens</i>	Tall Meadow-rue			S5	N5	G5		5	-3						
<i>Thelypteris palustris</i>	Marsh Fern			S5	N5	G5		5	-3						x
<i>Thuja occidentalis</i>	Eastern White Cedar			S5	N5	G5		4	-3	x		x			x
<i>Tilia americana</i>	Basswood			S5	N5	G5		4	-3	x		x	x	x	x
<i>Toxicodendron radicans</i>	Poison Ivy			S5	N4	G5T5		2	0	x		x		x	x
<i>Trifolium pratense</i>	Red Clover			SNA	NNA	GNR	SE5		3	x	x				
<i>Trillium cernuum</i>	Nodding Trillium			S5	N5	G5		8	0			x			
<i>Trillium erectum</i>	Red Trillium			S5	N5	G5		6	3						
<i>Trillium grandiflorum</i>	White Trillium			S5	N5	G5		5	-3			x			
<i>Tsuga canadensis</i>	Eastern Hemlock			S5	N5	G5		7	3				x		
<i>Tussilago farfara</i>	Coltsfoot			SNA	NNA	GNR	SE5		3						x
<i>Typha latifolia</i>	Broad-leaved Cattail			S5	N5	G5		1	-5						x
<i>Ulmus americana</i>	White Elm			S5	N5	G4		3	-3	x			x	x	x
<i>Verbascum thapsus</i>	Common Mullein			SNA	NNA	GNR	SE5		5			x			
<i>Veronica officinalis</i>	Common Speedwell			SNA	NNA	G5	SE5		5						
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell			SNA	N5	G5	SE5?		0					x	
<i>Vicia cracca</i>	Tufted Vetch			SNA	NNA	GNR	SE5		5	x	x	x	x	x	x
<i>Vitis aestivalis</i>	Summer Grape			S4	N4	G5		7	3				x		
<i>Vitis riparia</i>	Riverbank Grape			S5	N5	G5		0	0	x			x	x	
<i>Zanthoxylum americanum</i>	Common Prickly-ash			S5	N5	G5		3	3						

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Scientific Name	Common Name	SARA	SARO	S Rank	N Rank	G Rank	Exotic Status	Coefficient of Conservation	Coefficient of Wetness	FOMM5-2	FODM5-2	FOMM2-2	SWMM1-1	FODM3-1	FOMM3-3
<i>Abies balsamea</i>	Balsam Fir			S5	N5	G5		5	-3			x			
<i>Acer pensylvanicum</i>	Striped Maple			S4	N5	G5		7				x		x	x
<i>Acer saccharinum</i>	Silver Maple			S5	N5	G5		5	-3						
<i>Acer saccharum</i>	Sugar Maple			S5	N5	G5		4	3		x	x	x	x	x
<i>Acer spicatum</i>	Mountain Maple			S5	N5	G5		6	3					x	
<i>Achillea millefolium</i>	Common Yarrow			SNA	NNR	G5	SE5?	3							
<i>Actaea pachypoda</i>	White Baneberry			S5	N5	G5		6	5					x	x
<i>Adiantum pedatum</i>	Northern Maidenhair Fern			S5	N5	G5		7	3		x			x	x
<i>Alisma triviale</i>	Northern Water-plantain			S5	N5	G5		1	-5						
<i>Alnus incana</i> sp. <i>rugosa</i>	Speckled Alder			S5	N5	G5T5		6	-3						
<i>Amelanchier laevis</i>	Smooth Serviceberry			S5	N5	G5		5	5						
<i>Amphicarpaea bracteata</i>	American Hog-peanut			S5	N5	G5		4	0						
<i>Anemonastrum canadense</i>	Canada Anemone			S5	N5	G5		3	-3						
<i>Antennaria neglecta</i>	Field Pussytoes			S5	N5	G5		3	5						
<i>Apocynum androsaemifolium</i>	Spreading Dogbane			S5	N5	G5		3	5						
<i>Aquilegia canadensis</i>	Red Columbine			S5	N5	G5		5	3						
<i>Aralia nudicaulis</i>	Wild Sarsaparilla			S5	N5	G5		4	3					x	
<i>Arctium minus</i>	Common Burdock			SNA	NNA	GNR	SE5	3							
<i>Aruncus dioicus</i>	Common Goatsbeard			SNA	N5	G5	SE1	0	5						
<i>Asclepias syriaca</i>	Common Milkweed			S5	N5	G5		0	5						
<i>Asteracea</i> spp.	Asters			-	-	-	-	-	-						
<i>Betula alleghaniensis</i>	Yellow Birch			S5	N5	G5		6	0					x	
<i>Betula papyrifera</i>	Paper Birch			S5	N5	G5		2	3		x	x	x	x	x
<i>Bromus inermis</i>	Smooth Brome			SNA	NNA	G5	SE5	5	3						
<i>Galiumglossis canadensis</i>	Bluejoint Reedgrass			S5	N5	G5		4	-5						
<i>Carex stricta</i>	Tussock Sedge			S5	N5	G5		4	-5						
<i>Carex vaginata</i>	Sheathed Sedge			S5	N5	G5		10	-5				x		
<i>Carya cordiformis</i>	Bitternut Hickory			S5	N5	G5		6	0					x	
<i>Caulophyllum thalictroides</i>	Blue Cohosh			S5	N5	G5		5	5						x
<i>Cicuta subifera</i>	Swamp Water-hemlock			S5	N5	G5		5	-5						
<i>Cirsium arvense</i>	Canada Thistle			SNA	NNA	G5	SE5	5	3				x		
<i>Clematis virginiana</i>	Virginia Clematis			S5	N5	G5		3	0						
<i>Clintonia borealis</i>	Yellow Clintonia			S5	N5	G5		7	0				x		
<i>Convolvulus arvensis</i>	Field Bindweed			SNA	NNA	GNR	SE5	7	-3						
<i>Copis trifolia</i>	Goldfist			S5	N5	G5		7	5				x		
<i>Cornus racemosa</i>	Grey Dogwood			S5	N5	G5		2	0						
<i>Cornus sericea</i>	Red-osier Dogwood			S5	N5	G5		2	-3						
<i>Corylus cornuta</i>	Beaked Hazelnut			S5	N5	G5		5	3				x		
<i>Craegus</i> spp.	Hawthorn sp.			-	-	-	-	-	-						
<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper			S5	N5	G5		5	0						
<i>Dactylis glomerata</i>	Orchard Grass			SNA	NNA	GNR	SE5	5	3						
<i>Daucus carota</i>	Wild Carrot			SNA	NNA	GNR	SE5	5							
<i>Dirca palustris</i>	Eastern Leatherwood			S4	N4	G4		7	0		x			x	
<i>Dryopteris marginalis</i>	Marginal Wood Fern			S5	N5	G5		5	3		x				
<i>Echium vulgare</i>	Common Viper's Bugloss			SNA	NNA	GNR	SE5	7	-3				x		x
<i>Equisetum fluviatile</i>	Water Horsetail			S5	N5	G5		7	-5						
<i>Equisetum hyemale</i>	Common Scouring-rush			S5	N5	G5		2	0		x				
<i>Equisetum palustre</i>	Marsh Horsetail			S5	N5	G5		10	-3						
<i>Equisetum pratense</i>	Meadow Horsetail			S5	N5	G5		8	-3		x				
<i>Equisetum scirpoides</i>	Dwarf Scouring-rush			S5	N5	G5		7	3				x		
<i>Equisetum sylvaticum</i>	Woodland Horsetail			S5	N5	G5		7	-3					x	x
<i>Erigeron strigosus</i>	Rough Fleabane			S5	N5	G5		4	3						
<i>Erythronium americanum</i>	Yellow Trout-lily			S5	N5	G5		5	5						
<i>Eurybia macrophylla</i>	Large-leaved Aster			S5	N5	G5		5	5						
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed			S5	N5	G5		3	-5						
<i>Fagus grandifolia</i>	American Beech			S4	N5	G5		6	3		x	x	x	x	x
<i>Fragaria virginiana</i>	Wild Strawberry			S5	N5	G5		2	3						
<i>Fraxinus americana</i>	White Ash			S4	N5	G5		4	3		x	x	x	x	x
<i>Fraxinus nigra</i>	Black Ash			S3	N5	G5		7	-3						
<i>Fraxinus pennsylvanica</i>	Red Ash			S4	N5	G5		3	-3				x		
<i>Galium mollug</i>	Smooth Bedstraw			SNA	NNA	GNR	SE5	5	-3						
<i>Galium palustre</i>	Common Marsh Bedstraw			S5	N5	G5		5	-5						
<i>Galium triflorum</i>	Three-flowered Bedstraw			S5	N5	G5		4	3						x
<i>Glyceria striata</i>	Fowl Mannagrass			S5	N5	G5		3	-5						
<i>Gymnocarpium dryopteris</i>	Common Oak Fern			S5	N5	G5		7	3						x
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica			S5	N5	G5		8	5				x		
<i>Hydrocharis morsus-ranae</i>	European Frog-bit			SNA	NNA	GNR	SE5	5	-5						
<i>Hydotesmum glutinosum</i>	Large Tick-trefoil			S4	N4N5	G5		6	5						
<i>Hypericum perforatum</i>	Common St. John's-wort			SNA	NNA	G-TNR	SE5	5	-3						
<i>Impatiens capensis</i>	Spotted Jewelweed			S5	N5	G5		4	-3		x				
<i>Juglans cinerea</i>	Butternut	END	END	S27	N2	G3		6	3				x	x	
<i>Juncus tenuis</i>	Path Rush			S5	N5	G5		0	0					x	
<i>Juniperus horizontalis</i>	Creeping Juniper			S5	N5	G5		10	3			x			
<i>Laportea canadensis</i>	Canada Wood Nettle			S5	N5	G5		6	-3		x				
<i>Leucanthemum vulgare</i>	Oxeye Daisy			SNA	NNA	G5	SE5	5	3				x		
<i>Lithospermum officinale</i>	European Gromwell			SNA	NNA	GNR	SE5	5							
<i>Lonicera canadensis</i>	Canada Fly Honey-suckle			S5	N5	G5		6	3			x		x	
<i>Lycopus americanus</i>	American Water-horehound			S5	N5	G5		4	-5				x		
<i>Lysimachia borealis</i>	Northern Starflower			S5	N5	G5		6	0				x	x	
<i>Lysimachia ciliata</i>	Fringed Yellow Loosestrife			S5	N5	G5		4	-3						
<i>Lythrum salicaria</i>	Purple Loosestrife			SNA	NNA	G5	SE5	5	-5						
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley			S5	N5	G5		5	3		x	x		x	x
<i>Maianthemum stellatum</i>	Star-flowered False Solomon's Seal			S5	N5	G5		6	0						
<i>Mateuccia struthiopteris</i>	Ostrich Fern			S5	N5	G5		5	0		x				
<i>Melicotus albus</i>	White Sweet-clover			SNA	NNA	G5	SE5	3	3						
<i>Mentha canadensis</i>	Canada Mint			S5	N5	G5		3	-3						
<i>Mitchella repens</i>	Partridgeberry			S5	N5	G5		6	3					x	
<i>Mitella diphylla</i>	Two-leaved Mitrewort			S5	N5	G5		5	3						x
<i>Mitella nuda</i>	Naked Mitrewort			S5	N5	G5		6	-3				x		
<i>Glycyote arvensis</i>	Field Forget-me-not			SNA	NNA	GNR	SE4	6	3					x	x
<i>Nabalus albus</i>	White Rattlesnakeroot			S5	N5	G5		6	3				x	x	x
<i>Onoclea sensibilis</i>	Sensitive Fern			S5	N5	G5		4	-3		x				
<i>Osmunda regalis</i>	Royal Fern			S5	N5	G5		7	-5						
<i>Osmundastrum cinnamomeum</i>	Cinnamon Fern			S5	N5	G5		7	-3						
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam			S5	N5	G5		4	3		x	x	x	x	x
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel			S5	N5	G5		0	3						
<i>Parthenocissus quinquefolia</i>	Virginia Creeper			S4?	N4?	G5		6	3						
<i>Pastinaca sativa</i>	Wild Parsnip			SNA	NNA	GNR	SE5	0	5						
<i>Phalaris arundinacea</i>	Reed Canarygrass			S5	NNR	G5TNR		6	-3						
<i>Picea glauca</i>	White Spruce			S5	N5	G5		6	3						
<i>Pilosella aurantiaca</i>	Orange Hawkweed			SNA	NNA	GNR	SE5	5	5						
<i>Pilosella caespitosa</i>	Meadow Hawkweed			SNA	NNA	GNR	SE5	5	3						
<i>Pinus resinosa</i>	Red Pine			S5	N5	G5		8	3		x		x		
<i>Pinus strobus</i>	Eastern White Pine			S5	N5	G5		4	3		x	x		x	
<i>Pinus sylvestris</i>	Scots Pine			SNA	NNA	GNR	SE5	4	-3			x			
<i>Populus balsamifera</i>	Balsam Poplar			S5	NNR	G5		4	-3						
<i>Populus grandidentata</i>	Large-toothed Aspen			S5	N5	G5		5	5					x	x
<i>Populus tremuloides</i>	Trembling Aspen			S5	N5	G5		2	0		x				
<i>Potentilla recta</i>	Sulphur Cinquefoil			SNA	NNA	GNR	SE5	3	5						
<i>Prunus serotina</i>	Black Cherry			S5	N5	G5		3	3						
<i>Prunus virginiana</i>	Chokecherry			S5	N5	G5		2	3						
<i>Pteridium aquilinum</i>	Bracken Fern			S5	N5	G5		2	3						x
<i>Quercus rubra</i>	Northern Red Oak			S5	N5	G5		6	3		x	x		x	
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup			S5	N5	G5		1	0			x			
<i>Ranunculus acris</i>	Common Buttercup			SNA	NNA	G5	SE5	2	3			x		x	
<i>Rhus typhina</i>	Staghorn Sumac			S5	N5	G5		2	0						
<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry			S5	N5	G5		4	-3			x			
<i>Ribes lacustre</i>	Bristly Black Currant			S5	N5	G5		7	3						
<i>Rosa acicularis</i>	Prickly Rose			S5	N5	G5		5	3						
<i>Rosa blanda</i>	Smooth Rose			S5	N5	G5		3	3						
<i>Rosa rugosa</i>	Rugosa Rose			SNA	NNA	GNR	SE1	3	3						
<i>Rubus occidentalis</i>	Black Raspberry			S5	N5	G5		2	5						
<i>Rubus odoratus</i>	Purple-flowering Raspberry			S5	N5	G5		3	5						
<i>Rudbeckia triloba</i>	Brown-eyed Susan			SNA	NNA	G5	SE4	6	3						
<i>Salix amygdaloides</i>	Peach-leaved Willow			S5	N5	G5		5	-3						
<i>Sambucus canadensis</i>	Common Elderberry			S5	N5	G5		5	-3						
<i>Scirpus microcarpus</i>	Red-tinged Bulrush			S5	N5	G5		4							

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<i>Taraxacum officinale</i>	Common Dandelion			SNA	N5	G5	SE5		3	x					
<i>Thalictrum dioicum</i>	Early Meadow-rue			S5	N5	G5		6	-3					x	x
<i>Thalictrum pubescens</i>	Tall Meadow-rue			S5	N5	G5		5	-3						
<i>Thelypteris palustris</i>	Marsh Fern			S5	N5	G5		5	-3						
<i>Thuja occidentalis</i>	Eastern White Cedar			S5	N5	G5		4	-3		x	x	x	x	x
<i>Tilia americana</i>	Basswood			S5	N5	G5		4	-3	x	x	x	x	x	x
<i>Toxicodendron radicans</i>	Poison Ivy			S5	N4	G5t5		2	0						
<i>Trifolium pratense</i>	Red Clover			SNA	NNA	GNR	SE5		3	x					
<i>Trillium cernuum</i>	Nodding Trillium			S5	N5	G5		8	0					x	
<i>Trillium erectum</i>	Red Trillium			S5	N5	G5		6	3						
<i>Trillium grandiflorum</i>	White Trillium			S5	N5	G5		5	-3		x		x		x
<i>Tsuga canadensis</i>	Eastern Hemlock			S5	N5	G5		7	3		x	x	x	x	x
<i>Tussilago farfara</i>	Coltsfoot			SNA	NNA	GNR	SE5		3				x		
<i>Typha latifolia</i>	Broad-leaved Cattail			S5	N5	G5		1	-5				x		
<i>Ulmus americana</i>	White Elm			S5	N5	G4		3	-3						
<i>Verbascum thapsus</i>	Common Mullein			SNA	NNA	GNR	SE5		5						
<i>Veronica officinalis</i>	Common Speedwell			SNA	NNA	G5	SE5		5					x	
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell			SNA	N5	G5	SE5?		0						
<i>Vicia cracca</i>	Tufted Vetch			SNA	NNA	GNR	SE5		5						
<i>Vitis aestivalis</i>	Summer Grape			S4	N4	G5		7	3						
<i>Vitis riparia</i>	Riverbank Grape			S5	N5	G5		0	0						
<i>Zanthoxylum americanum</i>	Common Prickly-ash			S5	N5	G5		3	3						

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<i>Abies balsamea</i>	Balsam Fir			S5	N5	G5		5	-3				
<i>Acer pensylvanicum</i>	Striped Maple			S4	N5	G5		7	3				
<i>Acer saccharinum</i>	Silver Maple			S5	N5	G5		5	-3	x			
<i>Acer saccharum</i>	Sugar Maple			S5	N5	G5		4	3			x	x
<i>Acer spicatum</i>	Mountain Maple			S5	N5	G5		6	3				
<i>Achillea millefolium</i>	Common Yarrow			SNA	NNR	G5	SE5?	3	3				
<i>Actaea pachypoda</i>	White Baneberry			S5	N5	G5		6	5			x	x
<i>Adiantum pedatum</i>	Northern Maidenhair Fern			S5	N5	G5		7	3				
<i>Alisma triviale</i>	Northern Water-plantain			S5	N5	G5		1	-5				
<i>Alnus incana</i> sp. <i>rugosa</i>	Speckled Alder			S5	N5	G5T5		6	-3	x	x		
<i>Amelanchier laevis</i>	Smooth Serviceberry			S5	N5	G5		5	5				x
<i>Amphicarpaea bracteata</i>	American Hog-peanut			S5	N5	G5		4	0				
<i>Anemonastrum canadense</i>	Canada Anemone			S5	N5	G5		3	-3	x			
<i>Antennaria neglecta</i>	Field Pussytoes			S5	N5	G5		3	5				
<i>Apocynum androsaemifolium</i>	Spreading Dogbane			S5	N5	G5		3	5				
<i>Aquilegia canadensis</i>	Red Columbine			S5	N5	G5		5	3				
<i>Aralia nudicaulis</i>	Wild Sarsaparilla			S5	N5	G5		4	3				
<i>Arctium minus</i>	Common Burdock			SNA	NNA	GNR	SE5	3	3				
<i>Aruncus dioicus</i>	Common Goatsbeard			SNA	N5	G5	SE1	0	3				
<i>Asclepias syriaca</i>	Common Milkweed			S5	N5	G5		0	5	x			
<i>Asteraceae</i> spp.	Asters			-	-	-	-	-	-				
<i>Betula alleghaniensis</i>	Yellow Birch			S5	N5	G5		6	0				
<i>Betula papyrifera</i>	Paper Birch			S5	N5	G5		2	3			x	
<i>Bromus inermis</i>	Smooth Brome			SNA	NNA	G5	SE5	2	3				
<i>Galiumglossis canadensis</i>	Bluejoint Reedgrass			S5	N5	G5		4	-5				
<i>Carex stricta</i>	Tussock Sedge			S5	N5	G5		4	-5	x			
<i>Carex vaginata</i>	Sheathed Sedge			S5	N5	G5		10	-5				
<i>Carya cordiformis</i>	Bitternut Hickory			S5	N5	G5		6	0				
<i>Caulophyllum thalictroides</i>	Blue Cohosh			S5	N5	G5		5	5				
<i>Cicuta subifera</i>	Spotted Elder			S5	N5	G5		5	-3				
<i>Cirsium arvense</i>	Canada Thistle			SNA	NNA	G5	SE5	3	3				
<i>Clematis virginiana</i>	Virginia Clematis			S5	N5	G5		3	0		x	x	
<i>Clintonia borealis</i>	Yellow Clintonia			S5	N5	G5		7	0				
<i>Convolvulus arvensis</i>	Field Bindweed			SNA	NNA	GNR	SE5	7	-3				
<i>Copis trifolia</i>	Goldfinch			S5	N5	G5		2	0	x			
<i>Cornus racemosa</i>	Grey Dogwood			S5	N5	G5		2	0	x			
<i>Cornus sericea</i>	Red-osier Dogwood			S5	N5	G5		2	-3	x	x		
<i>Corylus cornuta</i>	Beaked Hazelnut			S5	N5	G5		5	3				
<i>Craegus</i> spp.	Hawthorn sp.			-	-	-	-	-	-				
<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper			S5	N5	G5		5	0				
<i>Dactylis glomerata</i>	Orchard Grass			SNA	NNA	GNR	SE5	5	3				
<i>Daucus carota</i>	Wild Carrot			SNA	NNA	GNR	SE5	5	5				
<i>Dirca palustris</i>	Eastern Leatherwood			S4	N4	G4		7	0				
<i>Dryopteris marginalis</i>	Marginal Wood Fern			S5	N5	G5		5	3				
<i>Echium vulgare</i>	Common Viper's Bugloss			SNA	NNA	GNR	SE5	7	-3				
<i>Equisetum fluviatile</i>	Water Horsetail			S5	N5	G5		7	-5		x		
<i>Equisetum hyemale</i>	Common Scouring-rush			S5	N5	G5		2	0				
<i>Equisetum palustre</i>	Marsh Horsetail			S5	N5	G5		10	-3	x			
<i>Equisetum pratense</i>	Meadow Horsetail			S5	N5	G5		8	-3			x	
<i>Equisetum scirpoides</i>	Dwarf Scouring-rush			S5	N5	G5		7	0				
<i>Equisetum sylvaticum</i>	Woodland Horsetail			S5	N5	G5		7	-3				
<i>Erigeron strigosus</i>	Rough Fleabane			S5	N5	G5		4	3				
<i>Erythronium americanum</i>	Yellow Trout-lily			S5	N5	G5		5	5				
<i>Eurybia macrophylla</i>	Large-leaved Aster			S5	N5	G5		5	5			x	
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed			S5	N5	G5		3	-5		x		
<i>Fagus grandifolia</i>	American Beech			S4	N5	G5		6	3				
<i>Fragaria virginiana</i>	Wild Strawberry			S5	N5	G5		2	3				
<i>Fraxinus americana</i>	White Ash			S4	N5	G5		4	3				x
<i>Fraxinus nigra</i>	Black Ash			S3	N5	G5		7	-3	x			
<i>Fraxinus pennsylvanica</i>	Red Ash			S4	N5	G5		3	5			x	
<i>Galium mollug</i>	Smooth Bedstraw			SNA	NNA	GNR	SE5	5	-3		x	x	
<i>Galium palustre</i>	Common Marsh Bedstraw			S5	N5	G5		5	-5	x			
<i>Galium triflorum</i>	Three-flowered Bedstraw			S5	N5	G5		4	3				x
<i>Glyceria striata</i>	Fowl Mannagrass			S5	N5	G5		3	-5				
<i>Gymnocarpium dryopteris</i>	Common Oak Fern			S5	N5	G5		7	3				
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica			S5	N5	G5		8	5				
<i>Hydrocharis morsus-ranae</i>	European Frog-bit			SNA	NNA	GNR	SE5	5	-5				
<i>Hydotesmum glutinosum</i>	Large Tick-trefoil			S4	N4N5	G5		6	5				
<i>Hypericum perforatum</i>	Common St. John's-wort			SNA	NNA	G-TNR	SE5	5	0				
<i>Impatiens capensis</i>	Spotted Jewelweed			S5	N5	G5		4	-3				
<i>Juglans cinerea</i>	Butternut	END	END	S2?	N2	G3		6	3			x	
<i>Juncus tenuis</i>	Path Rush			S5	N5	G5		0	0				
<i>Juniperus horizontalis</i>	Creeping Juniper			S5	N5	G5		10	3				
<i>Laportea canadensis</i>	Canada Wood Nettle			S5	N5	G5		6	-3				
<i>Leucanthemum vulgare</i>	Oxeye Daisy			SNA	NNA	GNR	SE5	5	5			x	
<i>Lithospermum officinale</i>	European Gromwell			SNA	NNA	GNR	SE5	5	5				
<i>Lonicera canadensis</i>	Canada Fly Honey-suckle			S5	N5	G5		6	3				
<i>Lycopus americanus</i>	American Water-horehound			S5	N5	G5		4	-5				
<i>Lysimachia borealis</i>	Northern Starflower			S5	N5	G5		6	0			x	
<i>Lysimachia ciliata</i>	Fringed Yellow Loosestrife			S5	N5	G5		4	-3		x		
<i>Lythrum salicaria</i>	Purple Loosestrife			SNA	NNA	G5	SE5	5	-5	x			
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley			S5	N5	G5		5	3			x	
<i>Maianthemum stellatum</i>	Star-flowered False Solomon's Seal			S5	N5	G5		6	0				
<i>Mateuccia struthiopteris</i>	Ostrich Fern			S5	N5	G5		5	0				
<i>Melicotus albus</i>	White Sweet-clover			SNA	NNA	G5	SE5	3	3				
<i>Mentha canadensis</i>	Canada Mint			S5	N5	G5		3	-3				
<i>Mitchella repens</i>	Partridgeberry			S5	N5	G5		6	3				
<i>Mitella diphylla</i>	Two-leaved Mitrewort			S5	N5	G5		5	3				
<i>Mitella nuda</i>	Naked Mitrewort			S5	N5	G5		6	-3				
<i>Glycyote arvensis</i>	Field Forget-me-not			SNA	NNA	GNR	SE4	6	3				
<i>Nabalus albus</i>	White Rattlesnakeroot			S5	N5	G5		6	3				
<i>Onoclea sensibilis</i>	Sensitive Fern			S5	N5	G5		4	-3	x	x		
<i>Osmunda regalis</i>	Royal Fern			S5	N5	G5		7	-5	x	x		
<i>Osmundastrum cinnamomeum</i>	Cinnamon Fern			S5	N5	G5		7	-3		x		
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam			S5	N5	G5		4	3				x
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel			S5	N5	G5		0	3				
<i>Parthenocissus quinquefolia</i>	Virginia Creeper			S4?	N4?	G5		6	3		x		
<i>Pastinaca sativa</i>	Wild Parsnip			SNA	NNA	GNR	SE5	5	5				
<i>Phalaris arundinacea</i>	Reed Canarygrass			S5	NNR	G5TNR		0	-3	x	x		
<i>Picea glauca</i>	White Spruce			S5	N5	G5		6	3			x	
<i>Pilosella aurantiaca</i>	Orange Hawkweed			SNA	NNA	GNR	SE5	5	5			x	
<i>Pilosella caespitosa</i>	Meadow Hawkweed			SNA	NNA	GNR	SE5	5	5				
<i>Pinus resinosa</i>	Red Pine			S5	N5	G5		8	3			x	
<i>Pinus strobus</i>	Eastern White Pine			S5	N5	G5		4	-3				
<i>Pinus sylvestris</i>	Scots Pine			SNA	NNA	GNR	SE5	4	-3				
<i>Populus balsamifera</i>	Balsam Poplar			S5	NNR	G5		4	-3		x		
<i>Populus grandidentata</i>	Large-toothed Aspen			S5	N5	G5		5	5				
<i>Populus tremuloides</i>	Trembling Aspen			S5	N5	G5		2	0			x	
<i>Potentilla recta</i>	Sulphur Cinquefoil			SNA	NNA	GNR	SE5	5	3				
<i>Prunus serotina</i>	Black Cherry			S5	N5	G5		3	3				
<i>Prunus virginiana</i>	Chokecherry			S5	N5	G5		2	3				
<i>Pteridium aquilinum</i>	Bracken Fern			S5	N5	G5		2	3				
<i>Quercus rubra</i>	Northern Red Oak			S5	N5	G5		6	3				
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup			S5	N5	G5		1	0				
<i>Ranunculus acris</i>	Common Buttercup			SNA	NNA	G5	SE5	2	3			x	0
<i>Rhus typhina</i>	Staghorn Sumac			S5	N5	G5		2	0			x	x
<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry			S5	N5	G5		4	3				
<i>Ribes lacustre</i>	Bristly Black Currant			S5	N5	G5		7	-3				
<i>Rosa acicularis</i>	Prickly Rose			S5	N5	G5		5	3				
<i>Rosa blanda</i>	Smooth Rose			S5	N5	G5		3	3				
<i>Rosa rugosa</i>	Rugosa Rose			SNA	NNA	GNR	SE1	3	3				
<i>Rubus occidentalis</i>	Black Raspberry			S5	N5	G5		2	5			x	
<i>Rubus odoratus</i>	Purple-flowering Raspberry			S5	N5	G5		3	5				
<i>Rudbeckia triloba</i>	Brown-eyed Susan			SNA	NNA	G5	SE4	5	5				
<i>Salix amygdaloides</i>	Peach-leaved Willow			S5	N5	G5		6	-3	x			
<i>Sambucus canadensis</i>	Common Elderberry			S5	N5	G5		5	-3				
<i>Scirpus microcarpus</i>	Red-tinged Bulrush			S5	N5	G5		4	-5				
<i>Silene vulgaris</i>	Bladder Campion			SNA	NNA	GNR	SE5	4	-5				
<i>Sisyrinchium montanum</i>	Strict Blue-eyed-grass			S5	N5	G5T5		4	0				
<i>Sium suave</i>	Common Water-parsnip			S5	N5	G5		4	-5				
<i>Solanum dulcamara</i>	Bittersweet Nightshade			SNA	NNA	GNR	SE5	5	5		x		
<i>Solidago flexicaulis</i>	Zigzag Goldenrod			S5	N5	G5		6	3			x	
<i>Solidago</i> spp.	Goldenrods			-	-	-	-	-	-				
<i>Sonchus arvensis</i>	Field Sow-thistle			SNA	NNA	GNR	SE5	4	3			x	
<i>Sonchus asper</i>	Prickly Sow-thistle			SNA	NNA	GNR	SE5	4	3				
<i>Spiraea alba</i>	White Meadowsweet			S5	N5	G5		3	-3	x			
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk			S5	N5	G5		7	3				

Appendix C - Vegetation Species List  
 Natural Heritage Study  
 Ferguson Lake Road Reconstruction  
 Township of Greater Madawaska, Renfrew County

Scientific Name	Common Name	SARA	SARO	S Rank	N Rank	G Rank	Exotic Status	Coefficient of Conservation	Coefficient of Wetness	SWTM2-1	SWTM1-1	FOMM10-2	FODM5-6
<i>Taraxacum officinale</i>	Common Dandelion			SNA	N5	G5	SE5		3				
<i>Thalictrum dioicum</i>	Early Meadow-rue			S5	N5	G5		6	3		x		
<i>Thalictrum pubescens</i>	Tall Meadow-rue			S5	N5	G5		5	-3			x	
<i>Thelypteris palustris</i>	Marsh Fern			S5	N5	G5		5	-3				
<i>Thuja occidentalis</i>	Eastern White Cedar			S5	N5	G5		4	-3	x	x	x	
<i>Tilia americana</i>	Basswood			S5	N5	G5		4	-3	x		x	x
<i>Toxicodendron radicans</i>	Poison Ivy			S5	N4	G5T5		2	0	x		x	
<i>Trifolium pratense</i>	Red Clover			SNA	NNA	GNR	SE5		3				
<i>Trillium cernuum</i>	Nodding Trillium			S5	N5	G5		8	0				x
<i>Trillium erectum</i>	Red Trillium			S5	N5	G5		6	3				x
<i>Trillium grandiflorum</i>	White Trillium			S5	N5	G5		5	-3				
<i>Tsuga canadensis</i>	Eastern Hemlock			S5	N5	G5		7	3				
<i>Tussilago farfara</i>	Coltsfoot			SNA	NNA	GNR	SE5		3				
<i>Typha latifolia</i>	Broad-leaved Cattail			S5	N5	G5		1	-5	x			
<i>Ulmus americana</i>	White Elm			S5	N5	G4		3	-3	x	x		
<i>Verbascum thapsus</i>	Common Mullein			SNA	NNA	GNR	SE5		5			x	
<i>Veronica officinalis</i>	Common Speedwell			SNA	NNA	G5	SE5		5				
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell			SNA	N5	G5	SE5?		0				
<i>Vicia cracca</i>	Tufted Vetch			SNA	NNA	GNR	SE5		5	x		x	
<i>Vitis aestivalis</i>	Summer Grape			S4	N4	G5		7	3				x
<i>Vitis riparia</i>	Riverbank Grape			S5	N5	G5		0	0	x	x	x	
<i>Zanthoxylum americanum</i>	Common Prickly-ash			S5	N5	G5		3	3			x	

# **APPENDIX D**

## **Field Forms**

## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whitton 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

Indicate the presence of Potential Wildlife Habitat by checking the appropriate box of features that are present within the polygon.

**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by type (TY) (B = bird, H = herpetofauna, etc.) and by species (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Cr. Rg</u>		POLYGON: <u>CVI-1</u>	
	SURVEYOR(S): <u>DD/KE</u>		DATE: <u>June 12/20</u>	
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY			<u>CVI-1</u>
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10-25 m 3 = 2-10 m 4 = 1-2 m 5 = 0.5-1 m 6 = 0.2-0.5 m 7 = HT < 0.2 m  
 CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

### STAND COMPOSITION:

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT			
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE
				OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Ln Rd</u>		POLYGON: <u>PCC</u>	
	SURVEYOR(S): <u>DJ/SE</u>		DATE: <u>June 16/20</u>	
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input checked="" type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY		
2	SUB-CANOPY		
3	UNDERSTOREY		
4	GRD. LAYER		PCC

HT CODES: 1 = >25 m 2 = 10<HT-25 m 3 = 2<HT-10 m 4 = 1<HT-2 m 5 = 0.5<HT 1 m 6 = 0.2<HT-0.5 m 7 = HT<0.2 m  
CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g. , none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

Indicate the presence of **Potential Wildlife Habitat** by checking the appropriate box of features that are present within the polygon.

**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by **type** (TY) (B = bird, H = herpetofauna, etc.) and by **species** (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Fepperton Co Rd</u>		POLYGON: <u>14</u>	
	SURVEYOR(S) <u>DD/IR</u>		DATE <u>June 16/20</u>	UTME
START		END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREE		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	<u>12</u>	<u>4</u>	<u>Sugar Maple &gt; A. Bittersweet</u>
2 SUB-CANOPY			<u>(Redwood)</u>
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 50%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

Indicate the presence of Potential Wildlife Habitat by checking the appropriate box of features that are present within the polygon.

**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by type (TY) (B = bird, H = herpetofauna, etc.) and by species (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lake, CO</u>	POLYGON: <u>13</u>	
	SURVEYOR(S): <u>BO/SC</u>	DATE: <u>JUNE 16/20</u>	UTME
	START	END	UTMZ

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2 4	<u>W. SPONGE ST. ASPEN</u>
2	SUB-CANOPY		
3	UNDERSTOREY		
4	GRD. LAYER		

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 50%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:					
	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:					
	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:					
	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
COMM. AGE:					
	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS: (cm)		
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: (cm)		

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	
CODE:	CODE:
COMPLEX	
CODE:	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
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5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lk. Sp.</u>		POLYGON: <u>12</u>	
	SURVEYOR(S): <u>BB/SR</u>		DATE: <u>June 16/80</u>	UTME
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DICHOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input checked="" type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input checked="" type="checkbox"/> SHRUB <input type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY		
2	SUB-CANOPY		<u>SPEC ALDER SWAMP</u>
3	UNDERSTOREY		
4	GRD. LAYER		

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 50%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

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**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

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6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

Indicate the presence of Potential Wildlife Habitat by checking the appropriate box of features that are present within the polygon.

**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by type (TY) (B = bird, H = herpetofauna, etc.) and by species (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>FERRIS LA. CO</u>		POLYGON: <u>11</u>	
	SURVEYOR(S): <u>DD/KR</u>		DATE: <u>JUNE 12/20</u>	UTME
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input checked="" type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED			

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	82	SILVER MAPLE >> W. CEDAR
2 SUB-CANOPY			
3 UNDERSTOREY	4	3	R.O. Pigeons = Sp. ANKER = P.L. WILLOW
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT 1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR ; 10% 2 = 10 < CVR ; 25% 3 = 25 < CVR ; 50% 4 = CVR > 60%

STAND COMPOSITION: <u>THICKET SWAMP</u>					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Fecogon Ln Rd</u>		POLYGON: <u>10</u>	
	SURVEYOR(S) <u>D/D/SE</u>		DATE <u>June 12/20</u>	UTME
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1 4	<u>SUGAR MAPLE 3 E. Hemlock = 2. C. 92</u>
2	SUB-CANOPY		
3	UNDERSTOREY		
4	GRD. LAYER		

HT CODES: 1 => 25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT 1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES 0 = NONE 1 = 0% < CVR ; 10% 2 = 10 < CVR ; 25% 3 = 25 < CVR ; 60% 4 = CVR > 60%

STAND COMPOSITION:	BA:
SIZE CLASS ANALYSIS:	< 10   10 - 24   25 - 50   > 50
STANDING SNAGS:	< 10   10 - 24   25 - 50   > 50
DEADFALL / LOGS:	< 10   10 - 24   25 - 50   > 50
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT
COMM. AGE:	PIIONEER   YOUNG   MID-AGE   MATURE   OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

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**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
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7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g. ., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>FERRISBURG LA. CO.</u>		POLYGON: <u>9</u>	
	SURVEYOR(S): <u>D.D./SR</u>		DATE: <u>June 12/20</u>	UTME
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREE		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	1	4	LG. TREES OPEN 3 A. BEECH = 50 MAPLE
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 50%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

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**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lake 20</u>	POLYGON: <u>8</u>	
	SURVEYOR(S): <u>DDSC</u>	DATE: <u>June 12/20</u>	UTME
	START	END	UTMZ
			UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input checked="" type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4 W CEDAR > E Hemlock = <u>Burned Area / Red Area</u>
2	SUB-CANOPY		
3	UNDERSTOREY		
4	GRD. LAYER		

HT CODES: 1 = >25 m 2 = 10<HT-25 m 3 = 2<HT-10 m 4 = 1<HT-2 m 5 = 0.5<HT 1 m 6 = 0.2<HT-0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR, 10% 2 = 10 < CVR, 25% 3 = 25 < CVR, 50% 4 = CVR > 50%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

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**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

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<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>FEDERSON CR PA.</u>		POLYGON: <u>7</u>	
	SURVEYOR(S): <u>DD/SK</u>		DATE: <u>JUNE 7/80</u>	
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	1	4	SUGAR MAPLE > W. PINE > E. PINE
2 SUB-CANOPY			IRON WOOD
3 UNDERSTOREY			+
4 GRD. LAYER			

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CVR CODES 0 = NONE 1 = 0% < CVR 10% 2 = 10 < CVR 25% 3 = 25 < CVR 60% 4 = CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS: (cm)		
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: (cm)		

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

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<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Co. Rd</u>	POLYGON: <u>6</u>	
	SURVEYOR(S): <u>D. J. R.</u>	DATE: <u>June 9/20</u>	UTME
	START	END	UTMZ

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> -MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1 4	SUGAR MAPLE > BEECH
2	SUB-CANOPY		IRONWOOD
3	UNDERSTOREY		
4	GRD. LAYER		FERNS

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES 0 = NONE 1 = 0% < CVR ; 10% 2 = 10 < CVR ; 25% 3 = 25 < CVR ; 60% 4 = CVR > 60%

STAND COMPOSITION:	BA:					
SIZE CLASS ANALYSIS:	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>&lt; 10</td> <td>10 - 24</td> <td>25 - 50</td> <td>&gt; 50</td> </tr> </table>	< 10	10 - 24	25 - 50	> 50	
< 10	10 - 24	25 - 50	> 50			
STANDING SNAGS:	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>&lt; 10</td> <td>10 - 24</td> <td>25 - 50</td> <td>&gt; 50</td> </tr> </table>	< 10	10 - 24	25 - 50	> 50	
< 10	10 - 24	25 - 50	> 50			
DEADFALL / LOGS:	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>&lt; 10</td> <td>10 - 24</td> <td>25 - 50</td> <td>&gt; 50</td> </tr> </table>	< 10	10 - 24	25 - 50	> 50	
< 10	10 - 24	25 - 50	> 50			
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
COMM. AGE:	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>PIONEER</td> <td>YOUNG</td> <td>MID-AGE</td> <td>MATURE</td> <td>OLD GROWTH</td> </tr> </table>	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH
PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH		

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

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**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by type (TY) (B = bird, H = herpetofauna, etc.) and by species (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lk. Rd.</u>	POLYGON: <u>5</u>	
	SURVEYOR(S): <u>DAIR</u>	DATE: <u>June 2/20</u>	UTME
	START	END	UTMZ

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	4	T. Arden > R. Pine - W. Birch
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT-25 m 3 = 2<HT-10 m 4 = 1<HT-2 m 5 = 0.5<HT 1 m 6 = 0.2<HT-0.5 m 7 = HT<0.2 m  
 CVR CODES: 0 = NONE 1 = 0% < CVR : 10% 2 = 10 < CVR : 25% 3 = 25 < CVR : 60% 4 = CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

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4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g. , none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

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**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lake Rd.</u>	POLYGON: <u>4</u>	
	SURVEYOR(S) <u>DB/RE</u>	DATE <u>June 7/20</u>	UTME
	START	END	UTMZ
			UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input checked="" type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK				<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	4	<u>W. CEDAR &gt;&gt; P. BIRCH</u>
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			<u>FERNS</u>

HT CODES: 1=>25 m 2=10<HT<25 m 3=2<HT<10 m 4=1<HT<2 m 5=0.5<HT<1 m 6=0.2<HT<0.5 m 7=HT<0.2 m  
CVR CODES: 0= NONE 1=0% < CVR < 10% 2=10 < CVR < 25% 3=25 < CVR < 60% 4= CVR > 60%

<b>STAND COMPOSITION:</b>					<b>BA:</b>
<b>SIZE CLASS ANALYSIS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>STANDING SNAGS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>DEADFALL / LOGS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>ABUNDANCE CODES:</b> N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
<b>COMM. AGE:</b>					
	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

<b>TEXTURE:</b>	DEPTH TO MOTTLES / GLEY	g =	G =
<b>MOISTURE:</b>	DEPTH OF ORGANICS:		(cm)
<b>HOMOGENEOUS / VARIABLE</b>	DEPTH TO BEDROCK:		(cm)

### COMMUNITY CLASSIFICATION:

<b>COMMUNITY CLASS:</b>	<b>CODE:</b>
<b>COMMUNITY SERIES:</b>	<b>CODE:</b>
<b>ECOSITE:</b>	<b>CODE:</b>
<b>VEGETATION TYPE:</b>	<b>CODE:</b>
<b>INCLUSION</b>	<b>CODE:</b>
<b>COMPLEX</b>	<b>CODE:</b>

Notes:



Wildlife

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**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

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10	Storm	trees uprooted; considerable structural damage

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<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <i>Ferrisway Cr. P.</i>		POLYGON: <i>3</i>	
	SURVEYOR(S): <i>DD/CE</i>		DATE: <i>JUNE 9/00</i>	UTME
	START	END	UTMZ	UTMN

**POLYGON DESCRIPTION**

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	<i>2</i>	<i>4</i>	<i>T. ARDEN &gt; G. ABT = B. C. EXCEL</i>
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			<i>SCOURGE - PINE</i>

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES D= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

<b>STAND COMPOSITION:</b>					BA:
<b>SIZE CLASS ANALYSIS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>STANDING SNAGS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>DEADFALL / LOGS:</b>					
	< 10	10 - 24	25 - 50	> 50	
<b>ABUNDANCE CODES:</b> N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
<b>COMM. AGE:</b>		PIIONEER	YOUNG	MID-AGE	MATURE
					OLD GROWTH

**SOIL ANALYSIS:**

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

**COMMUNITY CLASSIFICATION:**

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



Wildlife

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<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>Ferguson Lake Rd</u>		POLYGON: <u>2</u>	
	SURVEYOR(S): <u>BD/FR</u>		DATE: <u>JUNE 7/20</u>	UTME
	START	END	UTMZ	UTMN

**POLYGON DESCRIPTION**

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL. UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY			
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER	5	4	Bluegrass >> Scaevola < Bluegrass

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT 1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES 0 = NONE 1 = 0% < CVR ; 10% 2 = 10 < CVR ; 25% 3 = 25 < CVR ; 60% 4 = CVR > 60%

<b>STAND COMPOSITION:</b>					BA:
<b>SIZE CLASS ANALYSIS:</b>	< 10	10 - 24	25 - 50	> 50	
<b>STANDING SNAGS:</b>	< 10	10 - 24	25 - 50	> 50	
<b>DEADFALL / LOGS:</b>	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT					
<b>COMM. AGE:</b>	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

**SOIL ANALYSIS:**

<b>TEXTURE:</b>	DEPTH TO MOTTLES / GLEY	g =	G =
<b>MOISTURE:</b>	DEPTH OF ORGANICS:		(cm)
<b>HOMOGENEOUS / VARIABLE</b>	DEPTH TO BEDROCK:		(cm)

**COMMUNITY CLASSIFICATION:**

<b>COMMUNITY CLASS:</b>	CODE:
<b>COMMUNITY SERIES:</b>	CODE:
<b>ECOSITE:</b>	CODE:
<b>VEGETATION TYPE:</b>	CODE:
<b>INCLUSION</b>	CODE:
<b>COMPLEX</b>	CODE:

Notes:



## Wildlife

Weather information is recorded on the Wildlife data card. Such information can be useful for helping to interpret records or results.

**Temperature:** Record of approximate ambient temperature (°C) during the field survey.

**Cloud:** Record, in tenths, the proportion of the sky covered by clouds.

**Wind:** Record the Beaufort Scale number according to Table 20

Table 20. Beaufort Wind Scale (adapted from Whittow 1984).

0	Calm	smoke rises vertically
1	Light Air	smoke drifts, but wind vanes do not
2	Light Breeze	wind felt on face, leaves rustle
3	Gentle Breeze	leaves and small twigs in constant motion; light flags extended
4	Moderate Breeze	wind raises dust and loose paper; small branches move
5	Fresh Breeze	small trees in leaf begin to sway
6	Strong Breeze	large branches in motion; whistling in phone wires; umbrella use difficult
7	Near Gale	whole trees in motion; inconvenience felt when walking against wind
8	Gale	twigs break off trees; progress impeded
9	Strong Gale	slight structural damage – roofing shingles, TV antennae
10	Storm	trees uprooted; considerable structural damage

**Precipitation:** Brief statement of precipitation, e.g., none, steady rain, fog.

**Conditions:** Brief statement of conditions, surveyor mood, etc., which might affect the survey; a text field of 50 characters.

Indicate the presence of Potential Wildlife Habitat by checking the appropriate box of features that are present within the polygon.

**Wildlife:** All wildlife sightings and signs should be recorded while in the polygon. Record each sighting by type (TY) (B = bird, H = herpetofauna, etc.) and by species (SP. CODE). Use four-letter codes, provided in the database, for recording species.

**Evidence Codes:** (EV) should be used to record the type of observation. If possible, give an indication of the estimated number of individuals, pairs or signs for each wildlife species.

<b>ELC</b> COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <u>FERGUSON CR. LD</u>		POLYGON: <u>1</u>	
	SURVEYOR(S) <u>DJ/SR</u>		DATE <u>JUNE 7/20</u>	UTME
	START	END	UTMZ	UTMN

### POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MIN <input type="checkbox"/> ACIDIC BEDRK <input type="checkbox"/> BASIC BEDRK <input type="checkbox"/> CARB. BEDRK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLL UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE / CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH / BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING-LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WATER <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		

### STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	4	AM BEECH > SUGAR MAPLE = R. OAK
2 SUB-CANOPY			1 REDWOOD.
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m  
CVR CODES: 0 = NONE 1 = 0% < CVR ; 10% 2 = 10 < CVR ; 25% 3 = 25 < CVR ; 60% 4 = CVR > 60%

### STAND COMPOSITION:

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	
ABUNDANCE CODES:	N = NONE R = RARE O = OCCASIONAL A = ABUNDANT				
COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

### SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

### COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:



GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON CR. RD			DAY: 04	MONTH: June	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: M... - D... C...		WEATHER CONDITIONS: SUNNY			TIME STARTED: 5:20		TIME FINISHED: 5:49		
AIR TEMP: 25°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY:		DRAINAGE SYSTEM:			CROSSING #: CV-01455	STATION #: 4+000			
LOCATION OF CROSSING: FERGUSON CR. RD @ 4+000									
GPS COORDINATES: LBT 354749 5017706					MTO CHAINAGE:				
TOWNSHIP: Greater Municipality					MNR DISTRICT: Pembroke				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: VACANT LAND/RECREATION					SOURCES OF POLLUTION: ROAD RUNOFF				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 600			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	40		60						
Mean depth wetted (m)	0.04		0.04						
Mean width wetted (m)	0.62		0.6						
Mean bankfull width (m)									
Mean bankfull depth (m)									
Substrate	Sa/Gr		Bo/Co/Gr						
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	0	45	45	Instream 10 Overhanging	0	Instream 0 Overhanging 0	0
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60- 30%	30 - 1%	None		
	20	0	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
Predominant Species							100
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent STEEP CHANNEL.		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
COMMENTS:							
STEEP CHANNEL ALONG ROADSIDE. NO UPSTREAM PASSAGE OF FISH POSSIBLE. MAY HAVE CONNECTION TO D/S CU-00454. SEASONALITY OF FLOW TO BE CONFIRMED							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes      number of pages _____							

SECTION IDENTIFIER:		SECTION LOCATION:		SECTION LENGTH (m):	SCALE (cm / m):	
					PROJECT #: 20501-1	
					MAPPER: DD	
					NAME OF WATERBODY:	
					CROSSING #: CV-00455	
					STATION #: 4+000	
					DATE: DD-MMM-YY 04-06-20	
					<b>LEGEND</b>	
					10d depth (cm) 6w width	
					→ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ■ Fine Substrate ### Gravel Substrate oOooO Cobble /Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining // // // // Eroded Bank XXX Riprap / Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ® Riparian Tree  ▶ Seep/Spring - - - - Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line □ Culvert	
					PROFILE:	Horz. Scale

GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: Ferguson Lake Rd			DAY: 8	MONTH: 6	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown									
COLLECTORS: S. Reynolds, D. Davison		WEATHER CONDITIONS: Cloudy		TIME STARTED: 7:45 pm		TIME FINISHED: 8:30 pm			
AIR TEMP: 20°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY:		DRAINAGE SYSTEM:		CROSSING #: CR-00468		STATION #: 7+865			
LOCATION OF CROSSING: FERGUSON LAKE RD @ SW. 7+865									
GPS COORDINATES: 1BT, 352243, 5020040				MTO CHAINAGE:					
TOWNSHIP: GREATER HANOVER				MNR DISTRICT: FERGUSON					
LAND USE AND POLLUTION									
SURROUNDING LAND USE: Agricultural fields to east, forest to west					SOURCES OF POLLUTION: Roadway pollutants/runoff				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 1000 mm CSP			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input checked="" type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND: NONE			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s): Little 0.38 m/s (D/S)				
SUB-SECTION(S)	Run	Pool		Riffle		Flats	Inside culvert		Other
	<input type="radio"/>	D/S <input checked="" type="radio"/>	U/S <input type="radio"/>	D/S <input type="radio"/>	U/S <input checked="" type="radio"/>	<input type="radio"/>	D/S <input type="radio"/>	U/S <input type="radio"/>	
Percentage of area		80%	30%	20%	70%		-	-	
Mean depth wetted (m)		0.10m	0.16m	0.50m	0.06m		0.04m	0.10m	
Mean width wetted (m)		0.65m	1.0m	0.05m	0.6m		0.32m	0.67m	
Mean bankfull width (m)		0.75m	1.2m	0.70m	1.0m		-	-	
Mean bankfull depth (m)		0.73m	0.6m	0.50m	0.6m		-	-	
Substrate		Gr Sand Cobbles	Bo Co Gr	Bo Co Gr	Bo Co Gr		-	Gr Co	
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

HABITAT								
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris		Organic debris	Vascular Macrophytes	
				Instream	Overhanging		Instream	Overhanging
	20	10	10	0	0	0	0	20
							40	Crailies

SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60-30%	30 - 1%	None
	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

VEGETATION TYPE (%):	Submergent	Floating	Emergent	None
Predominant Species				100

MIGRATORY OBSTRUCTIONS:	None	Seasonal	Permanent
			Multiple barriers + transition to water

POTENTIAL CRITICAL HABITAT LIMITING:	Spawning	Evidence of Groundwater	Other
	None	None	

POTENTIAL ENHANCEMENT OPPORTUNITIES:

COMMENTS:

- Ⓢ Localized system that transitions to underground flow ~ 25m downstream.
- Multiple barriers upstream so no opportunity for migrating fish to use whvert location
- No fish observed.
- Whvert outlet is perched by approx. 0.07m

SECTION IDENTIFIER: DIS		SECTION LOCATION: DIS		SECTION LENGTH (m): ~40m		SCALE (cm / m): —	
						PROJECT #: 20501-1	
						MAPPER: S. Rey (old)	
						NAME OF WATERBODY:	
						CROSSING #: CV-00468	
						STATION #: 7+865	
						DATE: DD-MMM-YY 08-06-2020	
						<b>LEGEND</b>	
						10d depth (cm) 6w width	
						⇒ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar	
						■ Fine Substrate ### Gravel Substrate ○ Cobble / Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining ///// Eroded Bank XXX Riprap / Other Stabilization	
○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ⊗ Riparian Tree  ▶ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line └┘ Culvert							
PROFILE:	Horz. Scale	Vert. Scale					

SECTION IDENTIFIER: <i>u/s</i>		SECTION LOCATION:		SECTION LENGTH (m):		SCALE (cm / m):	
						PROJECT #: <i>20501-1</i>	
						MAPPER: <i>DS</i>	
						NAME OF WATERBODY:	
						CROSSING #: <i>CV-00468</i>	
						STATION #: <i>7+865</i>	
						DATE: DD-MMM-YY <i>08-06-20</i>	
<b>LEGEND</b>							
10d depth (cm) 6w width → Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ▨ Fine Substrate ### Gravel Substrate ○○○○ Cobble/Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining // // // // Eroded Bank XXX Riprap / Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ® Riparian Tree  ▸ Seep/Spring - - - - Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line ┌ └ Culvert							
PROFILE:		Horz. Scale		Vert. Scale			

*INCISED CHANNEL  
 BANKFACE = 0.6  
 DEPTH*

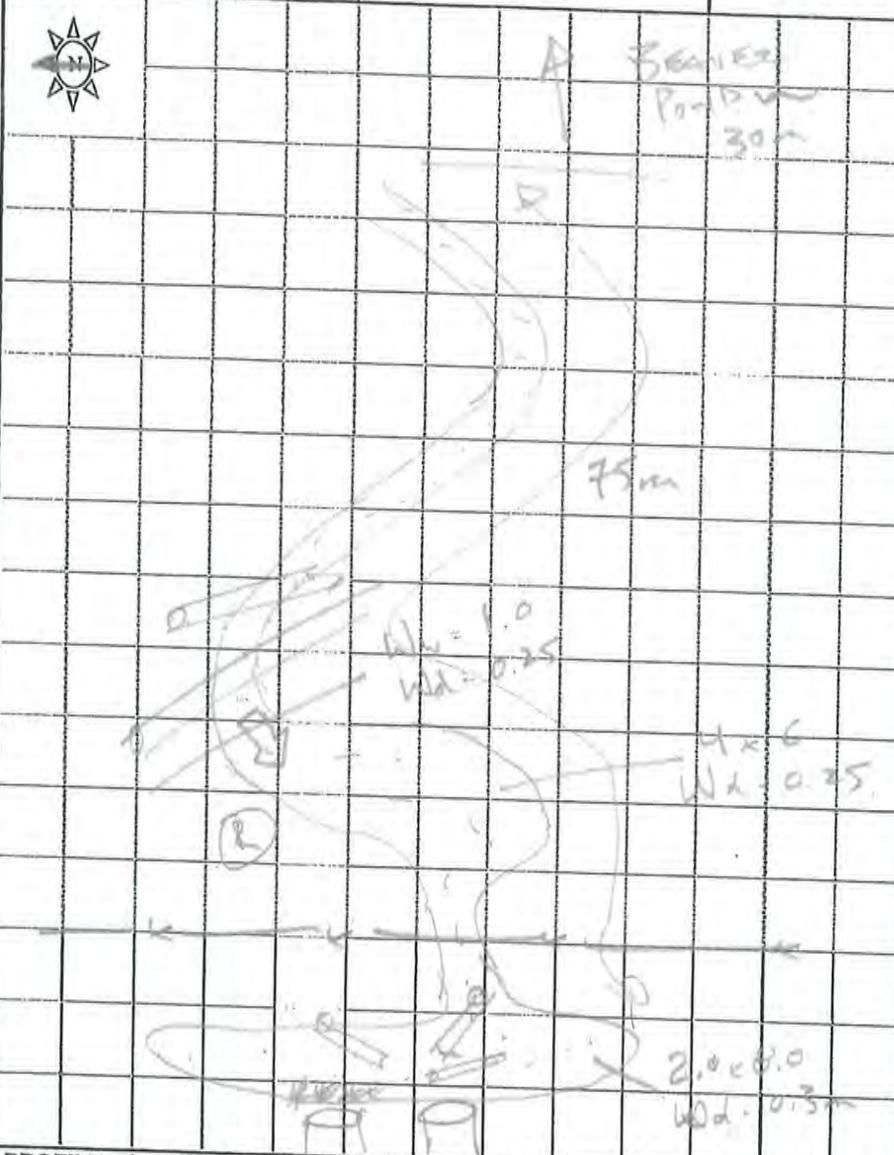
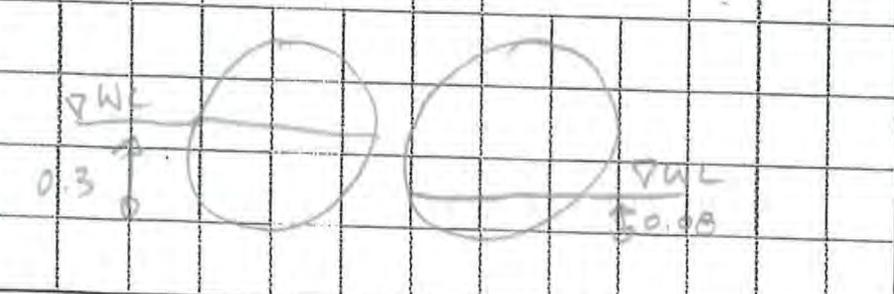
GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON LK. RD.			DAY: 04	MONTH: JUNE	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: A. W. L.		WEATHER CONDITIONS: Sun / Cloud			TIME STARTED: 8:30		TIME FINISHED: 8:50		
AIR TEMP: 23°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY: TRIB OF CONSTANT CREEK		DRAINAGE SYSTEM:			CROSSING #:	STATION #: 6+875			
LOCATION OF CROSSING: CHANNEL ADJACENT EXT. OF ROAD @ 6+875									
GPS COORDINATES: 18T 353056 5019515					MTO CHAINAGE:				
TOWNSHIP: GREENE MADAWASKA					MNR DISTRICT: PERBROKE				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: VACANT / RECREATION					SOURCES OF POLLUTION: ROAD RUNOFF				
EXISTING STRUCTURE TYPE									
<input type="radio"/> Bridge		<input type="radio"/> Box Culvert		<input type="radio"/> Open Foot Culvert		<input type="radio"/> CSP		<input type="radio"/> N/A	
Other <input type="radio"/> Describe: CHANNEL TO W. SIDE OF ROAD						Size (w x h) m <sup>2</sup>			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area		5		19.5					
Mean depth wetted (m)		0.1		0.2					
Mean width wetted (m)		2.5		2.0					
Mean bankfull width (m)									
Mean bankfull depth (m)									
Substrate		Mud / D / Sa			Mud / D / Sa				
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	0	0	0	0			
Right Upstream Bank	0	0	0	0			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	/	/	/	Instream 10 Overhanging	0	Instream Overhanging 50	40
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60-30%	30 - 1%	None		
	X	0	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
Predominant Species	0		0		0		100
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
	X						
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
COMMENTS:							
PERM. WATERCOURSE TO CONNECTION TO CONDUIT CREEK. NO CUT @ LOCATION BUT WATERCOURSE WITHIN 30 m OF ROADWAY (10-12m) - SPECIES ADJACENT LINED CHANNEL							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes    number of pages _____							

SECTION IDENTIFIER:		SECTION LOCATION:			SECTION LENGTH (m):		SCALE (cm / m):	
							PROJECT #:	
							MAPPER:	
							NAME OF WATERBODY:	
							CROSSING #:	
							STATION #: 6-875	
							DATE: DD-MMM-YY	
<p style="text-align: center;"><b>LEGEND</b></p> <p>10d depth (cm) 6w width</p> <p>→ Riffle                  ⇨ Run/Glide                  ○ Pool                  ■ Island/Bar                  ▨ Fine Substrate                  ### Gravel Substrate                  oOooO Cobble /Boulder                  *** Debris                  CT Cattail                  SV/FV Submerg/Float Veg                  EV Emergent Vegetation                  W Watercross                  Fe Iron Staining                  // // // // Eroded Bank                  XXX Riprap / Other Stabilization                  ○ Instream Log/Tree                  ^^^ Dam/Weir/Obstruction                  ⊗ Riparian Tree                   ▸ Seep/Spring                  - - - - Undercut Bank                  — Barrier to Fish Movement                  -S- Seasonal Barrier                  -x-x- Fence line                  ┌ └ Culvert</p>								
PROFILE:		Horz. Scale		Vert. Scale				

GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON LAKE RD			DAY: 04	MONTH: JUNE	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: ANGLER - SW/DG		WEATHER CONDITIONS: Sun/Cloud			TIME STARTED: 7:55		TIME FINISHED: 8:20		
AIR TEMP: 25°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY: E. of Ferguson Lake		DRAINAGE SYSTEM:		CROSSING #: CV-00463		STATION #: 6+020			
LOCATION OF CROSSING: FERGUSON LAKE RD. @ SW. 6+020									
GPS COORDINATES: 1BT 355418					MTO CHAINAGE:				
TOWNSHIP: GERRARD MADAWASKA					MNR DISTRICT: TERRACE				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: Vacant / Recreational					SOURCES OF POLLUTION: Roadside Runoff				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						1050 mm x 2 Size (w x h) m <sup>2</sup>			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	5 60	20		95 20					
Mean depth wetted (m)	0.25 0.4	0.5		0.28 0.3					
Mean width wetted (m)	1.0 1.5	0.4		3 5.0					
Mean bankfull width (m)									
Mean bankfull depth (m)									
Substrate	S	D, M, S		D, M					
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	0	0	0	Instream 25 Overhanging	5	Instream 25 Overhanging 0	45
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60- 30%	30 - 1%	None		
	0	0	0	<input checked="" type="radio"/>	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
	25						75
Predominant Species	EEL GRASS						
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
	X						
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
REMOVE DEBRIS @ CULVERT							
COMMENTS:							
PERMANENT DITCHES FOR 1400. FLOW FROM WETLAND TO CONSTRUCTIVE CE							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes      number of pages _____							

SECTION IDENTIFIER: W/S		SECTION LOCATION:		SECTION LENGTH (m):		SCALE (cm / m):							
				PROJECT #: 20501-1		MAPPER: DD							
				NAME OF WATERBODY: TRIG or Conington Cr.		CROSSING #: CV-00463		STATION #: 6+020					
				DATE: DD-MMM-YY 04-06-20		<p style="text-align: center;">LEGEND</p> <ul style="list-style-type: none"> <li>10d depth (cm)</li> <li>6w width</li> <li>→ Riffle</li> <li>⇨ Run/Glide</li> <li>○ Pool</li> <li>■ Island/Bar</li> <li>▨ Fine Substrate</li> <li>### Gravel Substrate</li> <li>oOoO Cobble / Boulder</li> <li>* * * Debris</li> <li>CT Cattail</li> <li>SV/FV Submerg/Float Veg</li> <li>EV Emergent Vegetation</li> <li>W Watercress</li> <li>Fe Iron Staining</li> <li>///// Eroded Bank</li> <li>XXX Riprap / Other Stabilization</li> <li>○ Instream Log/Tree</li> <li>^^^ Dam/Weir/Obstruction</li> <li>Ⓜ Riparian Tree</li> <li>↳ Seep/Spring</li> <li>----- Undercut Bank</li> <li>— Barrier to Fish Movement</li> <li>-S- Seasonal Barrier</li> <li>-x-x- Fence line</li> <li>┌└ Culvert</li> </ul>							
				PROFILE:						Horz. Scale		Vert. Scale	
													



GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON LK RD			DAY: 04	MONTH: JUNE	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: HAWES - SW/DD		WEATHER CONDITIONS: Sun/Cloud			TIME STARTED: 7:31		TIME FINISHED: 7:50		
AIR TEMP: 25°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY: Pembroke Drainage To Gurdys Cr.		DRAINAGE SYSTEM:			CROSSING #: CV-00461	STATION #: S+718			
LOCATION OF CROSSING: FERGUSON LAKE RD - SW - S+718									
GPS COORDINATES: 187, 353703, 5018741					MTO CHAINAGE:				
TOWNSHIP: GREATER MADAWASKA					MNR DISTRICT: PEMBROKE				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: VACANT / RECREATION					SOURCES OF POLLUTION: ROADSIDE RUNOFF				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 600 mm			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input checked="" type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area		100				DRY			
Mean depth wetted (m)		0.15				6m Feas			
Mean width wetted (m)		2.5				WATER			
Mean bankfull width (m)		—							
Mean bankfull depth (m)		—							
Substrate		Mu/D							
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	0	0	0	0			
Right Upstream Bank	0	0	0	0			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	0	0	0	Instream 10 Overhanging	VS	Instream 25 Overhanging	50
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60 - 30%	30 - 1%	None		
	0	0	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
	0		0		25		75
Predominant Species					GRASSES / CANNAS		
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
			LOW WATER PREVENTS DIRECT CONNECTION TO		CONTINENT CREEK		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
COMMENTS:							
EPHEMERAL FLOW TO CHANNEL TO CONNECTION TO CONTINENT CREEK (SEASONAL CONNECTION ONLY) NO HABITAT W/F OF CURVE. FISH WOULD GET TRAPPED @ LOCATION							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes    number of pages _____							



GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON LK RD			DAY: 04	MONTH: JUNE	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: A. W. L. - D.D./S.W.		WEATHER CONDITIONS: Sunny			TIME STARTED: 7:15		TIME FINISHED: 7:25		
AIR TEMP: 25°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY: Roadside to Constance Cr.		DRAINAGE SYSTEM:		CROSSING #: CV-00460		STATION #: 5+515			
LOCATION OF CROSSING: FERGUSON LAKE ROAD @ 5+515									
GPS COORDINATES: 187 353822, 5018642					MTO CHAINAGE:				
TOWNSHIP: GREATER MADAWASKA					MNR DISTRICT: PENBROKE				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: VACANT / RECREATION					SOURCES OF POLLUTION: ROAD RUNOFF				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 600 mm			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input checked="" type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area									
Mean depth wetted (m)									
Mean width wetted (m)									
Mean bankfull width (m)									
Mean bankfull depth (m)									
Substrate									
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
		Stable	Slightly Unstable	Moderately Unstable	Unstable		
Left Upstream Bank		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Right Upstream Bank		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris Instream Overhanging	Organic debris	Vascular Macrophytes Instream Overhanging	None
SHORE COVER (% stream shaded):	100 – 90 % <input type="radio"/>	90 – 60% <input type="radio"/>	60- 30% <input type="radio"/>	30 – 1% <input type="radio"/>	None <input type="radio"/>		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
Predominant Species							
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
COMMENTS:							
<p>CULVERT INDIRECTLY CONTRIBUTING TO CONTAMINATED CREEK → 15m TO CREEK.</p> <p>EMERGENT FROM THROUGH RICH HABITAT                  ↳ FERNS, GRASSES, SEDGES.</p>							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes    number of pages _____							

SECTION IDENTIFIER:	SECTION LOCATION:	SECTION LENGTH (m):	SCALE (cm / m):
			PROJECT #:
			MAPPER: STW
			NAME OF WATERBODY: Constant Creek
			CROSSING #: CV00460
			STATION #: 51515
			DATE: DD-MMM-YY
PROFILE:      Horz. Scale      Vert. Scale			<b>LEGEND</b>
			10d depth (cm) 6w width → Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ■ Fine Substrate ### Gravel Substrate oOooO Cobble /Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining ///// Eroded Bank xxx Riprap / Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ® Riparian Tree  ▶ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line □ Culvert

GENERAL INFORMATION									
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON CR 20			DAY: 04	MONTH: JUNE	YEAR: 2020		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: HARRIS - DA/SW		WEATHER CONDITIONS: SUNNY			TIME STARTED: 6:20		TIME FINISHED: 7:00		
AIR TEMP: 25°C			WATER TEMP:			CONDUCTIVITY (µS/cm):			
PHOTO NUMBERS AND DESCRIPTIONS:									
LOCATION									
NAME OF WATERBODY:		DRAINAGE SYSTEM:			CROSSING #:	STATION #: 4+625			
LOCATION OF CROSSING: FERGUSON CR 20 - SW 4+625									
GPS COORDINATES: 18T 354520 5018137					MTO CHAINAGE:				
TOWNSHIP: GREATER HURON PARISH					MNR DISTRICT: PEMBROKE				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: VACANT / RECREATIONAL					SOURCES OF POLLUTION: ROADSIDE RUNOFF				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:							Size (w x h) m <sup>2</sup> 1200 mm		
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	5	30	5	70	90				
Mean depth wetted (m)	0.25	0.3	0.35	0.16	0.16	0.07			
Mean width wetted (m)	3.0	1.3	1.1	0.76	1.2				
Mean bankfull width (m)	5	2.5	5	2.5	5				
Mean bankfull depth (m)	1.5	1.5	1.5	1.5	1.5				
Substrate	Bol/Gr	Bol/Gr	Bol/Gr						
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY								
	Stable	Slightly Unstable	Moderately Unstable	Unstable				
Left Upstream Bank	<input checked="" type="radio"/>	0	0	0				
Right Upstream Bank	<input checked="" type="radio"/>	0	0	0				
HABITAT								
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris		Organic debris	Vascular Macrophytes	None
	0	45	45	Instream 5	Overhanging 5	0	Instream 0	Overhanging 0
								0
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60- 30%	30 - 1%	None			
	<input checked="" type="radio"/>	0	0	0	0			
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None	
Predominant Species							100	
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent			
					MULTIPLE FALLS			
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other			
					CANALS			
POTENTIAL ENHANCEMENT OPPORTUNITIES:								
COMMENTS:								
SERIES OF RIFFLE - POOL FEATURES THROUGH STEEP INCLINE CHANNEL MULTIPLE BARRIERS THROUGH-OUT. PERMANENT WATERCOURSE.								
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes      number of pages _____								

GREEN RIFF.

SECTION IDENTIFIER: D/S		SECTION LOCATION:		SECTION LENGTH (m): 80m		SCALE (cm / m):	
						PROJECT #: 20501-1	
						MAPPER: DD	
						NAME OF WATERBODY:	
						CROSSING #: CV-00456	
						STATION #: 4+625	
						DATE: DD-MMM-YY 04-06-20	
						<p style="text-align: center;"><b>LEGEND</b></p> <p>10d depth (cm) 6w width</p> <p>→ Riffle              ⇨ Run/Glide              ○ Pool              ■ Island/Bar              ■ Fine Substrate              ### Gravel Substrate              ○○○○ Cobble /Boulder              *** Debris              CT Cattail              SV/FV Submerg/Float Veg              EV Emergent Vegetation              W Watercress              Fe Iron Staining              // // // // Eroded Bank              XXX Riprap / Other Stabilization              ○ Instream Log/Tree              ^^^ Dam/Weir/Obstruction              ⊗ Riparian Tree              ↳ Seep/Spring              ----- Undercut Bank              — Barrier to Fish Movement              -S- Seasonal Barrier              -x-x- Fence line              L Culvert</p>	
PROFILE:		Horz. Scale		Vert. Scale			

<b>SECTION IDENTIFIER:</b> <i>(120)</i>	<b>SECTION LOCATION:</b> <i>Upstream</i>	<b>SECTION LENGTH (m):</b>	<b>SCALE (cm / m):</b>
			<b>PROJECT #:</b>
			<b>MAPPER:</b> <i>SLW</i>
			<b>NAME OF WATERBODY:</b>
			<b>CROSSING #:</b> <i>C000456</i>
			<b>STATION #:</b> <i>41 655</i>
			<b>DATE: DD-MMM-YY</b> <i>04/06/20</i>
			<b>LEGEND</b>
			10d depth (cm) 6w width ⇒ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ■ Fine Substrate ### Gravel Substrate oOoo Cobble /Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining // // // // Eroded Bank XXX Riprap / Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ® Riparian Tree  ▶ Seep/Spring - - - Undercut Bank - Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line □ Culvert
<b>PROFILE:</b>	<b>Horz. Scale</b>	<b>Vert. Scale</b>	

*chipmunk*

GENERAL INFORMATION										
PROJECT #: 20501-1		PROJECT DESCRIPTION: FERGUSON CR. RD.		DAY: 04	MONTH: 06	YEAR: 2020				
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown										
COLLECTORS: A. JONES - DCD		WEATHER CONDITIONS: Sun/Cloud		TIME STARTED: 3:49		TIME FINISHED: 4:57				
AIR TEMP: 25-C			WATER TEMP:			CONDUCTIVITY (µS/cm):				
PHOTO NUMBERS AND DESCRIPTIONS:										
LOCATION										
NAME OF WATERBODY:		DRAINAGE SYSTEM:		CROSSING #: CV-00454	STATION #: 3+590					
LOCATION OF CROSSING: FERGUSON CR. RD. - Sta. 3+590										
GPS COORDINATES: 18T 355313, 5017549				MTO CHAINAGE:						
TOWNSHIP: GREATER MADAWASKA				MNR DISTRICT: PENBROKE						
LAND USE AND POLLUTION										
SURROUNDING LAND USE: VACANT FOREST / RECREATIONAL					SOURCES OF POLLUTION: Road Runoff					
EXISTING STRUCTURE TYPE										
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		NA <input type="radio"/>		
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 590mm				
SECTION TYPE AND MORPHOLOGY										
SECTION IDENTIFIER:				SECTION LOCATION: (include on habitat map)						
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:				
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):					
SUB-SECTION(S)	Run		Pool		Riffle		Flats		Inside culvert	Other
Percentage of area	13	5	NA	15	NA	5	87	75	0	
Mean depth wetted (m)	0.08			0.28		0.5	0.3	0.12	0.15	
Mean width wetted (m)	1.17			0.55		0.09	20	0.85		
Mean bankfull width (m)	3									
Mean bankfull depth (m)	0.7									
Substrate	GR SA			S D			Mu D	Mu D		
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D		

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Instream 30 Overhanging 10	15	Instream 15 Overhanging 30	0

SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60- 30%	30 - 1%	None
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

VEGETATION TYPE (%):	Submergent	Floating	Emergent	None
	0	25	40	35
Predominant Species		DUCKWEED	BL CANNONIC	

MIGRATORY OBSTRUCTIONS:	None	Seasonal	Permanent
		LOW WATER?	

POTENTIAL CRITICAL HABITAT LIMITING:	Spawning	Evidence of Groundwater	Other

POTENTIAL ENHANCEMENT OPPORTUNITIES:

COMMENTS:

SEASONALITY OF W/C UNKNOWN  
 CURRENT DEPTHS PROVIDE DEEP  
 FISH HABITATS W/S AND D/S OF CHANNEL  
 MUCH OF W/S HABITAT IS WITHIN  
 W. CEDAR SWAMP.  
 MEADOWS CHANNEL D/S THROUGH W. CEDAR

Additional Notes Appended?  No  Yes number of pages \_\_\_\_\_

SECTION IDENTIFIER: D/S		SECTION LOCATION:		SECTION LENGTH (m):		SCALE (cm / m):	
						PROJECT #: 20501-1	
						MAPPER: DCD	
						NAME OF WATERBODY:	
						CROSSING #: CV-00454	
						STATION #: 3+590	
						DATE: DD-MMM-YY 04-06-20	
						LEGEND	
10d depth (cm)							
6w width							
→ Riffle							
⇨ Run/Glide							
○ Pool							
■ Island/Bar							
■ Fine Substrate							
### Gravel Substrate							
oOooO Cobble /Boulder							
*** Debris							
CT Cattail							
SV/FV Submerg/Float Veg							
EV Emergent Vegetation							
W Watercress							
Fe Iron Staining							
///// Eroded Bank							
xxx Riprap / Other Stabilization							
○ Instream Log/Tree							
^^^ Dam/Weir/Obstruction							
⊗ Riparian Tree							
▶ Seep/Spring							
----- Undercut Bank							
— Barrier to Fish Movement							
-S- Seasonal Barrier							
-x-x- Fence line							
┌ Culvert							
PROFILE:	Horz. Scale	Vert. Scale					

FEEGUSON LAKE RD

SECTION IDENTIFIER: W/S		SECTION LOCATION:		SECTION LENGTH (m):		SCALE (cm / m):	
						PROJECT #: 20501-1	
						MAPPER: DCD	
						NAME OF WATERBODY:	
						CROSSING #: CV-00454	
						STATION #: 3+590	
DATE: DD-MMM-YY 04-06-20							
<b>LEGEND</b>							
10d depth (cm)							
6w width							
→ Riffle							
⇨ Run/Glide							
○ Pool							
■ Island/Bar							
▨ Fine Substrate							
### Gravel Substrate							
oOooO Cobble / Boulder							
*** Debris							
CT Cattail							
SV/FV Submerg/Float Veg							
EV Emergent Vegetation							
W Watercress							
Fe Iron Staining							
///// Eroded Bank							
XXX Riprap / Other Stabilization							
○ Instream Log/Tree							
^^^ Dam/Weir/Obstruction							
® Riparian Tree							
▶ Seep/Spring							
----- Undercut Bank							
— Barrier to Fish Movement							
-S- Seasonal Barrier							
-x-x- Fence line							
┌ Culvert							
PROFILE:		Horz. Scale		Vert. Scale			