Protected Areas Gap Analysis

FSC Canada National Standard, Principle / Criterion 6.5

Updated: September 2021

Summary for the Sudbury Forest

Contents

Introduction

Gap analysis, in the landscape context, is the analysis of the disproportionate scarcity of certain ecological features in an area, relative to their representation in a larger, surrounding region (Perera and Euler 2000). This analysis focuses on disproportionate representation of ecological features in regulated protected areas relative to the larger, surrounding landscape in accordance with the transition to the new national Forest Stewardship Council (FSC) standard Principle 6, Criterion 6.5 (Forest Stewardship Council 2018). The objective of Criterion 6.5 is to "identify and protect representative sample areas of native ecosystems and/or restore them to more natural conditions".

Current Classifications

Provincial parks and Protected Areas

There are 23 Provincial Parks, 9 Conservation reserves and four Forest Reserves in, or partially within the Sudbury Forest. The purpose of protected areas is to permanently protect a system of provincial parks and conservation reserves that includes ecosystems that are representative of all of Ontario's natural regions, protects provincially significant elements of Ontario's natural and cultural heritage, maintains biodiversity and provides opportunities for compatible, ecologically sustainable recreations. Provincial Parks and Reserves within the Sudbury Forest cover include:

Provincial Park	Class	Area (ha)
Chiniguchi	Waterway	9,368
Daisy Lake Uplands	Nature Reserve	600
Fairbank	Recreation	105
Windy	Recreation	118
Wanapitei	Natural Environment	3,413
French River	Waterway	73,530
Killarney Lakelands and Headwaters	Natural Environment	15,346
Killarney	Wilderness	49,325
Killarney Coast and Islands	proposed Waterway	39,337
Mashkinonje	Natural Environment	2,041
Obabika	Waterway	20,520
Solace	Waterway	5,943
Sturgeon River	Waterway	7,876
Total		227,522

Conservation Reserve	Area (ha)
Atlee	263
Atlee Central Forest	286
Cherriman Township	1,003
Eden Township Forest	145
Garson Forest	204
MacLennon Esker Forest	368
North Yorston	13,183
Pinetorch Lake	3,622

Conservation Reserve	Area (ha)
Tilton Forest	725
Total	19,799

Forest Reserves	Area (ha)
Wolf Lake Old Growth	2,470
Kukagami	3,510
Killarney North	3,228
Chiniguchi Waterway	135
Total	9,343

Significant Ecological Areas (SEA) on the MNRF values maps (LIO non-sensitive values data) are also identified in the forest management plan (FMP). The Haentshcel, Demorest, and Marconi areas do not have overlapping Park, Forest Reserve or Conservation Reserve status. These SEAs were established due to concentrations of older red and white pine and are identified as 'no-cut' deferral areas where they fall outside of regulated Parks or Reserves:

Name	Area (ha)	Status
Haentshcel	564	Unregulated, no-cut
Demorest	908	Unregulated, no-cut
Wolf Lake	2,539	Forest Reserve
Marconi	69	Unregulated, no-cut
McCarthy	1,107	Within Provincial Park (Chiniguchi Waterway)
Scollard	928	Within Provincial Park (French River)
Cherriman	742	Within Provincial Park (French River)
Cow Bay	576	Within Provincial Park (French River)
Total	7,433	

The mapped SEAs outside of parks or reserves are identified for inclusion in the discussion of protected areas gaps as they were identified in the past for their ecological value and have been through a consultation process with the FMP.

The Crown Land Use Policy Atlas (CLUPA) also identifies area W1003 as a Wilderness Area, which is not designated as a park or conservation reserve. Planning direction for the 2020-2030 FMP provided by the MNRF identified this area as being available for forest management. A subsequent review of land use direction has since suggested removing the area from the available land base, pending decisions on the status of this area. As stated in the CLUPA report, this wilderness area contains representative and special features of natural heritage significance. As a result, an amendment request to the 2020-2030 FMP identifies CLUPA area W1003 for withdrawal of the full 55.9 ha.

The basis for current status of regulated protected areas was a comprehensive land use planning and consultation process: Lands for Life / Ontario's Living Legacy (NRIC 1999). This process involved

significant input from stakeholders, First Nations, industry, government and non-government organizations.

While the Lands for Life / Ontario's Living Legacy resulted in a comprehensive system of protected areas, there is an identified need to evaluate potential gaps in protected areas, which is described in FSC Criterion 6.5.

Spatial Analysis

Background

A comprehensive gap analysis was completed in 2006 by Ontario Parks for management units in the Area of the Undertaking (AOU) (Davis 2006). For the Sudbury Forest this analysis covers the spectrum of areas of ecological influence with each overlapping Eco-regions and associated Eco-districts (Wester et al. 2018). This takes into account the representation of areas within and beyond the management unit boundary.

The analysis is based on landform / vegetation (L/V) features both inside and outside of regulated protected areas. Landform / vegetation representation was derived from Quaternary Geology / Landcover28 25-metre grid and protected area coverage, September 08, 2006 (Davis 2006). These L/V classifications represent both enduring features and native ecosystems on the landscape.

The spatial Gap Tool was used to identify the abundance or scarcity of L/V associations, and levels of achievement of protection in parks and reserves. The main focus of this summary are the overlapping areas of rare L/V associations layer and low levels of protection in the achievement layer. Rare features, and their associated other aspects of biodiversity, tend to be at greater risk than more common features. "Under-represented features that appear as red on both the achievement and rarity maps (that is, are rare features that are not well represented in the protected area system) should generally be a focus of conservation planning efforts if opportunities arise." (Davis 2006). By this definition, overlap is between the highest priority areas where Achievement is <25% and Rarity is listed as "Rarest".

Maps of achievement and rarity for each Eco-district in the management unit are presented in Appendix 1. A Status Achievement Overview Map (1:150,000 scale) is also provided which represents the achievement status in four colours. The colours signify the degree to which the minimum representation requirements (usually 1% or 50 hectares) are met for that feature in accordance with Davis (2006).

Tabular Results

The Gap Tool provides output for each Eco-district and is summarised accordingly in digital tables. These tables are included in the original submission from Ontario Parks along with shapefiles and PDF maps. The tables provide lists of L/V associations and respective area (hectares) needed to meet minimum requirements for representation of 50 ha or 1% for each Eco-district as a whole (refer to digital Excel files). For the Eco-districts overlapping the Sudbury Forest the following is noted:

- Nothing larger than 50 ha was identified in 4E-3, 4E-4, 5E-3, 5E-6, 5E-7 to meet requirements,
- For 5E-4 there are 87.2 ha of Fine Lacustrine & Glaciolacustrine / Aspen Dominated; otherwise all L/V associations were less than 50 ha to meet requirements,
- For 5E-5 there are 69.2 ha of Precambrian Int. to Acidic Bdrck / Grass and Meadow; otherwise all L/V associations were less than 50 ha to meet requirements.

Eco-district Level Mapping

The following is a summary of overlap between areas where Achievement is <25% and Rarity is listed as "Rarest" thus indicating a focus for conservation planning as noted in the Gap Tool background. The analysis includes the main Eco-districts covering the management unit: Eco-district 3E-5 Foleyet was not included in the 2006 analysis provided but it only covers a very small portion of McLeod Twp at the north end of the forest.

4E-3 Mississagi

This Eco-district represents a small area on the west side of the management unit and north of the city.

No overlap is noted between the L/V Rarity and Achievement priority criteria (Achievement <25% and Rarity is listed as "Rarest").

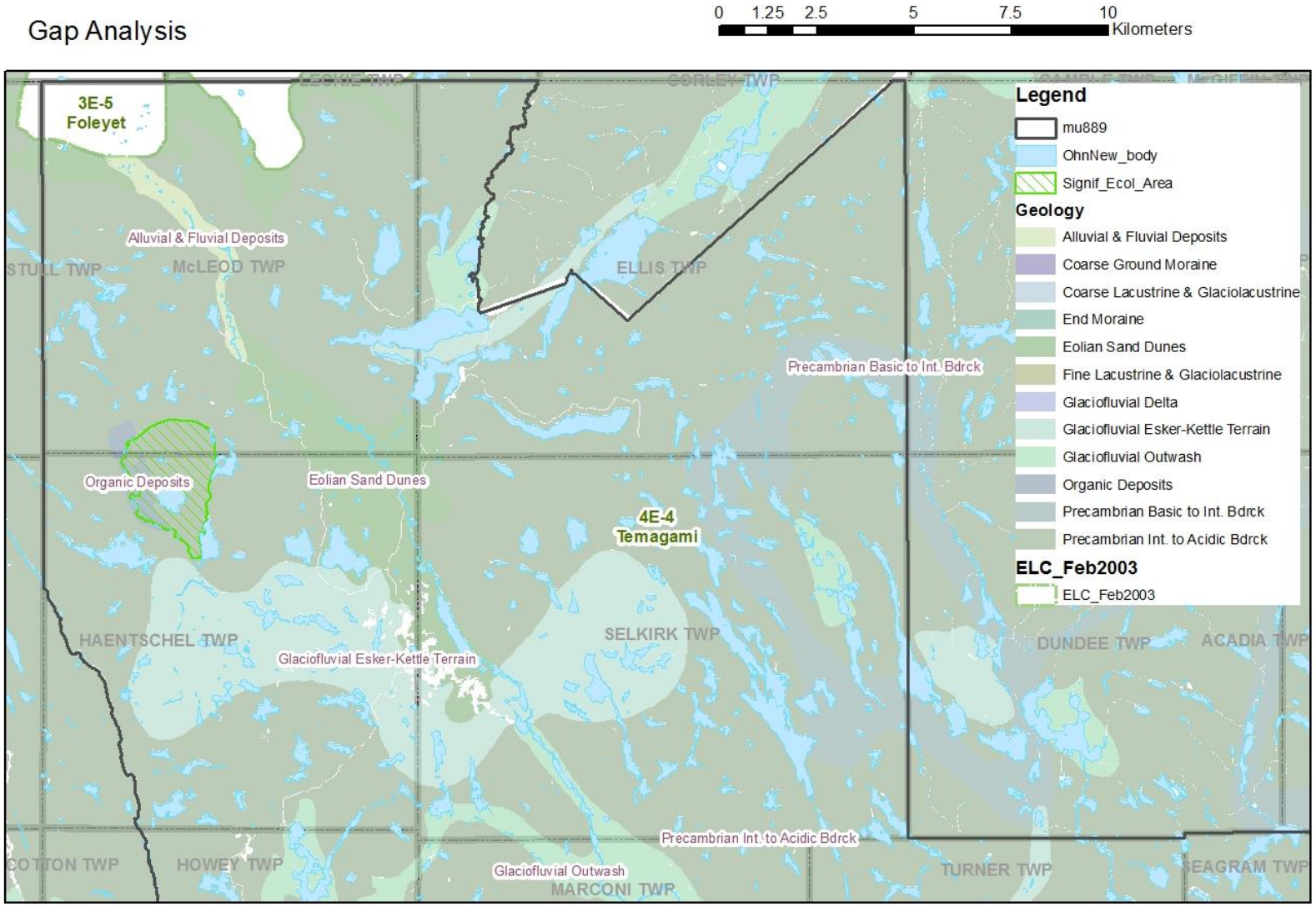
4E-4 Temagami

This Eco-district covers the north end of the management unit.

There are L/V priority overlaps of Eolian Sand Dunes and various vegetation associations spanning McLeod and Haentschel Twps, east of the existing McLeod Road and another area in Lampman Twp.

Additional overlaps occur that appear to be unlikely actual combinations of Organic Deposits with Red Pine and Spruce and Aspen/White birch. Finer mapping (ELC in the planning composite) shows Dry, Sandy: Red Pine- White Pine Conifer and other mixed conifer in these areas (Davis Twp) and Dry to Fresh, Coarse: Aspen - Birch Hardwood with Dry to Fresh, Coarse: Pine - Black Spruce Conifer (Beresford Twp). Also included is jack pine and spruce on organic substrate in Scadding and MacLenna Twps. Finer ELC mapping here also shows upland Dry to Fresh conditions with mixed pines and spruce. Also, some Oak on Organic Deposits (Aylmer Twp) is included in the Gap Tool output where the ELC mapping shows Dry to Fresh, Coarse: Oak Hardwood and shallow soils over rock. Figure 1 shows an example of the scale of geological mapping used in the Gap Tool analysis where finer scale vegetation mapping and actual associated landform / substrate within larger geological areas should be reviewed.

Figure 1. Example of geological mapping in the 4E-4 Temagami Eco-district.



5E-3 La Cloche

This Eco-district covers only a small area of the management unit which is dominated by Killarney Provincial Park. Almost all of the 5E-3 District is covered by the regulated park protected area.

No priority overlaps of L/V _rar and _Ach layers are noted.

5E-4 Sudbury

Eco-district 5E-4 covers much of the centre portion of the management unit.

Overlap of priority criteria (Achievement is <25% and Rarity is listed as "Rarest") of L/V _rar and _Ach layers include Organic Deposits with Hardwoods/Black Ash and Cedar and Balsam Fir (Laura Twp); and areas of Jack Pine (pure) on Organic Deposits in Street, Falconbridge, and Awey Twps (these dry vegetation communities on wet organic sites are also likely a mapping discrepancy where new ELC mapping shows Dry to Fresh, Coarse and Shallow sites as noted in some areas of 4E-4).

Hardwood/Black Ash on Organic substrate (total 160 ha) lies within a portion of Dowling and Fairbank Twps connected to the Provincially Significant Wetland (PSW) of the Vermilion River and along Wanapitei River in Waldie and Laura Twps (this also agrees with newer ELC mapping); also included are Alluvial & Fluvial Deposits with Yellow Birch Assn. The Dowling and Fairbank Twps L/V overlaps also occur largely within the CLUPA designated E180n Vermilion River Natural Heritage Enhanced Management Area. The CLUPA description of the area is stated as: *The Vermilion River and the Vermilion River Delta are two Provincially Significant Wetlands, located on the fringe of a highly populated and developed urban/rural area and are unique physiographical and biological features in the Sudbury Region. The many river meanders, accompanied by numerous ox bow lakes, are an excellent example of river dynamics in concert with vegetative succession. Natural heritage Enhanced Management Areas are intended to protect areas with significant natural values while allowing a range of resource activities.* Within the 2020-2030 FMP the area of E180n is also overlapped by the PSW Area of Concern (AOC). This area would potentially be a suitable candidate for further conservation planning.

Overlapping L/V criteria also occurs in areas of Red Pine (plantation) and White Spruce on Alluvial & Fluvial Deposits along the Vermilion River. This also agrees with ELC ecosites that are designated as G097TtM n and G116TtD n in Lumsden Twp. Additional area of overlap of these L/V associations in Drury Twp northeast of Agnew Lake (part of the river system of the Ministic Creek area that flows into the Spanish River), although these areas are shown in the new ELC as coarser textured substrates.

Figure 2 provides a summary of vegetation communities and associated landforms with L/V overlaps where Achievement is <25% and Rarity is listed as "Rarest" as noted in the Gap Tool on unprotected (unregulated) land within the Sudbury Forest. Green shaded areas are probable occurrences while red text areas are likely the result of mapping discrepancies (i.e., coarse geology mapping showing upland vegetation communities on wet organic substrates).

Figure 2. Summary of L/V Rarity and Achievement overlaps on unregulated areas in 5E-4 within the Sudbury Forest management unit.

Vegetation Community	Alluvial & Fluvial Deposits	Organic Deposits	Total
American Beech Assn.		10.0	10.0
Balsam Fir	3.3	161.2	164.5
Black Spruce-Tam. Mixed		18.9	18.9
Conifer Swamp/Fen/Bog	6.9		6.9
Exposed Rock	44.2		44.2
Grass and Meadow	4.7	8.5	13.2
Hardwoods-Black Ash	27.9	159.8	187.6
Hardwoods-Tamarack		4.0	4.0
Hardwoods-White Cedar		97.9	97.9
Jack Pine (pure)		243.8	243.8
Jack Pine Mixedwoods	48.5		48.5
Jack-Red-White Pine	2.1	36.8	38.9
Open Marsh/Fen/Bog	180.8		180.8
Pines-Mixed Tol Hdwd		49.7	49.7
Pines-Oaks-Red Maple		122.6	122.6
Pines-White Spruce		12.0	12.0
Red Pine Dominated	63.5	31.0	94.6
White Pine-Red Pine	107.5		107.5
White Spruce	145.2		145.2
Yellow Birch Assn.	7.3	0.3	7.7
Total	**641.9**	**956.6**	**1598.5**

5E-5 North Bay

This Eco-district represents a small area on the east side of the management unit.

There is a very small area of overlap (3.0 ha) of L/V rarity and achievement priorities of White Spruce on Organic substrate but this does not agree with new ELC data showing shallow soil and rock.

5E-6 Tomiko

The 5E-6 Eco-district includes a small area along the east side of the management unit.

Small overlapping areas of L/V rarity and achievement priorities occurs for Jack Pine on Organic substrate, which may also a mapping discrepancy (Scadding Twp), e.g., ELC shows Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated.

5E-7 Parry Sound

The south end of the management unit includes part of Eco-district 5E-7.

Some overlap of L/V rarity and achievement priority areas occur in Kilpatrick Twp of various conifer-dominated conditions on Organic Deposits. New ELC mapping shows Dry to Fresh, Coarse substrate and a small area of Moist, Coarse substrate.

Additionally, some overlap of L/V rarity and achievement priorities occur on Boom Island, Struthers Twp. This area is also identified as organic substrate with conifer but new ELC shows Dry to Fresh or Fresh, Silty to Fine Loamy conditions; imagery shows fingers of organic / muskeg throughout.

Planning Composite ELC Analysis

Further to the Ontario Parks work done in 2006 an analysis of ecological gaps was done in 2020 using the provincial Ecological Land Classification (ELC) system of ecosites (Banton et al. 2009) within the management unit. Ecosites represent distinct vegetation and substrate combinations based on a standardized format and process to describe enduring features (i.e., soil / landform) and native ecosystems. This was done using the 2020-2030 FMP planning composite inventory layer. This layer contains protected areas (land ownerships), and primary and secondary ecosites for each terrestrial polygon in the composite. For the purpose of this analysis only the dominant (primary) ecosite was used.

This analysis compared the relative abundance of each ecosite in regulated protected areas (Ownership code 5 or 7) and unregulated Crown land (Ownership code 1). Note that Ownership code 7 includes Forest Reserves which are excluded from forest management but may have mining rights, e.g., Wolf Lake. For the purposes of this analysis Ownership 7 was considered protected as it is excluded from the FMP available harvest area.

Results of the analysis are summarized in Appendix 2. The minimum representation indicator of 1% or 50 ha of each ELC association was used for reference as with the 2006 Ontario Parks Gap Analysis (Davis 2006). For example, three hectares of bluff (G004) occurs on the forest, and none of this area is in a regulated protected area, therefore it is flagged as “Under50, <=1%”. Similarly, there are 46 ha of active mineral shoreline, or beach (G005), with 20 ha (43%) in regulated protected area with the flag of “Under50”. All areas with less than one percent in regulated protected areas are also under 50 ha in size.

The ELC gap analysis may be used in conjunction with the Gap Tool analysis to refine potential priority areas for conservation planning.

Discussion

Spatial analyses of protected area gaps provide an indication of areas of interest that are relatively uncommon on the land base and also have a disproportionately low occurrence in protected areas. These areas are identified by Gap Tool outputs of maps, shapefiles, and tables (Davis 2006) and supplemented with updated ELC mapping and analysis. These analyses do not account for connectivity, individual patch size, or proximity which also need to be considered before identifying potential conservation areas. Due to the scale and resolution of map products any further consideration of candidate areas would also require ground verification. Other priority areas may also take precedence based on consultation and previous initiatives to identify high conservation values (HCV) and HCV areas as identified in the HCV report.

Gap Tool overlaps between rarity (rarest) and low achievement (less than 25% protection) layers as defined by Davis (2006) that appear to coincide with ELC include: Hardwoods-Black Ash on Alluvial / Fluvial and Organic Deposits and White Pine-Red Pine, White Spruce on Alluvial / Fluvial deposits in Eco-district 5E-4, and various vegetation communities on Eolian Deposits in 4E-4. Some of these areas include human-made conditions, e.g., red pine and spruce plantations on alluvial / fluvial deposits along the Vermilion River may be suitable for consideration if more naturalized, as per direction in FSC Principle / Condition 6.5, however, their occurrence may be inflated beyond what would naturally occur on these site types.

Analysis of the Planning Composite ELC using the same minimum representation criteria as Davis (2006) suggests more finely mapped areas with rare occurrences (i.e., less than 50 ha) and low levels of protection in regulated areas (under 1%) may also be considered as conservation priorities, e.g., Bluffs and Beaches, Oak Hardwood Swamp, Fresh/Clayey Hemlock - Cedar Conifer, and Mineral Thicket Swamp, etc. (Appendix 2).

Further designations of conservation areas should consider the spatial analyses completed to date, and periodic updates using new or updated information as well as past planning and consultation initiatives. Analysis and planning from adjacent management units will also need to be considered as each Eco-district overlaps one or more other management units and MNRF Districts.

Areas that have previously been identified as candidates for further protection may also be priorities irrespective of gap indicators. The Wolf Lake Forest Reserve has continued support for full regulated protection from stakeholders and the Vermilion Forest Management Company. Wilderness Area W1003 is also identified for withdrawal from the available land base, and Boom Island in Struthers Township (Eco-district 5E-7) has been identified as a possible candidate for consideration which includes some priority overlap of L/V Rarity and Achievement layers. Hardwood/Black Ash on Organic substrate connected to the Provincially Significant Wetland (PSW) of the Vermilion River occurs largely within the CLUPA designated E180n Vermilion River Natural Heritage Enhanced Management Area (in 5E-4): this may be a promising area for further conservation planning. Other gap areas are identified which could be considered although they lack the connectivity or proximity to other conservation designations. Additionally, the MNRF Values Mapping for FMPs identifies Significant Ecological Areas with ‘no cut’ designations that include older white and red pine stands that may also be included in the considerations for planning conservation areas.

References

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Wester, M.C., B.L. Henson, W.J. Crins, P.W.C. Uhlig, and P.A. Gray. 2018. *The Ecosystems of Ontario, Part 2: Ecodistricts*. Science and Research Technical Report TR-26. 516p.

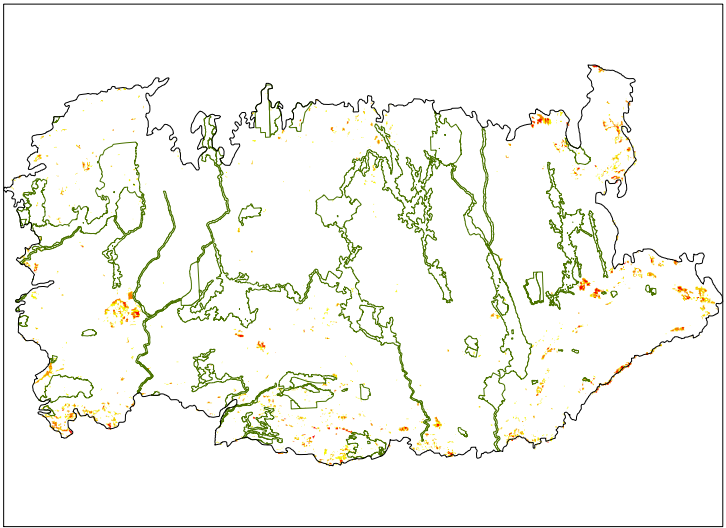
Appendix 1: Maps of 2006 L/V of Achievement and Rarity

Percent of Minimum Representation Requirements Achieved in Ecodistrict 4E-3 (Mississagi)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 20 40 km

Projection: Lambert
Datum: North American Datum 1983

The map is illustrative only. Do not rely on it as a precise indicator of routes, locations of features, nor as a guide to navigation.

This report is based on the best available information at the time of report generation.

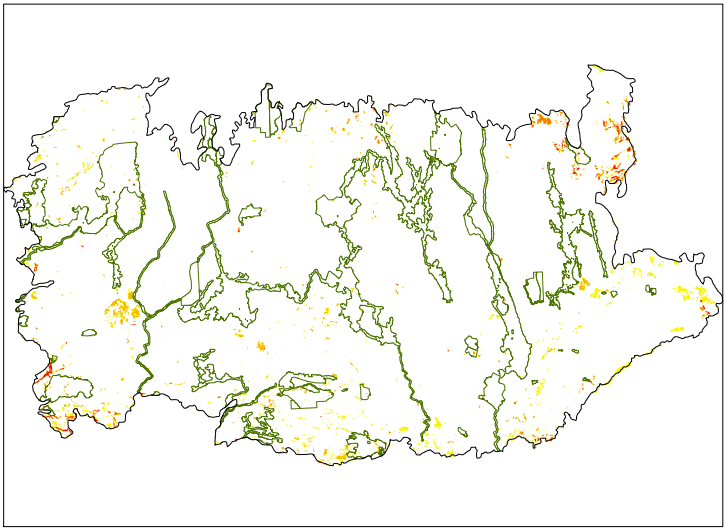
Ontario Ministry of Natural Resources

Representation Gaps by L/V Rarity for Ecodistrict 4E-3 (Mississagi)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



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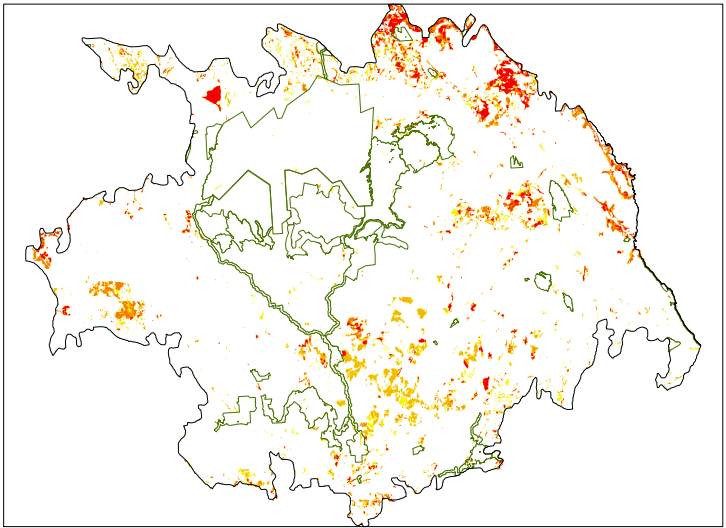
Ontario Ministry of Natural Resources

Percent of Minimum Representation Requirements Achieved in Ecodistrict 4E-4 (Temagami)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 11, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 15 30 km

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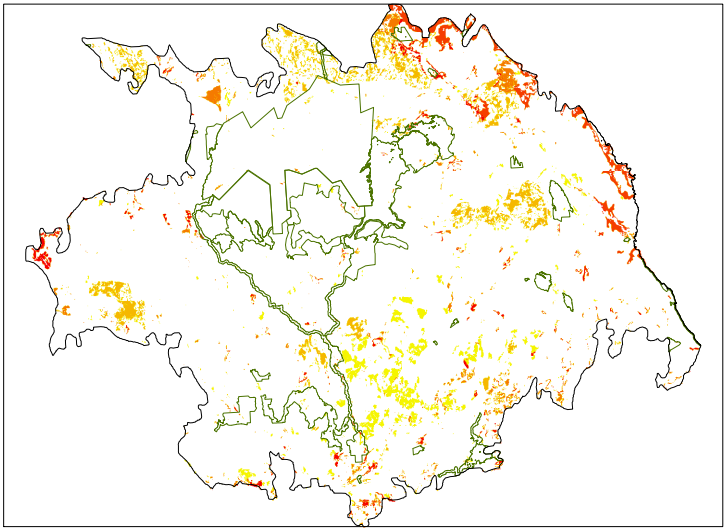
Ontario Ministry of Natural Resources

Representation Gaps by L/V Rarity for Ecodistrict 4E-4 (Temagami)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 11, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



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0 15 30 km

Projection: Lambert
Datum: North American Datum 1983

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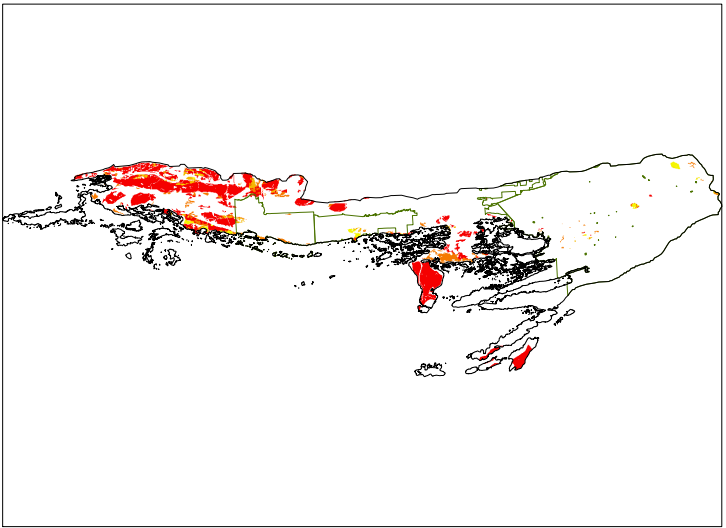
Ontario

Percent of Minimum Representation Requirements Achieved in Ecodistrict 5E-3 (LaCloche)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 06, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 5 10 km

Projection: Lambert
Datum: North American Datum 1983

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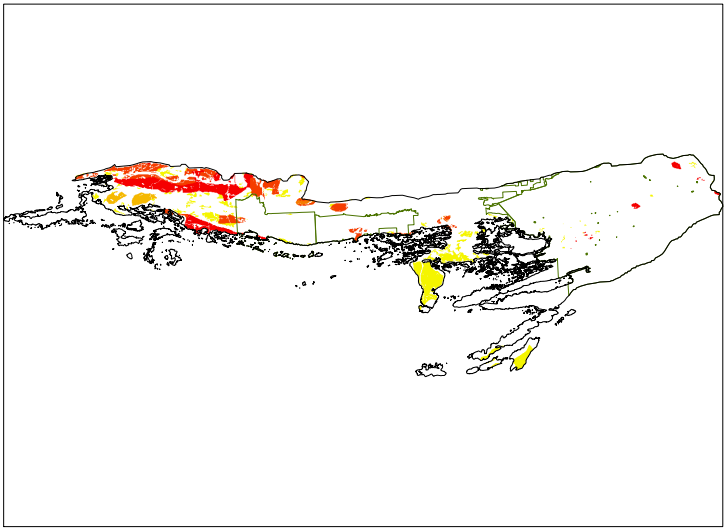
Ontario

Representation Gaps by L/V Rarity for Ecodistrict 5E-3 (LaCloche)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 06, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 5 10 km

Projection: Lambert
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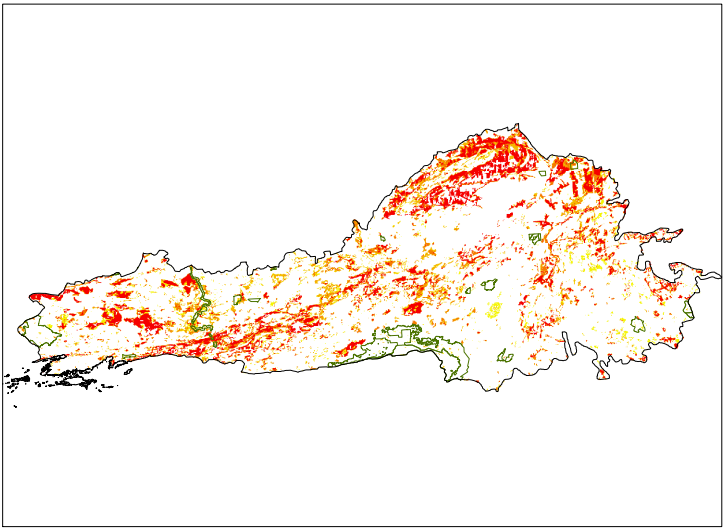
Ontario

Percent of Minimum Representation Requirements Achieved in Ecodistrict 5E-4 (Sudbury)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 20 40 km

Projection: Lambert
Datum: North American Datum 1983

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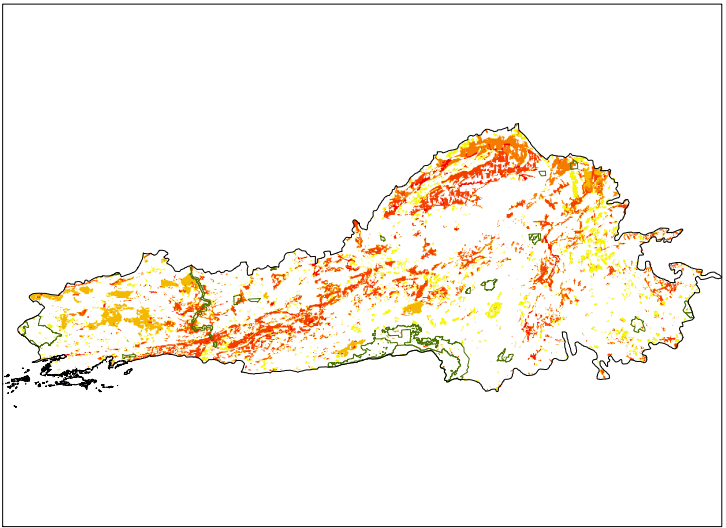
Representation Gaps by L/V Rarity for Ecodistrict 5E-4 (Sudbury)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 20 40 km

Projection: Lambert
Datum: North American Datum 1983

The map is illustrative only. Do not rely on it as a precise indicator of routes, locations of features, nor as a guide to navigation.

This report is based on the best available information at the time of report generation.

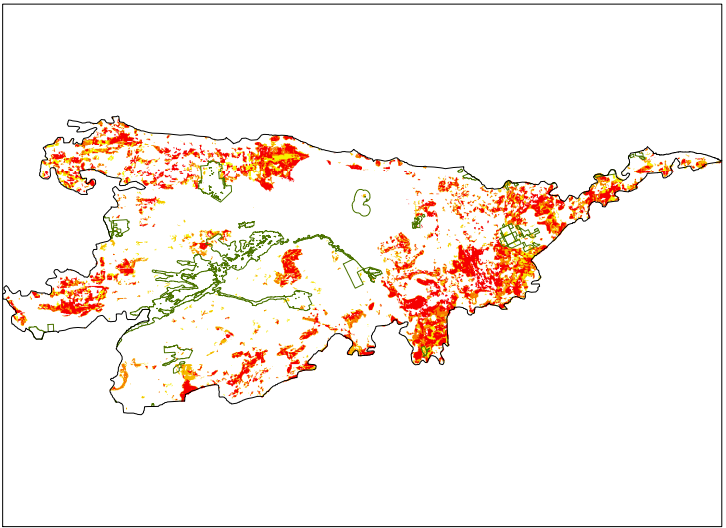
Ontario Ministry of Natural Resources

Percent of Minimum Representation Requirements Achieved in Ecodistrict 5E-5 (North Bay)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 08, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 15 30 km

Projection: Lambert
Datum: North American Datum 1983

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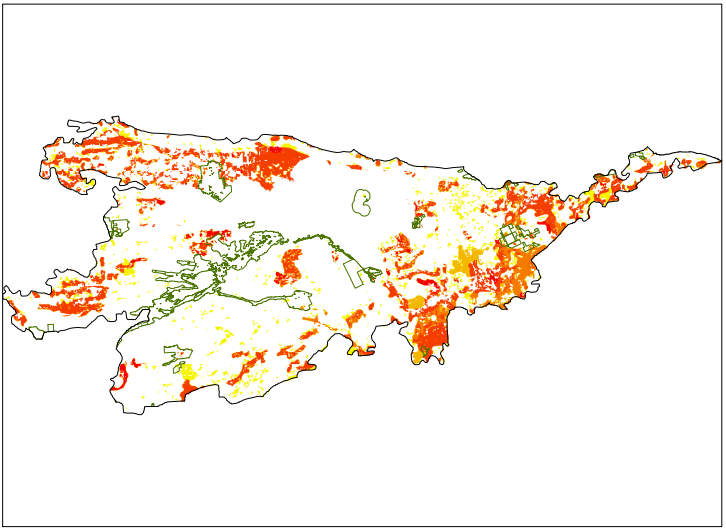
Ontario Ministry of Natural Resources

Representation Gaps by L/V Rarity for Ecodistrict 5E-5 (North Bay)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 08, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 15 30 km

Projection: Lambert
Datum: North American Datum 1983

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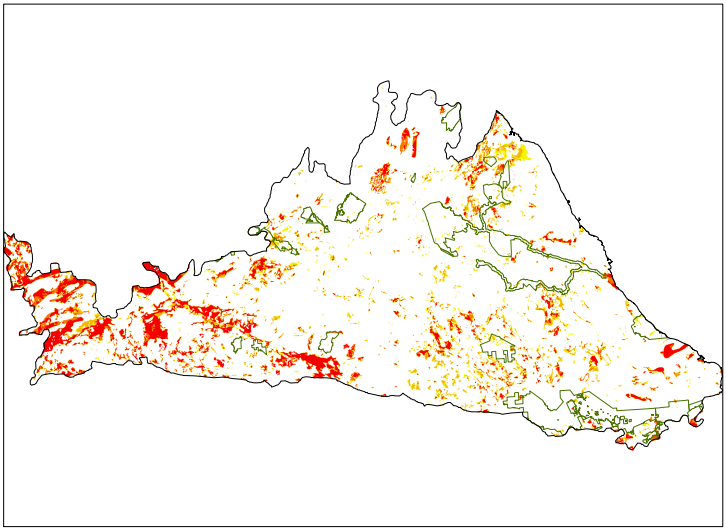
Ontario

Percent of Minimum Representation Requirements Achieved in Ecodistrict 5E-6 (Tomiko)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 06, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 12.5 25 km

Projection: Lambert
Datum: North American Datum 1983

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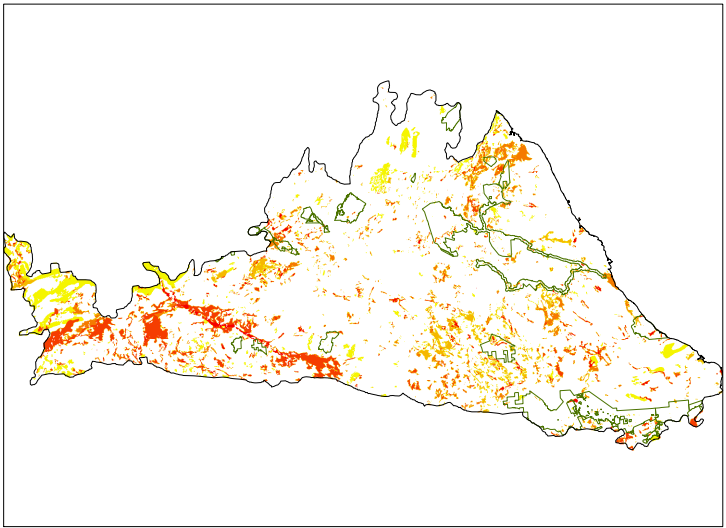
Ontario

Representation Gaps by L/V Rarity for Ecodistrict 5E-6 (Tomiko)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 06, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 12.5 25 km

Projection: Lambert
Datum: North American Datum 1983

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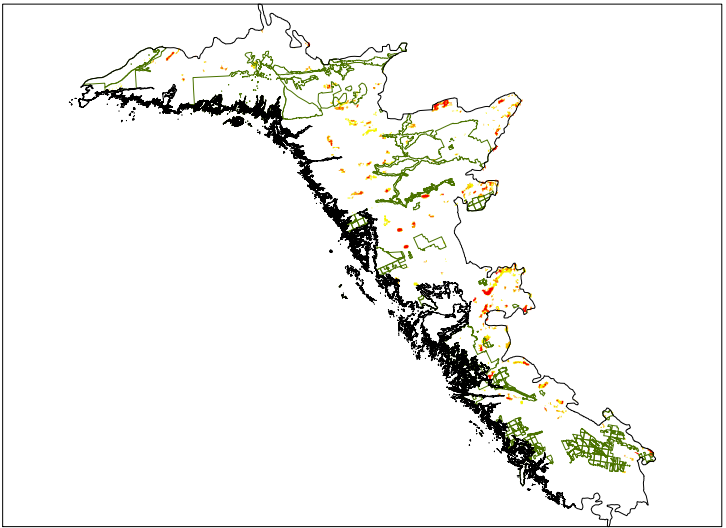
Ontario

Percent of Minimum Representation Requirements Achieved in Ecodistrict 5E-7 (Parry Sound)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006



Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- <25% of Requirements Achieved
- 25-49.9%
- 50-74.9%
- 75-99.9%
- 100% or Greater of Requirements Achieved

Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 20 40 km

Projection: Lambert
Datum: North American Datum 1983

The map is illustrative only. Do not rely on it as a precise indicator of routes, locations of features, nor as a guide to navigation.

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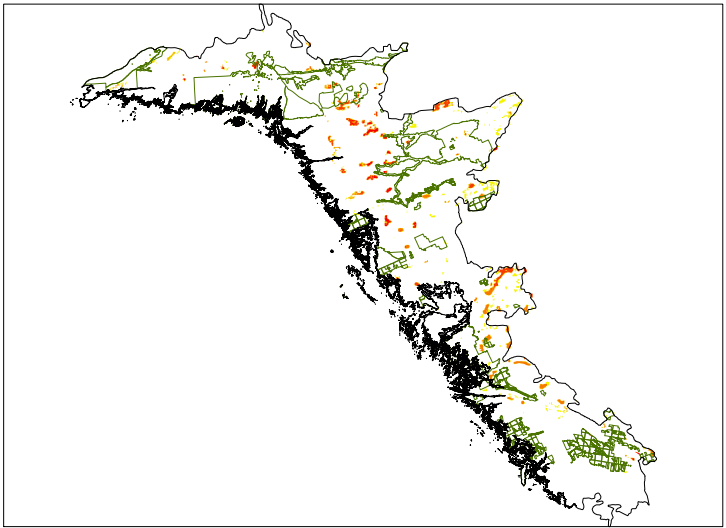
Ontario Ministry of Natural Resources

Representation Gaps by L/V Rarity for Ecodistrict 5E-7 (Parry Sound)

Derived from Quaternary Geology / Landcover28 25-metre grid and current protected area coverage, September 07, 2006

Legend

- Ecodistrict Boundary
- Protected Areas Boundary
- Under-Represented L/V association (most common L/Vs)
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association
- Under-Represented L/V association (rarest L/Vs)



Minimum representation requirements: 1% or 50 ha of each L/V association

N

0 20 40 km

Projection: Lambert
Datum: North American Datum 1983

The map is illustrative only. Do not rely on it as a precise indicator of routes, locations of features, nor as a guide to navigation.

This report is based on the best available information at the time of report generation.

Ontario

Appendix 2: Gap Summary for ELC in the 2020 planning composite

Planning Composite ELC

Ecosites		Area (ha)					
Number	Name	Not Regulated	Regulated	Total	<50 ha Regulated	Percent Regulated (%)	Conservtion Priority
G004	Bluff	3	0	3	Yes	0	Under50, <=1%
G005	Active Mineral Shoreline	26	20	46	Yes	43	Under50
G007	Active Mineral Barren	377	8	386	Yes	2	Under50
G010	Very Shallow, Dry to Fresh: Shrub	9	0	9	Yes	0	Under50, <=1%
G011	Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer	14,145	6,389	20,534	No	31	
G012	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer	13,210	7,444	20,654	No	36	
G013	Very Shallow, Dry to Fresh: Hemlock - Cedar Conifer	44	100	144	No	70	
G014	Very Shallow, Dry to Fresh: Conifer	880	54	934	No	6	
G015	Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood	3,993	832	4,825	No	17	
G016	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood	10,665	781	11,446	No	7	
G017	Very Shallow, Dry to Fresh: Oak Hardwood	953	283	1,236	No	23	
G018	Very Shallow, Dry to Fresh: Maple Hardwood	168	118	286	No	41	
G019	Very Shallow, Dry to Fresh: Mixedwood	90	132	222	No	59	
G023	Very Shallow, Moist: Red Pine - White Pine Conifer	28	12	41	Yes	30	Under50
G024	Very Shallow, Moist: Pine - Black Spruce Conifer	27	0	27	Yes	0	Under50, <=1%
G027	Very Shallow, Moist: Red Pine - White Pine Mixedwood	27	0	27	Yes	0	Under50, <=1%
G028	Very Shallow, Moist: Mixedwood	13	33	46	Yes	73	Under50
G029	Dry, Sandy: Field		0	0	Yes	100	Under50
G031	Dry, Sandy: Sparse Shrub	1	0	1	Yes	0	Under50, <=1%
G032	Dry, Sandy: Shrub	71	0	71	Yes	0	Under50, <=1%
G033	Dry, Sandy: Red Pine- White Pine Conifer	2,981	545	3,526	No	15	
G034	Dry, Sandy: Jack Pine – Black Spruce Dominated	2,402	98	2,500	No	4	
G035	Dry, Sandy: Pine - Black Spruce Conifer	3,051	214	3,265	No	7	
G036	Dry, Sandy: Hemlock - Cedar Conifer	54	191	245	No	78	
G037	Dry, Sandy: Spruce - Fir Conifer	237	23	260	Yes	9	Under50
G039	Dry, Sandy: Red Pine - White Pine Mixedwood	275	53	328	No	16	
G040	Dry, Sandy: Aspen – Birch Hardwood	2,209	226	2,435	No	9	
G041	Dry, Sandy: Oak Hardwood	165	165	330	No	50	
G042	Dry, Sandy: Maple Hardwood	103	48	152	Yes	32	Under50
G043	Dry, Sandy: Mixedwood	28	0	28	Yes	0	Under50, <=1%
G044	Dry to Fresh, Coarse: Field	75	2	77	Yes	2	Under50
G046	Dry to Fresh, Coarse: Sparse Shrub	206	5	211	Yes	2	Under50
G047	Dry to Fresh, Coarse: Shrub	115	8	122	Yes	6	Under50
G048	Dry to Fresh, Coarse: Red Pine - White Pine Conifer	124,819	31,956	156,776	No	20	

Planning Composite ELC

Ecosites		Area (ha)					
Number	Name	Not Regulated	Regulated	Total	<50 ha Regulated	Percent Regulated (%)	Conservtion Priority
G049	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	20,651	3,181	23,832	No	13	
G050	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	47,479	4,685	52,164	No	9	
G051	Dry to Fresh, Coarse: Hemlock - Cedar Conifer	1,725	2,782	4,507	No	62	
G052	Dry to Fresh, Coarse: Spruce - Fir Conifer	12,548	1,672	14,220	No	12	
G053	Dry to Fresh, Coarse: Conifer	243	122	365	No	33	
G054	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood	36,147	11,408	47,555	No	24	
G055	Dry to Fresh, Coarse: Aspen - Birch Hardwood	92,669	12,119	104,789	No	12	
G056	Dry to Fresh, Coarse: Elm - Ash Hardwood	143	28	171	Yes	17	Under50
G057	Dry to Fresh, Coarse: Oak Hardwood	4,262	1,888	6,150	No	31	
G058	Dry to Fresh, Coarse: Maple Hardwood	11,905	8,978	20,882	No	43	
G059	Dry to Fresh, Coarse: Mixedwood	1,334	900	2,234	No	40	
G060	Moist, Coarse: Field	1	0	1	Yes	0	Under50, <=1%
G063	Moist, Coarse: Shrub	49	0	49	Yes	0	Under50, <=1%
G064	Moist, Coarse: Red Pine - White Pine Conifer	6,298	1,727	8,024	No	22	
G065	Moist, Coarse: Pine - Black Spruce Conifer	17,366	1,729	19,095	No	9	
G066	Moist, Coarse: Hemlock - Cedar Conifer	1,246	440	1,686	No	26	
G067	Moist, Coarse: Spruce - Fir Conifer	4,368	785	5,154	No	15	
G068	Moist, Coarse: Conifer	85	18	103	Yes	17	Under50
G069	Moist, Coarse: Red Pine - White Pine Mixedwood	1,403	417	1,820	No	23	
G070	Moist, Coarse: Aspen - Birch Hardwood	6,943	1,479	8,422	No	18	
G071	Moist, Coarse: Elm - Ash Hardwood	542	113	655	No	17	
G072	Moist, Coarse: Oak Hardwood	9	0	9	Yes	0	Under50, <=1%
G073	Moist, Coarse: Sugar Maple Hardwood	457	601	1,058	No	57	
G074	Moist, Coarse: Red Maple Hardwood	492	239	731	No	33	
G075	Moist, Coarse: Maple Hardwood	45	85	130	No	66	
G076	Moist, Coarse: Mixedwood	86	113	200	No	57	
G081	Fresh, Clayey: Red Pine - White Pine Conifer	176	96	272	No	35	
G082	Fresh, Clayey: Jack Pine - Black Spruce Dominated	16	0	16	Yes	0	Under50, <=1%
G083	Fresh, Clayey: Pine - Black Spruce Conifer	14	10	24	Yes	42	Under50
G084	Fresh, Clayey: Hemlock - Cedar Conifer	19	0	19	Yes	0	Under50, <=1%
G085	Fresh, Clayey: Spruce - Fir Conifer	45	18	63	Yes	29	Under50
G087	Fresh, Clayey: Red Pine - White Pine Mixedwood	57	21	78	Yes	27	Under50
G088	Fresh, Clayey: Aspen - Birch Hardwood	206	73	279	No	26	
G091	Fresh, Clayey: Maple Hardwood	46	8	54	Yes	14	Under50

Planning Composite ELC

Ecosites		Area (ha)					
Number	Name	Not Regulated	Regulated	Total	<50 ha Regulated	Percent Regulated (%)	Conservtion Priority
G092	Fresh, Clayey: Mixedwood		21	21	Yes	100	Under50
G093	Fresh, Silty to Fine Loamy: Field	33	3	36	Yes	8	Under50
G095	Fresh, Silty to Fine Loamy: Sparse Shrub	112	0	112	Yes	0	Under50, <=1%
G096	Fresh, Silty to Fine Loamy: Shrub	218	0	218	Yes	0	Under50, <=1%
G097	Fresh, Silty to Fine Loamy: Red Pine - White Pine Conifer	1,826	548	2,374	No	23	
G098	Fresh, Silty to Fine Loamy: Jack Pine - Black Spruce Dominated	215	0	215	Yes	0	Under50, <=1%
G099	Fresh, Silty to Fine Loamy: Pine - Black Spruce Conifer	470	18	488	Yes	4	Under50
G100	Fresh, Silty to Fine Loamy: Hemlock - Cedar Conifer	142	99	241	No	41	
G101	Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	394	29	423	Yes	7	Under50
G102	Fresh, Silty to Fine Loamy: Conifer	45	1	46	Yes	1	Under50
G103	Fresh, Silty to Fine Loamy: Red Pine - White Pine Mixedwood	285	58	342	No	17	
G104	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood	959	37	996	Yes	4	Under50
G105	Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	23	6	29	Yes	20	Under50
G106	Fresh, Silty to Fine Loamy: Oak Hardwood	3	0	3	Yes	0	Under50, <=1%
G107	Fresh, Silty to Fine Loamy: Maple Hardwood	386	66	451	No	15	
G108	Fresh, Silty to Fine Loamy: Mixedwood	18	0	18	Yes	0	Under50, <=1%
G113	Moist, Fine: White Pine Conifer	429	307	736	No	42	
G114	Moist, Fine: Pine - Black Spruce Conifer	332	7	338	Yes	2	Under50
G115	Moist, Fine: Hemlock - Cedar Conifer		136	136	No	100	
G116	Moist, Fine: Spruce - Fir Conifer	279	11	290	Yes	4	Under50
G117	Moist, Fine: Conifer	61	0	61	Yes	0	Under50, <=1%
G118	Moist, Fine: White Pine Mixedwood	132	33	165	Yes	20	Under50
G119	Moist, Fine: Aspen - Birch Hardwood	520	166	686	No	24	
G120	Moist, Fine: Elm - Ash Hardwood	132	29	161	Yes	18	Under50
G121	Moist, Fine: Oak Hardwood		24	24	Yes	100	Under50
G122	Moist, Fine: Sugar Maple Hardwood	43	271	314	No	86	
G123	Moist, Fine: Red Maple Hardwood	111	93	204	No	46	
G124	Moist, Fine: Maple Hardwood	3	35	38	Yes	92	Under50
G125	Moist, Fine: Mixedwood	67	38	105	Yes	36	Under50
G126	Treed Bog	180	4	184	Yes	2	Under50
G127	Organic Poor Conifer Swamp	460	47	507	Yes	9	Under50
G128	Organic Intermediate Conifer Swamp	11,778	911	12,689	No	7	
G129	Organic Rich Conifer Swamp	1,398	120	1,519	No	8	
G130	Intolerant Hardwood Swamp	909	239	1,148	No	21	

Planning Composite ELC

Ecosites		Area (ha)					
Number	Name	Not Regulated	Regulated	Total	<50 ha Regulated	Percent Regulated (%)	Conservtion Priority
G131	Maple Hardwood Swamp	42	35	77	Yes	46	Under50
G132	Oak Hardwood Swamp	11	0	11	Yes	0	Under50, <=1%
G133	Hardwood Swamp	13	31	44	Yes	70	Under50
G134	Mineral Thicket Swamp	46	0	46	Yes	0	Under50, <=1%
G135	Organic Thicket Swamp	5,996	1,260	7,256	No	17	
G136	Sparse Treed Fen	4,978	1,123	6,101	No	18	
G137	Sparse Treed Bog	128	37	166	Yes	23	Under50
G138	Open Bog	390	2	392	Yes	1	Under50, <=1%
G139	Poor Fen	9,581	2,672	12,253	No	22	
G140	Open Moderately Rich Fen	8,014	780	8,794	No	9	
G141	Open Extremely Rich Fen	94	4	98	Yes	4	Under50
G142	Mineral Meadow Marsh	11,082	2,096	13,178	No	16	
G143	Rock Meadow Marsh	1	0	1	Yes	0	Under50, <=1%
G144	Organic Meadow Marsh		0	0	Yes	100	Under50
G146	Open Shore Fen	6,498	1,578	8,076	No	20	
G147	Shrub Shore Fen	242	22	264	Yes	8	Under50
G158	Cliff	292	64	356	No	18	
G159	Open Cliff	41	0	41	Yes	0	Under50, <=1%
G161	Bedrock Shoreline	124	10	134	Yes	8	Under50
G164	Rock Barren	9,202	7,899	17,101	No	46	
G165	Open Rock Barren	1,549	638	2,187	No	29	
G167	Talus or Historic/Raised Beach	4	1	4	Yes	12	Under50
G168	Open Talus or Historic/Raised Beach		1	1	Yes	100	Under50
G189	Constructed Vertical Surface	2	0	2	Yes	0	Under50, <=1%
G191	Active Waste Disposal/Landfill	11	0	11	Yes	0	Under50, <=1%
G193	Active Coarse Clean Fill	23	0	23	Yes	0	Under50, <=1%
G195	Active Fine Clean Fill	6	0	6	Yes	0	Under50, <=1%
G197	Pavement/Concrete	1,685	97	1,782	No	5	
G200	Other Materials	100	0	100	Yes	0	Under50, <=1%
G222	Mineral Poor Conifer Swamp	71	0	71	Yes	0	Under50, <=1%
G223	Mineral Intermediate Conifer Swamp	98	6	104	Yes	6	Under50
G224	Mineral Rich Conifer Swamp	54	121	175	No	69	
U997	NA	102	0	102	Yes	0	Under50, <=1%
U998	NA	1,291	29	1,320	Yes	2	Under50

Planning Composite ELC

Ecosites		Area (ha)					
Number	**Name**	**Not Regulated**	**Regulated**	**Total**	**<50 ha Regulated**	**Percent Regulated (%)**	**Conservtion Priority**
U999	NA	701	88	789	No	11	
	Total	**534,960**	**127,427**	**662,387**		**19**	