ELC NAME	DESCRIPTION
G223Tt	Mineral Intermediate Conifer Swamp (Tall Treed)
G223Tl	Mineral Intermediate Conifer Swamp (Low Treed)
G146S	Open Shore Fen (Shrub)
G146N	Open Shore Fen (Not Woody)
G142N	Mineral Meadow Marsh (Not Woody)
G139S	Poor Fen (Shrub)
G136Tt	Sparse Treed Fen (Tall Treed)
G136Tl	Sparse Treed Fen (Low Treed)
G135Tt	Organic Thicket Swamp (Low Treed)
G135S	Organic Thicket Swamp (Shrub)
G129Tt	Organic Rich Conifer Swamp (Tall Treed)
G128Tt	Organic Intermediate Conifer Swamp (Tall Treed)
G065Tt	Moist, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G055Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Tall Treed)
G052Tt	Dry to Fresh, Coarse: Spruce - Fir Conifer (Tall Treed)
G050Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G016Tl	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood (Low Treed)
G012Tt	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (Tall Treed)
G012Tl	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (LowTreed)
DA	Disturbed Area

692000 693000 694000

5346500 5345500 5344500

WB3431 WB78 WB80 WB0015 WB77 WB76 WB79

G050Tt G012Tt G223Tt G128Tt G142N G065Tt G139S G146N G146S G136Tl G016Tl G223Tl G129Tt G012Tl G139S G136Tl G136Tt G052Tt DA G055Tt G135S G135Tt

10

REGIONAL MAP SCALE 1:600000

DUBREUILVILLE

WAWA

0 200 400 m

HORIZONTAL SCALE 1:10000

LEGEND

- Study Area
- Mapped Watercourse
- Waterbody
- Unevaluated Wetland

Waterbody Crossings - Fish Habitat & Thermal Regime

- Direct Coldwater
- Direct Coolwater

ELC Communities

- Upland ELC Communities
- Wetland ELC Communities

Proposed Alternative Solutions

- Alternative Solution #2
- Alternative Solution #4

Potential Infrastructure Areas

- Infrastructure Area #2
- Infrastructure Area #4
- Turtle Survey

Indirect Wildlife Observations - i.e., Tracks, Scat, Beaver Lodges

- Bear
- Wolf

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

EXISTING CONDITIONS AND PROPOSED ROUTES

TRANSMISSION SYSTEM PROJECT
WAWA, ON

DATE ISSUED:	SEPTEMBER 2024	DRAWING NO.:
CREATED BY:	A.L.	2-22
PROJECT NO.:	23-028	
BASE MAP:	MNRF	

File: Q:\23 Projects\23-028 Wawa Transmission Station Class EA (BFN)\04.0 - Drafting\23-028.qgz

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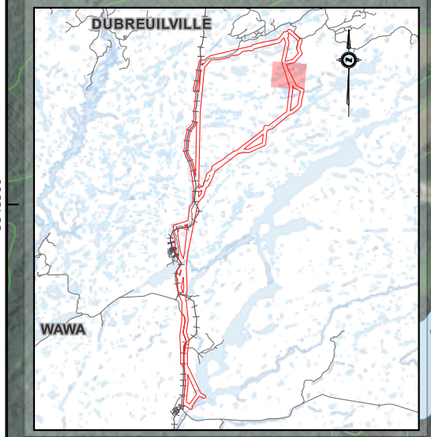
5348500 5347500 5346500

REGIONAL MAP SCALE 1:600000



0 200 400 m

HORIZONTAL SCALE 1:10000

ELC NAME	DESCRIPTION
G223Tt	Mineral Intermediate Conifer Swamp (Tall Treed)
G142N	Mineral Meadow Marsh (Not Woody)
G136Tl	Sparse Treed Fen (Low Treed)
G135S	Organic Thicket Swamp (Shrub)
G128Tt	Organic Intermediate Conifer Swamp (Tall Treed)
G067Tt	Moist, Coarse: Spruce - Fir Conifer (Tall Treed)
G065Tt	Moist, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G055Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Tall Treed)
G055Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Low Treed)
G052Tt	Dry to Fresh, Coarse: Spruce - Fir Conifer (Tall Treed)
G050Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G049Tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated (Tall Treed)
G035Tt	Dry, Sandy: Pine - Black Spruce Conifer (Tall Treed)
G012Tt	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (Tall Treed)
DA	Disturbed Area

CRADLE LAKES

BLACKOUT LAKE

Cradle Creek

WB84 WB83 WB82 WB3434 WB3433 WB81 WB3431

8B 12 11

LEGEND

- Study Area
- Mapped Watercourse
- Waterbody
- Unevaluated Wetland

Waterbody Crossings - Fish Habitat & Thermal Regime

- Direct Coldwater
- Direct Coolwater
- Not Fish Habitat

ELC Communities

- Upland ELC Communities
- Wetland ELC Communities

Proposed Alternative Solutions

- Alternative Solution #2
- Alternative Solution #4

Potential Infrastructure Areas

- Infrastructure Area #2
- Infrastructure Area #4
- Turtle Survey
- 2024 Dawn Breeding Bird Survey Location Only

Direct Wildlife Observations - i.e., Visual or Auditory Confirmation

- Common Loon
- Spring Peeper

Indirect Wildlife Observations - i.e., Tracks, Scat, Beaver Lodges

- Bear
- Beaver
- Wolf

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

EXISTING CONDITIONS AND PROPOSED ROUTES

TRANSMISSION SYSTEM PROJECT
WAWA, ON

DATE ISSUED:	SEPTEMBER 2024
CREATED BY:	A.L.
PROJECT NO.:	23-028
BASE MAP:	MNRF

DRAWING NO.: **2-23**

File: Q:\23 Projects\23-028 Wawa Transmission Station Class EA (BFN)\04.0 - Drafting\23-028.qgz

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692000
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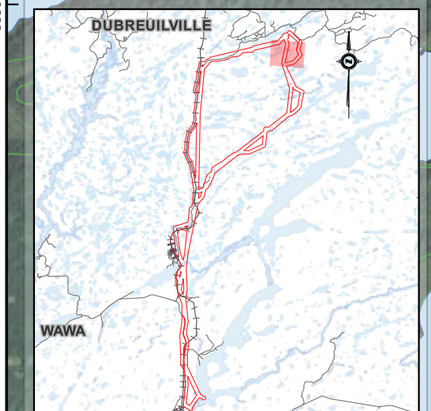

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HORIZONTAL SCALE 1:10000

ELC NAME	DESCRIPTION
G223Tt	Mineral Intermediate Conifer Swamp (Tall Treed)
G142N	Mineral Meadow Marsh (Not Woody)
G139S	Poor Fen (Shrub)
G136Tl	Sparse Treed Fen (Low Treed)
G135S	Organic Thicket Swamp (Shrub)
G128Tt	Organic Intermediate Conifer Swamp (Tall Treed)
G126Tl	Treed Bog (Low Treed)
G067Tt	Moist, Coarse: Spruce - Fir Conifer (Tall Treed)
G065Tt	Moist, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G065Tl	Moist, Coarse: Pine - Black Spruce Conifer (Low Treed)
G055Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Tall Treed)
G055Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Low Treed)
G052Tt	Dry to Fresh, Coarse: Spruce - Fir Conifer (Tall Treed)
G050Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G050Tl	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Low Treed)
G049Tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated (Tall Treed)
G035Tt	Dry, Sandy: Pine - Black Spruce Conifer (Tall Treed)
G035Tl	Dry, Sandy: Pine - Black Spruce Conifer (Low Treed)
G012Tt	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (Tall Treed)
DA	Disturbed Area

LEGEND

- Study Area
- Mapped Watercourse
- Waterbody
- Unevaluated Wetland

Waterbody Crossings - Fish Habitat & Thermal Regime

- Direct Coolwater
- Indirect Coolwater

ELC Communities

- Upland ELC Communities
- Wetland ELC Communities

Proposed Alternative Solutions

- Alternative Solution #1
- Alternative Solution #2
- Alternative Solution #3
- Alternative Solution #4

Potential Infrastructure Areas

- Infrastructure Area #1
- Infrastructure Area #2
- Infrastructure Area #3
- Infrastructure Area #4
- Turtle Survey

Direct Wildlife Observations - i.e., Visual or Auditory Confirmation

- Belted Kingfisher
- Black Bear
- Painted Turtle
- Spring Peeper
- Wood Frog

Indirect Wildlife Observations - i.e., Tracks, Scat, Beaver Lodges

- Moose

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

EXISTING CONDITIONS AND PROPOSED ROUTES

TRANSMISSION SYSTEM PROJECT
WAWA, ON

DATE ISSUED:	SEPTEMBER 2024	DRAWING NO.: 2-24
CREATED BY:	A.L.	
PROJECT NO.:	23-028	
BASE MAP:	MNRF	

File: Q:\23 Projects\23-028 Wawa Transmission Station Class EA (BFN)\04.0 - Drafting\23-028.qgz

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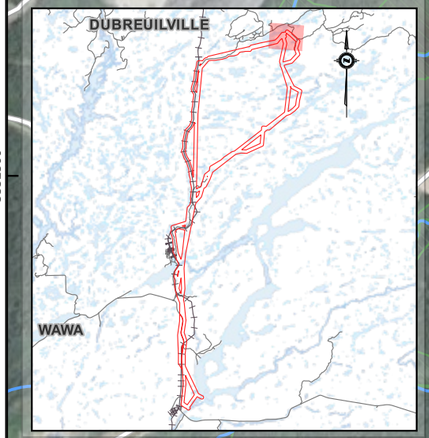
REGIONAL MAP SCALE 1:600000



0 200 400 m

HORIZONTAL SCALE 1:10000

ELC NAME	DESCRIPTION
G223Tt	Mineral Intermediate Conifer Swamp (Tall Treed)
G149N	Organic Shallow Marsh (Not Woody)
G146N	Open Shore Fen (Not Woody)
G142N	Mineral Meadow Marsh (Not Woody)
G136Tl	Sparse Treed Fen (Low Treed)
G135S	Organic Thicket Swamp (Shrub)
G128Tt	Organic Intermediate Conifer Swamp (Tall Treed)
G065Tt	Moist, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G065Tl	Moist, Coarse: Pine - Black Spruce Conifer (Low Treed)
G055Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Tall Treed)
G052Tt	Dry to Fresh, Coarse: Spruce - Fir Conifer (Tall Treed)
G050Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G049Tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated (Tall Treed)
DA	Disturbed Area

PINE LAKE
BEARPAW LAKE
GOUDREAU LAKE
HAWK JUNCTION ROAD
HAWK JUNCTION ROAD
WB130
WB129
WB88
WB86
Station 5B
22
12

LEGEND

- Study Area
- Mapped Watercourse
- Waterbody
- Unevaluated Wetland
- Stations

Waterbody Crossings - Fish Habitat & Thermal Regime

- Direct Coolwater
- Indirect Coolwater

ELC Communities

- Upland ELC Communities
- Wetland ELC Communities

Proposed Alternative Solutions

- Alternative Solution #1
- Alternative Solution #2
- Alternative Solution #3
- Alternative Solution #4

Potential Infrastructure Areas

- Infrastructure Area #1
- Infrastructure Area #2
- Infrastructure Area #3
- Infrastructure Area #4
- # Wildlife Camera Location

Direct Wildlife Observations - i.e., Visual or Auditory Confirmation

- Broad-winged Hawk
- Clouded Sulphur
- Eastern Garter Snake
- Moose
- Rusty Blackbird
- Spring Peeper
- Spruce Grouse

Indirect Wildlife Observations - i.e., Tracks, Scat, Beaver Lodges

- Moose

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

EXISTING CONDITIONS AND PROPOSED ROUTES

TRANSMISSION SYSTEM PROJECT
WAWA, ON

DATE ISSUED:	SEPTEMBER 2024	DRAWING NO.: 2-25
CREATED BY:	A.L.	
PROJECT NO.:	23-028	
BASE MAP:	MNRF	

File: Q:\23 Projects\23-028 Wawa Transmission Station Class EA (BFN)\04.0 - Drafting\23-028.qgz

Table 1: Species at Risk Habitat Summary and Assessment. Transmission Line Class EA **AEC23-028**

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
American Eel	*Anguilla rostrata*	END	No status	Deep (>10m) marine and freshwater habitats, including lakes and rivers with woody debris and submerged vegetation. Overwinter in mud bottoms of bays and estuaries (COSEWIC, 2012a) ESA Protection: Species and general habitat protection	Although potentailly suitable habitat occurs regionally, background reviewof DFO and MNRF records do not detect the species within the LSAs. The species would not be expected to occur.
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	Species occurs regionally based on background review, however, OBBA and NHIC records do not detect the species within the LSAs and no potentially suitable habitat occurs within the LSA. The species was not deteced during dawn breeding bird surveys. The species would not be expected to occur.
Barn Swallow	*Hirundo rustica*	-	THR	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. Also nest in caves, holes, crevices and cliff ledges (COSEWIC, 2011). ESA Protection: Species and general habitat protection	Although the species occurs regionally based on background review of OBBA records, Barn Swallow was not detected during dawn breeding bird surveys. Suitable anthropogenic structures for nesting, such as bridges or buildings are not present in the LSAs. Species not expected to occur.
Black Ash	*Fraxinus nigra*	END	No status	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018a). ESA Protection: Species and general habitat protection.	The species occurs regionally based on background review, however not detected during vascular plant inventory. In addition, protection of species does not extend to the RSA.
Blanding's Turtle	***Enydoidea blandingii***	**THR**	**END**	**Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2016a).** **ESA Protection: Species and general habitat protection**	**Species has potential to occur regionally based on MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Canada Warbler	***Cardellina canadensis***	**SC**	**THR**	**Wet, mixed deciduous-coniferous forests with a well developed shrub layer. Shrub marshes, Red-Maple stands, cedar stands, Black Spruce swamps, larch and riparian woodlands along rivers and lakes (COSEWIC, 2020).** **ESA Protection: N/A**	**Species occurs regionally based on background review and was detected duirng dawn breeding bird surveys. Considered further in main text.**
Caribou (Boreal population)	*Rangifer tarandus*	THR	THR	Use younger forests and hardwood stands if imbedded in coniferous forest, but primarily use mature or old stands of Black Spruce and Jack Pine, peatlands, bogs and fens. (COSEWIC, 2014a). ESA Protection: Species and general habitat protection	The LSA occurs south of the Caribou range boundary based on background review. Golder (2021) Caribou aerial transect surveys in the northern end of the PDAs did not detect Caribou. No Caribou or signs of the species were observed during the field program. Species not expected to occur.
Common Nighthawk	***Chordeiles minor***	**SC**	**THR**	**Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2018b).** **ESA Protection: N/A**	**Species occurs regionally based on background review and Golder (2021) report. Potentially suitable habitat for the species occurs within the LSAs. Considered further in main text.**
Eastern Small-footed Myotis	***Myotis Lleibii***	**END**	**No Status**	**Generally occurs in mountainous or rocky regions as well as in buildings, on the face of rock bluffs, and beneath slabs of rock and stones. Hibernation is typically confined to caves and old mines (Best and Jennings, 1997).** **ESA Protection: Species and general habitat protection**	**Speceis occurs regionally based on background review. Potentially suitable habitat for the species occurs within the LSAs. Considered further in main text.**
Eastern Red Bat	***Lasiurus borealis***	**END**	**No status**	**Roosting habitat include deciduous and coniferous foress of any age class. Species tends to roost on large diameter and tall trees reaching the the surrouding canopy (COSSARO, 2024).** **ESA Protection: Species and general habitat protection (ESA protections take effect January 30, 2025).**	**Species occurs regionally according to MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Eastern Whip-poor-will	***Antrostomus vociferus***	**THR**	**THR**	**Semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances, are preferred nesting habitats (COSEWIC, 2009a).** **ESA Protection: Species and general habitat protection**	**Species occurs regionally according to MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Eastern Wood-pewee	*Contopus virens*	SC	SC	Mostly in mature and intermediate-age deciduous and mixed forests having an open understory. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012a). ESA Protection: N/A	Woodland habitat in the Alternative Solution PLSAs generally do not have an open understory. Deciduous woodlands were generally aspen-birch not Sugar Maple-Oak. The species was not detected during dawn breeding bird surveys, and are not expected to occur.
Evening Grosbeak	***Coccothraustes vespertinus***	**SC**	**SC**	**Inhabit boreal forsts primarily within large mature and mixedwood forests dominated by White Spruce, Trembling Aspen or fir (COSEWIC, 2016).** **ESA Protection: N/A**	**Species occurs regionally based on background review. The MNRF NHIC records indicate the species occurs within the RSA, and potentially suitable habtiat occurs within the LSAs. Considered further in main text.**
Hoary Bat	***Lasiurus cinereus***	**END**	**No Status**	**Roosting habitat includes both deciduous and coniferous forests of any age class. Roost sites with overhead foliage and open flight space below are perferred, and typically occur near the edge of the crown and at high from the ground to prevent mammalian predation (COSEWIC, 2023).** **ESA Protection: Species and general habitat protection (ESA protections take effect January 30, 2025).**	**Species occurs regionally according to MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Little Brown Myotis	***Myotis lucifugus***	**END**	**END**	**Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves (MNRF, 2014) COSEWIC, 2013b).** **ESA Protection: Species and general habitat protection**	**Species occurs regionally based on background review. Furthermore, Golder (2021) bat acoustic monitoring identified the species in the Alternative Solutions LSAs. Considered further in main text.**
Lesser Yellowlegs	***Tringa flavipes***	**THR**	**No Status**	**This shorebird species breeds mainly in boreal wetlands and nests on dry ground near wetland areas, such as peatlands and marshes, which are used for foraging (COSEWIC, 2020).** **ESA Protection: Species and general habitat protection**	**Species occurs regionally according to MECP consultation. Potentially suitable wetland habitat is present in the Alternative Solutions LSAs. Considered further in main text.**

Table 1: Species at Risk Habitat Summary and Assessment. Transmission Line Class EA **AEC23-028**

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Monarch	*Danaus plexippus*	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2016b). ESA Protection: N/A	No significant amounts of milkweed was observed within the Alternative Solutions LSAs. Not considered further in main text.
Northern Myotis	***Myotis septentrionalis***	**END**	**END**	**Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013b).** **ESA Protection: Species and general habitat protection**	**Species occurs regionally based on background review. Potentially suitable habitat is present in the Alternative Solutions LSAs. Consdiered further in main text.**
Olive-sided Flycatcher	***Contopus cooperi***	**SC**	**THR**	**Natural forest openings, forest edges near natural openings (such as wetlands) or open to semi-open forest stands. Occasionally human made openings (such as clear cuts). Presence of tall snags and residual live trees is essential (COSEWIC, 2018c).** **ESA Protection: N/A**	**Species occurs regionally based on background review. The MNRF NHIC records indicate the species is present within the Alternative Solutions #3 and #4 LSAs, and potentially suitable habtiat occurs within all LSAs. Consdiered further in main text.**
Rusty Blackbird	***Euphagus carolinus***	**SC**	**SC**	**Inhabit boreal forests characterized by coniferous dominated forests adjacent to wetlands such as peat bogs, slow-moving streams, sedge meadows, marshes, swamps, and beaver ponds (COSEWIC, 2017).** **ESA Protection: N/A**	**Species observed during the field program. Consdiered further in main text.**
Short-eared Owl	***Asio flammeus***	**THR**	**THR**	**A wide variety of unforested habitats are used, including grasslands, fallow pastures, open wetlands, and occasionally fields planted with row-crops (COSEWIC, 2021).** **ESA Protection: N/A**	**Species occurs regionally based on background review. Potentially suitable habtiat (*i.e.,* open wetlands) occurs within the Alternative Solution LSAs. Considered further in main text.**
Silver-haired Bat	***Lasionycteris noctivagans***	**END**	**No Status**	**Roosting habitat includes large and decaying coniferous or deciduous trees. Although rare, the species may roost in or on buildings, especially during migration (COSEWIC, 2023).** **ESA Protection: Species and general habitat protection (ESA**	**Species occurs regionally based on MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Snapping Turtle	***Chelydra serpentina***	**SC**	**SC**	**Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008).** **ESA Protection: N/A**	**Species occurs regionally based on background review. Potentially suitable habtiat occurs within the Alternative Solution LSAs. Considered further in main text.**
Tri-colored Bat	***Perimyotis subflavus***	**END**	**END**	**Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013c).** **ESA Protection: Species and general habitat protection**	**Species occurs regionally based on MECP consultation. Potentially suitable habitat is present in the Alternative Solutions LSAs. Considered further in main text.**
Wood Thrush	***Hylocichla mustelina***	**SC**	**THR**	**Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012a).** **ESA Protection: N/A**	**Species observed during dawn breeding bird surveys. Considered further in main text.**
Wood Turtle	***Glyptemys insculpta***	**END**	**THR**	**Rivers and streams with sand or gravel bottoms and prefers clear, meandering streams with moderate current. Riparian areas with diverse, patchy cover are most commonly used across the range (COSEWIC, 2018d).** **ESA Protection: Species and regulated habitat protection**	**Species may occur regionally based on background review. Potentially suitable habtiat occurs within the Alternative Solution LSAs. Considered further in main text.**

1. Habitat as outlined within the MNRF's Species at Risk in Ontario website files (https://www.ontario.ca/environment-and-energy/species-risk-ontario-list), or Species Specific COSEWIC Reports referenced in this document.

Species at Risk in Ontario List (Updated June 13, 2017)

Best, T., and J. Jennings. 1997. Mammalian Species, *Myotis leibii* . The American Society of Mammalogists. No. 547, pp. 1-6, 5 figs.

Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field

COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

COSEWIC. 2009a. COSEWIC assessment and update status report on the Whip-poor-will *Caprimulgus vociferus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 28 pp.

COSEWIC. 2011. COSEWIC assessment and update status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.

COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp.

COSEWIC. 2012b. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.

COSEWIC. 2013a. COSEWIC assessment and update status report on the Bank Swallow *Riparia riparia* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp.

COSEWIC. 2013b. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus* , Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subfalvus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

COSEWIC. 2014a. COSEWIC assessment and status report on the Caribou *Rangifer tarandus* , Newfoundland population, Atlantic-Gaspésie population and Boreal population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiii + 128 pp.

COSEWIC. 2014b. COSEWIC assessment and status report on the Wolverine *Gulo gulo* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 76 pp.

COSEWIC. 2016a. COSEWIC assessment and status report on the Evening Grosbeak Coccothraustes vespertinus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 64 pp.

COSEWIC. 2016b. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp.

COSEWIC. 2017. COSEWIC assessment and status report on the Rusty Blackbird Euphagus carolinus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 64 pp.

COSEWIC. 2018a. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp.

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Table 2: Vascular Plant List, Transmission Line Class EA Surveyor: Jordan Wrobel, David D'Entremont **AEC23-028**

			Survey Stations[2]								Conservation Rankings[2]		
FAMILY[1]	SCIENTIFIC NAME[1]	COMMON NAME[1]	Station 1	Station 2	Station 3	Station 4A	Station 4B	Station 5A	Station 5B	Along LSAs	GRANK	SRANK	TRACK
Aceraceae	*Acer rubrum*	Red Maple	X								G5	S5	N
Aceraceae	*Acer spicatum*	Mountain Maple	X	X	X	X	X	X			G5	S5	N
Apiaceae	*Daucus carota*	Wild Carrot					X				GNR	SE5	N
Apiaceae	*Heracleum maximum*	American Cow Parsnip								X	G5	S5	N
Apiaceae	*Pastinaca sativa*	Wild Parsnip		X							GNR	SE5	N
Apiaceae	*Sium suave*	Common Water-parsnip		X				X			G5	S5	N
Apocynaceae	*Apocynum androsaemifolium*	Spreading Dogbane	X			X	X				G5	S5	N
Araliaceae	*Aralia nudicaulis*	Wild Sarsaparilla	X	X		X	X	X			G5	S5	N
Asteraceae	*Achillea millefolium*	Common Yarrow	X	X	X	X	X	X	X		G5	SE5?	N
Asteraceae	*Anaphalis margaritacea*	Pearly Everlasting	X	X	X	X	X	X	X		G5	S5	N
Asteraceae	*Centaurea stoebe*	Spotted Knapweed	X			X		X			GNR	SE5	N
Asteraceae	*Cirsium arvense*	Canada Thistle		X							G5	SE5	N
Asteraceae	*Doellingeria umbellata*	Flat-top White Aster			X			X			G5	S5	N
Asteraceae	*Eurybia macrophylla*	Large-leaved Aster	X	X	X	X	X	X	X		G5	S5	N
Asteraceae	*Euthamia graminifolia*	Grass-leaved Goldenrod	X						X		G5	S5	N
Asteraceae	*Eutrochium maculatum*	Spotted Joe Pye Weed			X	X			X		G5	S5	N
Asteraceae	*Hieracium sp.*	a Hawkweed	X	X	X		X		X		N/A	N/A	N/A
Asteraceae	*Lactuca biennis*	Tall Blue Lettuce						X			G5	S5	N
Asteraceae	*Leucanthemum vulgare*	Oxeye Daisy	X	X	X	X		X	X		GNR	SE5	N
Asteraceae	*Petasites frigidus*	Arctic Sweet Coltsfoot			X						G5	S5	N
Asteraceae	*Pilosella aurantiaca*	Orange Hawkweed	X	X	X	X	X	X			GNR	SE5	N
Asteraceae	*Pilosella caespitosa*	Meadow Hawkweed	X	X	X	X	X	X			GNR	SE5	N
Asteraceae	*Solidago altissima*	Tall Goldenrod				X					G5	S5	P
Asteraceae	*Solidago canadensis*	Canada Goldenrod			X		X	X	X		G5	S5	N
Asteraceae	*Solidago hispida*	Hairy Goldenrod	X		X	X		X			G5	S5	P
Asteraceae	*Solidago rugosa*	Rough-stemmed Goldenrod						X			G5	S5	N
Asteraceae	*Solidago sp.*	a Goldenrod					X				N/A	N/A	N/A
Asteraceae	*Symphyotrichum ciliolatum*	Lindley's Aster		X	X	X	X	X	X		G5	S5	N
Asteraceae	*Symphyotrichum puniceum*	Purple-stemmed Aster			X				X		G5	S5	N
Asteraceae	*Taraxacum officinale*	Common Dandelion	X	X	X						G5	SE5	N
Asteraceae	*Tragopogon dubius*	Yellow Goatsbeard			X						GNR	SE5	N
Asteraceae	*Tragopogon pratensis*	Meadow Goatsbeard			X			X			GNR	SE5	N
Betulaceae	*Alnus alnobetula*	Green Alder	X	X		X	X	X	X		G5	S5	N
Betulaceae	*Alnus incana ssp. rugosa*	Speckled Alder	X	X	X	X	X	X	X		G5T5	S5	N
Betulaceae	*Betula papyrifera*	Paper Birch	X	X	X	X	X	X	X		G5	S5	N
Betulaceae	*Corylus cornuta*	Beaked Hazelnut	X	X	X	X	X	X			G5	S5	N
Brassicaceae	*Arabis pycnocarpa*	Cream-flowered Rockcress		X							G5	S5	N
Brassicaceae	*Thlaspi arvense*	Field Pennycress		X							GNR	SE5	N
Caprifoliaceae	*Diervilla lonicera*	Northern Bush-honeysuckle	X	X	X	X	X	X	X		G5	S5	N
Caprifoliaceae	*Linnaea borealis*	Twinflower	X	X	X	X	X	X	X		G5	S5	N
Caprifoliaceae	*Lonicera canadensis*	Canada Fly Honeysuckle	X	X	X		X	X			G5	S5	N
Caprifoliaceae	*Lonicera hirsuta*	Hairy Honeysuckle		X	X			X			G5	S5	N
Caprifoliaceae	*Lonicera involucrata*	Bracted Honeysuckle		X							G5	S5	N
Caprifoliaceae	*Lonicera oblongifolia*	Swamp Fly-honeysuckle			X				X		G5	S5	N
Caprifoliaceae	*Lonicera villosa*	Mountain Fly-honeysuckle							X		G5	S5	N
Caprifoliaceae	*Sambucus canadensis*	Common Elderberry		X							G5T5	S5	N
Caprifoliaceae	*Sambucus nigra*	Black Elderberry							X		G5T5	SEH	N
Caprifoliaceae	*Sambucus racemosa*	Red Elderberry	X	X		X	X	X			G5	S5	N
Caprifoliaceae	*Symphoricarpos albus*	Thin-leaved Snowberry		X							G5	S5	N
Caprifoliaceae	*Viburnum edule*	Squashberry		X	X		X	X			G5	S5	N
Caprifoliaceae	*Viburnum opulus var. americanum*	Highbush Cranberry	X	X							G5T5	S5	N
Caryophyllaceae	*Dianthus armeria*	Deptford Pink	X								GNR	SE5	N
Caryophyllaceae	*Silene vulgaris*	Bladder Campion			X	X	X				GNR	SE5	N
Chenopodiaceae	*Chenopodium album*	Common Lamb's-quarters		X							G5	SE5	N
Clusiaceae	*Hypericum perforatum*	Common St. John's-wort	X	X			X				GNR	SE5	N
Clusiaceae	*Triadenum virginicum*	Virginia St. John's-wort							X		G5	S4	N
Convolvulaceae	*Convolvulus arvensis*	Field Bindweed		X							GNR	SE5	N
Cornaceae	*Cornus alternifolia*	Alternate-leaved Dogwood						X			G5	S5	N
Cornaceae	*Cornus canadensis*	Bunchberry	X		X	X	X	X	X		G5	S5	N
Cornaceae	*Cornus sericea*	Red-osier Dogwood		X	X	X	X	X	X		G5	S5	N
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar			X	X	X				G5	S5	N
Cyperaceae	*Carex arctata*	Drooping Woodland Sedge			X			X			G5	S5	N
Cyperaceae	*Carex brunnescens*	Brownish Sedge						X			G5	S5	N
Cyperaceae	*Carex crinita*	Fringed Sedge						X			G5	S5	N
Cyperaceae	*Carex deflexa*	Bent Northern Sedge		X							G5	S5	N
Cyperaceae	*Carex disperma*	Two-seeded Sedge		X	X				X		G5	S5	N
Cyperaceae	*Carex flava*	Yellow Sedge			X						G5	S5	N
Cyperaceae	*Carex interior*	Inland Sedge			X						G5	S5	N
Cyperaceae	*Carex intumescens*	Bladder Sedge		X	X	X					G5	S5	N
Cyperaceae	*Carex lupulina*	Hop Sedge						X			G5	S5	N
Cyperaceae	*Carex magellanica*	Boreal Bog Sedge							X		G5	S5	N
Cyperaceae	*Carex pauciflora*	Few-flowered Sedge							X		G5	S5	N
Cyperaceae	*Carex pedunculata*	Long-stalked Sedge	X		X	X	X	X			G5	S5	N
Cyperaceae	*Carex sp.*	a Sedge							X		N/A	N/A	N/A
Cyperaceae	*Carex stipata*	Awl-fruited Sedge			X						G5	S5	N
Cyperaceae	*Carex trisperma*	Three-seeded Sedge			X		X		X		G5	S5	N
Cyperaceae	*Carex utriculata*	Northern Beaked Sedge		X				X	X		G5	S5	N
Cyperaceae	*Carex vesicaria*	Inflated Sedge						X			G5	S5	N
Cyperaceae	*Carex vulpinoidea*	Fox Sedge							X		G5	S5	N
Cyperaceae	*Dulichium arundinaceum*	Three-way Sedge							X		G5	S5	N
Cyperaceae	*Eriophorum vaginatum*	Tussock Cottongrass							X		G5	S5	N
Cyperaceae	*Eriophorum virginicum*	Tawny Cottongrass							X		G5	S5	N
Cyperaceae	*Scirpus atrovirens*	Dark-green Bulrush							X		G5	S5	N

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			Survey Stations[2]								Conservation Rankings[2]		
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**Station 1**	**Station 2**	**Station 3**	**Station 4A**	**Station 4B**	**Station 5A**	**Station 5B**	**Along LSAs**	**GRANK**	**SRANK**	**TRACK**
Cyperaceae	*Scirpus cyperinus*	Common Woolly Bulrush					X		X		G5	S5	N
Dennstaedtiaceae	*Pteridium aquilinum*	Bracken Fern	X		X	X	X	X			G5	S5	N
Dryopteridaceae	*Athyrium filix-femina var. angustum*	Northeastern Lady Fern		X	X	X			X		G5T5	S5	N
Dryopteridaceae	*Dryopteris carthusiana*	Spinulose Wood Fern		X	X	X					G5	S5	N
Dryopteridaceae	*Dryopteris cristata*	Crested Wood Fern			X			X			G5	S5	N
Dryopteridaceae	*Dryopteris expansa*	Spreading Wood Fern							X		G5	S4	N
Dryopteridaceae	*Dryopteris intermedia*	Evergreen Wood Fern	X	X	X		X		X		G5	S5	N
Dryopteridaceae	*Gymnocarpium dryopteris*	Common Oak Fern	X	X	X		X		X		G5	S5	N
Dryopteridaceae	*Matteuccia struthiopteris*	Ostrich Fern		X				X	X		G5	S5	N
Dryopteridaceae	*Onoclea sensibilis*	Sensitive Fern		X	X						G5	S5	N
Dryopteridaceae	*Woodsia ilvensis*	Rusty Woodsia				X					G5	S5	N
Equisetaceae	*Equisetum arvense*	Field Horsetail			X				X		G5	S5	N
Equisetaceae	*Equisetum sylvaticum*	Woodland Horsetail			X		X		X		G5	S5	N
Ericaceae	*Chamaedaphne calyculata*	Leatherleaf				X	X	X	X		G5	S5	N
Ericaceae	*Epigaea repens*	Trailing Arbutus	X	X			X		X		G5	S5	N
Ericaceae	*Gaultheria hispidula*	Creeping Snowberry	X								G5	S5	N
Ericaceae	*Gaultheria procumbens*	Eastern Teaberry	X		X		X		X		G5	S5	N
Ericaceae	*Kalmia polifolia*	Pale Bog Laurel					X				G5	S5	N
Ericaceae	*Rhododendron groenlandicum*	Common Labrador Tea	X			X	X	X	X		G5	S5	N
Ericaceae	*Vaccinium angustifolium*	Early Lowbush Blueberry	X	X	X	X		X	X		G5	S5	N
Ericaceae	*Vaccinium myrtilloides*	Velvet-leaved Blueberry	X	X	X	X	X	X			G5	S5	N
Ericaceae	*Vaccinium oxycoccos*	Small Cranberry							X		G5	S5	N
Eriocaulaceae	*Eriocaulon aquaticum*	Seven-angled Pipewort								X	G5	S5	N
Fabaceae	*Lotus corniculatus*	Garden Bird's-foot Trefoil	X	X							GNR	SE5	N
Fabaceae	*Lupinus polyphyllus*	Large-leaved Lupine								X	G5	SE4	N
Fabaceae	*Melilotus albus*	White Sweet-clover							X		G5	SE5	N
Fabaceae	*Trifolium aureum*	Yellow Clover							X		GNR	SE5	N
Fabaceae	*Trifolium hybridum*	Alsike Clover			X						GNR	SE5	N
Fabaceae	*Trifolium pratense*	Red Clover	X		X	X		X	X		GNR	SE5	N
Fabaceae	*Vicia cracca*	Tufted Vetch			X	X	X	X			GNR	SE5	N
Fumariaceae	*Capnoides sempervirens*	Pale Corydalis							X		G5	S5	N
Grossulariaceae	*Ribes cynosbati*	Eastern Prickly Gooseberry		X							G5	S5	N
Grossulariaceae	*Ribes glandulosum*	Skunk Currant	X	X					X		G5	S5	N
Grossulariaceae	*Ribes lacustre*	Bristly Black Currant		X							G5	S5	N
Grossulariaceae	*Ribes triste*	Swamp Red Currant		X	X	X		X	X		G5	S5	N
Iridaceae	*Iris versicolor*	Harlequin Blue Flag			X						G5	S5	N
Iridaceae	*Sisyrinchium montanum*	Strict Blue-eyed-grass							X		G5	S5	N
Juncaceae	*Juncus articulatus ssp. articulatus*	Jointed Rush							X		G5TNR	S5	N
Juncaceae	*Juncus effusus*	Soft Rush							X		G5	S5	N
Juncaceae	*Juncus pelocarpus*	Brown-fruited Rush							X		G5	S5	N
Lamiaceae	*Clinopodium vulgare ssp. vulgare*	Wild Basil		X							G5T5	S5	N
Lamiaceae	*Galeopsis tetrahit*	Common Hemp-nettle		X							GNR	SE	N
Lamiaceae	*Lycopus uniflorus*	Northern Water-horehound		X							G5	S5	N
Lamiaceae	*Mentha canadensis*	Canada Mint		X					X		G5	S5	N
Lamiaceae	*Prunella vulgaris*	Common Self-heal						X	X		G5	S5	N
Lamiaceae	*Scutellaria galericulata*	Marsh Skullcap		X							G5	S5	N
Liliaceae	*Clintonia borealis*	Yellow Clintonia	X	X	X	X	X	X			G5	S5	N
Liliaceae	*Lilium philadelphicum*	Wood Lily				X					G5	S5	N
Liliaceae	*Maianthemum canadense*	Wild Lily-of-the-valley	X	X	X	X	X	X	X		G5	S5	N
Liliaceae	*Maianthemum trifolium*	Three-leaved False Solomon's Seal					X		X		G5	S5	N
Liliaceae	*Trillium cernuum*	Nodding Trillium		X		X					G5	S5	N
Lycopodiaceae	*Dendrolycopodium dendroideum*	Round-branched Tree-clubmoss						X			G5	S5	N
Lycopodiaceae	*Diphasiastrum complanatum*	Northern Ground-cedar						X			G5	S5	N
Lycopodiaceae	*Lycopodium lagopus*	One-cone Clubmoss				X					G5	S4	N
Lycopodiaceae	*Spinulum annotinum*	Stiff Clubmoss						X			G5	S5	N
Monotropaceae	*Hypopitys monotropa*	Pinesap		X							G5	S4	N
Myricaceae	*Myrica gale*	Sweet Gale			X						G5	S5	N
Oleaceae	*Fraxinus pennsylvanica*	Red Ash				X					G4	S4	N
Onagraceae	*Chamaenerion angustifolium*	Fireweed	X	X	X	X		X	X		G5	S5	N
Onagraceae	*Epilobium leptophyllum*	Narrow-leaved Willowherb							X		G5	S5	N
Onagraceae	*Oenothera biennis*	Common Evening-primrose	X		X						G5	S5	N
Orchidaceae	*Corallorhiza maculata*	Spotted Coralroot						X			G5	S5	N
Orchidaceae	*Cypripedium acaule*	Pink Lady's-slipper	X	X	X			X	X		G5	S5	N
Orchidaceae	*Liparis loeselii*	Loesel's Twayblade							X		G5	S4S5	N
Orchidaceae	*Platanthera dilatata*	Tall White Bog Orchid							X		G5	S5	N
Osmundaceae	*Claytosmunda claytoniana*	Interrupted Fern			X		X		X		G5	S5	N
Oxalidaceae	*Oxalis montana*	White Wood-sorrel			X						G5	S5	N
Pinaceae	*Abies balsamea*	Balsam Fir	X	X	X		X	X	X		G5	S5	N
Pinaceae	*Larix laricina*	Tamarack		X	X	X	X	X	X		G5	S5	N
Pinaceae	*Picea glauca*	White Spruce	X	X	X	X	X	X	X		G5	S5	N
Pinaceae	*Picea mariana*	Black Spruce	X	X	X	X	X	X	X		G5	S5	N
Pinaceae	*Pinus banksiana*	Jack Pine	X	X				X	X		G5	S5	N
Plantaginaceae	*Plantago major*	Common Plantain	X		X		X		X		G5	SE5	N
Poaceae	*Agrostis gigantea*	Redtop	X	X	X	X	X	X	X		G4G5	SE5	N
Poaceae	*Agrostis stolonifera*	Creeping Bentgrass						X			G5	SE5	N
Poaceae	*Avenella flexuosa*	Wavy Hairgrass	X	X	X	X		X	X		G5	S5	N
Poaceae	*Brachyelytrum aristosum*	Northern Shorthusk			X						G5	S5?	N
Poaceae	*Bromus ciliatus*	Fringed Brome		X	X	X					G5	S5	N
Poaceae	*Calamagrostis canadensis*	Bluejoint Reedgrass		X	X	X	X	X	X		G5	S5	N
Poaceae	*Cinna latifolia*	Drooping Woodreed					X				G5	S5	N
Poaceae	*Danthonia spicata*	Poverty Oatgrass	X	X	X	X	X	X	X		G5	S5	N
Poaceae	*Elymus repens*	Quackgrass	X	X	X	X		X			GNR	SE5	N
Poaceae	*Festuca rubra*	Red Fescue	X								G5	S5	P

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FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**Station 1**	**Station 2**	**Station 3**	**Station 4A**	**Station 4B**	**Station 5A**	**Station 5B**	**Along LSAs**	**GRANK**	**SRANK**	**TRACK**
Poaceae	*Glyceria canadensis*	Canada Mannagrass							X		G5	S5	P
Poaceae	*Glyceria striata var. striata*	Fowl Mannagrass			X		X	X	X		G5T5	S5	N
Poaceae	*Oryzopsis asperifolia*	Rough-leaved Mountain Rice	X	X		X	X				G5	S5	N
Poaceae	*Phalaris arundinacea*	Reed Canarygrass								X	G5	S5	N
Poaceae	*Phleum pratense*	Common Timothy	X	X		X		X			GNR	SE5	N
Poaceae	*Piptatheropsis canadensis*	Canada Ricegrass							X		G4G5	S4	N
Poaceae	*Poa compressa*	Canada Bluegrass			X						GNR	SE5	N
Poaceae	*Poa palustris*	Fowl Bluegrass			X	X		X			G5	S5	N
Polygalaceae	*Polygaloides paucifolia*	Fringed Milkwort				X					G5	S5	N
Polygonaceae	*Fallopia cilinodis*	Fringed Black Bindweed		X	X						G5	S5	N
Polygonaceae	*Rumex acetosella*	Sheep Sorrel								X	GNR	SE5	N
Polygonaceae	*Rumex crispus*	Curled Dock	X	X	X						GNR	SE5	N
Polypodiaceae	*Polypodium virginianum*	Rock Polypody				X	X				G5	S5	N
Primulaceae	*Lysimachia borealis*	Northern Starflower	X	X	X	X	X	X			G5	S5	N
Pyrolaceae	*Pyrola chlorantha*	Green-flowered Pyrola	X								G5	S4S5	N
Ranunculaceae	*Actaea sp.*	a Baneberry			X		X				N/A	N/A	N/A
Ranunculaceae	*Anemone virginiana*	Tall Anemone		X				X			G5	S5	N
Ranunculaceae	*Coptis trifolia*	Goldthread		X	X	X	X	X	X		G5	S5	N
Ranunculaceae	*Ranunculus acris*	Common Buttercup			X						G5	SE5	N
Ranunculaceae	*Thalictrum pubescens*	Tall Meadow-rue		X	X						G5	S5	N
Rhamnaceae	*Endotropis alnifolia*	Alder-leaved Buckthorn		X	X	X		X			G5	S5	N
Rosaceae	*Amelanchier humilis*	Low Serviceberry	X	X		X		X			G5	S5	N
Rosaceae	*Amelanchier interior*	Inland Serviceberry						X			G5	SU	N
Rosaceae	*Amelanchier sanguinea*	Round-leaved Serviceberry			X						G5	S5	N
Rosaceae	*Amelanchier spicata*	Running Serviceberry		X							G5	S4	N
Rosaceae	*Comarum palustre*	Marsh Cinquefoil		X							G5	S5	N
Rosaceae	*Dasiphora fruticosa*	Shrubby Cinquefoil							X		G5	S5	N
Rosaceae	*Fragaria virginiana*	Wild Strawberry	X	X	X	X		X	X		G5	S5	N
Rosaceae	*Physocarpus opulifolius*	Eastern Ninebark			X						G5	S5	N
Rosaceae	*Potentilla norvegica*	Rough Cinquefoil				X			X		G5	S5	N
Rosaceae	*Prunus pensylvanica*	Pin Cherry	X	X	X	X	X	X	X		G5	S5	N
Rosaceae	*Prunus virginiana*	Chokecherry		X	X	X	X	X			G5	S5	N
Rosaceae	*Rosa acicularis*	Prickly Rose	X	X	X				X		G5	S5	N
Rosaceae	*Rubus idaeus ssp. idaeus*	European Red Raspberry	X	X							G5T5	SE1	N
Rosaceae	*Rubus idaeus ssp. strigosus*	North American Red Raspberry	X	X	X	X	X	X	X		G5T5	S5	N
Rosaceae	*Rubus pubescens*	Dwarf Raspberry		X	X	X	X	X	X		G5	S5	N
Rosaceae	*Rubus repens*	Dewdrop					X				G5	S4?	N
Rosaceae	*Sorbus americana*	American Mountain-ash	X	X	X	X	X	X	X		G5	S5	N
Rubiaceae	*Galium asprellum*	Rough Bedstraw		X							G5	S5	N
Rubiaceae	*Galium trifidum*	Three-petalled Bedstraw			X		X				GNR	S5	N
Rubiaceae	*Galium triflorum*	Three-flowered Bedstraw				X					G5	S5	N
Rubiaceae	*Mitchella repens*	Partridgeberry	X								G5	S5	N
Salicaceae	*Populus balsamifera*	Balsam Poplar		X	X	X		X	X		G5	S5	N
Salicaceae	*Populus tremuloides*	Trembling Aspen	X	X	X	X	X	X	X		G5	S5	N
Salicaceae	*Salix bebbiana*	Bebb's Willow	X	X	X	X	X	X	X		G5	S5	N
Salicaceae	*Salix discolor*	Pussy Willow	X	X	X	X	X				G5	S5	N
Salicaceae	*Salix petiolaris*	Meadow Willow		X							G5	S5	N
Salicaceae	*Salix pyrifolia*	Balsam Willow		X			X	X			G5	S5	N
Saxifragaceae	*Mitella nuda*	Naked Mitrewort					X		X		G5	S5	N
Scrophulariaceae	*Euphrasia stricta*	Stiff Eyebright				X		X			GNR	SE4?	N
Scrophulariaceae	*Linaria vulgaris*	Butter-and-eggs							X		GNR	SE5	N
Scrophulariaceae	*Melampyrum lineare*	American Cow-wheat		X				X			G5	S5	N
Scrophulariaceae	*Verbascum thapsus*	Common Mullein								X	GNR	SE5	N
Sparganiaceae	*Sparganium americanum*	American Burreed			X						G5	S5	N
Sparganiaceae	*Sparganium natans*	Small Burreed							X		G5	S5	N
Thelypteridaceae	*Parathelypteris noveboracensis*	New York Fern			X						G5	S4S5	N
Thelypteridaceae	*Thelypteris palustris*	Marsh Fern		X		X					G5	S5	N
Typhaceae	*Typha latifolia*	Broad-leaved Cattail							X		G5	S5	N
Violaceae	*Viola blanda*	Sweet White Violet					X				G5	S5	N
Violaceae	*Viola sp.*	a Violet			X						N/A	N/A	N/A

[1] Nomenclature based on Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC, 2024)

[2] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

	Ecological Land Classification[1]			
Alternative Solution	**Community Class**	**Community Series**	**ELC Code**	**Alternative Area Footprint (ha)**
#1	Forest	Deciduous Forest	G016Tl, G016Tt, G055Tl, G055Tt, G070Tl, G070Tt	188
	Forest	Coniferous Forest	G012Tt, G014Tt, G037Tl, G049Tt, G049Tl, G050Tl, G052Tt, G055Tt,G065Tt, G065Tl, G066Tt, G067Tt	200
	Swamp	N/A	G134S, G135S, G128Tl, G128Tt	22
	Marsh	N/A	G142N, G143S, G151N	12
	Fen	N/A	G136Tl, G139N	2
	Bog	N/A	G137Tl	12
	Rock Barren	N/A	G165N	0.3
	Disturbed Area	N/A	n/a	9
#2	Forest	Deciduous Forest	G016Tl, G055Tl, G055Tt, G070Tt	178
	Forest	Coniferous Forest	G012Tt, G014Tt, G034Tt, G035Tt, G049Tl, G049Tt, G050Tl, G050Tt, G052Tt, G053Tt, G065Tl, G065Tt, G067Tt, G068Tt	225
	Swamp	N/A	G127Tt, G128Tl, G128Tt, G129Tt, G134S, G135S, G135Tt, G223Tl, G223Tt	38
	Marsh	N/A	G142N, G143S, G151N	13
	Fen	N/A	G140S, G136Tl, G139N, G139S, G140S, G146N, G146S,	5
	Bog	N/A	G137Tl	2
	Rock Barren	N/A	G165N	0.1
	Disturbed Area	N/A	n/a	21

#3	Forest	Deciduous Forest	G16Tl, G016Tt, G040Tl, G055Tl, G055Tt, G070Tl, G070Tt,	104
	Forest	Coniferous Forest	G014Tt, G034Tt, G037Tt, G049Tl, G049Tt, G050Tt, G052Tt, G065Tt, G065Tl, G066Tt, G068Tt, G114Tt	184
	Swamp	N/A	G127Tt, G128Tl, G128Tt, G134S, G135S, G223Tl	31
	Marsh	N/A	G142N	11
	Fen	N/A	G136Tl, G139N, G140S, G146N, G148N, G151N	5
	Bog	N/A	n/a	0
	Rock Barren	N/A	G164S, G164Tl	1
	Disturbed Area	N/A	n/a	102
#4	Forest	Deciduous Forest	G016Tl, G055Tl, G055Tt, G070Tl, G070Tt	145
	Forest	Coniferous Forest	G012Tl, G012Tt, G014Tt, G035Tt, G049Tt, G050Tt, G050Tl, G052Tt, G053Tt, G065Tl, G065Tt, G066Tt, G067Tt	217
	Swamp	N/A	G128Tt, G128Tl, G129Tt, G135S, G223Tl, G223Tt	17
	Marsh	N/A	G142N	10
	Fen	N/A	G136Tl, G136Tt, G139N, G140S	11
	Bog	N/A	G126Tl, G137Tt	0.7
	Rock Barren	N/A	n/a	0
	Disturbed Area	N/A	n/a	9

ELC Code	ELC Label
DA	Disturbed Area
G012Tl	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (LowTreed)
G012Tt	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer (Tall Treed)
G014Tt	Very Shallow, Dry to Fresh: Conifer (Tall Treed)
G016Tl	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood (Low Treed)
G016Tt	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood (Tall Treed)
G034Tt	Dry, Sandy: Jack Pine - Black Spruce Dominated (Tall Treed)
G035Tt	Dry, Sandy: Pine - Black Spruce Conifer (Tall Treed)
G037Tt	Dry, Sandy: Spruce - Fir Conifer (Tall Treed)
G049Tl	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated (Low Treed)
G049Tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated (Tall Treed)
G050Tl	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Low Treed)
G050Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G052Tl	Dry to Fresh, Coarse: Spruce - Fir Conifer (Low Treed)
G052Tt	Dry to Fresh, Coarse: Spruce - Fir Conifer (Tall Treed)
G053Tt	Dry to Fresh, Coarse: Conifer (Tall Treed)
G055Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Low Treed)
G055Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood (Tall Treed)
G065Tl	Moist, Coarse: Pine - Black Spruce Conifer (Low Treed)
G065Tt	Moist, Coarse: Pine - Black Spruce Conifer (Tall Treed)
G066Tt	Moist, Coarse: Cedar Conifer (Tall Treed)
G067Tt	Moist, Coarse: Spruce - Fir Conifer (Tall Treed)
G068Tt	Moist, Coarse: Conifer (Tall Treed)
G070Tl	Moist, Coarse: Aspen - Birch Hardwood (Low Treed)
G070Tt	Moist, Coarse: Aspen - Birch Hardwood (Tall Treed)
G114Tt	Moist, Fine: Pine - Black Spruce (Tall Treed)
G126Tl	Treed Bog (Low Treed)
G127Tt	Organic Poor Conifer Swamp (Tall Treed)
G128Tl	Organic Intermediate Conifer Swamp (Low Treed)
G128Tt	Organic Intermediate Conifer Swamp (Tall Treed)
G129Tt	Rich Conifer Swamp (Tall Treed)
G134S	Mineral Thicket Swamp (Shrub)
G135S	Organic Thicket Swamp (Shrub)
G135Tt	Organic Thicket Swamp (Tall Treed)
G136Tl	Sparse Treed Fen (Low Treed)
G136Tt	Sparse Treed Fen (Tall Treed)
G137Tl	Sparse Treed Bog (Low Treed)
G137Tt	Sparse Treed Bog (Tall Treed)
G139N	Poor Fen (Not Woody)
G139S	Poor Fen (Shrub)
G140S	Open Moderately Rich Fen (Shrub)
G142N	Mineral Meadow Marsh (Not Woody)
G143S	Rock Meadow Marsh (Shrub)

G146N	Open Shore Fen (Not Woody)
G146S	Open Shore Fen (Shrub)
G148N	Mineral Shallow Marsh (Not Woody)
G151N	Open Water Marsh: Mineral (Not Woody)
G164S	Rock Barren (Shrub)
G164Tl	Rock Barren (Low Treed)
G223Tl	Mineral Intermediate Conifer Swamp (Low Treed)
G223Tt	Mineral Intermediate Conifer Swamp (Tall Treed)

Table 5: Breeding Bird Survey, Transmission Line Class EA

			Location[1,2]																												Conservation Rankings[3]				
			1			2			3			4A			4B			5A			5B			6		7		8A		8B		Incidental					
FAMILY	SCIENTIFIC NAME	COMMON NAME	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	B	C	B	C	B	C	B	C		GRANK	SRANK	ESA	SARA	TRACK
Accipitridae	*Buteo platypterus*	Broad-winged Hawk																													C/X	✓	G5	S5B			N
Accipitridae	*Haliaeetus leucocephalus*	Bald Eagle																														✓	G5	S4			N
Anatidae	*Anas platyrhynchos*	Mallard																								X							G5	S5B,S3N			N
Ardeidae	*Ardea herodias*	Great Blue Heron																														✓	G5	S4			N
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing		S	X/S								S	X						C/X			C/X	S/C						S			G5	S5B, S3N			N
Cardinalidae	*Pheucticus ludovicianus*	Rose-breasted Grosbeak																						S									G5	S5B			N
Cathartidae	*Cathartes aura*	Turkey Vulture																														✓	G5	S5B,S3N			N
Certhiidae	*Certhia americana*	Brown Creeper								S																							G5	S5			N
Corvidae	*Corvus brachyrhynchos*	American Crow			C		X			S	S																C	S	C				G5	S5			N
Corvidae	*Corvus corax*	Common Raven																											C/X	C		✓	G5	S5			N
Corvidae	*Cyanocitta cristata*	Blue Jay								C			C							C				C				C					G5	S5			N
Fringillidae	*Coccothraustes vespertinus*	Evening Grosbeak						S																									G5	S4	SC	SC	Y
Fringillidae	*Loxia curvirostra*	Red Crossbill																	S														G5	S5			N
Fringillidae	*Loxia leucoptera*	White-winged Crossbill							S			S																					G5	S5			N
Fringillidae	*Pinicola enucleator*	Pine Grosbeak																														✓	G5	S4B,S5N			N
Fringillidae	*Spinus pinus*	Pine Siskin															S																G5	S5			N
Fringillidae	*Spinus tristis*	American Goldfinch																								S							G5	S5			N
Gaviidae	*Gavia immer*	Common Loon																									C				S		G5	S5	NAR		N
Gruidae	*Grus canadensis*	Sandhill Crane																														✓	G5	S5B,S3N			N
Hirundinidae	*Tachycineta bicolor*	Tree Swallow							S																								G5	S4S5B			N
Icteridae	*Euphagus carolinus*	Rusty Blackbird																														✓	G4	S4B,S3N	SC	SC	Y
Motacillidae	*Anthus rubescens*	American Pipit																														✓	G5	S4B			N
Paridae	*Poecile atricapillus*	Black-capped Chickadee		S			C	S/C						S				S		S						S						✓	G5	S5			N
Parulidae	*Cardellina canadensis*	Canada Warbler				S																											G5	S5B	SC	THR	Y
Parulidae	*Geothlypis philadelphia*	Mourning Warbler				S			S															S	S								G5	S5B			N
Parulidae	*Geothlypis trichas*	Common Yellowthroat								S							S	S								S	S			S	S		G5	S5B,S3N			N
Parulidae	*Leiothlypis ruficapilla*	Nashville Warbler				S			S	S	S	S		S	S	S	S		S		S	S					S	S		S	S	✓	G5	S5B			N
Parulidae	*Mniotilta varia*	Black-and-white Warbler		S					S								S				S			S					S	S			G5	S5B			N
Parulidae	*Seiurus aurocapilla*	Ovenbird											S	S	S		S	S		S						S						✓	G5	S5B			N
Parulidae	*Setophaga americana*	Northern Parula						S																							S		G5	S5B			N
Parulidae	*Setophaga caerulescens*	Black-throated Blue Warbler										C						S															G5	S5B			N
Parulidae	*Setophaga castanea*	Bay-breasted Warbler	S																														G5	S5B			N
Parulidae	*Setophaga coronata*	Yellow-rumped Warbler				S		S							S								S		S	S				S			G5	S5B,S4N			N
Parulidae	*Setophaga fusca*	Blackburnian Warbler																	S														G5	S5B			N
Parulidae	*Setophaga magnolia*	Magnolia Warbler	S	S	S	S			S		S				C	S			S				S			S		S	S				G5	S5B			N
Parulidae	*Setophaga pensylvanica*	Chestnut-sided Warbler	S	S						S	S	S	S	S				S						S		S							G5	S5B			N
Parulidae	*Setophaga petechia*	Yellow Warbler	S																		S					S							G5	S5B			N
Parulidae	*Setophaga ruticilla*	American Redstart	S	S	C				S	S		C					X						S	S/C	S	S	S			S			G5	S5B			N
Parulidae	*Setophaga virens*	Black-throated Green Warbler				S																											G5	S5B			N
Passerellidae	*Melospiza georgiana*	Swamp Sparrow																								S	S			S	S		G5	S5B,S4N			N
Passerellidae	*Spizella passerina*	Chipping Sparrow																		S													G5	S5B,S3N			N
Passerellidae	*Zonotrichia albicollis*	White-throated Sparrow	X,S	S	C/S	S		S	S	S	S	C,S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S	S	S	✓	G5	S5			N
Phasianidae	*Bonasa umbellus*	Ruffed Grouse																														✓	G5	S5			N
Phasianidae	*Falcipennis canadensis*	Spruce Grouse																														✓	G5	S5			N
Phasianidae	*Meleagris gallopavo*	Wild Turkey																														✓	G5	S5			N
Phasianidae	*Melospiza melodia*	Pine Grosbeak																								S							G5	S5			N
Picidae	*Colaptes auratus*	Northern Flicker	C		C																								S		S		G5	S5			N
Picidae	*Dryobates pubescens*	Downy Woodpecker																		C													G5	S5			N
Picidae	*Dryobates villosus*	Hairy Woodpecker	S																														G5	S5			N
Picidae	*Dryocopus pileatus*	Pileated Woodpecker																														✓	G5	S5			N
Picidae	*Sphyrapicus varius*	Yellow-bellied Sapsucker								X									S									S					G5	S5B,S3N			N
Regulidae	*Regulus calendula*	Ruby-crowned Kinglet														S								S								✓	G5	S5			N
Regulidae	*Regulus satrapa*	Golden-crowned Kinglet								S											S			S		S						✓	G5	S5			N
Scolopacidae	*Scolopax minor*	American Woodcock	C									C			C																	✓	G5	S4B			N
Sittidae	*Sitta canadensis*	Red-breasted Nuthatch																		S				S					S		S	✓	G5	S5			N
Strigidae	*Aegolius acadicus*	Northern Saw-whet Owl																														✓	G5	S5			N
Troglodytidae	*Troglodytes aedon*	House Wren																											S				G5	S5B			N
Troglodytidae	*Troglodytes hiemalis*	Winter Wren				S												S									S			S	✓	G5	S5B,S4N			N
Turdidae	*Catharus fuscescens*	Veery		S						S					S			S							S							G5	S5B			N
Turdidae	*Catharus guttatus*	Hermit Thrush			S			S				S	S	S	S		S	S		S		S	S					S	S		✓	G5	S5B,S4N			N
Turdidae	*Catharus ustulatus*	Swainson's Thrush				S			S	S	S									S		S	S		S			S		S			G5	S5B			N
Turdidae	*Hylocichla mustelina*	Wood Thrush			S						S	S			S									S			S					✓	G4	S4B	SC	THR	Y
Turdidae	*Turdus migratorius*	American Robin				S	S			C			X/S							C/X				X									G5	S5			N

Table 5: Breeding Bird Survey, Transmission Line Class EA			Location[1,2]																												Conservation Rankings[3]				
			1			2			3			4A			4B			5A			5B			6		7		8A		8B		Incidental					
FAMILY	SCIENTIFIC NAME	COMMON NAME	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	B	C	B	C	B	C	B	C		GRANK	SRANK	ESA	SARA	TRACK
Tyrannidae	*Empidonax alnorum*	Alder Flycatcher																				S	S			S							G5	S5			N
Tyrannidae	*Empidonax minimus*	Least Flycatcher																S		S								S					G5	S5B			N
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	S	S	S	S		S	S	S/C	S	S	S	S	S	S	S/X		S	S		S		S/C	S	S		S	S	S	S		G5	S5B			N
Vireonidae	*Vireo philadelphicus*	Philadelphia Vireo							S			S																					G5	S5B			N
Vireonidae	*Vireo solitarius*	Blue-headed Vireo						S																S									G5	S5B			N

[1] **A** Day 1: July 4, 2023, Observer: Jordan Wrobel, Temperature 10-14°C, Cloud Cover 10% , Wind: B1, Precipitation: Nil, Search Time 06:32 to 08:45; Day 2: July 6, 2023, Observer: Jordan Wrobel, Temperature 15°C, Cloud Cover 100% , Wind: B2, Precipitation: Nil, Search Time 07:21 to 08:16. **B** Day 1: June 11, 2024, Observer: Jordan Wrobel, Temperature 7-10°C, Cloud Cover 0% , Wind: B1, Precipitation: Nil, Search Time 06:41 to 09:40; Day 2: June 12, 2024, Observer: Jordan Wrobel, Temperature 10-13°C, Cloud Cover 100% , Wind: B3, Precipitation: Nil, Search Time 07:04 to 09:27. **C** Day 1: July 3, 2024, Observer: Jordan Wrobel, Temperature 15°C, Cloud Cover 100% , Wind: B2, Precipitation: Nil, Search Time 07:50 to 09:56; Day 2: July 4, 2024, Observer: Jordan Wrobel, Temperature 10-15°C, Cloud Cover 60-80% , Wind: B1, Precipitation: Nil, Search Time 05:40 to 09:41.

[2] Breeding Bird Evidence Codes: X - Species observed, C - Call heard, FO - Flyover (Species presence); H - Species observed in its breeding season in suitable nesting habitat, S - Singing male (Possible Breeding); P - Pair observed , T - Territorial behaviour, A - Agitated behaviour or anxiety calls of adult, V -

[3] Conservation Rankings: From Ontario Ministry of Natural Resources , Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

Table 6: Amphibian Breeding Summary, Transmission Line Class EA

Observers: Jordan Wrobel
Adam McClelland

			Species								
Date	**Sampling Station(s)***	**Start Time**	**Wood Frog**	**Spring Peeper**	**Chorus Frog**	**Northern Leopard Frog**	**American Toad**	**Green Frog**	**Gray Treefrog**	**Pickerel Frog**	**Nothing Heard**
09-May-23	1	22:01	-	3 (out)	-	-		-	-	-	-
	2	21:32	1-4; 1-1 (out)	-	-	-	-	-	-	-	-
10-May-23	5A	21:32	3; 3 (out)	3; 2-5 (out)	-	-	-	-	-	-	-
	5B	22:06	3	3	1-2	-	-	-	-	-	-
11-May-23	3	22:18	2-5 (out)	3 (out)	-	-	-	-	-	-	-
	4A	21:52	-	2-7	-	-	-	-	-	-	-
	4B	21:32	-	3 (out)	-	-	-	-	-	-	-

**see mapping* ** format: call code - estimated # of individuals*

Weather Conditions

Date	**Air Temperature (^{o}C)**	**Wind (Beaufort/ Direction)**	**Cloud Cover**	**Precipitation**
09-May-23	8	B1	0%	nil
10-May-23	10	B1	0%	nil
11-May-23	9	B1	0%	nil

[1] Call Code Levels

1 = males could be individually counted
2 = calls overlap but numbers could be estimated
3 = overlapping calls, not possible to estimate numbers involved in chorus.

Table 7: Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E

1.1 Seasonal Concentration Areas for Wildlife Species

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Moose Late Winter Cover **Rationale;** Habitat important for providing cover and minimizing snow depths allowing movement of moose in late winter.	Moose	B036 - 038, B049-053, B065-068 B081-087 B098-102 B114-117 More common on deeper soils with dense conifer cover and vegetation in the understory for browse.	Late winter moose habitat is characterized by dense conifer cover with greater than 60% canopy closure and >6m in height. Upland sites are preferred. Snow depth in excess of 70cm restrict moose movement during winter, however late winter thermal refuge is important in relieving heat stress. These habitats are extensively used by moose during late spring and summer due to the shade provided. Conifer stands >50ha, dominated by tall trees >6m, on gentle to moderately rugged sites with deep soils. Areas identified as rating 3 or 4 for late winter moose habitat are Candidate SWH. Information Sources • OMNRF Forester, Ecologist or Biologist may be aware of locations. • The Selected Wildlife and habitat Inventory Manual (1998) outlines the inventory method for Late Winter Moose Habitat.	Field Studies will confirm the use of these areas as late winter habitat by moose during the months of March and April. Moose are very difficult to observe in late winter habitat, therefore any number of moose observed or moose tracks and trails observed in the habitat confirm this habitat as a SWH. The area of the SWH is the area of treed ecosites associated with the winter cover area plus 300 m surrounding the site. The relative importance of the site to the surrounding landscape should be considered. Significant sites may be only one of few in the area. SWHMiST Index #24 provides development effects and mitigation measures for aquatic feeding areas, similar effects and mitigation can be used for late winter habitat.	Habitats within Alternative Solutions LSAs are not representative of key habitat. MNRF Wildlife Values Area mapping does not identify this Wildlife Habitat in any Alternative Solutions LSAs. No further evaluation undertaken.
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale;** Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	Focus on sites that have appropriate vegetation and highest likelihood of seasonal water accumulation B060-062 B077-079 B093-095 B109-111 Plus evidence of annual spring flooding from melt water or run-off within identified Ecosites.	Fields with sheet water during Spring (mid March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Flood plains (flooded river banks) • Cultivated fields with waste grains are commonly used by waterfowl, these are not considered SWH. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • EIS Reports • Sites documented through waterfowl planning processes (eg. EHJV implementation plan). • Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area • eBird Canada http://ebird.org/content/canada/	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWHMiST Index #7 provides development effects and mitigation measures.	Habitats within the Alternative Solutions LSAs are not representative of key habitat types. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Aquatic) **<u>Rationale;</u> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the ecodistrict.**	**Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Tundra Swan Trumpeter Swan**	**B142-152**	• **Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration.** • **Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.** • **These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)** **<u>Information Sources</u>** • **OMNRF District staff.** • **Canadian Wildlife Service staff may know the larger, most significant sites. Check website: http://wildspace.ec.gc.ca** • **Naturalist clubs often are aware of staging/stopover areas.** • **OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.** • **Sites documented through waterfowl planning processes (eg. EHJV implementation plan)** • **Ducks Unlimited projects** • **Element occurrence specification on NatureServe Explorer: http://www.natureserve.org** • **Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area** • **eBird Canada http://ebird.org/content/canada/**	**Studies carried out and verified presence of:** • **Aggregations of 100 or more individuals of listed species for 7 days, results in > 700 waterfowl use days.** • **Areas with annual staging of ruddy ducks, canvasbacks, redheads and trumpeter swans are SWH** • **The combined area of the ELC ecosites and a 100m radius area is the SWH** • **Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat.** • **Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"** • **Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).** • **SWHMiST Index #7 provides development effects and mitigation measures.**	**Potentially suitable habitat types (*i.e.* marshes, fens) occur in all Alternative Solution LSAs. Considered further in main text.**
Shorebird Migratory Stopover Area **<u>Rationale:</u>** High quality shorebird stopover habitat is extremely rare and typically has a long history of use	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Wilson's Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin Wilson's Snipe	B005-006 B160-162 B170-172 B176-178 B186-188 B204 B207	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Storm water retention ponds and sewage lagoons are not considered SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs. • Temiskaming Birds: http://timbirds.info/ • NHIC Shorebird Migratory Concentration Area • eBird Canada http://ebird.org/content/canada/	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period). • Sites used for multiple years are more significant. • The area of significant shorebird habitat includes the mapped ELC ecosites plus a 100m radius area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #8 provides development effects and mitigation measures.	Habitats within the Alternative Solutions LSAs are not representative of key habitat types. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Bat Hibernacula **Rationale;** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Hibernacula may be found in abandoned caves, mine shafts, underground foundations (Karsts) and these ecosites: B158-159 B164-165 B174-175 B180-181 Caves and mine shafts are the important features. Commonly associated as components of either Cliff or Rock Barren ecosites. Once feature is identified the substrate classification can be used to identify characteristics and potential/suitability of identified or suspected hibernacula.	• Hibernacula may be found in abandoned caves, mine shafts, underground foundations and karsts. • The locations and site characteristics of bat hibernacula are relatively poorly known. • Primary criteria is identification of known feature • • Buildings or active mine sites are not considered to be SWH) Information Sources • OMNRF for possible locations and contact for local experts • NHIC Bat Hibernaculum/Nursery. • Ministry of Northern Development and Mines and NRVIS for location of mine shafts and mine locations. • Clubs that explore caves (*e.g.* Caving Canada (http://www.cancaver.ca/) Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH • The area includes 1000m radius around the entrance of the hibernaculum • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects" • SWHMiST Index #1 provides development effects and mitigation measures.	Review of the MNRF NHIC records identified Bat Hibernacula associated with Alternative Solution #1 and #3 LSAs. However, these records are associated with an active mine site and are not considered a Wildlife Habitat. No caves or other potentially suitable bat hibernacula habitat were observed within Alternative Solutions LSAs. No further evaluation undertaken.
Bat Maternity Colonies **Rationale;** Known locations of treed bat maternity colonies is extremely rare in all Ontario landscapes.	**Big Brown Bat** **Silver-haired Bat**	**Maternity colonies considered SWH are found in treed Ecosites.** **B015-019** **B023-028** **B039-043** **B054-059** **B069-076** **B087-092** **B103-108** **B118-125** **Aspen is an important feature in Ecoregion 3E, primarily the presence of larger diameter trees in older mixed-wood stands.**	• **Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).** • **Maternity roosts are not found in caves and mines in Ontario** • **Maternity colonies located in Mature (dominant trees > 80yrs old) deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees** • **Female Bats prefer wildlife trees (snags) of decay class 1 or 2 or class 2-4, can be living or with bark mostly intact.** • **Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred** **Information Sources** • **OMNRF for possible locations and contact for local experts** • **University Biology Departments with bat experts.**	• **All Maternity Colonies are considered SWH** • **The area of the habitat includes the entire woodland or the forest stand ELC Ecosite or an Ecoelement containing the maternity colony** • **Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"** • **SWHMiST Index #12 provides development effects and mitigation measures.**	**Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text.**
Turtle Wintering Areas **Rationale;** Generally sites are the only known sites in the area. Sites with the highest number of	**Painted Turtle** **Special Concern:** **Snapping Turtle**	**B128-142** **B145-152**	• **For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.** • **Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate**	• **Presence of one or more overwintering Painted Turtles is significant.** • **One or more Snapping Turtle over-wintering within a wetland is significant.** • **The mapped ELC ecosite area with the over**	**Potentially suitable wetland habitat occurs within all Alternative Solutions LSAs. Considered further in main text.**

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
individuals are most significant.			**Dissolved Oxygen.** • **Year-round persistence of standing or flowing water to depth, or presence of springs to prevent freezing is key.** • **Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.** **<u>Information Sources</u>** • **Reports and other information available from CAs.** • **Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites.** • **OMNRF ecologist or biologist may be aware of locations of wintering turtles** • **NHIC, Ontario Herpetofaunal Summary Atlas, Ontario Herpetofaunal Atlas**	**wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.** • **Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Aug. – Sept.) or spring (Apr. - May). Congregation of turtles is more common where wintering areas are limited and therefore significant.** • **SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.**	
Reptile Hibernacula **<u>Rationale;</u> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.**	**<u>Snakes:</u>** **Eastern Gartersnake** **Smooth Green Snake** **Northern Ringneck Snake** **Northern Redbelly Snake**	**For all snakes, habitat may be found in any forested ecosite in northern Ontario. Talus, rock barren, crevice and caves are more typically related to these habitats. Many suitable conditions also observed in the very shallow ecosites particularly on fractured bedrock and lower veg cover Open and Sparse Tall/Low Treed or Shrub Systems.** **B008-028** **B128-139** **B158-159** **B164-165** **B167-172** **B174-175** **B180-181** **B183-188**	**For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations.** **Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.** **Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Observation of congregating snakes on sunny warm days in the spring or fall is a good indicator. The existence of rock piles or slopes, stone fences, and crumbling foundations.** **<u>Information Sources</u>** • **In spring, local residents or landowners have observed the emergence of snakes on their property (*e.g.* old dug wells).** • **Reports and other information available from CAs.** • **Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites.** • **OMNRF ecologist or biologist.** • **NHIC**	**Studies confirming:** • **Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.** • **Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (*e.g.* foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct).** • **<u>Note:</u> Sites for hibernation possess specific habitat parameters (*e.g.* temperature, humidity, *etc.*) and consequently are used annually, often by many of the same individuals of a local population. Other critical life processes (*e.g.* mating) often take place in close proximity to hibernacula. As such, the feature in which the hibernacula is located plus a 30 m radius buffer is the SWH.** • **SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula.**	**Potentially suitable habitat occurs within all Alternative Solutions LSAs. Considered further in main text.**
Colonially-Nesting Bird Breeding Habitat (Cliff) <u>Rationale;</u> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local	Cliff Swallow	Cliff faces, bridge abutments, silos, barns (Cliff Swallows). Habitat may be found in, but not limited to the following ecosites: B001-004 B157-159	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, and soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation.	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. • Field surveys to observe and count swallow nests are to be completed during the breeding season (May-July). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power	Habitats within Alternative Solutions LSAs are not representative of key habitat. MNRF Wildlife Values Area mapping does not identify this Wildlife Habitat in any Alternative Solutions LSAs. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
populations. All swallow population are declining in Ontario.		B173-175	Information Sources • Reports and other information available from CAs. • Ontario Breeding Bird Atlas. • Bird Studies Canada; NatureCounts http://www.birdscanada.org/bird mon/ • Naturalist Clubs • eBird Canada http://ebird.org/content/canada/	Projects". • SWHMiST Index #4 provides development effects and mitigation measures.	
Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale; Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.**	**Great Blue Heron Bonaparte's Gull Double-crested Cormorant**	**May include a wide variety of tall treed ecosites. Habitat selection based on close proximity to water body or on island: B045-059 B064-076 B081-092 B097-108 B113-137 B161-162 B177-178**	• **Great Blue Herons nest in live or dead standing trees in wetlands, lakeshores, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.** • **Most nests in trees are 11 to 15 m from ground, near the top of the tree.** • **Bonaparte's Gulls nest in coniferous trees (preferably spruce-fir) near fens, bogs, swamps, ponds or lakes.** • **Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen (OBBA).** **Information Sources** • **Ontario Breeding Bird Atlas, colonial nest records.** • **Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).** • **NHIC Mixed Wader Nesting Colony** • **Aerial photographs can help identify large heronries.** • **Reports and other information available from CAs** • **OMNRF District Offices.** • **Local naturalist clubs.** • **NRVIS** • **eBird Canada http://ebird.org/content/canada/**	**Studies confirming:** • **Presence of 4 or more active nests of Great Blue Heron or 10 or more nests of Bonaparte's Gull** • **For Great Blue Heron: the edge of the colony and a minimum 300m radius area of habitat or extent of the ELC ecosite containing the colony or any island <15.0ha with a colony is the SWH** • **For Bonaparte's Gull: the edge of the colony and a minimum 150m radius area of habitat surrounding the colony is the SWH** • **For Double-crested Cormorants: OMNRF District offices will identify significance of colony and mitigation measures.** • **Confirmation of active colonies must be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh whitewash, dead young and/or eggshells** • **SWHMiST Index #5 provides development effects and mitigation measures**	**Potentially suitable habitat types (*i.e.* fens, bogs, swamps) occur in all Alternative Solution LSAs. Considered further in main text.**
Colonially - Nesting Bird Breeding Habitat (Ground) **Rationale:** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Ring-billed Gull Common Tern Double-crested Cormorant Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). B160-165 B169-172 B176-181 B185-188 Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). B008 B020-021 B030-031	• Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water or in marshy areas, lakes or large rivers (twolined on a 1:50,000 NTS map). • Brewers Blackbird colonies are found loosely on the ground or in low bushes in close proximity to streams and irrigation ditches within farmlands. • Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen (OBBA). Information Sources • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs • OMNRF District Offices • Local naturalist clubs	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • For Double-crested Cormorants: OMNRF District offices will identify significance of colony and mitigation measures. • Studies should be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #6 provides development	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		B045-046 B061-062 B078-079 B094-095 B110-111 B142-144	• NHIC Colonial Waterbird Nesting Area • eBird Canada http://ebird.org/content/canada/	effects and mitigation measures.	

Table 1.2.1 Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes <u>Rationale;</u> Uncommon to rare in Ecoregion 3E.	Cliffs: B157-159 B173-175 B201-203 Talus: B166-168 B182-184 Characteristic plant species of cliffs in 3E may include: *Polypodium virginianum, Woodsia ilvensis, Cystopteris fragilis, Danthonia spicata, Dechampsia flexuosa, Aquilegia Canadensis, Sibbaldiopsis tridentate, Selaginella rupestris, Cladina rangiferina, Cladina mitis, Vaccinium angustifolium, Arctostaphylus uva-ursi, Diervilla lonicera, Betula papyrifera* Characteristic plant species of talus in 3E may include: *Polypodium virginanum, Agrostis scabra, Aralis hispida, Woodisa ilvensis, Aralia nudicaulis, Cladina rangiferina, Cladina mitis, Diervilla lonicera, Alnus viridis ssp. crispa, Prunus pensylvanica, Betula papyrifera, Populus tremuloides*	Cliffs: Vertical consolidate bedrock communities with a minimum height of 3 m and a slope of >60° or 173%. They have limited plant growth and species diversification. Ground cover dominated by lichen and bryophytes. Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Talus: Rock accumulations at the base of cliffs, or former cobble beaches left behind after lake levels drop. These have a skeletal soil structure, and can have organic accumulations between the rocks. Lichen cover usually extensive. Trees and shrubs are stunted. Herbs and graminoids limited to patches of organic or mineral soil accumulations.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • Noble 1982 • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resources Inventory (FRI) • Aerial photographs • ANSI Site District and Inventory reports • Significant Wildlife Habitat Technical Guide (OMNRF 2000) • Topographical maps of area • Soil survey reports and Northern Ontario Engineering Geology Terrain Study mapping (NOEGTS). • Local naturalists • High cliffs (>40 m) can be queried from Digital Elevation Models. • Conservation Authority	All cliff and talus slope ecosites are considered significant. The cliff or talus slope ecosite area is the SWH. SWHMiST Index #21 provides development effects and mitigation measures.	Habitats with the Alternative Solutions LSAs are not representative of key habitat types. No further evaluation undertaken.
Rare Treed Type: Red and White Pine Stands **<u>Rationale;</u>** Uncommon to rare in central and northern areas of Ecoregion 3E – they amount to less than 1% of the total forest	B011 B015 B023 B027 B033 B039 B048 B054 B064 B069 B081 B087 B097 B103 B113 B118	Red and White Pine stands attain their northern limit near the northern margin of the Clay Belt. They occur as sporadic, small stands and are generally found on dry, often exposed, and rocky sites. However, these conditions can vary.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resource Inventory (FRI). • Noble 1982 • Crins et al. 2009 • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.	Stands should have > 10% absolute cover or > 35% relative cover of white and/or red pine. The red and white pine ecosite is the SWH. • SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Rare Treed Type: Black Ash **<u>Rationale;</u>** Uncommon to rare in central and northern areas of	B019 B028 B056 B059 B071 B076 B089	Black Ash stands are found within low lying, predominantly alluvial material throughout the Clay Belt.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • Noble 1982 • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer).	Stands should have > 10% absolute cover or > 35% relative cover of Black Ash. The black ash ecosite is the SWH.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Ecoregion 3E.	B092 B105 B108 B120 B125		• Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resource Inventory (FRI) – but may be under reported, especially along rivers. • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Conservation Authority	• SWHMiST Index #37 provides direction for rare species and habitats.	
Rare Treed Type: Elm **<u>Rationale;</u>** Uncommon to rare in central and northern areas of Ecoregion 3E.	B019 B043 B056 B059 B071 B076 B089 B092 B105 B108 B120 B125	Elm stands are found within low lying, predominantly alluvial material throughout the Clay Belt.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • Noble 1982 • Crins et al. 2009 • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resource Inventory (FRI) – but may be under reported, especially along rivers. • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Conservation Authority	Stands should have > 10% absolute cover or > 35% relative cover of Elm. The elm ecosite is the SWH. • SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Rare Treed Type: Oak **<u>Rationale;</u>** Only found in southern portions of Ecoregion 3E.	B017 B019 B028 B041 B043 B057 B059 B072 B076 B090 B092 B106 B108 B121 B125	Hardwood canopy within lower topographic positions. Fresh to moist moisture regimes with variable substrate textures.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resource Inventory (FRI) – but may be under reported, especially along rivers. • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Conservation Authority	Stands should have > 10% absolute cover or > 35% relative cover of Oak. The oak ecosite is the SWH. • SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Rare Treed Type: Red and Sugar Maple **<u>Rationale;</u>** Uncommon to rare in central and northern areas of Ecoregion 3E.	B018 B019 B028 B042 B043 B058 B059 B073(Mh) B074(Mr) B075 B076 B091 B092 B107 B108 B122(Mh) B123(Mr) B124 B125	Hardwood canopy containing red and/or sugar maple. Generally on warmer-than-normal sites with a higher nutrient regime.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • Noble 1982 • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009. • Forest Resource Inventory (FRI).	Stands should have > 10% absolute cover or > 35% relative cover of red and/or sugar maple. The red and/or sugar maple ecosite is the SWH. • SWHMiST Index #37 provides direction for rare	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
			• Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Conservation Authority	species and habitats.	
Rare Treed Type: Yellow Birch **Rationale;** Uncommon to rare in central and northern areas of Ecoregion 3E.	B019 B028 B040 B043 B055 B059 B070 B076 B088 B092 B0104 B108 B119 B125	Hardwood canopy consisting mostly of yellow birch. Generally on warmer-than-normal sites with a higher nutrient regime.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Locations may be available within NRVIS layer: Significant Ecological Area (SIGECOL.shp). • Banton et al. 2009 • Forest Resource Inventory (FRI) – some stands may have been misclassified as white birch. • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Conservation Authority	Stands should have > 10% absolute cover or > 35% relative cover of yellow birch. The yellow birch ecosite is the SWH. • SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Rock Barren **Rationale; Rock barrens that are close to roads or trails can be significantly impacted by invasive species and/or trampling**	**Calcareous Rock Barren B179** **B180** **B181** **Precambrian Rock Barren** **B163** **B164** **B165** **Characteristic plant species of rock barrens in 3E may include: *Danthonia spicata, Dechampsia flexuosa, Carex pensylvanica, Corydalis sempervirens, Aralis hispida, Agrostis scabra, Aralia nudicaulis, Pteridium aquilinum , Vaccinium angustifolium, Rubus spp., Diervilla lonicera, Betula papyrifera, Pinus banksiana, Populus tremuloides***	**Exposed bedrock areas (mostly exposed rock with < 5 cm mineral or < 10 cm organic material) and < 25% vascular vegetation.**	• **OMNRF Forester, Ecologist or Biologist may be aware of locations.** • **Noble 1982** • **NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer).** • **Banton et al. 2009** • **Forest Resource Inventory (FRI).** • **Conservation Authority.** • **Soil survey reports and Northern Ontario Engineering Geology Terrain Study mapping (NOEGTS).**	**All rock barren ecosites are considered significant .** **The rock barren ecosite area is the SWH.** • **SWHMiST Index #21 provides development effects and mitigation measures.**	**Rock Barrens are present within all Alternative Solutions LSAs. Considered further in main text.**
Sand Dunes Notably: **American Dune Grass Type** **Rationale;** Uncommon to rare in Ecoregion 3E.	B005 B006 B142 Characteristic plant species of sand dunes grass type in 3E may include: *Leymus mollis, Lathyrus japonicus, Prunus pumila var. pumila*	Exposed mineral material community often associated with shorelines of lakes or exposed inland mineral material that has been shaped by eolian (wind) processes. **American Dune Grass Type** Open grassy sand dunes with Indicator Species: American dune grass, beach	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Banton et al. 2009 • Forest Resource Inventory (FRI). • Soil survey reports and Northern Ontario Engineering Geology Terrain Study mapping (NOEGTS).	Field studies confirm the presence of any of the characteristic plant species. The American Dune Grass Type of Sand Dune ecosite area is the SWH. B006 ecosites are considered	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
		pea, and sand cherry. Scattered white spruce forest islands may also occur.	• Conservation Authority	rare in 3E and are considered SWH. SWHMiST Index #37 provides direction for rare species and habitats.	
Great Lakes Arctic-Alpine Shoreline Type **<u>Rationale:</u>** Rare in Ecoregion 3E	B161 B162 Characteristic plant species of Great Lakes arctic-alpine shoreline type in 3E may include: *Carex capillaries, Castilleja septentrionalis, Cypripedium passerinum, Dryopteris fragrans, Elymus mollis, Empetrum nigrum, Euphrasia hudsoniana, Festuca brachyphylla, Hedysarum alpinum, Listera borealis, Lycopodium selago, Pinguicula vulgaris, Poa glauca, Poa glaucantha, Polygonum viviparum, Primula mistassinica, Sagina nodosa, Saxifraga aizoon, Scirpus cespitosus, Selaginella selanginoides, Tofieldia palustris, Trisetum spicatum, Vaccinium uliginosum, Vaccinium vitisidaea, Woodsia glabella*	Found on the shoreline of Lake Superior on open basic bedrock. Vegetation consists mostly of arctic-alpine species.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Banton et al. 2009 • Conservation Authority	Limited to the shore of the Great Lakes. All Great Lakes Arctic-Alpine Shoreline Type ecosites are considered significant, The Great Lakes Arctic-Alpine Shoreline Type ecosite area is the SWH. SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Hardwood Swamps **<u>Rationale;</u>** Rare in Ecoregion 3E.	B130 B131 B132 B133	Dominant hardwood canopy that is located within lower topographic positions and subject to flooding. Nutrient regime is rich and substrate is mostly moderately deep to deep with variable textures.	• OMNRF Forester, Ecologist or Biologist may be aware of locations. • NHIC may have information on known locations. This information is available on their website (Biodiversity Explorer). • Banton et al. 2009 • Conservation Authority. • Riley 1994	All hardwood swamp ecosites are considered significant. The hardwood swamp ecosite is the SWH. • SWHMiST Index #37 provides direction for rare species and habitats.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Table 1.2.2 Specialized Habitats for Wildelife considered SWH.

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area **<u>Rationale:</u> Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant**	**American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Common Merganser Red-breasted Merganser Mallard Canada Goose American Widgeon Bufflehead Common Goldeneye**	**All upland habitats located adjacent to ELC ecosites; B129-135 B140-152 B224 are Candidate SWH: Note: includes adjacency to provincially Significant Wetlands**	**A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.** • **Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests.** • **Wood Ducks, Bufflehead, Common Goldeneye and Hooded Mergansers utilize large diameter trees in woodlands for cavity nest sites.** **<u>Information Sources</u>** • **Ducks Unlimited staff may know the locations of particularly productive nesting sites.** • **OMNRF District Staff** • **OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.** • **Reports and other information available from CAs.** • **eBird Canada http://ebird.org/content/canada/**	**Studies confirmed:** • **Presence of 3 or more nesting pairs for listed species excluding Mallards, or;** • **Presence of 10 or more nesting pairs for listed species including Mallards.** • **Nesting studies should be completed during the spring breeding season (April - July). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".** • **A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.** • **SWHMiST Index #25 provides development effects and mitigation measures.**	**Potentially suitable habitat types (*i.e.* fens, marshes, swamps) occur in all Alternative Solution LSAs. Considered further in main text.**
Bald Eagle and Osprey Nesting Habitat **<u>Rationale:</u> Nests are used annually by these species. Suitable nesting locations may be impacted due to shoreline development**	**Osprey Special Concern Bald Eagle**	**Treed communities directly adjacent to riparian areas – rivers, lakes, ponds and wetlands**	**Nests are associated with lakes, ponds, rivers or wetlands along treed shorelines, islands, or on structures over water. Osprey nests are usually at the top of a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made objects such as telephone or hydro poles will not normally be considered as SWH, however the OMNRF District retains discretion regarding significance of constructed nesting platforms.** **<u>Information Sources</u>** • **NHIC compiles all known nesting sites for Bald Eagles in Ontario.** • **OMNRF values information (LIO/NRVIS) will list known nesting locations** • **Nature Counts, Ontario Nest Records Scheme data.** • **OMNRF Ecologist or Biologist may be aware of locations of nesting raptors. In addition, these staff may know local naturalists that may be aware of the locations of raptor nests.** • **Sustainable Forestry Licence (SFL) companies will identify additional nesting locations through field operations.** • **Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented** • **Reports and other information available from CAs.** • **Local naturalists may know of other locations.** • **Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance.** • **eBird Canada http://ebird.org/content/canada/**	**Studies confirm:** • **One or more active Osprey or Bald Eagle nests in an area** • **Considered SWH if the nest has been used or suspected of use within the past 5 years; unless documented that the nest and other associated nests in the nesting area have been unoccupied within the past 3 consecutive years by Osprey or Bald Eagle.** • **Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH.** • **For an Osprey, the active nest and a 300 m radius around the nest is the SWH** • **For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on sight lines from the nest to the development and inclusion of perching and foraging habitat** • **SWHMiST Index #26 provides development effects and mitigation measures** • **Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"**	**A Bald Eagle was observed flying over Alternative Solution #1 LSA. Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Woodland Raptor Nesting Habitat **<u>Rationale:</u> These habitats may be used annually by some species. Nests sites for these species are rarely identified in advance site investigations;**	**Red-tailed Hawk Great Horned Owl: Broad-winged Hawk Sharp-shinned Hawk Merlin Coopers Hawk Northern Goshawk Great gray Owl Long-eared Owl Common Raven Cavity Nesters/users: Saw-whet Owl Boreal Owl Barred Owl Northern Hawk Owl American Kestrel (Northern Flying Squirrel use cavities as roosting sites in winter)**	**May be found in all forested ELC Ecosites.**	**All natural or conifer plantation woodland/forest stands.** • **Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Merlin or Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands.** • **Some woodland raptors rely on cavity trees for nesting. They do not excavate their own cavities, but rely on natural cavities of sufficient size and those excavated by Pileated Woodpeckers. Larger diameter trees are used most frequently, with nest cavities most often found in trembling aspen.** • **Nests may be used again, or a new nest may be in close proximity to old nest.** **<u>Information Sources</u>** • **OMNRF Ecologist or Biologist may be aware of locations of nesting raptors.** • **Sustainable Forestry Licence (SFL) companies will identify additional nesting locations through field operations.** • **Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented.** • **Check data from Bird Studies Canada.** • **Reports and other information available from CAs.** • **Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance.** • **eBird Canada http://ebird.org/content/canada/**	**Studies confirm:** • **Presence of 1 or more occupied nests from species list is considered significant.** • **Northern Goshawk – A 400m radius around the nest or 28 ha of suitable habitat is the SWH.** • **Barred Owl – A 200m radius around the nest is the SWH.** • **Broad-winged Hawk, Coopers Hawk, Great Horned Owl, Red-tailed Hawk, Long-eared Owl – A 100m radius around the nest is the SWH** • **Merlin and Sharp-Shinned Hawk – A 50m radius around the nest is the SWH.** • **Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.** • **SWHMiST Index #27 provides development effects and mitigation measures.**	**Two Broad-winged Hawks were observed flying over Alternative Solution #1 LSA. Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text.**
Turtle Nesting Areas <u>Rationale:</u> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	**Painted Turtle <u>Special Concern Species</u> Snapping Turtle**	**B003 B006-007 B031 B171-172 B187-188**	• **Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.** • **For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.** • **Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.** **<u>Information Sources</u>** • **Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).** • **Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.** • **Ontario Reptile and Amphibian Atlas (Ontario Nature).** • **NHIC** • **Use aerial photographs and maps to narrow the search for prime nesting areas including shoreline beaches located near weedy areas of wetlands, lake and river shorelines, road embankments near turtle habitat, and stream**	**Studies confirm:** • **One or more turtle nest is a SWH.** • **The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area. dependant on slope, riparian vegetation and adjacent land use is the SWH.** • **Travel routes from wetland to nesting area are to be considered within the SWH.** • **Field investigations should be conducted in prime nesting season typically late spring to early summer.** • **SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.**	**Although ELC Ecosites do not occur within the LSAs, it is anticipated there is potential turtle nesting habitat associated with watercourse, wetlands, or other waterbodies in the RSA. Considered further in main text.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			crossings/culverts. • **Reports and other information available from CAs.** • **Sightings by local Naturalist groups**		
Seeps and Springs **<u>Rationale;</u>** **Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.**	**Selected wildlife species that utilize this feature:** **Ruffed Grouse** **Moose** **White-tailed Deer** **Black bear** **Northern two-lined Salamander**	**Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.**	**Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.** • **Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.** **<u>Information Sources</u>** • **Topographical Map** • **Thermography.** • **Hydrological surveys conducted by CAs and MOE.** • **Local naturalists and landowners may know some locations.** • **Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.**	**Field Studies confirm:** • **Presence of a site with 2 or more seeps/springs should be considered SWH.** • **The area of ELC ecosite or an ecoelement within the ecosite containing the seeps/springs is the SWH. The protection of the function of the feature considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.** • **SWHMiST Index #30 provides development effects and mitigation measures.**	**Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text.**
Aquatic Feeding Habitat **<u>Rationale;</u>** Aquatic Feeding habitats are an extremely important habitat component for moose and other wildlife as they supply important nutrients. Forest cover adjacent to these areas is important as well to provide for summer thermal cover, screening and escape cover.	Moose	Habitat may be found in all forested ecosites adjacent to water.	• OMNRF maps these locations on Crown land and rate the site on a scale of 1 – 4, with 4 having the greatest potential. Feeding sites classed 3 or 4 are candidate significant areas. • OMNRF District should be contacted where Class 2 feeding sites are identified as these may be considered significant by OMNRF if higher quality sites are absent in the surrounding landscape. • Identification of Moose Aquatic Feeding Areas should follow the method outlined in OMNRF's Selected Wildlife and Habitat Features: Inventory Manual. • Wetlands and isolated embayments in rivers or lakes which provide an abundance of submerged aquatic vegetation such as pondweeds, water milfoil and yellow water lily are preferred sites. Adjacent stands of lowland conifer or mixed woods will provide cover and shade. <u>Information Sources</u> • Local naturalists and landowners may know some locations. • OMNRF values information (NRVIS) may list known locations • OMNRF Biologist may be aware of locations. • Sustainable Forestry Licence (SFL) companies may identify additional MAFA locations through field operations. • Topographical Maps together with aerial photographs will help locate potential sites.	• Moose Aquatic Feeding Habitat identified and ranked 3 or 4 by OMNRF are considered SWH. • The area of the habitat includes the ELC ecosite area and adjacent stands (120m) of mixed or conifer forest, particularly those that provide thermal cover and/or travel corridors to other habitat features are considered significant. • Surveys should be conducted from mid June to end of July when submergent aquatic vegetation has peaked. • Surveys should confirm the use of the site by moose or other species through observation of animal presence, tracks, *etc*. • If a SWH is determined for Aquatic Feeding Habitat then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #24 provides development effects and mitigation measures.	MNRF Wildlife Values Area mapping does not identify this Wildlife Habitat in the Alternative Solutions LSAs. No further evaluation undertaken.
Mineral Licks **<u>Rationale;</u> Mineral licks are a valuable habitat component but are also very rare on the landscape.**	**Moose** **Porcupine**	**Habitat may be found in all treed ecosites.**	**This habitat component is found in upwelling groundwater and the soil around these seepage areas. It typically occurs in areas of sedimentary and volcanic bedrock. In areas of granitic bedrock, the site is usually overlain with calcareous glacial till.** **<u>Information Sources</u>** • **Local naturalists and landowners may know some locations.** • **OMNRF values information (NRVIS) may list known locations** • **OMNRF Ecologist or Biologist may be aware of locations.** • **Sustainable Forestry Licence (SFL) companies may identify**	• **The area of the habitat is the wetland, seep or spring containing the mineral lick and 120m of undisturbed contiguous forest around the site dependant on level of disturbance in the area.** • **Field investigations should be conducted in early spring prior to leaf out. Since sites will be very difficult to locate, consider using a small aircraft.** • **SWHMiST Index #29 provides development**	**Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			additional locations through field operations.	effects and mitigation measures.	
Denning Sites for Mink, Otter, Gray Wolf Eastern Wolf Canada Lynx Marten Fisher Black Bear **<u>Rationale:</u> Species are important furbearing mammals and den sites can be a limiting factor in sustaining populations.**	**Mink Otter Gray Wolf Canada Lynx** **<u>Special Concern</u> Eastern Wolf** **<u>Cavity Users</u> Marten Fisher**	**Habitat may be found in all treed ecosites.**	**Mink prefer shorelines dominated by coniferous or mixed forests with dens usually underground. Mink will often use old muskrat lodges. Mink may den in root masses along shorelines of water bodies.** **Otters prefer undisturbed shorelines along water bodies that support productive fish populations with abundant shrubby vegetation and downed woody debris for denning. They often use old beaver lodges or log jams and crevices in rock piles.** **Marten and fisher share the same general habitat, requiring large tracts of coniferous or mixed forests of mature or older age classes. Denning sites are often in cavities in large trees or under large downed woody debris.** **Wolves prefer a more interior forest condition for locating their den sites. Wolves often select sandy sites, sloped for excavation (esker areas should be examined as potentially key sites). Wolf dens are often located in close proximity to wetlands.** **Lynx den sites are most often associated with the presence of downed woody debris.** **Black bears, particularly sub-adults, will often den in the base of hollow trees. In 3E such trees are rare and primarily consist of large diameter cedar or sometimes large white spruce.** **<u>Information Sources</u>** • **Local naturalists and landowners may know some locations.** • **OMNRF values information (NRVIS) may list known locations.** • **OMNRF Ecologist or Biologist may be aware of locations.** • **Sustainable Forestry Licence (SFL) companies may identify additional denning sites through field operations.** • **Topographical Maps together with aerial photographs will help locate potential sites.** • **Local trappers may know the location of prime denning sites.**	• **Wolf den sites (gray or eastern) and a 200m radius will be considered significant.** • **Any known active denning site and a 100 m radius around it with the remaining listed species is considered to be significant.** • **Extensive searches for denning sites are not recommended as they are very difficult to locate but protection of most suitable habitat should be considered during planning.** • **SWHMiST Index #31 provides development effects and mitigation measures.**	**Potentially suitable habitat within woodland communities occurs in all Alternative Solution LSAs. Considered further in main text**
Rendezvous Sites	**Gray Wolf** **<u>Special Concern</u> Eastern Wolf**	**Isolated open areas including bogs, fens, other wetlands, meadows, clearcuts.**	• **Rendezvous sites may be found in a variety of habitats such as open bogs, burns, clearcuts, beaver meadows, and open forest.** • **Rendezvous sites are often used by wolf packs during multiple years.** • **Areas used as rendezvous sites one year may be used as den sites in a subsequent year.**	**The identified rendezvous site and a 200 m radius from the site are considered the SWH.**	**Potentially suitable habitat within wetland communities occurs in all Alternative Solution LSAs. Considered further in main text.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• Wolves appear to have a low tolerance for human activity near rendezvous sites.		
Amphibian Breeding Habitat (Wetlands) **<u>Rationale;</u> Wetlands supporting breeding for these amphibian species are extremely important within Northern Ontario landscapes.**	**Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Boreal Chorus Frog Northern Leopard Frog Green Frog Mink Frog Wood Frog Spring Peeper**	**Rich swamps and thicket, vernal/seasonal pooling, riparian and variety of wetland interiors and margins B128-135 B141-152 B223-224 Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (*e.g.* Green Frog) may be adjacent to woodlands.**	• Wetlands and pools (including vernal pools) >500m^2 (about 25m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on OMNRF mapping and could be important amphibian breeding habitats • Wetlands and pools need to persist until mid-July • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. **<u>Information Sources</u>** • Ontario Herpetofaunal Summary Atlas • Ontario Reptile and Amphibian Atlas (Ontario Nature). • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Ecologist or Biologist may know of populations, wetland evaluations may be a good source of information. • Use maps or aerial photography to locate marsh habitat. • Reports and other information available from CAs.	**Studies confirm:** • Presence of breeding population of 1 or more of the listed newt/salamander species or 3 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 3 or more of the listed frog/toad species with Call Level Codes of 3. • The ELC ecosite area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (Apr to June) when amphibians are migrating, calling and breeding within the wetland habitats. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #15 provides development effects and mitigation measures.	**Potentially suitable habitat within wetland communities occurs in all Alternative Solution LSAs. Considered further in main text.**
Amphibian Breeding Habitat (Woodland). <u>Rationale;</u> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	**Eastern Newt Blue-spotted Salamander Spotted Salamander Four-toed Salamander Spring Peeper Wood Frog American Toad**	**All treed upland ecosites, however more likely on fine textured moist ecosites (*e.g.*, B119-125) The wetland breeding ponds (including vernal pools) may be permanent or seasonal, large or small in size and could be located within or adjacent to the woodland.**	• Presence of a wetland, lake or pond of area >500m^2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). • The wetland, lake or pond and surrounding forest, would be the Candidate SWH. Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Pools need to be present until mid July. • Breeding pools within the woodland or the shortest distance from forest habitat are more significant because of reduced risk to migrating amphibians and more likely to be used. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. **<u>Information Sources</u>** • Ontario Herpetofaunal Summary Atlas for historical records • Ontario Reptile and Amphibian Atlas (Ontario Nature). • Local landowners may also provide assistance as they may hear springtime choruses of amphibians on their property. • Contact local OMNRF Ecologist or Biologist and wetland evaluations. • Local field naturalist clubs	**Studies confirm;** • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 100 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • The habitat is the wetland and treed area or adjacent ELC treed ecosites. The amount of area protected is dependent on slope, riparian vegetation, high water mark, density and height of trees and ground/surface water condition. • A combination of observational study and call count surveys will be required during the spring when amphibians are migrating or are concentrated around suitable breeding habitat within the woodland. • SWHMiST Index #14 provides development effects and mitigation measures.	**Potentially suitable habitat occurs in all Alternative Solution LSAs. Considered further in main text.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• **Canadian Wildlife Service Amphibian Road Call Survey information.** • **Ontario Vernal Pool Association (http://www.ontariovernalpools.org/)**		
Mast Producing Areas **<u>Rationale:</u>** Mast is a very important food requirement for many wildlife species.	Examples of wildlife species utilizing this habitat: Black Bear White-tailed deer Ruffed Grouse	All shrub and treed ecosites capable of producing mast.	• Significant tree species include mountain ash and pin cherry. Significant shrub species include blueberries, raspberries, beaked hazel and choke cherry. • Some Oak or other hard-mast producing species may be present in 3E and significance should be evaluated as encountered because of its importance as a food source for various wildlife species. • Recently disturbed sites (fire or logging), large bedrock outcroppings, forest openings or utility corridors >1 ha provide excellent sites for mast producing shrubs. • Permanent open sites providing longterm food sources are more significant. <u>Information Sources</u> • OMNRF Ecologists, Biologists or Foresters may know of important feeding sites or areas with high composition of mast producing trees through OMNRF Wildlife Food Surveys. • FRI maps to locate stands with mast producing trees. • SFL companies may know of areas through regular forest inventory work. • Local naturalists clubs or hunters may be aware of important locations. • Aerial photography will assist in locating forest openings and bedrock outcrops.	• Natural open sites with abundant (50% ground cover) mast producing shrubs (*e.g.* Raspberry, Blueberry and Beaked hazel) species are considered significant. • Anthropogenic disturbances (logging or otherwise) may be considered significant at the discretion of OMNRF. • Area of the early successional habitat or treed ELC ecosite with mast-producing trees or shrubs is the SWH. • Surveys should be conducted during the active growing season from June to August however may be assessed at other times particularly for tree species. • SWHMiST Index #3 provides development effects and mitigation measures.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Sharp-tailed Grouse Leks **<u>Rationale:</u>** Leks are an important habitat feature required to maintain populations of sharp-tailed	Sharp-tailed Grouse	B029-031 B044-046 B060-062 B077-079 B093-095 B109-111 B126 B136-141	• The lek or dancing ground consists of bare, grassy area as the core of the lekking area, and may contain some sparse shrubland. • There is often a knoll or slightly elevated rise in topography associated with the site. This is a better drained site less likely to collect water. • Leks are typically a grassy field/meadow separated by >15ha from adjacent shrublands and >30ha from adjacent treed areas. • Field/meadows are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous stands. • Field/meadows are to be as undisturbed as possible with low intensities of agriculture (light grazing or late haying). • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting. <u>Information Sources</u> • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas • eBird Canada http://ebird.org/content/canada/	Studies confirming lek habitat are to be completed from March to June. • Any site confirmed with sharptailed grouse courtship activities is considered significant. • The ELC ecosite plus a 200 meter area with shrub or deciduous trees is the lek habitat. • SWHMiST Index #32 provides development effects and mitigation measures.	Habitats with the Alternative Solutions LSAs do not meet the habitat criteria. No further evaluation undertaken.

Table 1.3 Habitats of Species of Conservation Concern considered SWH.

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Bird Breeding Habitat **<u>Rationale;</u> Rich wetlands for these bird species are very productive and rare in Northern Ontario landscapes.**	**American Bittern Sora Red-necked Grebe Pied-billed Grebe Ring-necked Duck Lesser Scaup Ruddy Duck American Coot Sandhill Crane Virginia Rail Trumpeter Swan Special Concern: Yellow Rail Black Tern**	**Ecosites: B134-B152**	• **Nesting occurs in wetlands.** • **All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.** **<u>Information Sources</u>** • **Contact OMNRF, wetland evaluations are a good source of information.** • **Local naturalist clubs** • **NHIC Records.** • **Reports and other information available from CAs.** • **Ontario Breeding Bird Atlas.** • **eBird Canada http://ebird.org/content/canada/**	**Studies confirm:** • **Presence of any combination of 5 or more of the listed species.** • **Presence of one or more breeding pair of trumpeter swans is significant.** • **Note: any wetland with breeding of 1 or more Black Terns or Yellow Rail is SWH.** • **Area of the ELC ecosite is the SWH.** • **Breeding surveys should be done in May-July when these species are actively nesting in wetland habitats.** • **Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".** • **SWHMiST Index #35 provides development effects and mitigation measures.**	**Potentially suitable habitat within wetland communities occurs in all Alternative Solution LSAs. Considered further in main text.**
Open Country Bird Breeding Habitat **<u>Rationale;</u>** This wildlife habitat is declining throughout Ontario and North America.	Vesper Sparrow Le Conte's Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	All Field, Meadow and Sparse Shrub ecosites B08-09 B20-21 B29-31 B44-46 B60-62 B77-79 B93-95 B109-111	Large field/meadow areas (includes natural and cultural fields and meadows) >30 ha. Field/meadow not Class 1 or 2 agricultural lands, and not being actively used for farming (*i.e.* no row cropping or intensive hay or livestock pasturing in the last 5 years). Field/meadow sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger Field/meadow areas than the common Field/meadow species. <u>Information Sources</u> • Use Agricultural land classification maps with aerial photographs to determine the potential Fields/meadows that might be candidate sites. • Ask local birders for location of Fields/meadows that support abundant and species rich populations of area-sensitive species. • Reports and other information available from CAs. • Ontario Breeding Bird Atlas. • eBird Canada http://ebird.org/content/canada/	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #32 provides development effects and mitigation measures.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.

Shrub/Early Successional Bird Breeding Habitat **<u>Rationale:</u>** This wildlife habitat is declining throughout Ontario and North America.	Clay-colored Sparrow Field Sparrow Ruffed Grouse Eastern Kingbird American Woodcock	All sparse shrub and shrub ecosites B09-10 B21-22 B31-32 B46-47 B62-63 B79-80 B95-96 B111-112 B134-135	Large natural field areas succeeding to shrub and thicket habitats>30 ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (*i.e.* no row-cropping, haying or live-stock pasturing in the last 5 years). Larger shrub thicket habitats (>30 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands. <u>Information Sources</u> • Use agricultural land classification maps and recent aerial photographs to determine the amount of potential shrub and thicket habitats. • Ask local birders for location of shrub and thicket habitats that support abundant and species rich populations of area-sensitive species. • Reports and other information available from CAs. • Ontario Breeding Bird Atlas • eBird Canada http://ebird.org/content/canada/	Field Studies confirm: • Presence of nesting or breeding of 2 or more of species listed. • The area of the SWH is the contiguous ELC ecosite area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" SWHMiST Index #33 provides development effects and mitigation measures.	Habitats with the Alternative Solutions LSAs are not representative of key habitat. No further evaluation undertaken.
Special Concern and Rare Wildlife Species **<u>Rationale:</u> These species are quite rare or have experienced significant population declines in Ontario.**	**All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.**	**All plant and animal element occurrences (EO).** **Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.**	**When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or Provincially rare species; linking candidate habitat on the site to ELC Ecosites needs to be completed.** **<u>Information Sources</u>** • **Natural Heritage Information Centre will have the Special Concern and Provincially Rare (S1-S3, SH) species lists and element occurrences for these species.** • **NHIC Website: Biodiversity Explorer https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB /mainSubmit.do** • **Expert advice should be sought as many of the rare spp. have little information available about their requirements.** • **Ontario Breeding Bird Atlas**	**Studies Confirm:** • **Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable.** • **Habitat form and function needs to be assessed from the assessment of vegetation types and an area of significant habitat that protects the rare or special concern species identified.** • **The habitat needs to be easily mapped and cover an important life stage component for a species (*e.g.* specific nesting habitat or foraging habitat).** • **The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH; this must be delineated through detailed field studies.** • **SWHMiST Index #37 provides development effects and mitigation measures.**	**Canada Warbler (SC), Evening Grosbeak (SC), Olive-sided Flycatcher (SC), Rusty Blackbird (SC), and Wood Thrush (SC) were confirmed during Azimuth's field surveys or MNRF NHIC background review. Considered further in main text.**

Table 8: Fish and Fish Habitat Summary Table

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB1	Route 1 Route 4	Indirect	Coldwater	Small drainage feature on aerial mapping. No defined channel observed.	Michipicoten River approx. 1km downstream with: • Brook Stickleback, **Brook Trout**, Northern Redbelly Dace, **Slimy Sculpin** (MNR, 2023a). • Brook Stickleback, **Brook Trout, Burbot**, Chub, Finescale Dace, **Mottled Sculpin, Slimy Sculpin,** Spottail Shiner, White Sucker (MNR, 2022).
WB2	Route 1 Route 4	Direct	Coldwater	Creek feature observed. Connected to Michipicoten River approx. 1.6km downstream.	Michipicoten River approx. 1.6km downstream with: • Brook Stickleback, **Brook Trout**, Northern Redbelly Dace, **Slimy Sculpin** (MNR, 2023a). • Brook Stickleback, **Brook Trout, Burbot**, Chub, Finescale Dace, **Mottled Sculpin, Slimy Sculpin,** Spottail Shiner, White Sucker (MNR, 2022).
WB3	Route 2 Route 3	Direct	Coldwater	Small tributary/bay connected to Whitefish Lake. Surficially connected to Michipicoten River based on MNRF mapping approx. 1km downstream.	Whitefish Lake: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB4	Route 2 Route 3	Direct	Coolwater	Small wetland/pond feature. No connection noted to downstream fish habitat feature on aerials. Large enough to be expected to host fish, likely baitfish/coolwater fish community.	None available.
WB5	Route 1 Route 4	Indirect	Coolwater	Small drainage feature with a small corrugated steel pipe culvert across Highway 101. No defined channel observed.	None available.
WB6	Route 2 Route 3	Indirect	Coldwater	Small, poorly defined drainage feature on aerial mapping. Connected to Whitefish Lake approx. 0.7km downstream.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB7	Route 2 Route 3	Indirect	Coldwater	Small, poorly defined drainage feature on aerial mapping. Connected to Whitefish Lake approx. 0.9km downstream.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB8	Route 1 Route 2 Route 3 Route 4	Indirect	Coldwater	Small drainage feature observed with box culvert crossing Highway 101. Connected to Whitefish Lake approx. 2km downstream.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB9	Route 1 Route 2 Route 3 Route 4	Indirect	Coldwater	Small drainage feature observed with box culvert across Highway 101. Connected to Whitefish Lake approx. 2.7km downstream.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB10	Route 2 Route 3	Direct	Coldwater	Drainage feature observed. Connected to Whitefish Lake approx. 2km downstream. May function as indirect, channel form not clear on aerials.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB11	Route 1 Route 4	Direct	Coldwater	Drainage feature on aerial mapping. Connected to Whitefish Lake approx. 2.6km downstream. May function as indirect, channel form not clear on aerials.	None available. Whitefish Lake downstream: • Cisco, **Lake Whitefish**, Northern Pike, Walleye, White Sucker, Smallmouth Bass (MNR, 2023a). • **Lake Trout, Burbot** (MNR, 2022).
WB12	Route 1 Route 4	Indirect	Coldwater	No defined feature on aerial mapping. Connected to WB11 approx. 650m downstream.	None available.

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB13	Route 1 Route 4	Indirect	Coldwater	No defined feature on aerial mapping. Connected to WB12 approx. 400m downstream.	None available.
WB14	Route 2 Route 3	Indirect	Coldwater	No defined feature. Connected to WB12 approx. 800m downstream.	None available.
WB15	Route 1 Route 4	Indirect	Coldwater	No defined feature on aerial mapping. Connected to WB12 approx. 1.8km downstream.	None available.
WB16	Route 2 Route 3	Direct	Coolwater	Small wetland feature. May be created due to beaver dam. Large enough to be expected to host fish, likely baitfish/coolwater fish community.	None available.
WB17	Route 1 Route 4	Indirect	Coolwater	Small, poorly defined drainage feature connected to WB16 feature approx. 350 downstream.	None available.
WB18	Route 2 Route 3	Indirect	Coolwater	Small, poorly defined drainage feature connected to WB16 feature approx. 350 downstream.	None available.
WB19	Route 2 Route 3	Indirect	Coolwater	Appears to be GIS generated feature and/or ATV trail. May need field confirmation. Connected to WB18 approx. 250km downstream.	None available.
WB20	Route 1 Route 4	Indirect	Coolwater	Appears to be poorly defined lowland drainage area. May drain to WB17 or WB19.	None available.
WB21	Route 2 Route 3	Indirect	Coolwater	Appears to be poorly defined lowland drainage area connected to WB20.	None available.
WB22	Route 4	Indirect	Coldwater	Appears to be GIS generated feature. May need field confirmation.	Connected to Grant Lake downstream, which is assumed to be coldwater fish habitat.
WB23	Route 4	Indirect	Coldwater	Poorly defined feature, possible GIS generated feature. May need field confirmation.	Connected to Grant Lake downstream, which is assumed to be coldwater fish habitat based on connection to Hawk Lake/River (known coldwater system).
WB24	Route 1 Route 2 Route 3	Indirect	Coldwater	Poorly defined feature, possible GIS generated feature. May need field confirmation.	Connected to Grant Lake downstream, which is assumed to be coldwater fish habitat based on connection to Hawk Lake/River (known coldwater system).
WB25	Route 3	Direct	Coldwater	Defined creek/wetland with ponded areas and beaver dams. Appears to be connected to Hawk Lake downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB26	Route 1 Route 2	Direct	Coldwater	Defined creek/wetland with ponded areas and beaver dams. Appears to be connected to Hawk Lake/River downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB27	Route 4	Direct	Coldwater	Poorly defined creek/wetland area. Appears to be connected to Hawk Lake/River downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB28	Route 3	Direct	Coldwater	Poorly defined creek/wetland area. Appears to be connected to Hawk Lake/River downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB29	Route 1 Route 2	Direct	Coldwater	Poorly defined creek/wetland area. Appears to be connected to Hawk Lake downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB30	Route 4	Direct	Coldwater	Poorly defined creek/wetland area.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB31	Route 1 Route 2 Route 3 Route 4	Direct	Coldwater	Main branch of Hawk River, large river system.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB32	Route 2 Route 3	Direct	Coldwater	Tributary to Hawk River downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB33	Route 1 Route 4	Direct	Coldwater	Pike Lake, connected to Hawk River downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB34	Route 1	Indirect	Coldwater	Connected to Pike Lake downstream, which is connected to the Hawk River/Lake system.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB35	Route 4	Direct	Coldwater	Connected to McVeigh Creek downstream, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNRF, 2022).
WB36	Route 4	Direct	Coldwater	Connected to McVeigh Creek downstream, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNR, 2022).
WB37	Route 4	Direct	Coldwater	Connected to McVeigh Creek downstream, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNR, 2022).
WB38	Route 1	Direct	Coldwater	Connected to McVeigh Creek downstream, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNR, 2022).
WB39	Route 3	Direct	Coldwater	McVeigh Creek, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB40	Route 2	Direct	Coldwater	Connected to McVeigh Creek downstream, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB41	Route 3	Direct	Coldwater	McVeigh Creek, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB42	Route 2 Route 3	Direct	Coldwater	Oxbow along McVeigh Creek, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB43	Route 3	Direct	Coldwater	McVeigh Creek, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB44	Route 2 Route 3	Direct	Coldwater	McVeigh Creek and small lake feature, which are connected to the Hawk River/Lake system downstream.	Hawk Lake downstream:

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
					• **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB45	Route 2 Route 4	Direct	Coldwater	McVeigh Creek, which is connected to the Hawk River/Lake system downstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022).
WB46	Route 4	Direct	Coldwater	Small tributary connected to McVeigh Creek, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNR, 2022).
WB47	Route 2	Direct	Coldwater	Small tributary connected to McVeigh Creek, which is connected to the Hawk River/Lake system downstream and the Forge Creek system upstream.	Hawk Lake downstream: • **Lake Trout, Brown Trout, Burbot, Lake Whitefish,** Smallmouth Bass, White Sucker (MNR, 2022). Forge Creek upstream: • **Lake Trout,** Northern Pike (MNR, 2022).
WB48	Route 1 Route 3	Direct	Coldwater	Forge Creek system.	Forge Creek: • **Lake Trout,** Northern Pike (MNR, 2022).
WB49	Route 2	Direct	Coldwater	McVeigh Creek, which is connected to the Forge Creek system downstream and Wallace Lake upstream.	Forge Creek: • **Lake Trout,** Northern Pike (MNR, 2022). Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB50	Route 4	Direct	Coldwater	McVeigh Creek, which is connected to the Forge Creek system downstream and Wallace Lake upstream.	Forge Creek: • **Lake Trout,** Northern Pike (MNR, 2022). Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB51	Route 4	Direct	Coldwater	McVeigh Creek, which is connected to the Forge Creek system downstream and Wallace Lake upstream.	Forge Creek: • **Lake Trout,** Northern Pike (MNR, 2022). Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB52	Route 4	Direct	Coldwater	Small creek connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB53	Route 4	Direct	Coldwater	Small lake feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB54	Route 1 Route 4	Direct	Coldwater	Small creek connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB55	Route 2 Route 3	Direct	Coldwater	Small creek connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB56	Route 4	Direct	Coldwater	Small lake feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB57	Route 4	Direct	Coldwater	Large wetland feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB58	Route 2	Direct	Coldwater	Small creek feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB59	Route 2 Route 4	Direct	Coldwater	Small creek feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB60	Route 4	Direct	Coldwater	Small creek/wetland feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB61	Route 4	Direct	Coldwater	Small creek/wetland feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB62	Route 2 Route 4	Direct	Coldwater	Small creek/wetland feature connected to Big Lake (unofficial name) downstream.	Big Lake: • Stocked with **Brook Trout** in 2017, 2019, 2021, and 2023 **(**MNR, 2022).
WB63	Route 2 Route 4	Direct	Coldwater	Big Lake (unofficial name) crossing.	Big Lake: • Stocked with **Brook Trout** in 2017, 2019, 2021, and 2023 **(**MNR, 2022).
WB64	Route 2 Route 4	Direct	Coldwater	River system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB65	Route 2 Route 4	Direct	Coldwater	River system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB66	Route 2 Route 4	Direct	Coldwater	River system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB67	Route 2	Direct	Coldwater	Small creek system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB68	Route 2	Direct	Coldwater	Small creek system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB69	Route 4	Direct	Coldwater	Lake system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB70	Route 4	Direct	Coldwater	Lake system connected to Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB71	Route 4	Direct	Coldwater	Small wetland system connected to Cawdron Lake/Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB72	Route 2 Route 4	Direct	Coldwater	Small creek system connected to Cawdron Lake/Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB73	Route 2 Route 4	Direct	Coldwater	Small creek system connected to Cawdron Lake/Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB74	Route 2 Route 4	Direct	Coldwater	Small creek system connected to Cawdron Lake/Forge Creek downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB75	Route 2 Route 4	Direct	Coldwater	Small creek system connected to wetland and Cawdron Lake/Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB76	Route 4	Direct	Coldwater	Small creek system connected to Goudreau Creek downstream, which is connected to Cawdron Lake and the Forge Creek system further downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB77	Route 4	Direct	Coldwater	Goudreau Creek, which is connected to Cawdron Lake and the Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB78	Route 4	Direct	Coldwater	Large lake system that is connected to Goudreau Creek, which is connected to Cawdron Lake and the Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB79	Route 2	Direct	Coldwater	Small lake system that is connected to Goudreau Creek, which is connected to Cawdron Lake and the Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB80	Route 2	Direct	Coldwater	Goudreau Creek, which is connected to Cawdron Lake and the Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).
WB81	Route 2 Route 4	Direct	Coldwater	Tributary to Blackout Lake, which is connected to Cawdron Lake and Forge Creek system downstream.	Forge Creek: • **Lake Trout,** Northern Pike, **Burbot**, White Sucker, Yellow Perch (MNR, 2022).

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB82	Route 2 Route 4	Direct	Coolwater	Small creek that is a tributary to Cradle Lakes.	Cradle Lakes: • Walleye, Smallmouth Bass (MNR, 2022).
WB83	Route 2 Route 4	Direct	Coolwater	Small creek that is a tributary to Cradle Lakes.	Cradle Lakes: • Walleye, Smallmouth Bass (MNR, 2022).
WB84	Route 2 Route 4	Direct	Coolwater	Small creek and open lake section that is part of the Cradle Lakes system.	Cradle Lakes: • Walleye, Smallmouth Bass (MNR, 2022).
WB85	Route 2	Direct	Coolwater	Goudreau Creek in proximity to Cradle Lakes downstream and Goudreau Lake upstream.	Cradle Lakes: • Walleye, Smallmouth Bass (MNR, 2022). Goudreau Lake: • Northern Pike (MNR, 2022).
WB86	Route 2	Direct	Coolwater	Tributary/wetland feature connected to Goudreau Lake/Creek downstream.	Goudreau Lake: • Northern Pike (MNR, 2022).
WB87	Route 4	Direct	Coolwater	Goudreau Creek in proximity to Goudreau Lake upstream.	Goudreau Lake: • Northern Pike (MNR, 2022).
WB88	Route 4	Direct	Coolwater	Tributary/wetland feature connected to Goudreau Lake downstream.	Goudreau Lake: • Northern Pike (MNR, 2022).
WB89	Route 3	Direct	Coldwater	Small creek/wetland feature connected to Wallace Lake.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB90	Route 3	Direct	Coldwater	Small creek feature connected McVeigh Creek, which is connected to Wallace Lake downstream and McKechnie Lake upstream.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022). McKechnie Lake: • **Brook Trout** (MNR, 2022).
WB91	Route 1	Direct	Coldwater	Small creek/lake feature connected to McVeigh Creek, which is connected to Wallace Lake downstream and McKechnie Lake upstream.	Wallace Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022). McKechnie Lake: • **Brook Trout** (MNR, 2022).
WB92	Route 3	Direct	Coldwater	McKechnie Lake shoreline and small tributary to the lake draining from the east.	McKechnie Lake: • **Brook Trout** (MNR, 2022).
WB93	Route 1	Direct	Coldwater	Small creek draining to McKechnie Lake downstream	McKechnie Lake: • **Brook Trout** (MNR, 2022).
WB94	Route 3	Direct	Coldwater	McKechnie Lake shoreline and small tributary to the lake draining from the east.	McKechnie Lake: • **Brook Trout,** White Sucker, Yellow Perch (MNR, 2022).
WB95	Route 3	Direct	Coldwater	Speight Lake shoreline.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB96	Route 1	Direct	Coldwater	River system connected to Speight Lake.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB97	Route 3	Direct	Coldwater	Speight Lake shoreline and small tributary to the lake draining from the west.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB98	Route 1	Direct	Coldwater	River system connected to Speight Lake.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB99	Route 3	Direct	Coldwater	Speight Lake shoreline and small tributary to the lake draining from the west.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB100	Route 1	Direct	Coldwater	Garbe Creek crossing, connected to Garbe Lake upstream and Speight Lake further downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
					Garbe Lake: • **Brook Trout** (MNR, 2022).
WB101	Route 3	Direct	Coldwater	Speight Lake shoreline and small tributary to the lake draining from the west.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB102	Route 3	Direct	Coldwater	McVeigh Creek shoreline and small tributary to the lake draining from the west, connected to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB103	Route 1	Direct	Coldwater	Small creek connected to McVeigh Creek, which drains to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB104	Route 3	Direct	Coldwater	Billboy Creek crossing, connected to Billboy Lake upstream and McVeigh Creek downstream, which drains to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022). Billboy Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB105	Route 1	Direct	Coldwater	Billboy Creek crossing, connected to Billboy Lake upstream and McVeigh Creek downstream, which drains to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022). Billboy Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB105	Route 1	Direct	Coldwater	Billboy Creek crossing, connected to Billboy Lake upstream and McVeigh Creek downstream, which drains to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022). Billboy Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB106	Route 3	Direct	Coldwater	McVeigh Creek crossing, connected to Speight Lake downstream.	Speight Lake: • **Brook Trout,** White Sucker (MNR, 2022).
WB107	Route 3	Direct	Coldwater	McVeigh Creek shoreline and small tributary to the lake draining from the west, connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB108	Route 1	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB109	Route 3	Direct	Coldwater	McVeigh Creek shoreline and small tributary to the lake draining from the west, connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB110	Route 1	Direct	Coldwater	Small creek and lake feature that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB111	Route 1	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB112	Route 3	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB113	Route 3	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB114	Route 1	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB115	Route 3	Direct	Coldwater	Emily Lake shoreline that is connected to the McVeigh Creek system, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB116	Route 1	Direct	Coldwater	Small creek that drains to McVeigh Creek, which is connected to Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB117	Route 1	Direct	Coldwater	Small creek that drains to Dipneedle Lake, which drains to McVeigh Creek and Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB118	Route 3	Direct	Coldwater	Small creek crossing that connects Philip Lake to Dipneedle Lake, which drains to McVeigh Creek and Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).

Waterbody ID	Proposed Routes along Waterbody	Fish Habitat[1,2] (direct, indirect)	Thermal Regime[1] (warm, cool, cold)	Preliminary Fish Habitat Notes	Fish Community[1] (coldwater species in **bold**)
WB119	Route 3	Direct	Coldwater	In proximity to Summit Lake, which drains to McVeigh Creek and Speight Lake downstream.	Speight Lake: **Brook Trout,** White Sucker (MNR, 2022).
WB120	Route 1	Direct	Coolwater	Small lake feature in proximity to route, drains to McVeigh Creek.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022).
WB121	Route 1 Route 3	Direct	Coolwater	Small creek/wetland feature that drains to McVeigh Creek.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022).
WB122	Route 3	Direct	Coolwater	Small creek/wetland feature that drains to McVeigh Creek.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022).
WB123	Route 3	Direct	Coolwater	Small creek/lake feature (Nicho Lake) that drains to McVeigh Creek, connected to Dobbs Lake upstream.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022). Dobbs Lake: White Sucker (MNR, 2022).
WB124	Route 1	Direct	Coolwater	Small lake feature, possible tailings pond. Drains to McVeigh Creek.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022).
WB125	Route 3	Direct	Coolwater	Dobbs Lake shoreline in proximity to route.	Dobbs Lake: White Sucker (MNRF, 2022).
WB126	Route 1	Direct	Coolwater	Small lake feature, possible tailings pond. Drains to McVeigh Creek.	Northern segment of McVeigh Creek: Blacknose Shiner, Brook Stickleback, Common Shiner, Finescale Dace, Iowa Darter, Johnny Darter, Northern Pearl Dace, Northern Redbelly Dace, White Sucker, Yellow Perch (MNR, 2022).
WB127	Route 1 Route 3	Direct	Coolwater	Wetland and creek, connected to Webb Lake downstream.	Webb Lake: Brook Stickleback, Finescale Dace, Northern Pearl Dace, Northern Redbelly Dace, Fathead Minnow, Yellow Perch, Northern Pike, White Sucker (MNR, 2022).
WB128	Route 1 Route 3	Direct	Coolwater	Wetland feature and creek, connected to Webb Lake downstream.	Webb Lake: Brook Stickleback, Finescale Dace, Northern Pearl Dace, Northern Redbelly Dace, Fathead Minnow, Yellow Perch, Northern Pike, White Sucker (MNR, 2022).
WB129	Route 1 Route 3	Direct	Coolwater	Goudreau Lake crossing.	Goudreau Lake: • Northern Pike (MNR, 2022).
WB130	Route 1 Route 3	Direct	Coolwater	Tributary that drains to Goudreau Lake.	Goudreau Lake: • Northern Pike Common Shiner, White Sucker, Yellow Perch, Blacknose Shiner, Common Shiner (MNR, 2022).

[1] Fish habitat is defined in subsection 2(1) of the Fisheries Act to include all waters frequented by fish and any other areas upon which fish depend directly or indirectly to carry out their life processes. The types of areas that can directly or indirectly support life processes include but are not limited to spawning grounds and nursery, rearing, food supply, and migration areas.

[2] Fish habitat characterization, thermal regime, and fish community information is based on aerial imagery interpretation, along with available online MNRF resources (Land Information Ontario) outlined below.

Ministry of Natural Resources (MNR). 2023a. Land Information Ontario. Aquatic Resource Area Survey Point online database.

Ministry of Natural Resources (MNR). 2023b. Land Information Ontario. Aquatic Resource Area Line Segment online database.

Ministry of Natural Resources (MNR). 2022. Land Information Ontario. Fish ON-Line.

Criteria for Proposed Alternative Solutions	Alt. Sol. #1	Alt. Sol. #2	Alt. Sol. #3	Alt. Sol. #4	Alt. Sol. #5 (Do Nothing)	Ranking Rationale Summary	Environmental Rational for Preferred Alternative Solution #4
Suitability for Mine's Needs*						From a natural heritage perspective each of the Alternative Solutions provide a feasible and functional option for the mines, with the exception of Alternative Solution 5 (Do Nothing).	--
Public Safety**						From a natural heritage perspective, the Alternative Solutions do not raise concern to public safety.	--
Route Length					N/A	Direct routes exhibiting traditional transmission line characteristics decrease the length of the corridor and minimize impacts on vegetation communities.	Alternative Solution #4 results in the shortest corridor, which would therefore impact the smallest geographic area and in general reduces environmental impacts related from construction duration, access requirements, and overall impact area.
Pole Requirements					N/A	It is our understanding as the number of poles increases the risk of environmental impacts through the physical installation, movement of equipment, potential erosion, and contamination (*i.e.* fuel) to adjacent KNHFs. In addition, alternative solutions with lower pole requirements suggests infrastructure can span over more KNHFs (*i.e.* wetlands) than alternative solutions with higher pole requirements.	Alternative Solution #4 has significantly lower pole requirements due to the reduced length and changes in direction; and poles can be flown in by helicopter to reduce access constraints and additional access construction works (*i.e.*, creating larger roads and bridge crossings).
Pole Foundation Requirements					N/A	It is our understanding the complexity of the utility pole foundation correlates with an increase in equipment requirements and complexity of the installation process. This results in the higher potential for direct or indirect impacts to sensitive communities and wildlife.	Alternative Solution #4 utilizes the highest percentage of direct embedment pole foundations which are considered low-impact from an environmental perspective (as opposed to drilling, blasting, or crib structures), and is the preferred solution from a construction installation perspective.
Access logistics					N/A	Routes were assessed based on the presence of existing roads/trails, proximity to disturbed areas (*i.e.,* existing hydro corridors, recently logged areas), challenges in topography fluctuation, and need for access trails. The ease in access reflects equipment, machinery, and man-power requirements; and is anticipated to correlate with higher disturbance and risk of environmental contaminants entering adjacent communities and vegetation removal requirements.	Alternative Solution #4 utilizes historical logging and recreational trails for access (observed through aerial imagery and confirmed during site visits). These existing trails and existing watercourse crossings will be modified (*i.e.,* trail widening, upgrades to watercourse crossings for safety purposes/machinery) to allow equipment access and reduce the need for additional clearing/environmental impacts for access to the proposed route.
Fish/Fish Habitat Areas						Routes were assessed based on the number of waterbodies within the alternative solutions LSA, proximity to watercourses throughout the alignment, number of coldwater crossings, and use of existing roads/infrastructure to reduce the need for new watercourse crossings/vegetation removal. Mitigation measures are recommended to minimize anticipated impacts to KNHFs.	As mentioned above, Alternative Solution #4 utilizes historical logging and recreational trails for access. Therefore, new watercourse crossings/structures are kept to a minimum which reduces the overall impact on fish habitat. Only one new watercourse structure is proposed (WB0021) for Alternative Solution #4. Pole foundations are being kept outside of direct fish habitat features, and impacts from riparian vegetation removal along the transmission line route are being mitigated through operational standards (*i.e.,* retaining vegetation below the 2-year high water mark, no machinery access within 30m of watercourses for vegetation removal, retain low-lying vegetation for soil stability, etc.).
SAR/SAR Habitat						SAR species and their habitat confirmed and/or have the potential to be present occur across each alternative solution. General habitat for identified SAR is extensive in the RSA. Mitigation measures are recommended to minimize anticipated impacts to SAR and SAR habitat.	With Alternative Solution #4 being the shortest route, the overall impact area for construction and maintenance of the proposed transmission line is reduced. In addition, a majority of suitable habitat will remain unaltered as wetlands/SAR habitat are being avoided where possible.

Candidate Significant Wildlife Habitat						There are no mapped SWH associated with the alternative solutions. Candidate SWH confirmed and/or have potential to occur are associated with all four alternative solutions and are extensive in the RSA. Mitigation measures are recommended to minimize anticipated impacts to KNHFs.	With there being no mapped SWH associated with any of the alternative solutions, there is no significant difference in alternative solutions based on SWH.
Extent of Forest Removal/Impact						Routes were accessed based on the estimated area of overall forest removal. Alternative Solution #3 is estimated to remove 288ha, whereas Alternative Solution #1, #2, and #4 result in 388ha, 402ha, and 361ha respectively. Mitigation measures are recommended to minimize anticipated impacts to forests.	Alternative Solution #4 requires the second smallest extent of forest removal.
Extent of Wetland Removal/Impact						Routes minimizing the extent of impacts to wetlands and their unique ecological features and functions are preferred. Alternative Solution #1 and #4 are estimated to impact approximately 38ha of wetland. Whereas Alternative #2, and #3 are anticipated to impact approximately 58ha and 42ha respectively. Mitigation measures are recommended to minimize anticipated impacts to wetlands.	Alternative Solution #4 impacts the smallest amount of wetland habitat (tied with Alternative Solution #1). As the size and occurrence of wetlands associated with Alternative Solution #4 is lower, this provides expanded opportunities to avoid/minimize works in wetlands (*i.e.,* span over). This also reduces the potential impacts on SAR, and unique flora and fauna in the area.
Summary of Ranking:	**Acceptable**	**Least Preferred**	**Least Preferred**	**Preferred**	**Least Preferred**		

Consideration of potential for impacts is in the context of transmission corridor construction.

*Additional consultation from the mine may be warranted.

¨Additional consultation from interested stakeholders may be warranted.

Low Impact (Preferred Solution)
Moderate Impact
High Impact (Least Preferred Solution)

APPENDICES

Appendix A: Background Information
Appendix B: Photographic Record
Appendix C: Medicinal Plants
Appendix D: Field Notes for Turtle Surveys
Appendix E: Wildlife Camera Photographic Record
Appendix F: Right of Way Selection Trade off Study-Appendix B Table
Appendix G: MNR Information Request
Appendix H: Public and Indigenous Consultation Summary

APPENDIX A

Background Information

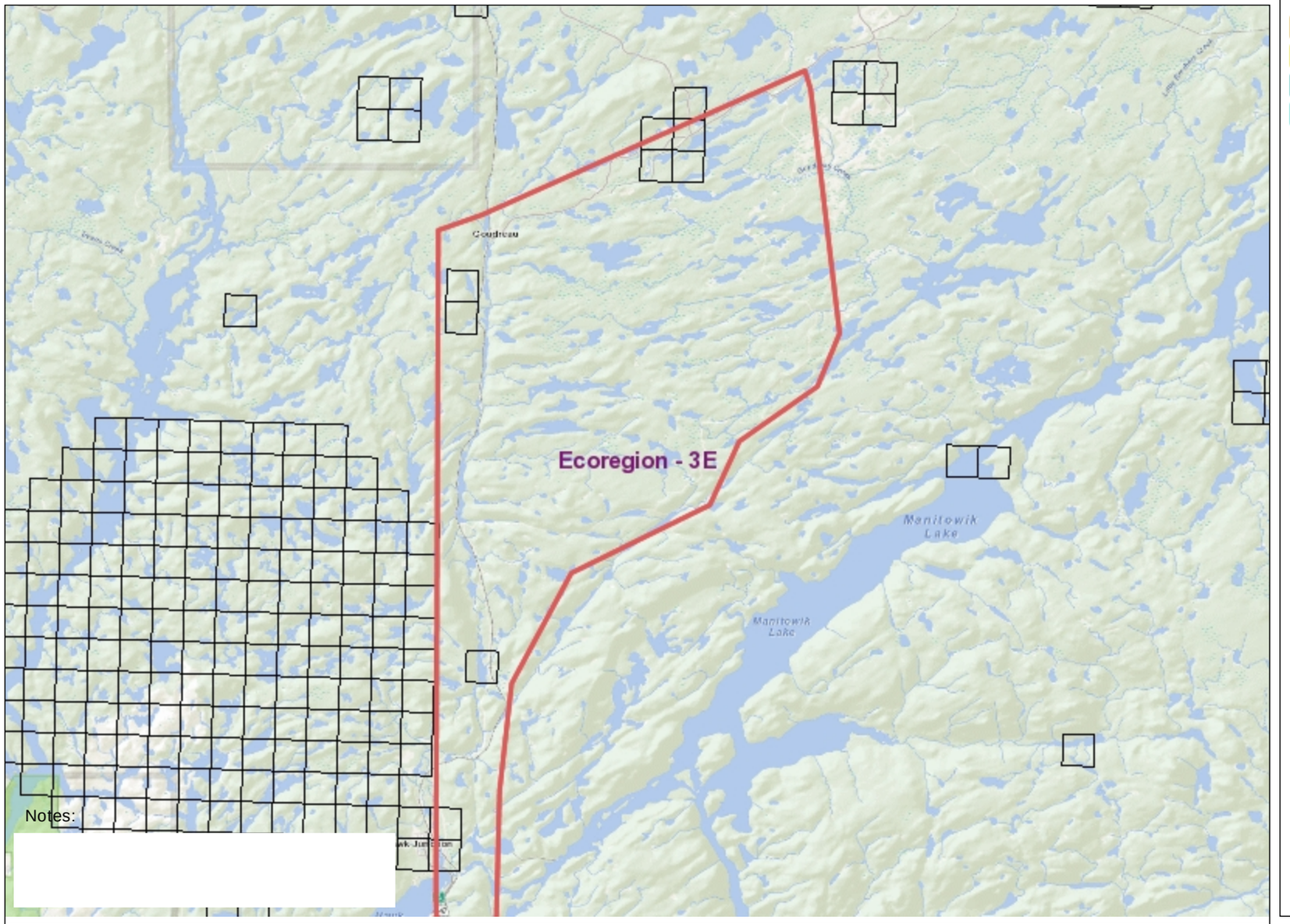
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

AEC23-028 Transmission Line Class EA

Map created:1/4/2024



Notes:

Legend

- NHIC 1 Km Grid
- Ecoregion
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park

9.4 0 4.71 9.4 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

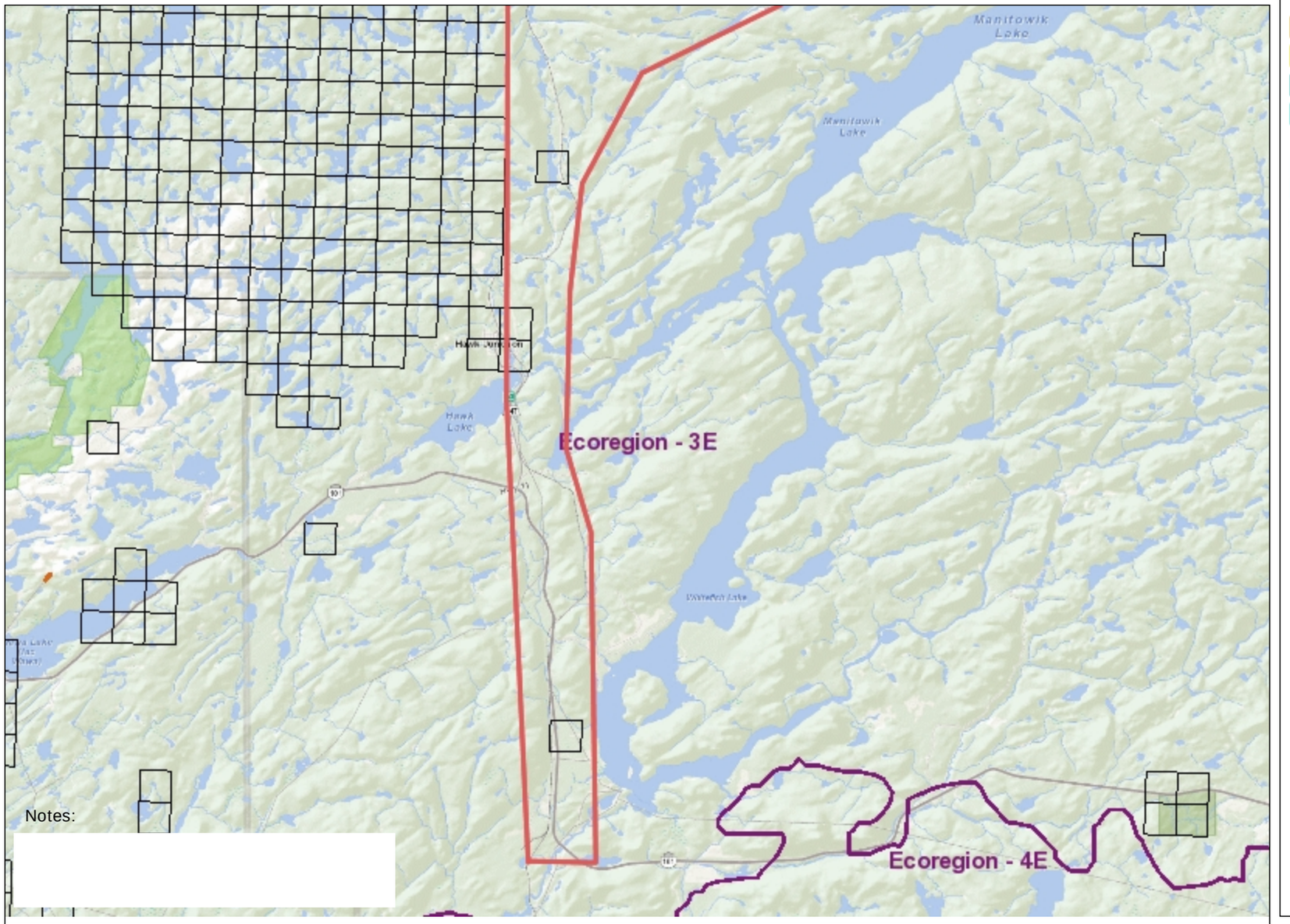
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

AEC23-028 Transmission Line Class EA

Map created:1/4/2024



Notes:

Legend

- NHIC 1 Km Grid
- Ecoregion
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park

9.4 0 4.72 9.4 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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
614706	SPECIES	Evening Grosbeak	Coccothraustes vespertinus	S4	SC	SC	16FU8229	
614706	SPECIES	Canada Warbler	Cardellina canadensis	S5B	SC	SC	16FU8229	
614705	SPECIES	Evening Grosbeak	Coccothraustes vespertinus	S4	SC	SC	16FU8228	
614705	SPECIES	Canada Warbler	Cardellina canadensis	S5B	SC	SC	16FU8228	
614811	SPECIES	Uhler's Sundragon	Helocordulia uhleri	S3			16FU8334	
614811	SPECIES	Spatulate Moonwort	Botrychium spathulatum	S2S3			16FU8334	
614902	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8245	
614903	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8246	
615057	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8850	
615067	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8950	
615058	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8851	
615068	RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				16FU8951	
615068	SPECIES	Rusty Blackbird	Euphagus carolinus	S4B,S3N	NAR	SC	16FU8951	
615068	SPECIES	Canada Warbler	Cardellina canadensis	S5B	SC	SC	16FU8951	
615068	SPECIES	Olive-sided Flycatcher	Contopus cooperi	S4B	SC	SC	16FU8951	
615069	SPECIES	Olive-sided Flycatcher	Contopus cooperi	S4B	SC	SC	16FU8952	
614623	SPECIES	Evening Grosbeak	Coccothraustes vespertinus	S4	SC	SC	16FU8416	

Ontario Nature | Ontario Reptile & Amphibian Atlas

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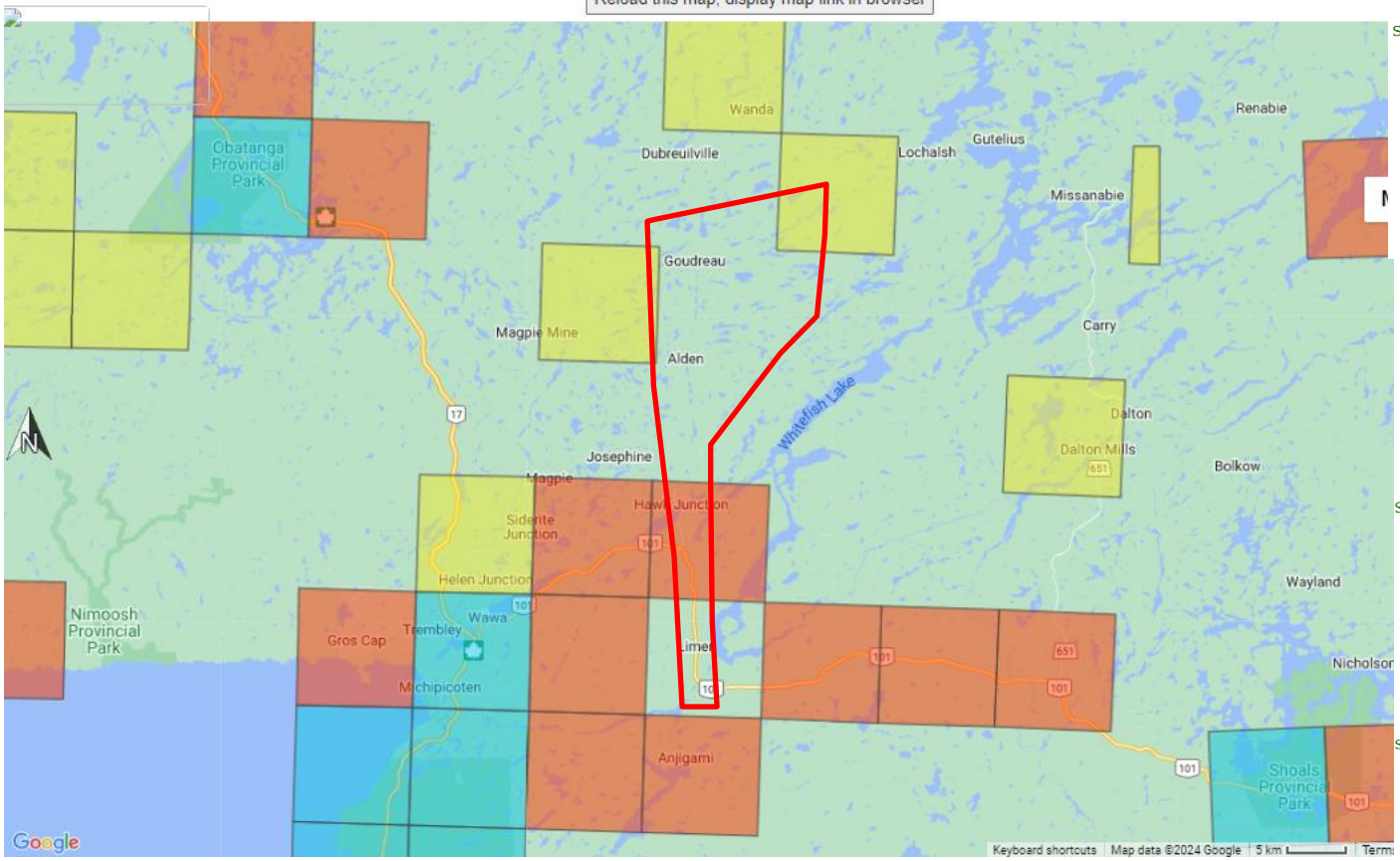
Toronto Entomologists' Association | Visit our Butterfly Atlas

Species 0. All species | Colouring of squares: records... Before and after 1998

Only 1998 or after | Only before 1998 | Map type 10 km squares alone | Time period all

470,762 records in 3,246 squares from 1800 to 2019

Reload this map; display map link in browser



Species list, starting with the species with the fewest records, for square 16FU82

All species

Number of rows of data displayed below: 1.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
19	Northern Ring-necked Snake	1	1941	1941

Species list, starting with the species with the fewest records, for square 16FU74

All species

Number of rows of data displayed below: 1.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
12	Eastern Gartersnake	1	2009	2009

Species list, starting with the species with the fewest records, for square 16FU95

All species

Number of rows of data displayed below: 1.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
51	Red-spotted Newt	1	2013	2013

Species list, starting with the species with the fewest records, for square 16FU86

All species

Number of rows of data displayed below: 1.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
6	Snapping Turtle	1	2017	2017

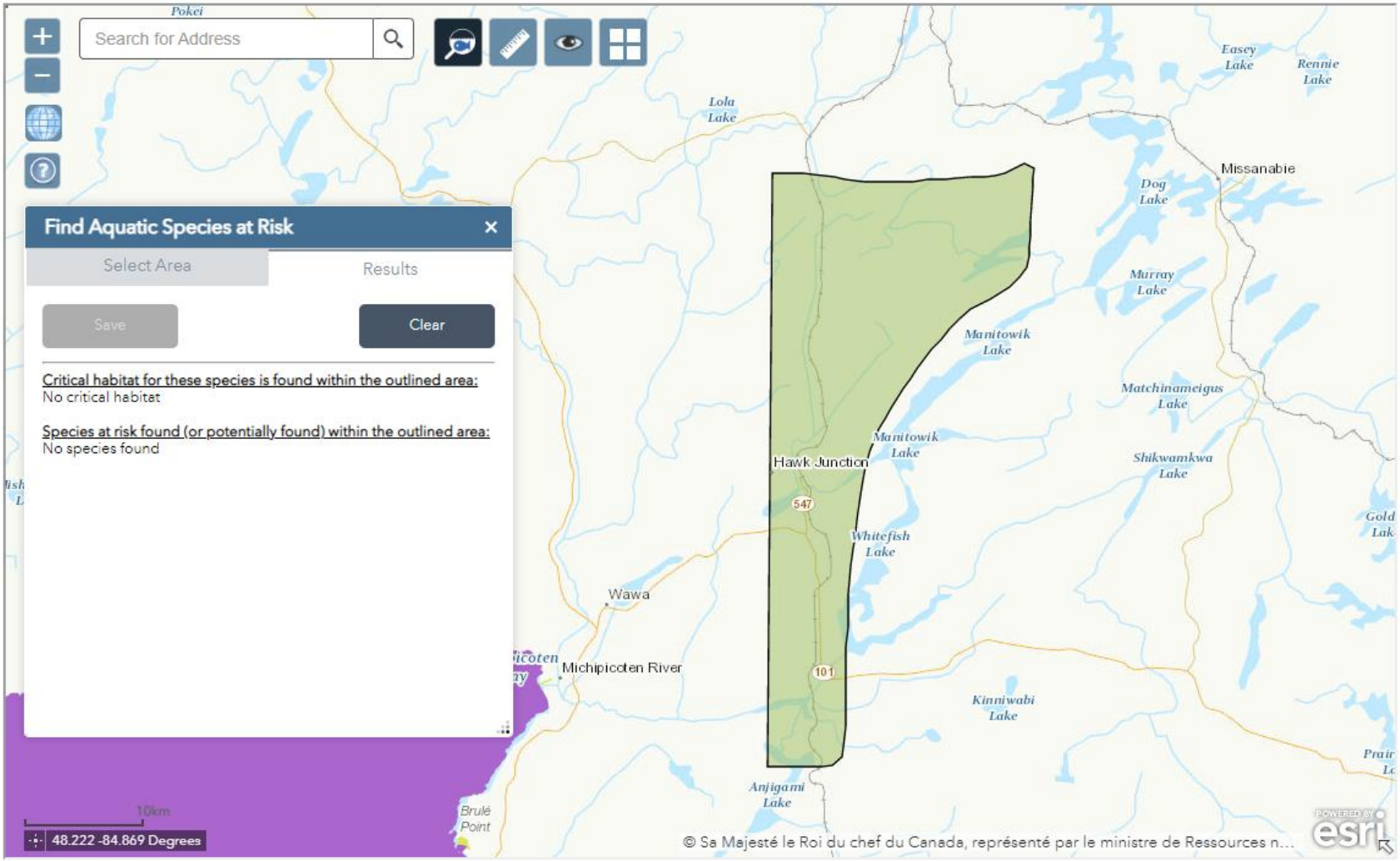
Species list, starting with the species with the fewest records, for square 16FU80

All species

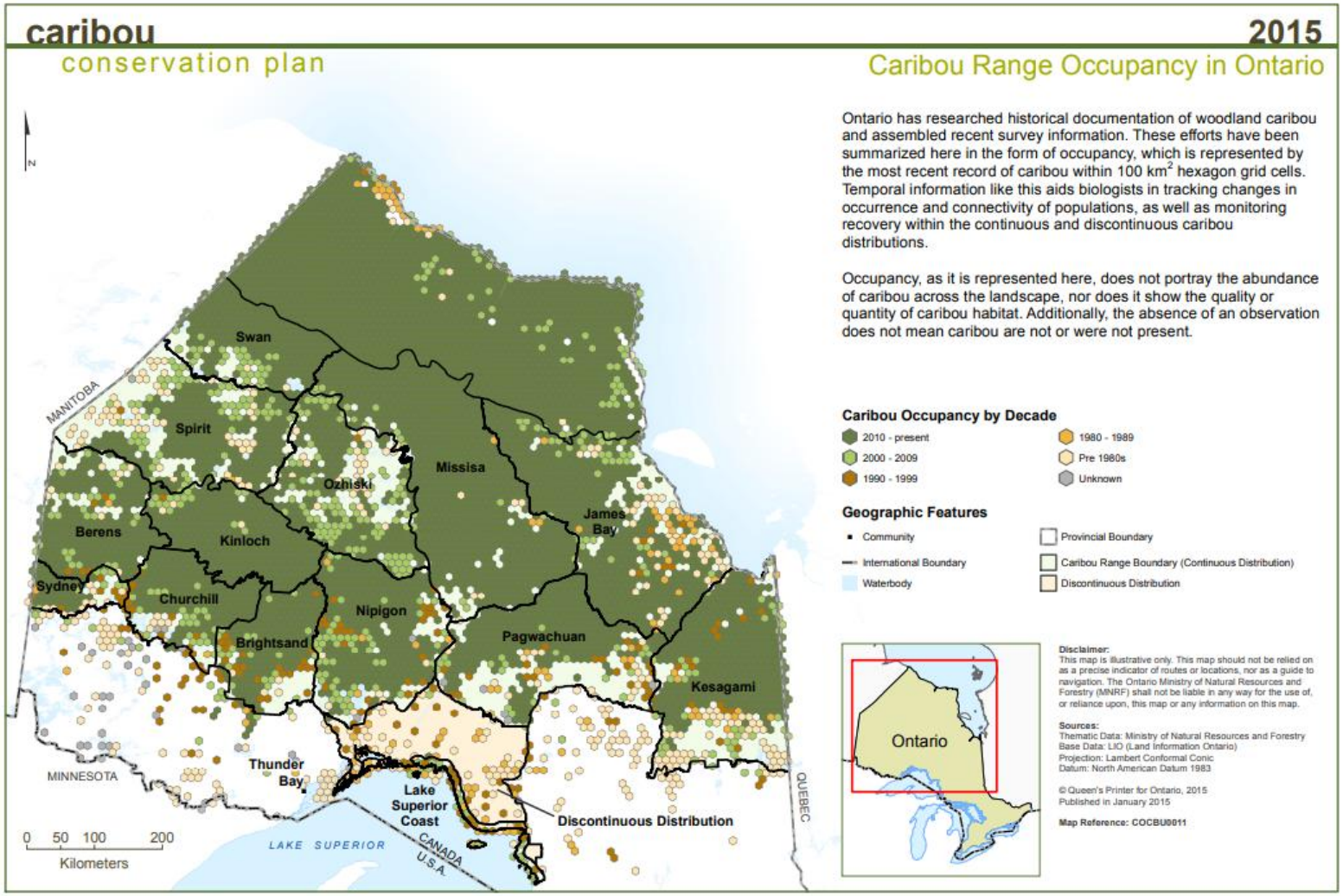
Number of rows of data displayed below: 4.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
30	Mink Frog	1	1979	1979
36	American Toad	1	1984	1984
35	Wood Frog	1	1984	1984
12	Eastern Gartersnake	1	1984	1984

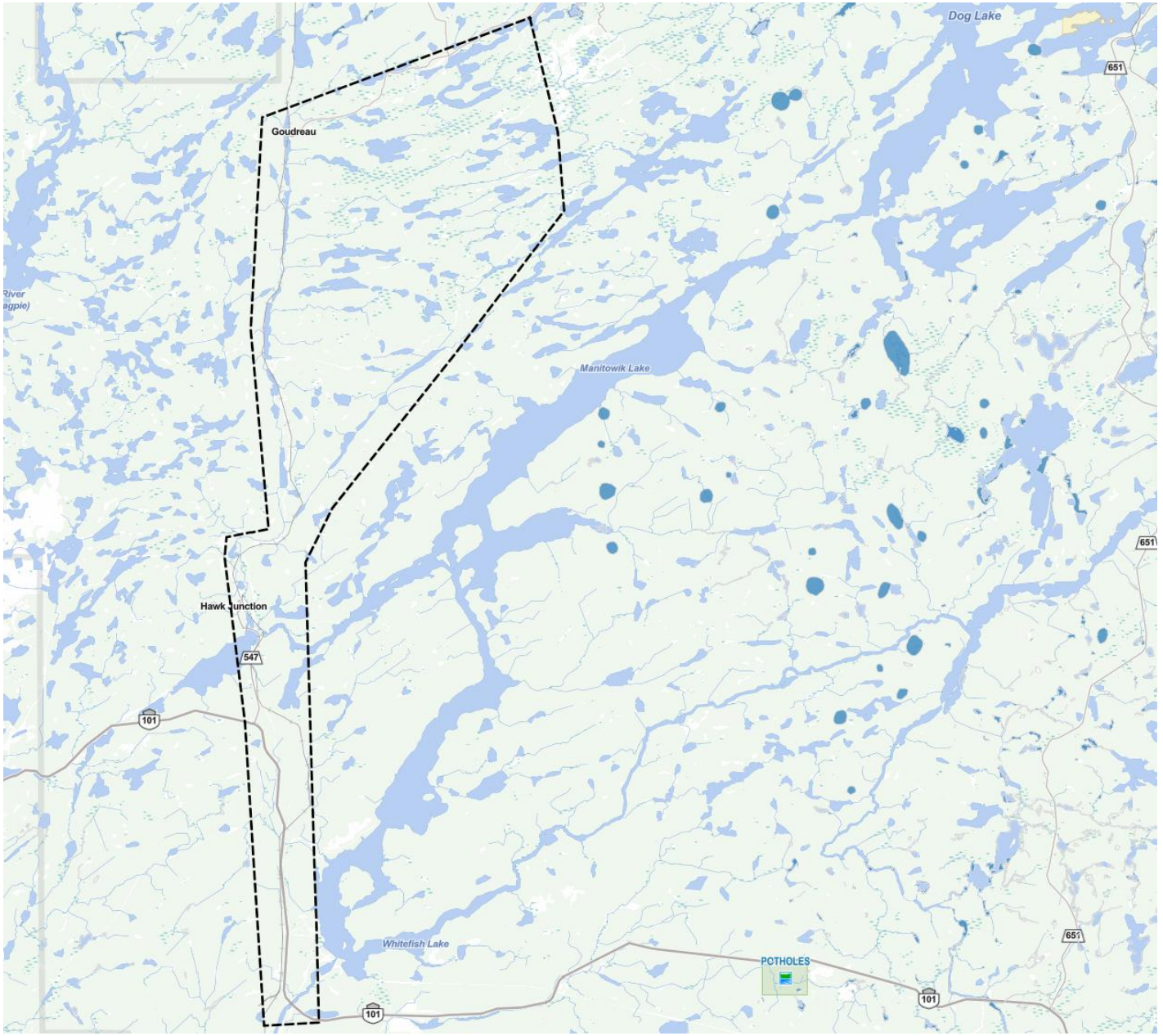
ORAA, 2020


Search for Address
Find Aquatic Species at Risk
Select Area
Results
Save
Clear
Critical habitat for these species is found within the outlined area:
No critical habitat
Species at risk found (or potentially found) within the outlined area:
No species found
Pokei
Lola Lake
Easey Lake
Rennie Lake
Missanabie
Dog Lake
Murray Lake
Manitowik Lake
Matchinamegus Lake
Shikwamkwa Lake
Hawk Junction
547
Whitefish Lake
Wawa
Michipicoten River
101
Kinniwabi Lake
Anjigami Lake
Brulé Point
10km
48.222 -84.869 Degrees
© Sa Majesté le Roi du chef du Canada, représenté par le ministre de Ressources n...
esri

DFO, 2023a


caribou
conservation plan
2015
Caribou Range Occupancy in Ontario
Ontario has researched historical documentation of woodland caribou and assembled recent survey information. These efforts have been summarized here in the form of occupancy, which is represented by the most recent record of caribou within 100 km² hexagon grid cells. Temporal information like this aids biologists in tracking changes in occurrence and connectivity of populations, as well as monitoring recovery within the continuous and discontinuous caribou distributions.
Occupancy, as it is represented here, does not portray the abundance of caribou across the landscape, nor does it show the quality or quantity of caribou habitat. Additionally, the absence of an observation does not mean caribou are not or were not present.
Caribou Occupancy by Decade
2010 - present
2000 - 2009
1990 - 1999
1980 - 1989
Pre 1980s
Unknown
Geographic Features
Community
International Boundary
Waterbody
Provincial Boundary
Caribou Range Boundary (Continuous Distribution)
Discontinuous Distribution
Swan
Spirit
Ozhiski
Missisa
James Bay
Berens
Kinloch
Sydney
Churchill
Nipigon
Brightsand
Pagwachuan
Kesagami
Thunder Bay
Lake Superior Coast
Discontinuous Distribution
MANITOBA
MINNESOTA
QUEBEC
LAKE SUPERIOR
CANADA
U.S.A.
0 50 100 200
Kilometers
Ontario
Disclaimer:
This map is illustrative only. This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry (MNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.
Sources:
Thematic Data: Ministry of Natural Resources and Forestry
Base Data: LIO (Land Information Ontario)
Projection: Lambert Conformal Conic
Datum: North American Datum 1983
© Queen's Printer for Ontario, 2015
Published in January 2015
Map Reference: COCBU0011

MNRF, 2015c



Wildlife Values Areas (MNRF, 2024)

APPENDIX B

Photographic Record

Photograph 1: G142N community east of 547 road in Hawk Junction (May 10, 2023).

Photograph 2: Representative forest community within RSA (May 9, 2023).

Photograph 3: Michipicoten River associated with the southern end of the LSA's (September 26, 2023).

Photograph 4: Unnamed tributary (WB2) along Highway 101 in the LSAs (September 26, 2023).

Photograph 5: Representative photograph of a forest community and the change in topography within the LSAs (November 26, 2023).

Photograph 6: White-faced Meadowhawk (*Sympetrum obtrusum*) captured within the LSAs (September 26, 2023).

Photograph 7: Mourning Cloak (*Nymphalis antiopa*) observed within the southern LSAs (May 9, 2023).

Photograph 8: Moose observed at dusk on Highway 101 (May 10, 2023).

Photograph 9: A young G055Tl community at Station 1 (September 26, 2023).

Photograph 10: A representative photograph of wildlife camera placement at Station 1 (December 21, 2023).

Photograph 11: A Boreal Chickadee (*Poecile hudsonicus*) observed at Station 1 (September 26, 2023).

Photograph 12: A Red Squirrel observed in Jack Pine tree at Station 1 (September 26, 2023).

Photograph 13: Snow Hare tracks observed at Station 1 (January 9, 2024).

Photograph 14: Pine Marten tracks across a log at Station 1 (January 9, 2024).

Photograph 15: View of Station 2 along Highway 101 (September 26, 2023).

Photograph 16: View of G134S community at Station 2 (September 26, 2023).

Photograph 17: Least Skipper (*Ancyloxypha numitor*) observed at Station 2 (July 5, 2023).

Photograph 18: American Pipit (*Anthus rubescens*) observed within hydro corridor at Station 2 (September 26, 2023).

Photograph 19: Pine Sap (*Monotropa hypopitys*) observed at Station 2 (September 26, 2023).

Photograph 20: Representative view of vegetation within hydro corridor at Station 2 (September 26, 2023).

Photograph 21: View of ground cover within hydro corridor at Station 3 (July 9, 2023).

Photograph 22: Pink Lady Slipper (*Cypripedium acaule*) observed at Station 3 (July 9, 2023).

Photograph 23: Lynx tracks observed in proximity to Station 3 (January 19, 2024).

Photograph 24: Pine Grosbeak (*Pinicola enucleator*) observed in proximity to Station 3 (January 9, 2024).

Photograph 25: G136Tl community in Alternative Solution #3 northern LSA (May 10, 2023).

Photograph 26: View of lake with beaver lodge along Alternative Solution #3 (September 28, 2023).

Photograph 27: G148N community documented adjacent to railroad associated with Alternative Solution #3 LSA (September 11, 2023).

Photograph 28: Bald Eagle (*Haliaeetus leucocephalus*) flying over Alternative Solution #3 LSA (September 11, 2023).

Photograph 29: Male Ruffed Grouse (*Bonasa umbellus*) observed along Goudreau Road and Alternative Solution #3 LSA (27, 2023).

Photograph 30: Ruby-crowned Kinglet (*Regulus calendula*) observed along Goudreau Road and Alternative Solution #3 and #1 LSA (27, 2023).

Photograph 31: The railroad and adjacent woodland within Station 4A study area (September 26, 2023).

Photograph 32: Shallow soils and small rock outcrops associated with Station 4A (September 26, 2023).

Photograph 33: Northern Azure (*Celastrina lucia*) butterfly observed on trail at Station 4A (May 11, 2023).

Photograph 34: G052Tt community within 5A (September 27, 2023).

Photograph 35: Spotted Coralroot (*Corallorhiza maculata*) observed in G055Tt community at Station 5A (September 27, 2023).

Photograph 36: Hermit Thrush (*Catharus guttatus*) observed in G052Tt community at Station 5A (September 27, 2023).

Photograph 37: Red-breasted Nuthatch (*Sitta canadensis*) observed in proximity to Station 5A (September 27, 2023).

Photograph 38: Two otter tracks observed along Goudreau Road (December 20, 2023).

Photograph 39: Representative picture of wetland with open water along Hawk Junction Road in Alternative Solution #2 and #4 LSA (September 28, 2023).

Photograph 40: View of G052Tt community and G142N community connected to a lake in Alternative Solution #2 LSA (July 6, 2023).

Photograph 41: Beaver observed within a lake along Alternative #2 LSA (September 28, 2023).

Photograph 42: Broad-winged Hawk observed at dusk along Alternative Solution #2 LSA (May 10, 2023).

Photograph 43: Bear tracks observed along Alternative Solution #2 and #4 LSA (July 6, 2023).

Photograph 44: Bear and wolf tracks observed along Alternative Solution #2 and #4 LSA (July 6, 2023).

Photograph 45: An area with young tree growth within G055Tt community at Station 4B (July 4, 2023).

Photograph 46: G055Tt community associated with Station 4B (September 26, 2023).

Photograph 47: The G149N community at Station 5B (July 5, 2023).

Photograph 48: A Rusty Blackbird (*Euphagus carolinus*) and American Woodcock (*Scolopax minor*) observed at Station 5B (September 27, 2023; May 10, 2023 respectively).

Photograph 49: Loesel's Twayblade (*Liparis loeselii*) observed in G136Tl community at Station 5B (July 5, 2023).

Photograph 50: Wolf tracks observed at Station 5B during wildlife camera deployment (December 20, 2023).

Photograph 51: A male Spruce Grouse (*Falcipennis canadensis*) observed at Station 5B, (January 9, 2024).

Photograph 52: A female Spruce Grouse observed at Station 5B (January 9, 2024).

APPENDIX C

Medicinal Plants

Plants Commonly Harvested for Medicinal Use

Azimuth reviewed the following resources Hassan *et al.,* 2012; Uprety *et al.,* 2012; Métis Nation of Ontario, 2010; and Waugh, 2016 to identify potential medicinal plants within the RSA. These journals and scientific papers compile lists for commonly harvested medicinal plants in Northern Ontario; based from extensive literature reviews and interviews with Indigenous communities. The following common medicinal plants[1] have been confirmed or are expected occur within the RSA:

Balsam Poplar – used to treat diarrhea, fevers, worms, and inflammation

Birch – bark used as splints for broken limbs

Black-eyed Susan – used to treat inflammation, indigestion, sores, snakebites, swelling, and earaches

Bunchberry – an anti-inflammatory, fever-reducing, and pain killer

Eastern White Cedar – used to cure sores on leg/body and muscles cramps (boughs), used to cure pains and swelling (leaves)

Canada Goldenrod – used to treat multiple aliments including headaches, sore throat, kidney stones, and ulcers

Choke Cherry – bark used to treat gout

Common Dandelion – can lower sugar and cholesterol levels, treat liver and urinary tract issues, an anti-inflammatory, and immune stimulant

Common Horsetail – used in teas to treat gout, gonorrhea, stomach problems, and infections

Common Plantain – used for poultice for cuts, used to cure catarrh (roots)

Common St. John's Wort – an anti-inflammatory and antibacterial

Common Yarrow – an antiseptic, antibacterial, anti-inflammatory, and anti-spasmodic

Coltsfoot – used for respiratory ailments

Dogbane – used to cure toothache (stem and roots)

Fireweed – used to treat inflammation, burns, boils, and sores

Jewel weed – antidote for poison ivy and used to treat mosquito bites

Mountain Ash – used in concoction for settling stomach (bark of branches), used to cure headaches (small branches)

Marsh Marigold – used for poultice for cuts (root)

Marsh Skullcap – has anti-flammatory, antioxidant, anticonvulsant, antibacterial, and anti-viral properties

Mountain Maple – used to stop hemorrhage (bark), used to cure dysentery with bleeding (root)

Mint – used to cure a cold

Pearly Everlasting – used to treat swollen mucus membrane and paralysis, and has anti-flammatory and antimicrobial properties

Pin Cherry – used to cure burn or scald (bark of root)

Pitcher Plant – may have anticancer, antiviral, and antimicrobial properties

Quackgrass – an antiseptic and laxative, and used to treats fever, jaundice, rheumatic limbs, chest pain, and poor eyesight

Red Osier Dogwood – used to stop hemorrhaging (bark)

Red Raspberries – used to cure diarrhea (roots)

Spreading Dog Bane – used to treat headaches insomnia, constipation, liver disease, and indigestion

Tamarack – drank as a tea to treat colds

Trilliums – used to stop spitting up blood, for sore or inflamed eye, and "everything in fact" (roots)

Wild Sarsaparilla – used to cure a cough (roots)

White Baneberry – (roots) used to prevent conceiving a child (birth control)

White Spruce – used to treat infection, insect bites, and cuts

Wood Sorrel – used to treat inflammation, diarrhea, sprains, urinary tract infections, boils, and pimples

Yarrow – made into a tea to suppress bleeding and fevers

[1] This document is not a comprehensive list of medicinal plants within the RSA, and is meant to provide examples of potential common medicinal plants in the RSA.

APPENDIX D

Field Notes for Turtle Surveys

AZIMUTH FIELD NOTES

AEC Project # and Name: 23-028 Wawa transmission Site#:

Date of Field Study: May 10-11th 2023 Notes Completed By: Jordan Wrobel

Staff Onsite: Jordan Wrobel + Adam McClellan Reason for Visit: Veg / turtle surveys / wildlife / etc

Weather conditions:

Turtle Station #15:
- 2 ecologists surveying w binoculars 15 minutes
- May 10th 10:32 am, B2, no rain, 10% cloud cover (CC)
- surveyed for ~15 minutes
- No turtles observed

Turtle Station #14:
- 2 ecologists surveying w binoculars 15 minutes
- May 10th 11:10am, B2, no rain, 10% CC. No Turtles observed

Turtle Station #13:
- 2 ecologists surveying w binoculars 15 minutes
- May 10th 1:05pm, B2, no rain, 10% CC
- No turtles observed

Turtle Station #5:
- 2 ecologists surveyed w binoculars 15 minutes
- May 11th 19°C, 10:22 am, B1, 15% CC, no rain
- No Turtles observed

Turtle Station #6:
- 2 ecologists surveyed w binoculars 15 minutes
- May 11th, 19°C, 11:11am, B1, 30% CC, no rain
- No turtles observed

Turtle Station #7:
- 2 ecologists survey w binoculars 15 minutes
- May 11th, 23°C, 1:47pm, B1, 40% CC, no rain
- No Turtles observed

Turtle Station #8:
- 2 ecologists survey w binoculars 15 minutes
- May 11th 23°C, 2:34pm, B2, 40% CC, no rain
- No Turtles observed

AZIMUTH FIELD NOTES

AEC Project # and Name: 23-028 Wawa transmission line Site#:

Date of Field Study: June 11th 2024 Notes Completed By: Jordan Wrobel

Staff Onsite: Jordan Wrobel, Matt Stuart Reason for Visit: Fisheries Sampling / Turtle surveys / Wildlife

Weather conditions:

Turtle Station #2:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th 9:52 am, 12°c, B1, 0% cloud cover (cc), no rain
- No turtles observed.

Turtle Station #4:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th 10:31 am, 12°c, B1, 0% CC, no rain
- No turtles observed

Turtle Station #9:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th, 11:44 am, 15°c, B1, 15% CC, no rain
- 1 Midland Painted turtle

Turtle Station #10:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th, 12:31 pm, 20°c, 20% CC, B1, no rain
- No turtles observed

Turtle Station #11:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th, 1:43 pm, 20°c, 20% CC, B1, no rain
- No turtles observed

Turtle Station #12:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th 2:12 pm, 20°c, 20% CC, B1, no rain
- No turtles observed

Turtle Station #13:
- 1 ecologist ~~w~~ binoculars for 15-20 minutes
- June 11th, 3:03 pm, 20°c, 20% CC, B1, no rain
- No turtles observed

* temperatures approx. for stations with no service

AZIMUTH FIELD NOTES

AEC Project # and Name: 23-028 Wawa Transmission Line Site#:

Date of Field Study: June 12th 2024 Notes Completed By: Jordan Wrobel

Staff Onsite: Jordan Wrobel, Matt Stuart Reason for Visit: Turtles / Fisheries sampling

Weather conditions:

Turtle Station #12:
- 1 ecologist ☐ binoculars for 15-20 minutes
- June 12th, 9:27am, 13°c, B3, 0% cloud cover (cc), no rain
- No turtles observed

Turtles Station #11:
- 1 ecologist ☐ binoculars for 15-20 minutes
- June 12th, 9:51 am 13°c, B3, 0% CC, no rain
- No turtles observed

Turtles station #13:
- 1 ecologist ☐ binoculars for 15-20 minutes
- June 12th, 10:10am, 15°c, B2, 0% CC, no rain
- No turtles observed

Turtle station #9:
- 1 ecologist ☐ Binoculars for 15-20 minutes
- June 12th, 1:47 pm, 20°c, 40% CC, B1, no rain
- 1 Midland painted turtle observed

Turtle station #3:
- 1 ecologist ☐ binoculars for 15-20 minutes
- June 12th, 2:16pm, 30% CC, B1, no rain
- No turtles observed

Turtle station #1:
- 1 ecologist ☐ binoculars for 15-20 minutes
- June 12th, 3:20 pm, 22°c, 20% CC, B1, no rain
- No turtles observed

4 Temperatures approx. where no service occurred.

APPENDIX E

Wildlife Camera Photographic Record

Photograph 1: Red Fox captured in proximity of Station 1 (December 22, 2023).

Photograph 2: A Lynx captured passing through Station 2 (December 30, 2023).

Photograph 3: A wolf travelling through the northern end of Station 2 (December 31, 2023).

Photograph 4: Two wolves captured moving through station 2 (December 31, 2023).

Photograph 5: Moose moving past wildlife camera associated with Station 3 (January 6, 2023).

Photograph 6: Red Fox traversing past wildlife camera associated with Station 3 (December 21, 2023).

Photograph 7: Snow Hare captured in Station 5a (January 3, 2023).

Photograph 8: Red Fox traversing past wildlife camera at Station 5a (December 28, 2023).

Photograph 9: Two wolves traversing past Station 5a wildlife camera (January 2, 2023).

Photograph 10: American Marten captured by wildlife camera at Station 5a (January 8, 2023).

Photograph 11: Lynx traversing though southern end of Station 5b (December 23, 2023).

Photograph 12: A lone wolf captured moving through Station 5b (December 23, 2023).

Photograph 13: Lynx traversing past wildlife camera at Station 5b (December 29, 2023).

Photograph 14: Two wolves traversing past southern wildlife camera at Station 5b (December 31, 2023).

Photograph 15: Red Fox running through Station 5b (January 6, 2024).

Photograph 16: Two wolves approaching the northern end of Station 5b (December 22, 2023).

APPENDIX F

Right of Way Selection Trade off Study-Appendix B Table

Appendix B – Ballpark Line Estimate

	Number of poles	UNITS	BLUE ROW (ORIGINAL PLAN) QTY	MAGENTA ROW (FALLOW LOG ROUTE) QTY	BROWN ROW (FALLOW API ROW) QTY	GREEN ROW (PROPOSED PLAN) QTY
TOTAL LINE LENGTH		KM	44.4	48.2	44.3	42.9
AVG SPAN LENGTH		m	300	90	90	300
TOTAL STRUCTURES		ea	136	534	499	143
MOBILIZATION		LS	1	1	1	1
PROJECT INFRASTRUCTURE		LS	1	1	1	1
PROJECT MANAGEMENT		LS	1	1	1	1
DEMOBILIZATION		LS	1	1	1	1
ENVIRONMENTAL		LS	1	1	1	1
RESTORATION		LS	1	1	1	1
ESTIMATED NEW ROADS		km	30	16	15	27
ESTIMATED ROADS TO BE EXPANDED		km	10	32	25	25
ESTIMATED CLEARING		hec	13	34	27	28
TANGENTS	1	EA	120	488	363	122
SMALL ANGLES (0-5°)	1	EA	4	4	43	5
MED ANGLES (0-30°)	1	EA	7	22	73	7
HEAVY ANGLES (30°+) (2 POLE)	2	EA	5	20	20	9
LONG SPANS (3 POLE DDE)	3	EA	22	12	3	10
WATER CROSSINGS		EA	8	19	28	12
PEAKS OVER 20M TALL (ADD COST STR)		EA	34			8
SWAMP CRIBS FDN		EA	12	77	108	11
DIRECT EMBED CULVERT GRANULAR FDN		EA	43	252	161	88
ROCK CULVERT BORE/BLASTING FDN		EA	81	202	230	44
CONDUCTOR SET-UP		EA	10	24	22	10
CONDUCTOR STRINGING		km	45	49	45	43
OPGW SET-UP		EA	10	24	22	10
OPGW STRINGING		km	45	49	45	43

APPENDIX G

MNR Information Request

Roger Holmes

From: Roger Holmes
Sent: March 22, 2024 9:31 AM
To: 'Genevieve.thompson@ontario.ca'
Subject: Fisheries Background Information Request: Batchewana First Nation Wawa Transmission Class EA
Attachments: AEC23-028 Wawa Tranmission Line - Fisheries Table.docx

Good Morning Genevieve,

To introduce myself, I work for Azimuth Environmental Consulting, Inc. (Azimuth) and we have been retained by Alamos Gold Inc. to assist with a Class EA for the construction of a transmission line near Hawk Junction. I received your contact information from Phil Couture who has been working on the project as well.

My email today is to request any background fisheries information that MNRF may have for the study area of the proposed transmission line. I've attached figures in the WeTransfer link below that show the study area, which includes four proposed routes for the transmission line. I've also put together the attached summary table outlining our *preliminary* assessment of fish habitat and thermal regimes of the watercourses and lakes along the four proposed routes.

Wawa figures: https://we.tl/t-5KmIPsgZH6

I've added fisheries information to the table based on available online information from various MNRF Land Information Ontario databases (Aquatic Resource Area Survey Point, Aquatic Resource Area Line Segment, Fish ON-Line). Where fisheries or thermal information was not available for a specific watercourse, I used the proximity to known fish habitat systems and flow direction to infer the anticipated fish habitat and thermal regime. If MNRF has any additional information, or would like to make corrections to the attached table, that would greatly appreciated. Feel free to make track changes in the attached table.

Also, I wanted to confirm appropriate in-water timing windows for coolwater and coldwater systems along these routes. Would MNRF agree with the following permitted in-water timing windows should in-water works be required:

- Coolwater systems: no in-water work permitted from April 1 – July 1
- Coldwater systems: no in-water work permitted from September 15 – July 1

If you would like to discuss anything, please feel free to call.

Regards,

Roger Holmes, M.Sc.,
Senior Aquatic Ecologist/Environmental Site Inspector

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APPENDIX H

Public and Indigenous Consultation Summary

Available On Request