Conservation Area Network Gap Analysis for the Kenogami Forest

March 24,2021 – Version 2

Contents

List of Tables

List of Figures

1.0 Purpose

FSC criteria and indicator 6.5 requires that the applicant complete an analysis to identify potential gaps in the completeness of the Conservation Areas Network in the Management Unit. Elements considered for inclusion in the gap analysis address enduring features, representation of native ecosystems, landscape connectivity, High Conservation Values and High Conservation Value areas as per the FSC National Forest Stewardship Standard of Canada (V-1-0).

Consultation and Indigenous engagement have commenced with the seven (7) Indigenous communities that traditionally have used the Kenogami Forest. This report has been reviewed and presented to the seven (7) communities' local Indigenous peoples whose traditional territory overlaps with the Kenogami Forest and discussed with self-identified interested and effected stakeholders regarding the identification and management of designated conservation lands. Engagement with Indigenous peoples and self-identified interested and effected stakeholders is an ongoing process on the Kenogami Forest.

There are many ways to conduct an ecological gap analysis. These range from simply superimposing protected areas onto biodiversity maps to more complex analysis such as detailed mapping and using decision-support computer software to develop optimal protected area networks. The following report presents the results of the gap analysis as conducted by the Ontario Ministry of Natural Resources and Forestry for ecodistricts that overlap with the Kenogami Forest.

1.1 Ontario's Approach to Ecological Representation

The Ontario Ministry of Natural resources and Forestry (OMNRF) uses a protected area planning system based on the Ecological Land Classification (ELC), which is a hierarchy of ecosystem classification ranking (Ecozone, Ecoregions and Ecodistricts).

Ecozones - At the highest level, ecosystems are divided into ecozones based on continental climate regimes and bedrock. There are three ecozones defined for Ontario (1-Hudson Bay Lowlands; 2-Ontario Shield; 3-Mixedwood Plains). The Ontario Shield ecozone encompasses most of the northwestern Ontario region and covers 98% of the Kenogami Forest, with a small portion in the Hudson Bay Lowlands ecozone. The climate in this ecozone is relatively cold and moist, with long, cold winters and short, warm summers. However, there is a wide range of temperature, precipitation, and humidity patterns (*Crins et al. 2009).* The area contains most of the precambrian bedrock of the province. Ecozones are subdivided into ecoregions, which are identified primarily by sub-continental climatic regimes and bedrock geology. Ecoregions are subdivided into ecodistricts identified primarily by patterns of relief, geology, geomorphology, and substrate parent material.

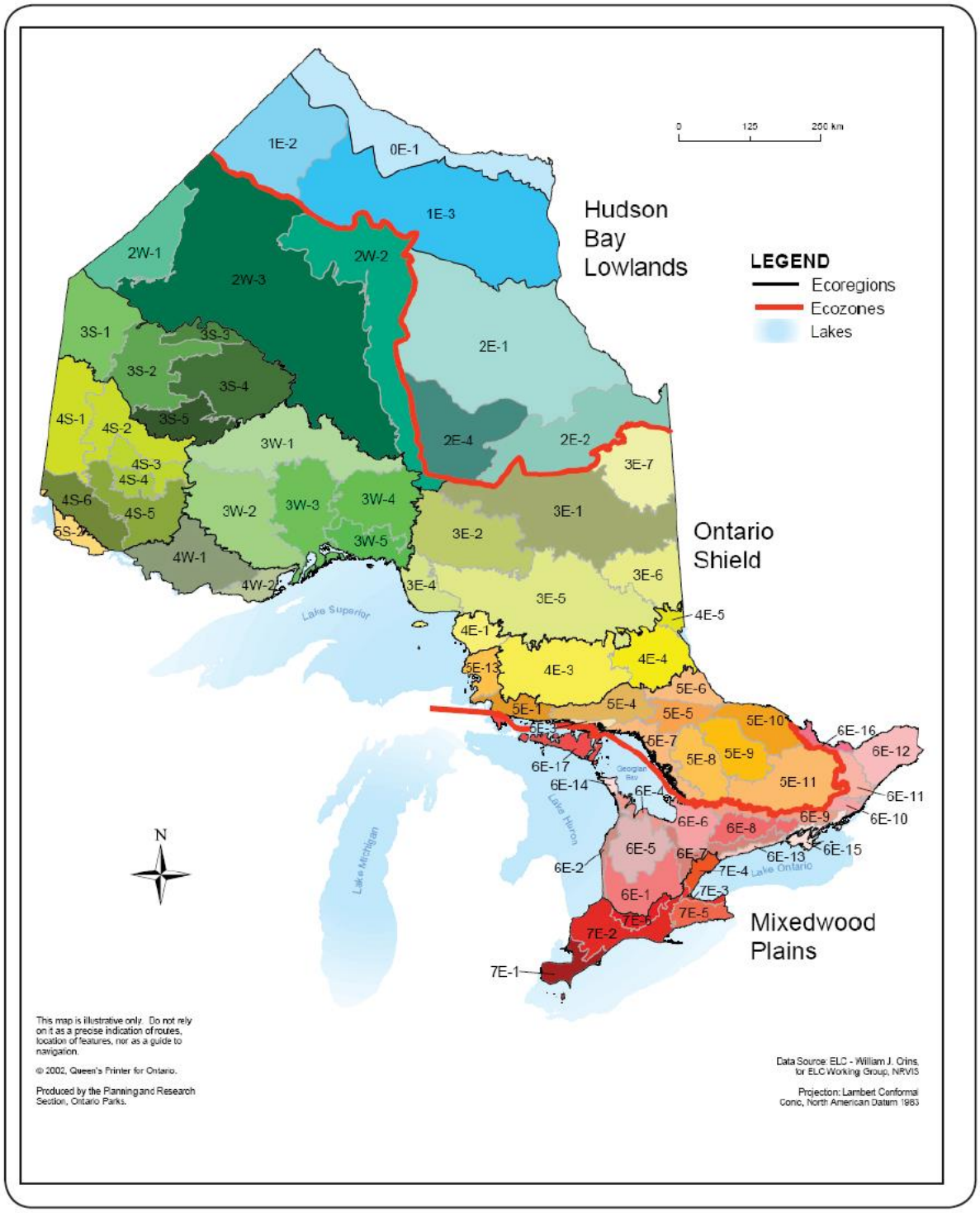
Ecoregions and Ecodistricts – There are nine (9) ecoregions in the Ontario Shield ecozone. The Kenogami Forest is primary comprised of ecozones 3W and 2W. Ecoregions are primarily characterized by climatic patterns, and Ecodistricts (e.g. 3W-1, 3W-5), distinguished by physiographic differences and by the successional trends exhibited by the predominant vegetation type on those physiographic features.

The major ecosystem organizers and boundary determinants at the two upper levels in the provincial ELC hierarchy (i.e. ecozones and ecoregions), include bedrock geology at the ecozone level and climatic variables at the ecoregion level. It is important to recognize that the biotic components of ecosystems such as communities of organisms as well as individual species, respond to these higher-order

ecosystem drivers, as well as finer-scale features such as substrates and microclimate (*Crins et al. 2009).*

Ecoregions and ecodistricts are the ecosystem classes generally applied to protected areas planning in Ontario. Ecodistricts are also considered to be the appropriate units for forest license planning and inventory. Figure 1 presents the ecozones, ecoregions, and ecodistricts of Ontario. Figure 2 represents the ecozones that overlap with the Kenogami Forest. Protected areas are regulated under the Provincial Parks and Conservation Reserves Act.

Figure 1. Map of Ecozones, Ecoregions and Ecodistricts of Ontario.



Source: The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions, 2009. William J. Crins, Paul A. Gray, Peter W.C. Uhlig, and Monique C. Wester.

1.2 Ontario's Ecological Representation Analysis

The concept of ecological representation has developed is a method to help conserve biological diversity. Ecological representation is based on the principle that the full range of Ontario's natural diversity should be systematically identified and protected. Fundamentally, protected area systems should include representative examples of the known biodiversity within ecologically defined regions. Gaps in representation may include examples of biodiversity that are not adequately represented within protected areas. Gap analyses identify features that are not sufficiently represented within protected areas. Gap analyses are used to evaluate the degree of protection already in place for aspects of biodiversity, so that conservation efforts can be focused on species or communities of highest need. Elements of biodiversity with lower levels of existing protection generally merit higher priority for conservation efforts (*Gap Tool User's Guide, 2006*).

MNRF has chosen to use naturally occurring landform/vegetation associations as surrogates to represent the range of biodiversity in terrestrial ecosystems. This concept incorporates coarse elements of the physical environment (surficial geology landforms) and local biotic elements (vegetation associations) as a more complete basis for assessing terrestrial diversity on the landscape (MNRF 1997). The theory behind the approach predicts that, through representation of naturally occurring landform/vegetation associations, a set of representatives, functional terrestrial ecosystems will be protected and maintained. MNRF's minimum requirements are to represent at least 1% or 50 hectares of each naturally-occurring landform/vegetation association within each of Ontario's 71 ecodistricts. These are minimum requirements, and do not imply adequacy of representation. For further information on this approach, refer to Crins and Kor (2000) or Davis and McCalden (2004).

Although representation is the primary concept used to identify possible additions to Ontario's system of protected areas, it is not the only one. Other important considerations include: ecological functions, such as hydrological benefits; diversity of ecosystems, habitats, species, or other features; condition in terms of relative freedom from human disturbance; connectivity with other protected areas; and special features such as species at risk or localized geological features. Therefore, it is important to consider protected areas not only within the boundaries of the Kenogami Forest, but also consider areas adjacent to the forest when information is available. This is further discussed in Section 3.1 where areas inside and adjacent to the forest are discussed.

The OMNRF uses gap analysis to assess achievement of ecological representation (LV targets) and identify underrepresented features requiring additional protection within Ontario's system of protected areas. *"Gaptool"* is an ArcGIS-based gap analysis tool to assess the current representation of landform/vegetation types (LV types) within individual ecodistricts. The Ontario gap analysis methodology identifies the landform features and the vegetation features on each landform unit; assesses existing representation; and identifies the gaps. The results of a gap analysis conducted by the OMNRF for ecodistricts overlapping the Kenogami Forest is documented in this report.

This analysis is based on the LV FRI, which is a composite data set based on the best available information within each ecodistrict, primarily within the Ontario Shield Ecozone. Landforms are translated to a consistent legend. Vegetation is based on Forest Resource Inventory (FRI) data classified into a set of 44 vegetation classes based on tree species composition and non-forest attributes.

By default, *GapTool* is configured to include the following types of protected areas in its analyses: national parks

- provincial parks
- conservation reserves
- wilderness areas, and
- recommended provincial parks and conservation reserves.

The boundaries of protected areas change from time to time as sites are recommended, regulated, and revised. Ontario Parks maintains the most recent boundary information on provincial protected areas (*GapTool*: *An Analytical Tool for Ecological Monitoring and Conservation Planning, 2006).* Other protected areas can also be included in gap analyses, provided their boundaries are stored in appropriate GIS format including other types of protected areas, such as Areas of Natural and Scientific Interest (ANSIs) or privately owned conservation easements within a gap analysis.

2.0 Ecodistricts

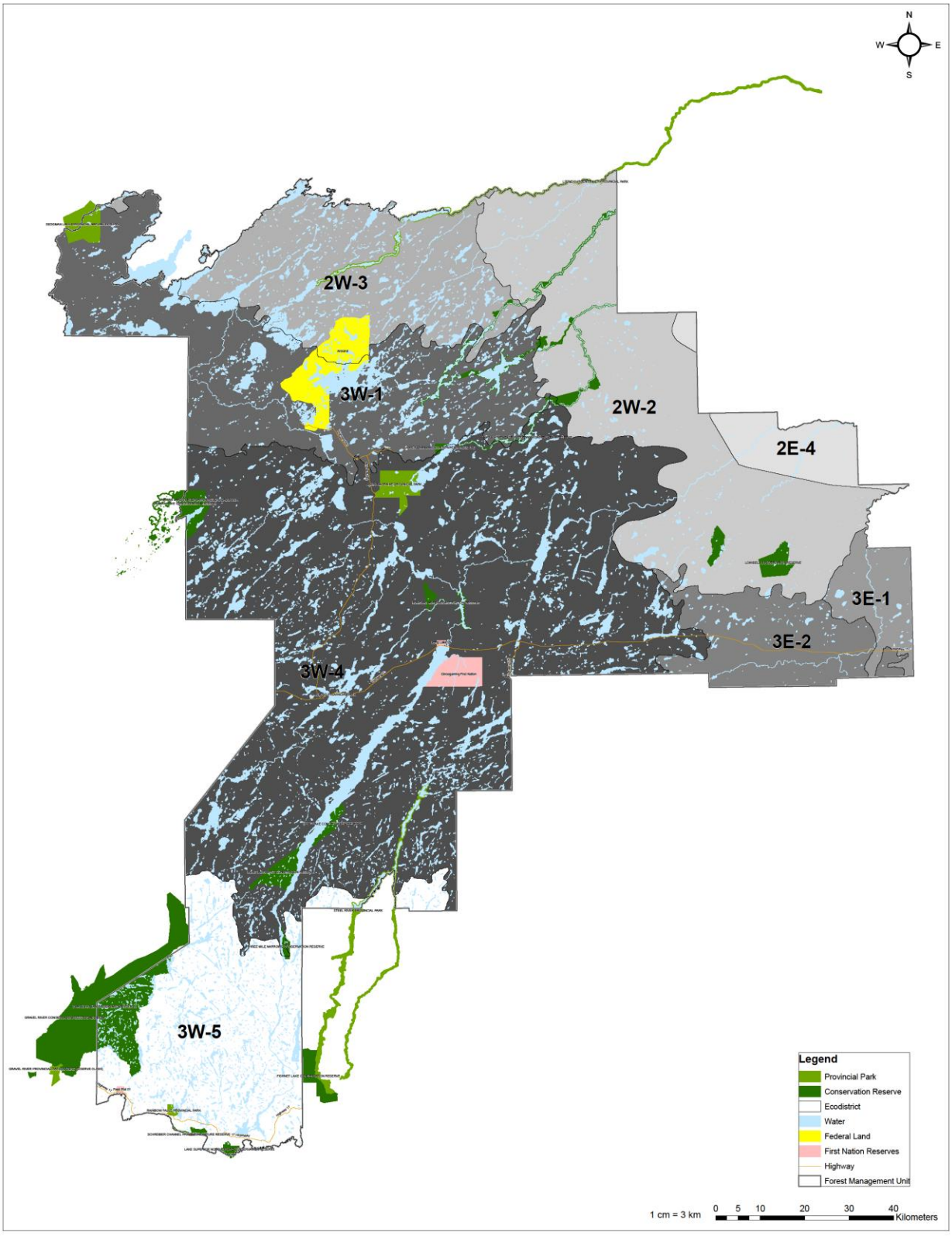
The Kenogami Forest is associated with eight (8) ecodistricts contained within ecoregions 3W, 2W, 3E and 2E. The percent of area requirements achieved ranged between 54.6% (ecodistrict 2W-2) and 94.6% (ecodistrict 3W-1), with an average of 78.2%.

Table 1. Proportion of Ecodistricts & Area of All L/V Achieved

Ecodistrict	Ecoregion	Proportion of Kenogami Forest*	Area of All L/V Association Representation requirements achieved (%)**	Area of All L/V Association Representation requirements achieved (ha)**
3W-4	Lake Nipigon	46%	62.7%	10,644 of 16,981
2W-2	Big Trout Lake	16%	54.6%	21,220 of 38,873
3W-1	Lake Nipigon	14%	94.6%	23,258 of 24,594
3W-5	Lake Nipigon	11%	70.4%	8,685 of 12,332
2W-3	Big Trout Lake	5%	85.5%	78,788 of 92,150
3E-2	Lake Abitibi	4%	81.9%	19,536 of 23,849
2E-4	James Bay	2%	86.6%	20,978 of 24,217
3E-1	Lake Abitibi	2%	89.2%	37,173 of 41,689
Average %			***78.2%***	

**Source: Kenogami Forest 2011-2021 FMP Analysis Package Section 2.2.3 (p. 40)*
***Source: Landform/vegetation (L/V) associations datasets as per MNRF*

Figure 2. Map of Ecodistricts Overlapping with the Kenogami Forest.



3.0 Existing Protected Areas in or Adjacent to the Kenogami Forest Boundary

3.1 Provincial Parks and Conservation Reserves

Provincial Parks and Conservation Reserves are Crown lands that are not available for forest management activities. These lands are regulated under the *Provincial Parks Act* and Conservation Reserves designated under the *Provincial Parks and Conservation Reserves Act* (2006). Some of these areas were set aside from forest management activities through Ontario's Living Legacy.

Existing protected areas are located within the eight ecodistricts overlapping the Kenogami Forest. Current levels of protection include 20 protected areas which include two additional recommended areas, with sizes ranging from 12 hectares to 18,222 hectares, and total approximately 70,026 hectares. Table 2 lists the parks and protected areas that are in as well as the portions that are adjacent to the Kenogami Forest.

Table 2. Existing Parks & Protected Areas in the Kenogami Forest Boundaries

Name	CLUPA Reference ID	Classification (Category)	Area (ha)
Sedgman Lake	P2674	Provincial Park (nature reserve)	3,648
Sedgman Lake Addition	P2674	Provincial Park (nature reserve)	227
Little Current River	P2664	Provincial Park (waterway)	4,507
MacLeod	P2666	Provincial Park (recreation)	86
Nakina Moraine	P2667	Provincial Park (natural environment)	5,331
Rainbow Falls	P2671	Provincial Park (recreation)	580
Schreiber Channel	P2673	Provincial Park (nature reserve)	12
Steel River	P2678	Provincial Park (waterway)	3,087
Sub-total			**17,476**
Gravel River	C2225	Conservation Reserve	18,222
Lake Superior North Shore	C2222	Conservation Reserve	1,338
Lower Twin Lake	C2209	Conservation Reserve	378
Low/Bell	C2201	Conservation Reserve	5,576
Nakina Northeast Waterway	C2204	Conservation Reserve	13,909
Longlac North	C2207	Conservation Reserve	1,829
Long Lake	C2216	Conservation Reserve	1,720
Long Lake West	C2216	Conservation Reserve	4,580
Fishnet Lake	C2217	Conservation Reserve	4
Three Mile Narrows	C2219	Conservation Reserve	804
Onaman Lake	C2223	Conservation Reserve	2,937
Onaman Lake (recommended)	C2223	*Conservation Reserve*	*1,253*
Sub-total			**52,550**
Grand Total			**70,026**

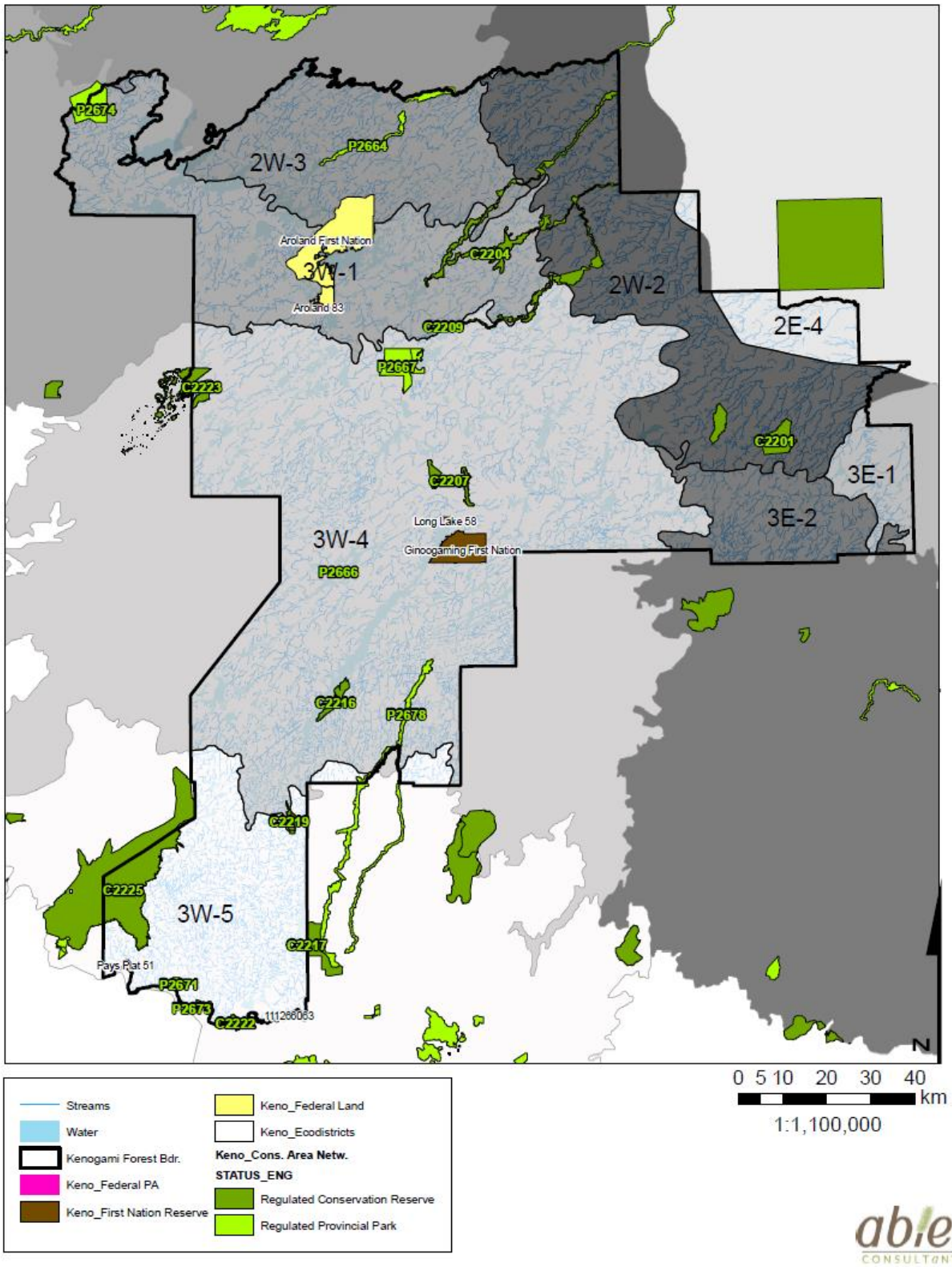
In addition to park and conservation reserve areas located entirely within the Kenogami Forest, there are some that are on the boundary of the forest that overlap onto other forests. Although these protected areas are outside the Kenogami Forest boundaries, when they are combined with the adjacent area inside the forest, they do provide significant additional core protected areas for flora and fauna and can provide travel corridors or refuge for some wildlife species, and should not be disregarded. Table 3 identifies the areas in addition to those presented in Table 2, which provide an additional 49,876 ha of protected areas outside the Kenogami Forest, but are part of those inside the forest boundaries.

Table 3. Existing Parks & Protected Areas Adjacent to the Kenogami Forest Boundaries

Name	CLUPA Reference ID	Classification (Category)	Area (ha)
Gravel River	P2660	Provincial Park (nature reserve)	733
Sedgman Lake	P2674	Provincial Park (nature reserve)	2,112
Little Current River	P2666	Provincial Park (recreation)	5,168
Steel River	P2678	Provincial Park (waterway)	7,936
subtotal			**15,952**
Conservation Reserves			
Gravel River	C2225	Conservation Reserve	28,410
Lake Superior North Shore	C2222	Conservation Reserve	163
Fishnet Lake	C2217	Conservation Reserve	3,500
Onaman Lake	C2223	Conservation Reserve	1,851
subtotal			**33,924**
Grand Total			**49,876**

Figure 3 represents the parks and conservation reserves that are contained within each ecodistrict on the Kenogami Forest. Sixty-seven (67%) of the forest is part of Ecoregion 3W Lake Nipigon comprised of ecodistricts 3W-1, 3W-4 and 3W-5.

Figure 3. Parks and Protected Areas within Ecodistricts Overlapping the Kenogami Forest.



Based on analysis of the LVFRI data, the achievement of area requirements ranged from a minimum of 40.7% (Low/Bell C2201 in ecodistrict 2W-2) to a maximum of 100% (Schreiber Channel P2673 in ecodistrict 3W-5 and McLeod P2666 ecodistrict 3W-4), with an average of 90% for the eight ecodistricts analyzed in total (Table 4).

Table 4. Parks & Protected Areas by Ecodistrict of Area of All L/V Achieved

Name	CLUPA Reference ID	Ecodistrict	Area of All L/V Association Representation requirements achieved (%)*	Area of All L/V Association Representation requirements achieved (ha)*
Gravel River	P2660	3W-5	84.2%	1,081 of 1,284
Sedgman Lake	P2674	3W-1	99.5%	19,612 of 19,708
Little Current River	P2664	2E-4	98.0%	19,969 of 20,367
		2W-2	88.5%	6,044 of 6,827
MacLeod	P2666	3W-4	100%	694 of 694
Nakina Moraine	P2667	3W-4	84.7%	6,661 of 7,864
Rainbow Falls	P2671	3W-5	98.2%	1,986 of 2,022
Schreiber Channel	P2673	3W-5	100%	579 of 579
Steel River	P2678	3W-4	86.1%	6,581 of 7,643
		3W-5	92.8%	7,149 of 7,703
Average %			93.2	
Gravel River	C2225	3W-5	94.3%	7,416 of 7,862
Lake Superior North Shore	C2222	3W-5	99.6%	2,261 of 2,284
Lower Twin Lake	C2209	3W-1	99.5%	9,030 of 9,078
		3W-4	98.7%	2,127 of 2,154
Low/Bell	C2201	2W-2	40.7%	4,594 of 11,287
Nakina Northeast Waterway	C2204	2W-2	86.2%	7,985 of 9,268
		2W-3	88.7%	30,918 of 34,865
		3W-1	99.9%	12,303 of 12,311
		3W-4	88.0%	4,504 of 5,119
Longlac North	C2207	3W-4	92.8%	5,058 of 5,452
Long Lake	C2216	3W-4	84.3%	4,827 of 5,728
Fishnet Lake	C2217	3W-5	98.9%	3,063 of 3,097
Three Mile Narrows	C2219	3W-4	89.8%	2,649 of 2,950
		3W-5	99.6%	3,966 of 3,980
Onaman Lake	C2223	3W-4	90.2%	5,564 of 6,170
Average %			***90.0%***	

**Source: Landform/vegetation (L/V) associations datasets as per MNRF*

3.2 Area of Landform/Vegetation (L/V) Associations

The OMNRF assessed levels of landform/vegetation (LV) representation by area which were classified as the following:

- High those with target area representation achievement between 70% and 99%,
- Medium those between 35% and 70%, and
- Low those between 0% and 35%.

The representation maps for each ecodistrict highlight the under-represented L/Vs which are those that have a value of "N" in the "Min +" results of the analysis. White areas on the map signify L/V associations for which the minimum representation requirements have been achieved, and those that have been omitted from the analysis (e.g. agriculture, community/infrastructure, etc.) (*GapTool Users Guide, 2006).* Gaps are shaded in four colours on the maps. The colours signify the degree to which the minimum representation requirements (usually 1% or 50 hectares minimum) are met for that feature, as
follows:

- Red: <25% of requirements achieved
- Orange: 25-49.9% of requirements achieved
- Amber: 50-74.9% of requirements achieved
- Yellow: 75-99.9% of requirements achieved

Rarity classes were calculated as part of the GapTool output, with LVs partitioned into five different classes based on their frequency of occurrence within the ecodistrict. On the following maps you will also see the occurrence of LVs as the following:

- Rarest - least frequently occurring
- Rare - second most frequently occurring
- Middle - third most frequently occurring
- Common - fourth most frequently occurring
- Most Common - most frequently occurring

Table 5 identifies the total area included in the L/V associations and the area that is under-represented by ecodistrict. Note that these shortfalls are for the entire ecodistrict and not just the Kenogami Forest. Also note that all land area in the ecodistrict is included in an LV association (e.g. agriculture, community infrastructure, clear open water, etc).

Table 5. Area of Under-represented LV Types within Ecodistricts

Ecodistrict	Total Area of Entire Ecodistrict (ha)	Total Area Included in L/V Associations* (Ecodistrict) (ha)	Total Protected Area of L/V Associations (Ecodistrict) (ha)	Total Area of Under-represented L/V Associations (Ecodistrict) (ha)
3W-4	1,492,656	1,252,067	21,122	6,337
2W-2	4,003,604	3,628,237	98,188	17,652
3W-1	2,593,837	2,135,225	780,312	1,335
3W-5	1,295,895	655,049	67,177	3,646
2W-3	10,668,953	9,015,677	288,962	13,362
3E-2	2,143,883	1,874,060	78,220	4,313
2E-4	2,326,229	2,219,840	50,523	3,238
3E-1	4,128,733	3,667,224	136,271	4,516
Total	28,653,790	23,474,932	1,505,094	51,294

Eco-district 3W-4

Ecodistrict 3W-4 is comprised of 199 landform-vegetation types derived from Quaternary Landform / LVFN 25-metre grid and current protected area coverage (July 16, 2019). This Ecodistrict 3W-4 has a total area of 1,252,068 hectares, with the Kenogami Forest overlapping with only 46% of this ecoregion (Table 1. Figure 4).

Protected areas representing 21,122 hectares 1.7% of the total area of the LV types included, and protected areas targets have been achieved for 43 of 190 (22.6%) of the LV types. The area of all LV type representation requirements were achieved for 10,644 of 16,981 hectares (62.7%) of the targeted area (Table 1).

The portion of this ecodistrict that overlaps with the Kenogami Forest is the central portion where there is a significant amount of area that is Patent Land (Municipality of Longlac and First Nations Reserves), as well as confidential First Nations values areas.

From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated in the western portion of this ecodistrict, which is outside the Kenogami Forest, and the eastern side of the ecodistrict of which only the north-eastern portion is inside the Kenogami Forest.

An area to the northeast of this ecodistrict that identifies some under-represented areas of the rarest type that overlap with the Nakina Northeast Waterway Conservation Reserve and several caribou calving reserves. The more north-eastern portion of this ecodistrict identifies some under-represented areas of the rarest type, but much of this area overlaps with the caribou mosaic blocks deferred for approximately 200 years (depending on the block) in the upcoming 2021-2031 FMP or caribou calving reserves.

There are generally several large caribou calving reserves along the northern portion of this ecodistrict The southern portion of this ecodistrict also contains large parks such as the Long Lake Conservation Reserve and the Long Lake West Conservation Reserve.

Figure 5 shows a further analysis of the under-represented L/V types identified in Figure 4 (red areas). Figure 5 shows that of the under-represented areas in Figure 4, the vast majority of these areas are 75-99.9% achieved. Figure 5 also shows that most of the LV types that remain under-represented are located in a few scattered stands making it difficult to capture them in a large protected area without including undesirable stands (i.e. recently harvested, wildfire). For example the more concentrated red areas on Figure 5 south of Chipman Lake and along the Club Road/Club Lake area are all younger stands scattered stands that were previously harvested and regenerated making them poor candidates.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented. Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 4. Percent of Minimum Representation Requirements for Ecodistrict 3W-4.

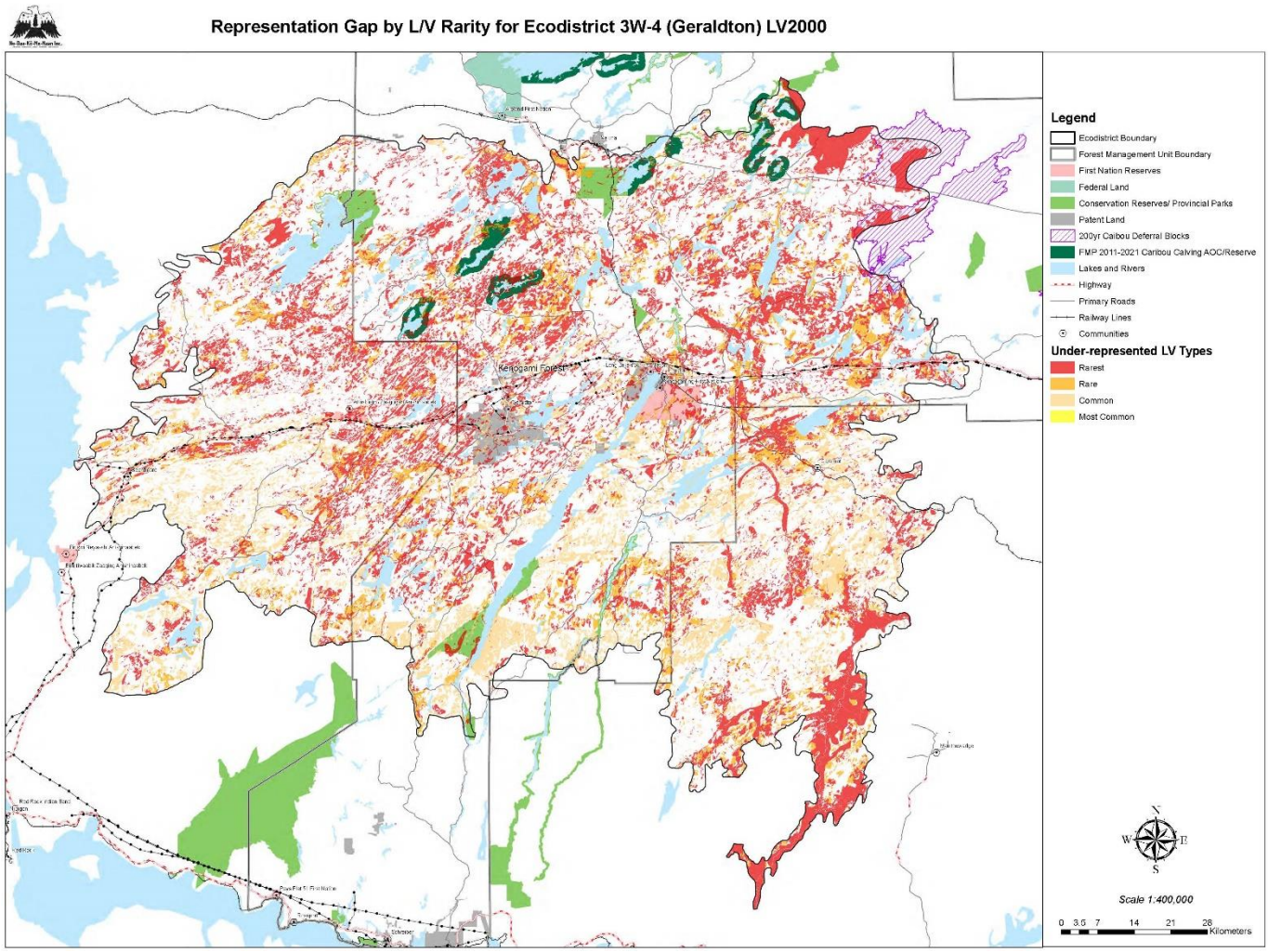
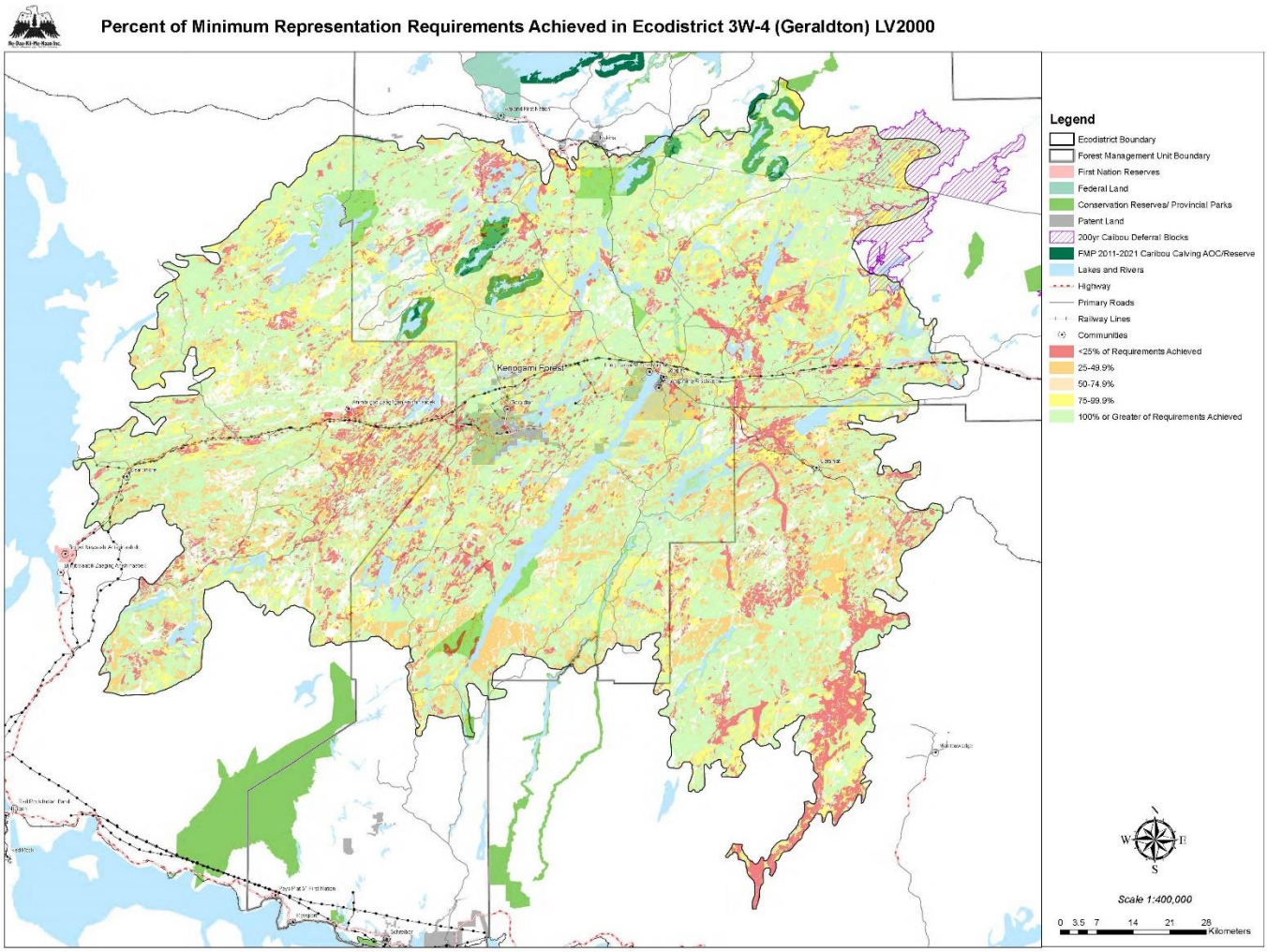


Figure 5. Percent of Under-Represented L/V Types Achieved



Eco-district 2W-2

Ecodistrict 2W-2 is comprised of 131 landform-vegetation types derived from Quaternary Landform / LVFN 30-metre grid and current protected area coverage (November 3, 2016). This Ecodistrict 2W-2 has a total area of 3,628,237 hectares, with the Kenogami Forest overlapping 16% of this ecoregion at the southern portion (Table 1 and Figure 5).

Protected areas representing 98,189 hectares 2.7% of the total area of the LV types included, and protected areas targets have been achieved for 48 of 131 (36.6%) of the LV types. The area of all LV type representation requirements were achieved for 21,220 of 38,873 hectares (54.6%) of the targeted area (Table 1).

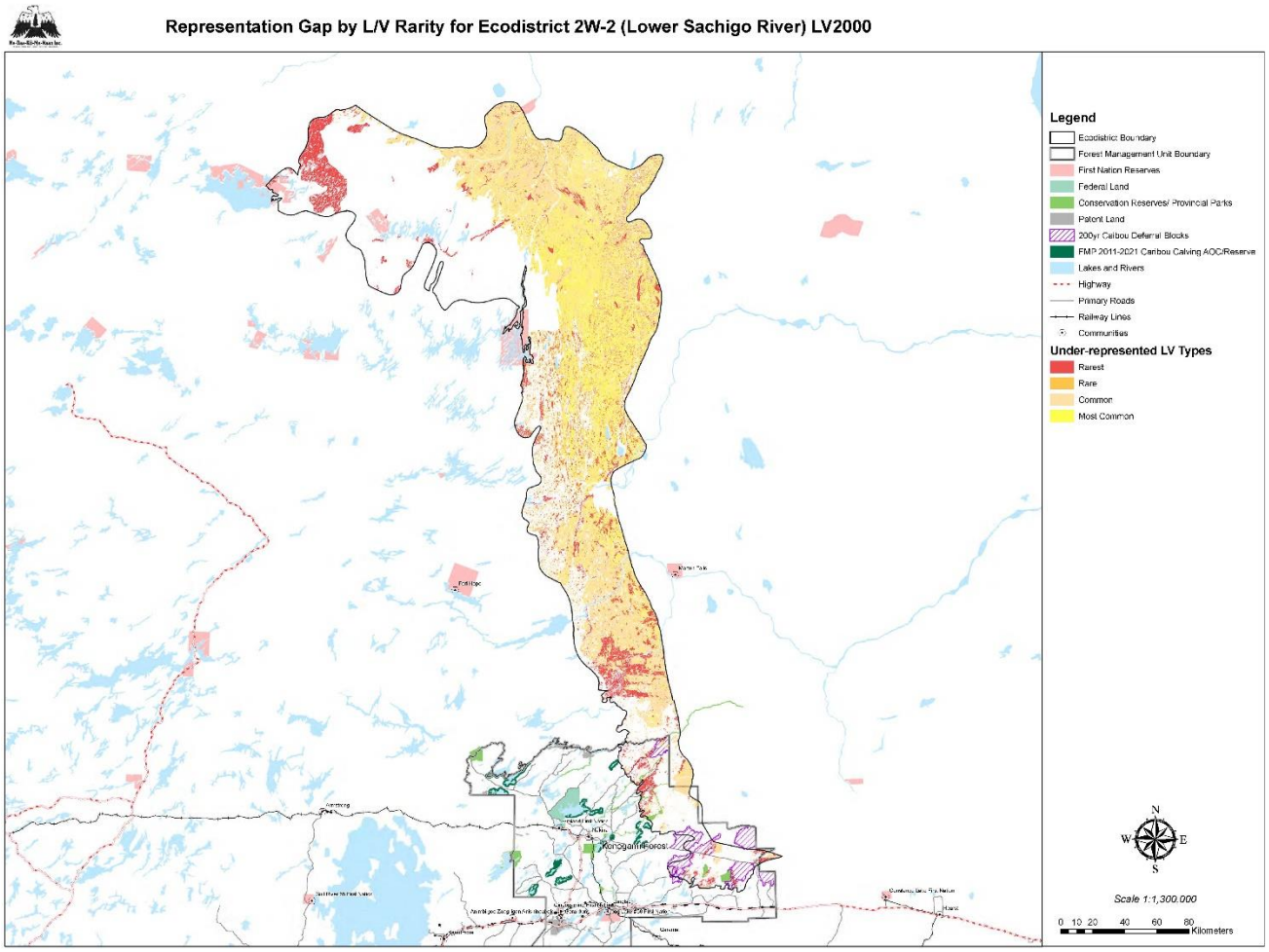
The portion that overlaps with the Kenogami Forest is the southern portion of this ecodistrict where there is relatively little area that is under-represented. Several conservation reserves are present where the Kenogami Forest overlaps with this ecodistrict such as the Little Current River Provincial Park, Low/Bell Conservation Reserve and Nakina Northeast Waterway Conservation Reserve. Additionally, several caribou mosaic blocks are deferred for approximately 200 years (depending on the block) in the upcoming 2021-2031 FMP.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 6 shows that the Kenogami Forest is located on a very small portion at the southern extent of this ecodistrict and the majority of the LV under-represented areas are located outside the forest boundaries to the north.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 6. Percent of Minimum Representation Requirements Achieved in Ecodistrict 2W-2.



Eco-district 3W-1

Ecodistrict 3W-1 is comprised of 164 landform-vegetation types derived from Quaternary Landform / LVFN 25-metre grid and current protected area coverage (February 20, 2018). This ecodistrict has a total area of 2,135,225 hectares, with the Kenogami Forest overlapping with only 14% of this ecoregion (Table 1 and Figure 6).

Protected areas representing 780,313 hectares 36.5% of the total area of the LV types included, and protected areas targets have been achieved for 93 of 165 (56.4%) of the LV types. The area of all LV type representation requirements were achieved for 23,258 of 24,594 hectares (94.6%) of the targeted area (Table 1).

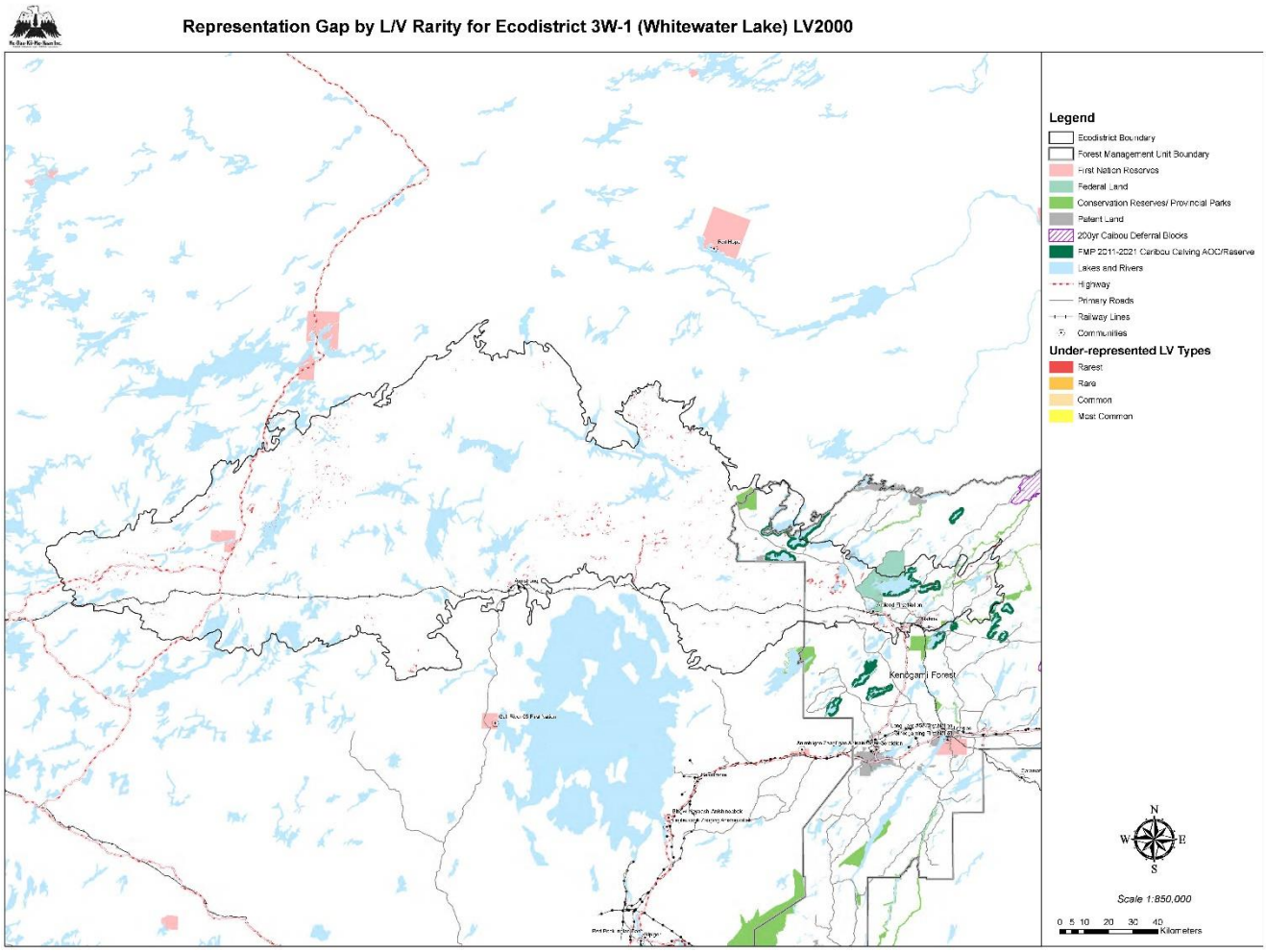
From a spatial perspective, the under-represented LV types (<25% achieved) are almost non-existent with only very small areas displayed on Figure 6 that overlap with the Kenogami Forest.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 7 shows that the Kenogami Forest does not form a large part of the ecodistrict and does not contain any shortfalls in the landform-vegetation types.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 7. Percent of Minimum Representation Requirements Achieved in Ecodistrict 3W-1.



Eco-district 3W-5

Ecodistrict 3W-5 is comprised of 185 landform-vegetation types derived from Quaternary Landform / LVFN 25-metre grid and current protected area coverage (February 12, 2019). This ecodistrict has a total area of 655,050 hectares, with the Kenogami Forest overlapping with 11% of this ecoregion (Table 1 and Figure 7).

Protected areas representing 67,178 hectares 10.3% of the total area of the LV types included, and protected areas targets have been achieved for 67 of 186 (36.0%) of the LV types. The area of all LV type representation requirements were achieved for 8,685 of 12,332 hectares (70.4%) of the targeted area (Table 1).

The Kenogami Forest is bound by the Gravel River Conservation Reserve to the west and the Steel River Provincial Park to the east, just east of the forest boundary. Three Mile Narrows Conservation Reserve is located within the Kenogami Forest in this ecoregion.

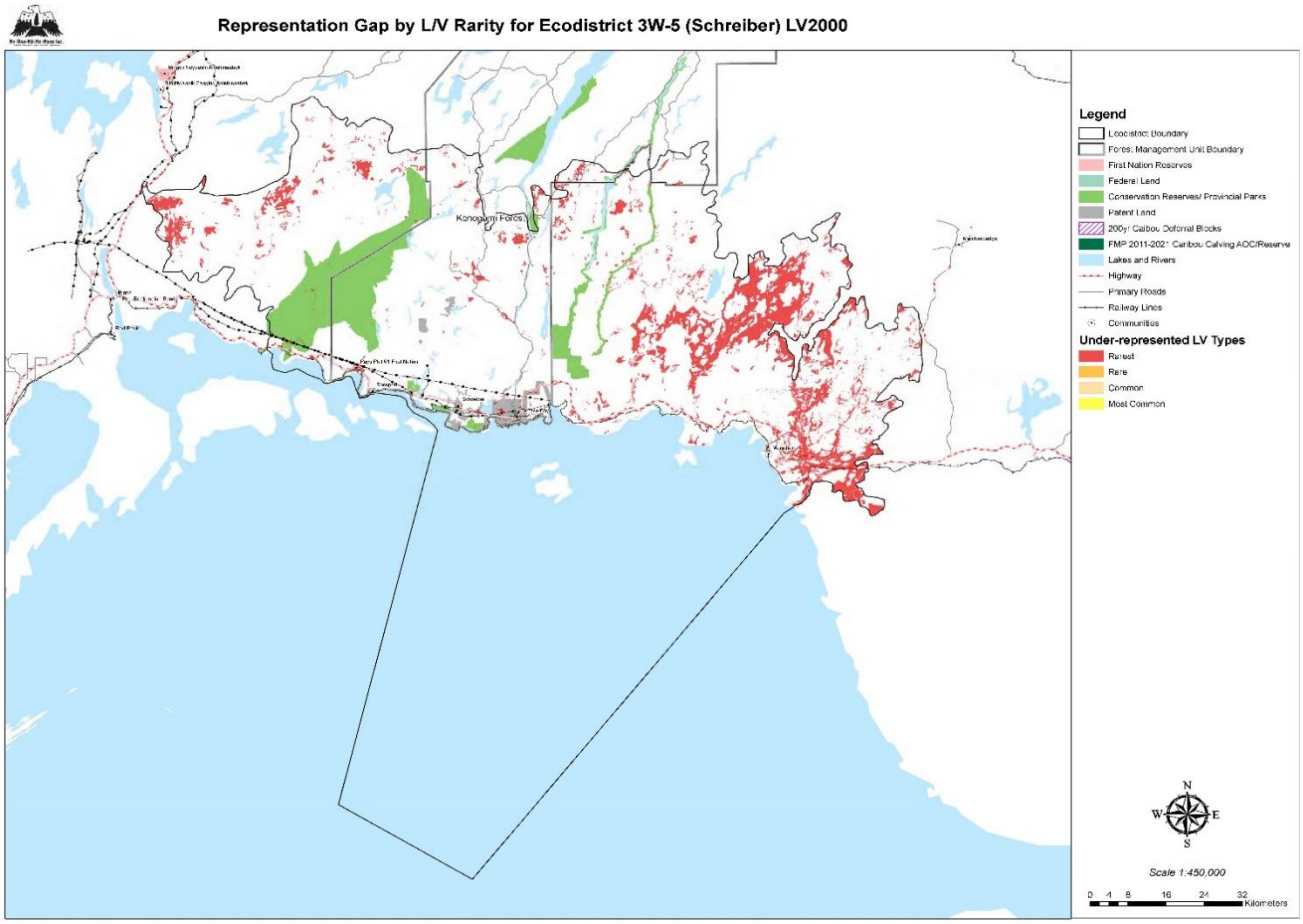
From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated in the eastern portion of this ecodistrict which is outside the Kenogami Forest boundary. The portion of this ecodistrict that overlaps with the Kenogami Forest is the southern-central portion of this ecodistrict, where there is relatively little area that is under-represented.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 8 shows that the Kenogami Forest contains a significant amount of currently protected parks and conservations reserves in this area. Figure 8 also shows that shortfalls are located outside the forest to the east of the forest, north of Lake Superior.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. In fact one community in this area was vehemently opposed to any new conservation area reserves. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required .

Figure 8. Percent of Minimum Representation Requirements Achieved in Ecodistrict 3W-5.



Eco-district 2W-3

Ecodistrict 2W-3 is comprised of 161 landform-vegetation types derived from Quaternary Landform / LVFN 30-metre grid and current protected area coverage November 3, 2016). This ecodistrict has a total area of 9,015,677 hectares, with the Kenogami Forest overlapping with ~~16~~ 5% of this ecoregion (Table 1 and Figure 8).

Protected areas representing 288,962 hectares 3.2% of the total area of the LV types included, and protected areas targets have been achieved for 80 of 162 (49.4%) of the LV types. The area of all LV type representation requirements were achieved for 78,788 of 92,150 hectares (85.5%) of the targeted area (Table 1).

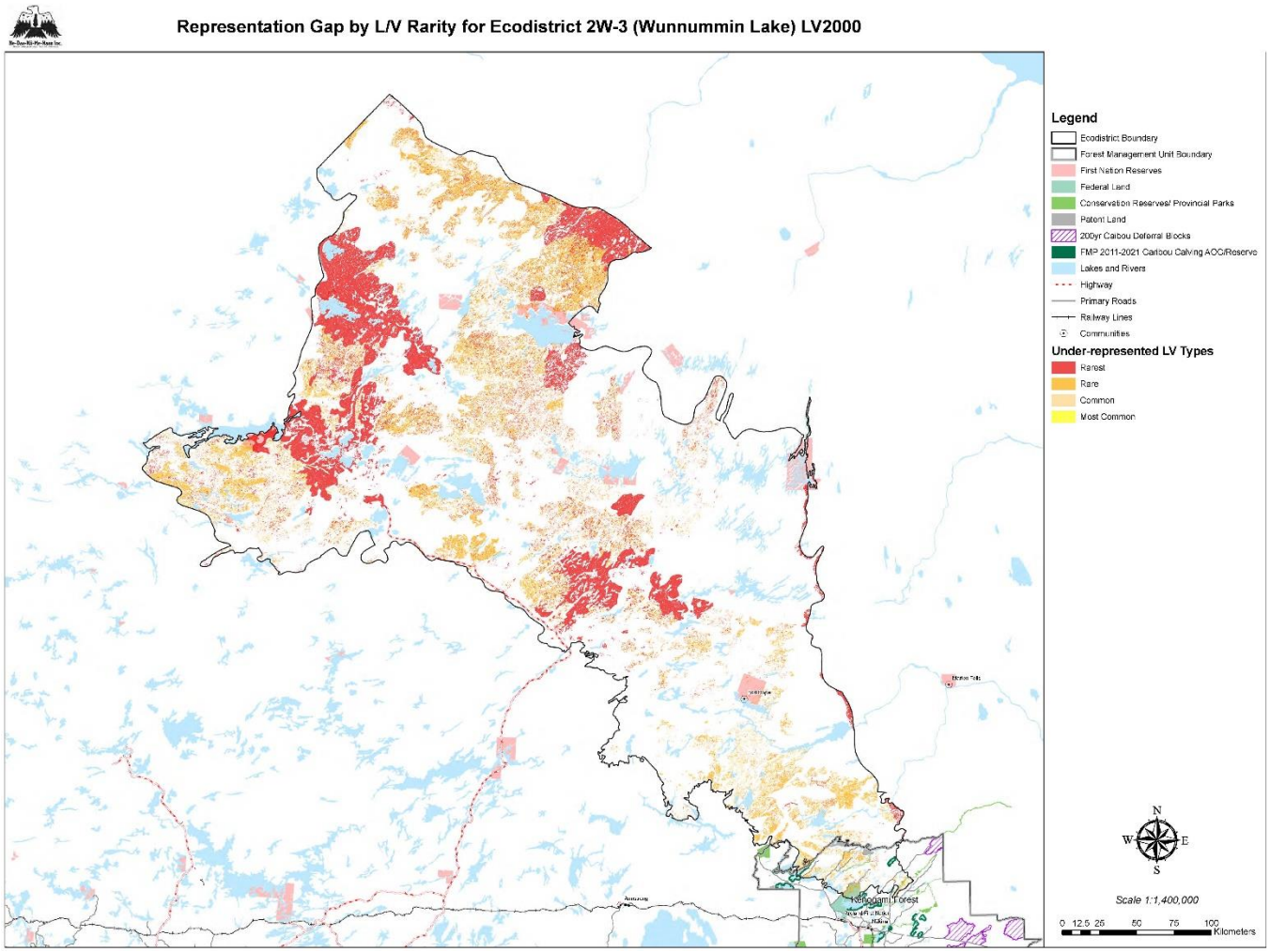
From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated in the north and north-western portion of this ecodistrict. However, the Kenogami Forest only overlaps with the most southern portion of this ecodistrict where there is relatively little area that is under-represented.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 9 shows that the Kenogami Forest does not form a large part of the ecodistrict (5% as per Table 1) and does not contain any shortfalls in the landform-vegetation types.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 9. Percent of Minimum Representation Requirements Achieved in Ecodistrict 2W-3.



Eco-district 3E-2

Ecodistrict 3E-2 is comprised of 228 landform-vegetation types derived from Quaternary Landform / LVFN 25-metre grid and current protected area coverage July 17, 2019). This ecodistrict has a total area of 1,874,061 hectares, with the Kenogami Forest overlapping with only 4% of this ecoregion (Table 1 and Figure 9).

Protected areas representing 78,220 hectares 4.2% of the total area of the LV types included, and protected areas targets have been achieved for 99 of 229 (43.2%) of the LV types. The area of all LV type representation requirements were achieved for 19,536 of 23,849 hectares (81.9%) of the targeted area (Table 1).

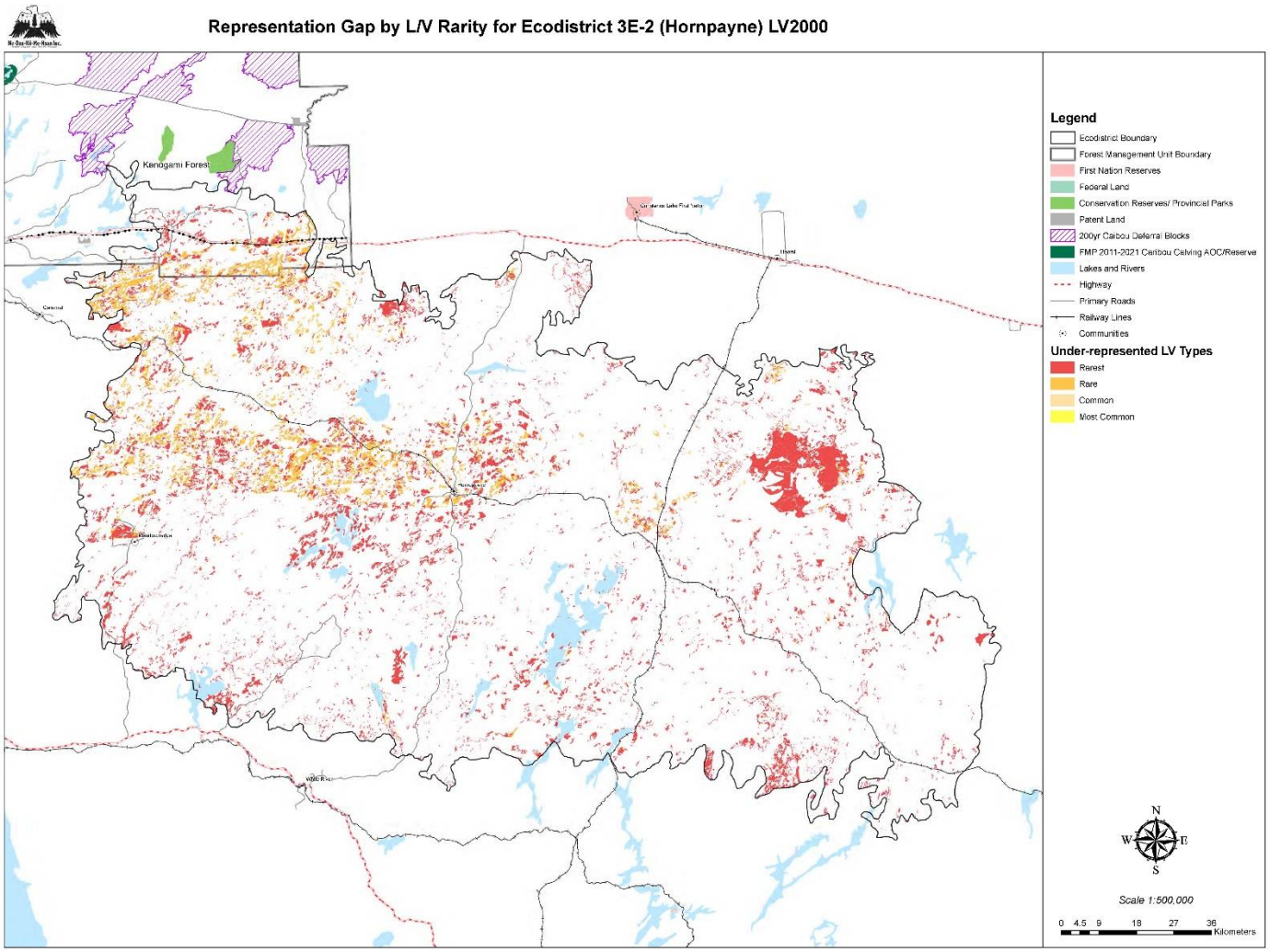
From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated outside the Kenogami Forest boundaries. The Kenogami Forest in located in the north-west corner of this ecodistrict where relatively few L/V areas are under-represented.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 10 shows that the Kenogami Forest does not form a large part of the ecodistrict (4% as per Table 1) and does not contain any shortfalls in the landform-vegetation types.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 10. Percent of Minimum Representation Requirements Achieved in Ecodistrict 3E-2.



Eco-district 2E-4

Ecodistrict 2E-4 is comprised of 92 landform-vegetation types derived from Quaternary Landform / LVFN 30-metre grid and current protected area coverage (November 3, 2016). This Ecodistrict 2E-4 is a total area of 2,219,840 hectares, however the Kenogami Forest overlaps with only 2% of this ecoregion (Table 1 and Figure 10).

Protected areas representing 50,523 hectares 2.3% of the total area of the LV types included, and protected areas targets have been achieved for 21 of 92 (22.8%) of the LV types. The area of all LV type representation requirements were achieved for 20,978 of 24,217 hectares (86.6%) of the targeted area (Table 1).

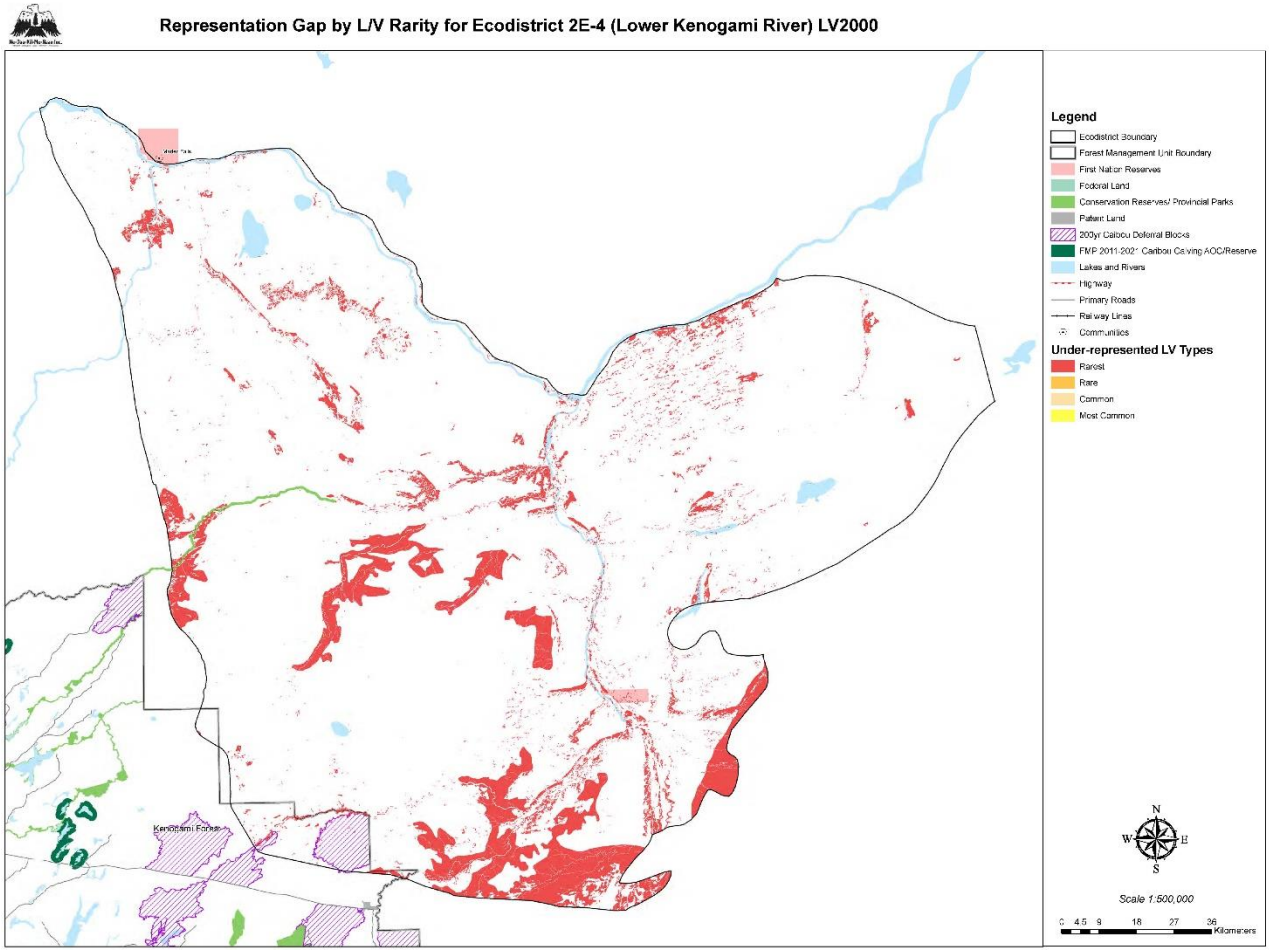
From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated outside the Kenogami Forest boundaries. The Kenogami Forest in located in the south-west corner of this ecodistrict where relatively few L/V areas are under-represented.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 11 shows that the Kenogami Forest does not form a large part of the ecodistrict (2% as per Table 1) and does not contain any shortfalls in the landform-vegetation types.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 11. Percent of Minimum Representation Requirements Achieved in Ecodistrict 2E-4.



Eco-district 3E-1

Ecodistrict 3E-1 is comprised of 228 landform-vegetation types derived from Quaternary Landform / LVFN 25-metre grid and current protected area coverage February 12, 2019). This ecodistrict has a total area of 3,667,224 hectares, with the Kenogami Forest overlapping with 2% of this ecoregion (Table 1 and Figure 11).

Protected areas representing 136,272 hectares 3.7% of the total area of the LV types included, and protected areas targets have been achieved for 96 of 229 (41.9%) of the LV types. The area of all LV type representation requirements were achieved for 37,173 of 41,689 hectares (89.2%) of the targeted area (Table 1).

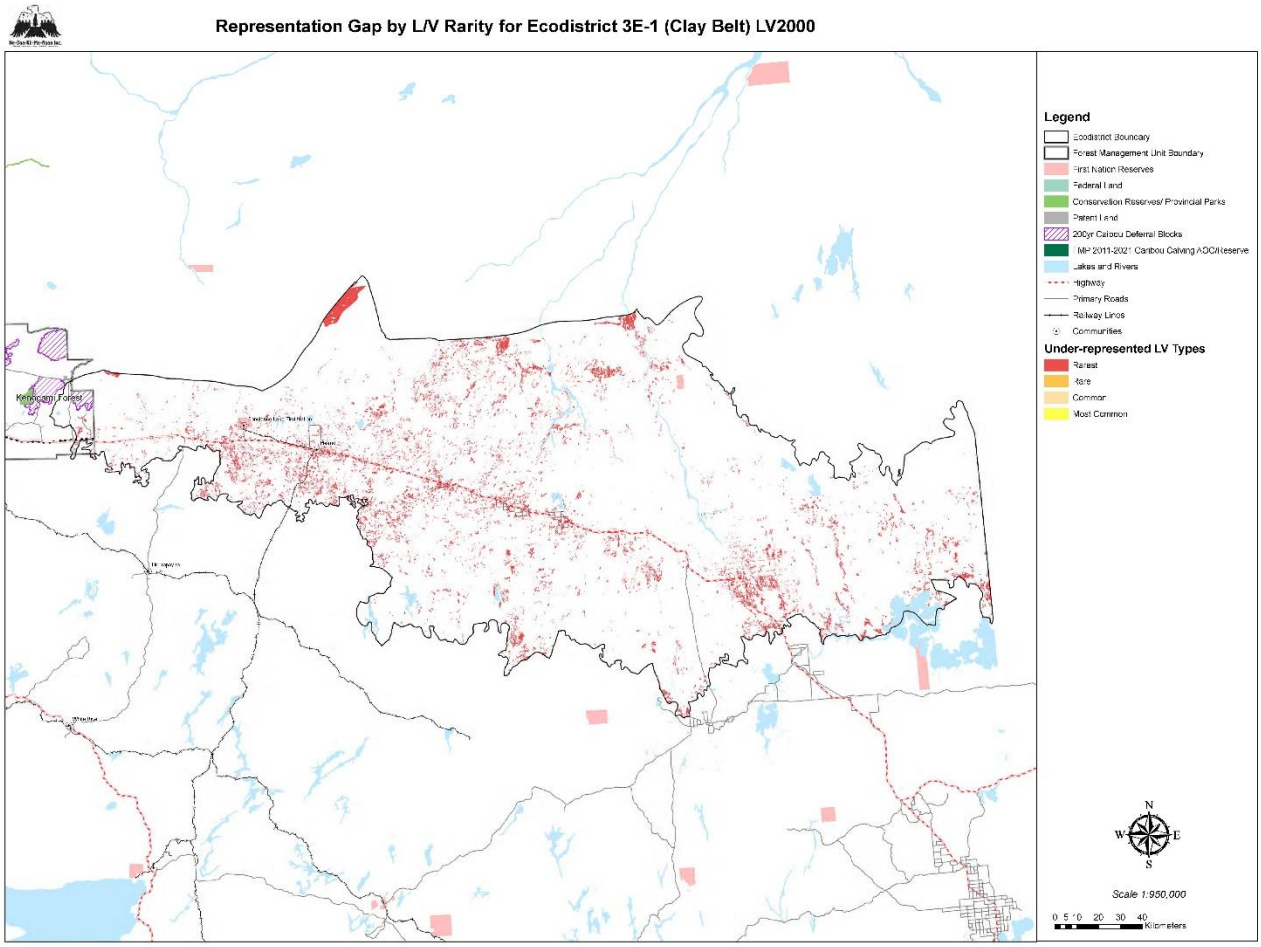
From a spatial perspective, the under-represented LV types (<25% achieved) are concentrated outside the Kenogami Forest boundaries. The Kenogami Forest in located in the western corner of this ecodistrict where relatively few L/V areas are under-represented.

Decision

No additional conservation areas required in this eco-district as there is adequate representation according to the landform-vegetation data presented above. Figure 12 shows that the Kenogami Forest does not form a large part of the ecodistrict (2% as per Table 1) and does not contain any shortfalls in the landform-vegetation types.

Additionally, during Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them or new areas required.

Figure 12. Percent of Minimum Representation Requirements Achieved for Ecodistrict 3E-1.



3.3 Other Protected Areas – Caribou Habitat Deferrals

It is important to recognize that any new potential protected areas must consider the other undisturbed areas set aside on the Kenogami Forest such as long term caribou deferrals and Intact Forest Landscapes. These are further discussed in Sections 3.3 and 3.4. 2222

In addition to the protected areas identified in the previous tables and maps, it should be acknowledged that the northern portion of the Kenogami Forest is managed under a caribou mosaic (harvest scheduling pattern) sometimes termed a Dynamic Caribou Habitat Scheduling (DCHS) that identifies which blocks may/may not be operated in in a 20-year time period over 100 years. The caribou mosaic harvest scheduling pattern is designed so that after a mosaic block is harvested, it is left undisturbed for 100 years until the next harvest.

Although the caribou mosaic deferral blocks are not permanently protected areas on the forest since they will eventually be harvested, it is important to note that the blocks are deferred from harvest over a significant period of time and this does indeed provide some protection/preservation of ecological processes in comparison to a forest that allows harvesting to take place at any time and location pending operability and other harvesting logistics. It is important to consider these long-term caribou habitat deferral areas when considering filling any gaps with conservation area networks.

Deferral blocks provide refuge habitat for wildlife and allow for other biological/ecological processes to occur as they would in a park or conservation reserve-type of protected area, until they are harvested in the future time period. Other mature deferral blocks would always remain on the landscape over time as the per the mosaic block cycling schedule.

The following map identifies the caribou mosaic deferral blocks in the 2011-2021 FMP and the timing of each of these blocks is explained below. D blocks with a harvest period (2056-2076) and E blocks (2076-2096) have no disturbance for at least 35 years from now, which is a significant amount of time to remain undisturbed. Additionally, there would be another set of D-blocks and E-Blocks left on the landscape which would not be harvested for at least 35 years from the year 2056 (i.e. year 2091), resulting in a perpetual state of some undisturbed areas always remaining on the landscape.

Figure 14 identifies the Caribou Mosaic for the upcoming 2021-2031 FMP. The harvest scheduling for these blocks is identified on the maps. In order to provide further protection for long-term caribou habitat, some caribou mosaic blocks in the northeast portion of the Kenogami Forest were deferred from harvest for an additional 170-230 years above and beyond the normal 20-100 years further. See Section 4.1 for additional details.

Timing of Harvest Operations as per 2011-2021 FMP

A: Caribou mosaic years 0-20: Harvest operations in these blocks will be completed during the 2011-2021 FMP. Upon harvest completion, these blocks will return to the A sub-unit in the caribou mosaic operation schedule.

AC, AD, AE: Caribou mosaic years 0-20: These blocks are scheduled harvest completion (clean-up) during the first 5-year period (2011-2016) of the 2011-2021 FMP. These blocks will then transfer to the respective normal C, D, or E sub-unit operation schedule in the caribou mosaic.

B (and BA): Caribou mosaic years 21-40: Harvest operations in these blocks will commence during the second 5-year period (2016-2021) of the 2011-2021 FMP (ending in the year 2036).

C: Caribou mosaic years 41-60: Harvest operations are not scheduled to commence in these blocks until the year 2036 (ending in the year 2056).

D: Caribou mosaic years 61-80: Harvest operations are not scheduled to commence in these blocks until the year 2056 (ending in the year 2076).

E: Caribou mosaic years 81-100: Harvest operations are not scheduled to commence in these blocks until the year 2076 (ending in the year 2096).

Figure 13. Caribou Mosaic (2011-2021 FMP)

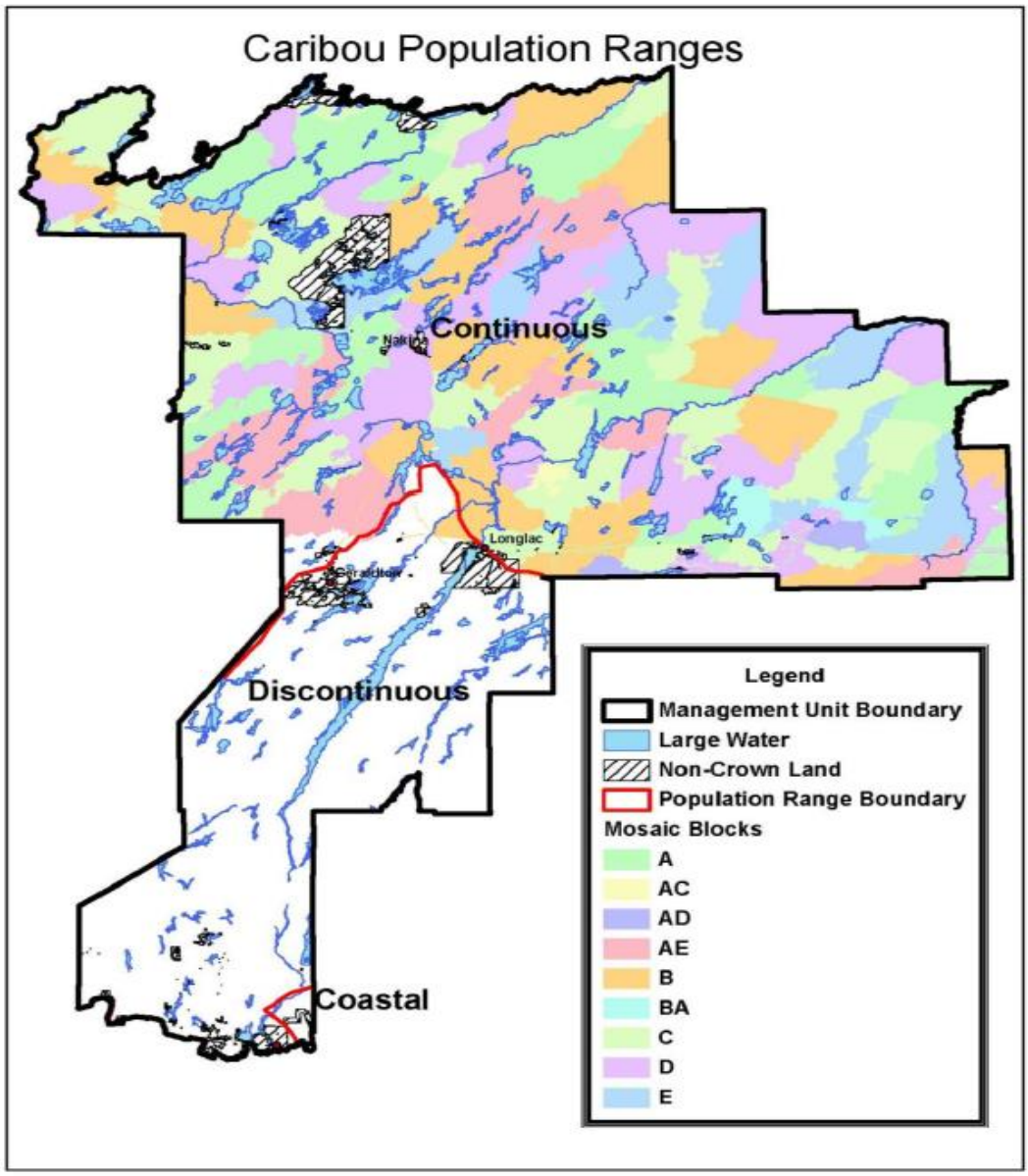
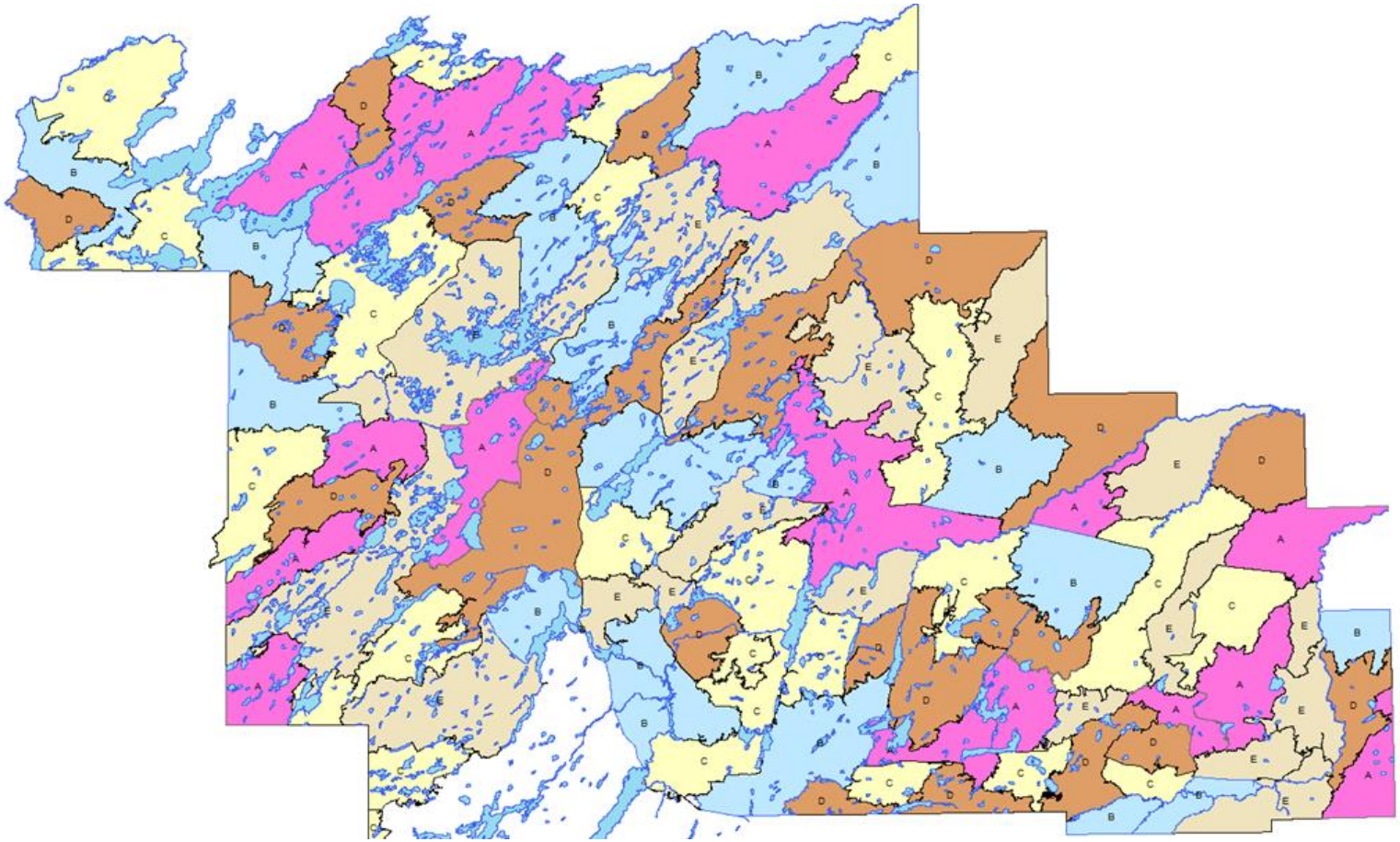


Figure 14. Caribou Mosaic (2021-2031 FMP)



A	1995-2016
B	2016-2031
C	2031-2051
D	2051-2071
E	2071-2091

3.4 Intact Forest Landscapes

IFLs are based on the premise that the entire forest must not only be large enough to support most or all native species, but also long-term, large-scale natural disturbances should be able to take place to maintain the full range of ecosystem processes and functions (i.e., naturally functioning landscapes are maintained and landscape natural processes can occur).

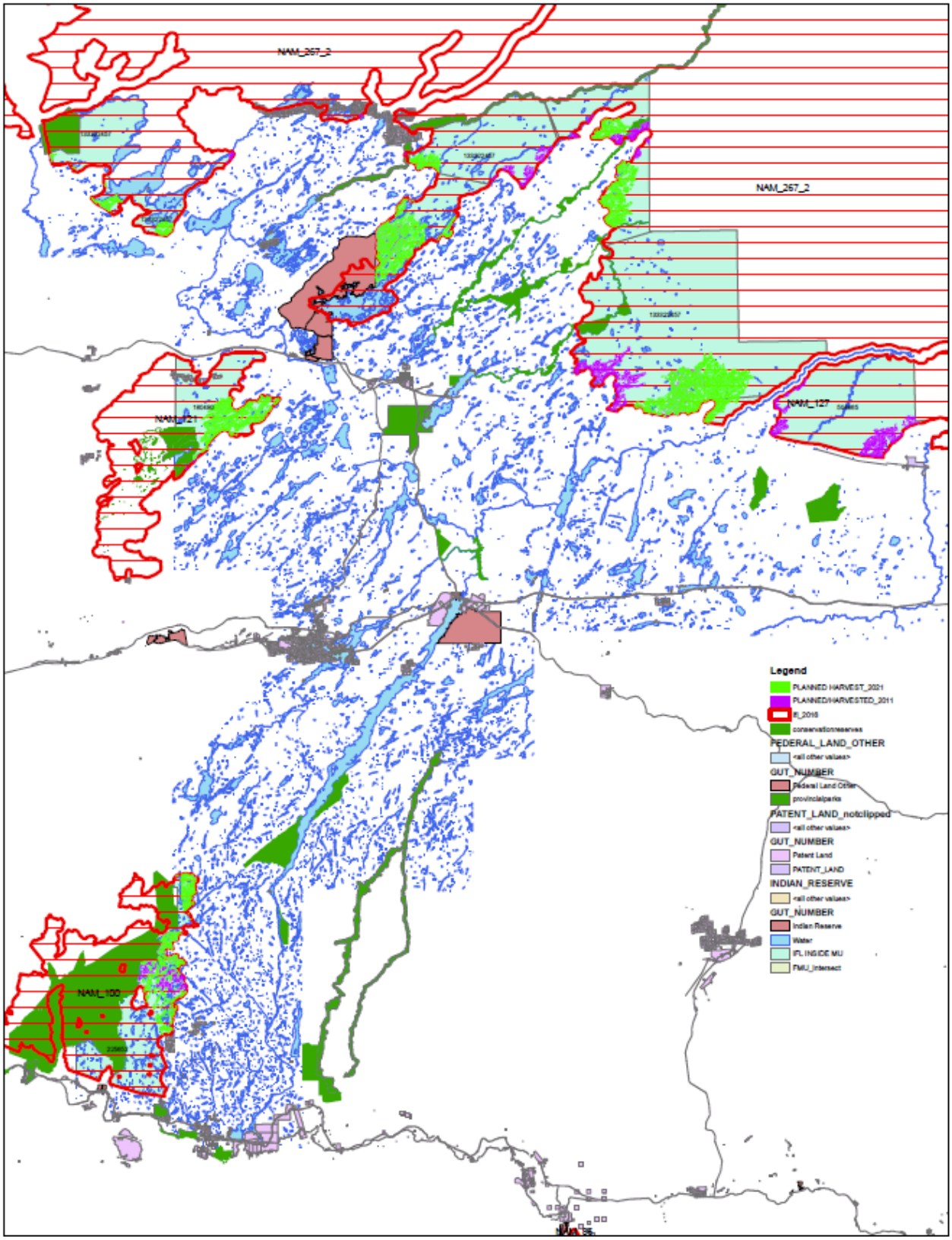
Although IFLs are part of Principle 9 High Conservation Values (HCV) framework in the FSC Standard, and are not technically part of a Conservation Area Network gap analysis, they remain important considerations when planning areas. These IFLs are part of the High Conservation Value Forests containing HCVs. Other HCVs may also ultimately contribute to the Conservation Area Networks such as cultural heritage values and other Indigenous (FN confidential) areas as identified in Table 7.

When considering the location and extend of additional conservation area networks, the concept of Intact Forest Landscape (IFLs) must also be carefully assessed. The concept of IFLs is defined as large continuous expanses of natural ecosystems in the zone of current forest landscapes extent without signs of significant human activity requiring:

(1) minimum area of 50,000 hectares;
(2) minimum IFL patch width of 10 km; and
(3) minimum corridor/appendage width of 2 km to insure that IFL patch core areas are large enough to provide refuge for wide-ranging animal species.

All anthropogenic disturbances are buffered by 500 m including roads and harvest areas. IFLs are further detailed in the HCV Assessment Report, however the following map of Intact Forest Landscapes is provided for context in this report when considering new potential conservation area networks. The IFLs are identified by the red stripe with light green inside the management unit on Figure 15.

Figure 15. Intact Forest Landscapes on the Kenogami Forest.



4.0 Parks and Protected Areas

4.1 Additional Parks and Protected Areas

The FSC criterion 6.5.7 requires that "The Conservation Areas Network comprises a minimum of 10% of the area of the Management Unit." In order to address this an analysis of the current protection areas for the Kenogami Forest was conducted. Protected areas are selected to ensure that there is always a natural range of forest types and ages, while also supporting timber harvest and regeneration outside the protected areas. There are large areas on the Kenogami Forest that are not formal parks or conservation reserves, but are reserved from harvest and are not eligible for operations. These include:

- water quality riparian area harvest reserves,
- other areas of concern (AOCs) (e.g. stick nests, denning areas, canoe routes, remote tourism reserves, etc.),
- residual harvest patches retained within harvest blocks,
- by-pass harvest areas (areas excluded from harvest because they are inaccessible or low merchantable timber volumes,
- large-scale harvest deferrals (e.g. former marten core deferrals (up to 60 years), caribou DCHS deferrals (up to 200 years)

Table 6 and Table 7 below identifies the parks and conservation reserves within the boundaries of the Kenogami Forest along with several other protected areas. These tables include approximately 1,500 hectares of park and conservation reserve area currently proposed for expansion. Table 6 is based on the additional protected areas for the currently approved 2011-2021 FMP, and Table 7 is based on those areas proposed in the 2021-2031 FMP. Figures 12 and 13 are maps representing those same areas contained in Tables 6 and 7.

The percent (%) has been calculated using the Total Forested area based on table FMP-1 (Non-Productive + Productive + Production), which includes Non-Prod areas consisting of muskeg, brush, alder and rock consistent with the Living Legacy L/V data analysis (**1,688,179 ha**).

Indigenous Values - The 58 Extension, Pays Play Extension, 52 Landing Protection, and other FN Confidential areas are important to those Indigenous communities that identify the Kenogami Forest as their traditional territory and that have requested these areas be protected. These areas are not presented on any maps contained in this report, but these areas are presented in Tables 6 and 7. The Pays Plat Extension area is currently an estimate, but is within 5-10% accuracy.

Water Quality Values - The Water Quality reserves are shoreline reserves along ponds and lakes on the Kenogami Forest. Tables 6 and 7 do not include all slope-dependant reserves, but only those that occur on lakes and ponds.

Lakes are defined by the *Ontario Wetland Evaluation System (2002)* as areas of open water greater than 8 ha in size and, at some point greater than 2 m deep. All lakes are considered to have high potential sensitivity to forest management operations (*Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales, 2011)*. The guide further describes ponds as being defined as bodies of shallow, open water, between ≥0.5 ha and <8 ha in size. The potential sensitivity to forest management operations of ponds ranges from high to low.

Many aquatic and semiaquatic species of plants and animals inhabit lakes and ponds, which makes them an important habitat feature. This includes mammals, birds, reptiles, and amphibians, ranging

from numerous species of turtles and waterfowl to aquatic furbearers, such as beavers and river otters, and more than 80 species of fish. Coldwater fish species such as lake trout, are heavily reliant on deep oligothrophic lakes. The shallow depth, ponds makes them extremely productive habitats, especially for aquatic furbearers and waterfowl, including numerous species of conservation priority (*Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales, 2011)*.

Lakes serve as migration stops and breeding grounds for many birds and as refuges for a wide variety of other animals and provide habitat for a diversity of organisms, from microscopic plants and animals to fish. Bats and semi-aquatic animals, such as mink, salamanders, beavers, and turtles also inhabit lakes and ponds. Semi-aquatic wildlife species require both water and terrestrial land to survive, so both the lake/pond and the shoreline are important. Numerous water birds live on lakes or gather there to breed and raise their young. These include ducks, geese, loons, swans, kingfishers, herons, osprey and bald eagles. Plants also grow along shorelines and may include mosses, ferns, reeds, rushes, and cattails (https://www.nationalgeographic.org/encyclopedia/lake).

Caribou Mosaic Deferral Areas - The *Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach For use in northwestern Ontario Version 1.0, 1999* was used in the development of the 2011-2021 Kenogami Forest Management Plan. Direction in the guide. Long term habitat supply for caribou required regional coordination and planning to develop an approach to maintaining broad landscape pattern and forest composition and to address, at a strategic level, three landscape features; 1) winter habitat, 2) calving habitat, and 3) location of primary access roads.

The guide further identifies that appropriate protection of calving lakes may include up to a 1000 metre reserve of standing timber, restrictions on road access, restricted development or use of tourism facilities, and/or modified forest management activities compatible with maintaining caribou calving values and survival of the cow-calf group(s). These 1000 metre caribou calving reserves were applied in the Kenogami Forest 2011-2021 FMP.

The *Forest Management Guide for Boreal Landscapes, 2014* (BLG) was used in the development of the 2011-2021 Kenogami Forest Management Plan. The guide provides direction to forest managers regarding caribou calving reserves as to where they should be located and the appropriate measures to be taken to protect habitat from forest management activities. The guide specifies that in order to manage for calving and nursery habitat (e.g., large lakes with islands, complexes of smaller lakes, or open peatland complexes with treed islands):

i) include these habitats in caribou tracts and schedule them for protection or harvest consistent with habitat tract pattern and composition objectives developed through implementation of the guide;

ii) proceed with allocation and harvest of a habitat tract with known or potential calving sites and nursery areas provided they are in an unsuitable condition (e.g. over mature, with a dense understory of shrubs such as raspberry); or if there is a sufficient supply of calving and nursery habitat in suitable condition on the management unit. For example, forest operations could occur if at least one third of the forest stands on the perimeter and islands of a known, large calving/nursery lake were retained or maintained in a suitable condition. Stands in suitable condition are generally mature, conifer dominated, sparsely to well-stocked, with a relatively open understory. Suitable calving and nursery habitat will also be contiguous with tracts of mature, conifer dominated forest cover.

In order to provide further protection for long-term caribou habitat, some caribou mosaic blocks in the northeast portion of the Kenogami Forest were deferred from harvest for an additional 170-230 years above and beyond the normal 20-100 years. These are:

Block	**Year Operable**	**Delay (years)**	**Area (ha)**
B25	2211-2231	190	6,710
C9	2231-2251	210	8,590
C10	2231-2251	210	14,522
C13	2231-2251	210	13,968
D11	2251-2271	230	14,439
Total			**58,229**

Table 6. Conservation Area Networks - Parks & Protected Areas (Reserves, AOCs) 2011-2021 FMP

Additional Protection Area	Area (ha)	Percent
Parks	17,249	
Conservation Reserves	52,550	
subtotal	**69,799**	**4.13%**
58 Extension	1,833	
Pays Plat Extension	2,000	
FN Confidential	38,751	
subtotal	**42,584**	**2.52%**
Water Quality Reserves (lakes, ponds)	58,603	
Caribou Calving Reserves	38,022	
subtotal	**96,625**	**5.72%**
Total	**209,008**	**12.38%**

Note: subtotal are not cumulative

Table 7. Conservation Area Networks - Parks & Protected Areas (Reserves, AOCs) 2021-2031 FMP

Additional Protection Area	Area (ha)	Percent
Parks	17,249	
Conservation Reserves	52,550	
subtotal	**69,799**	**4.13%**
58 extension	1,833	
Pays Plat Extension	2,000	
FN Confidential	38,751	
subtotal	**42,584**	**2.52%**
Water Quality Reserves (lakes, ponds)	58,603	
Caribou 200 Yr Deferrals Blocks	58,229	
subtotal	**116,832**	**6.92%**
Totals	**229,215**	**13.58%**

Note: subtotal are not cumulative

Figure 16. Additional Protected Areas on the Kenogami Forest (2011-2021 FMP)

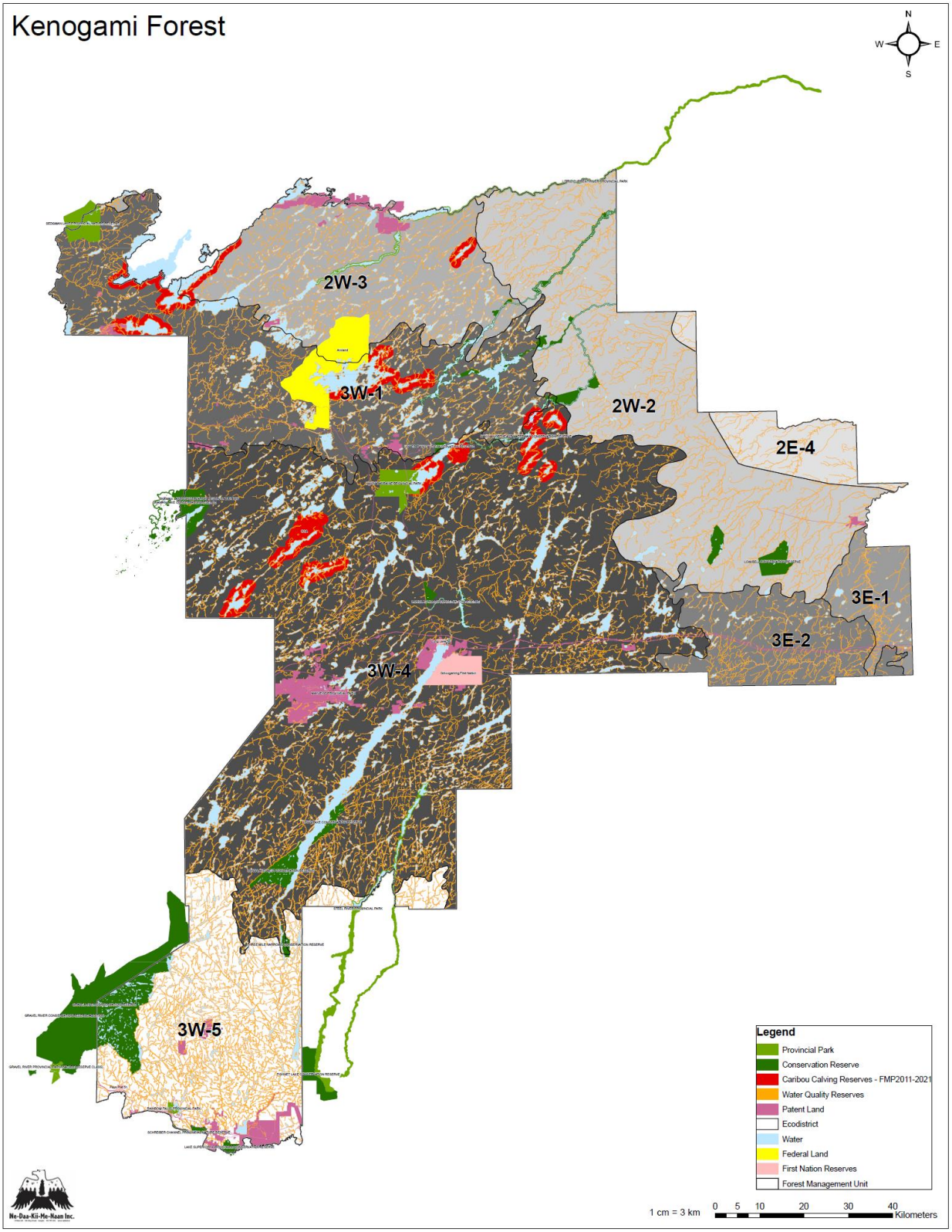
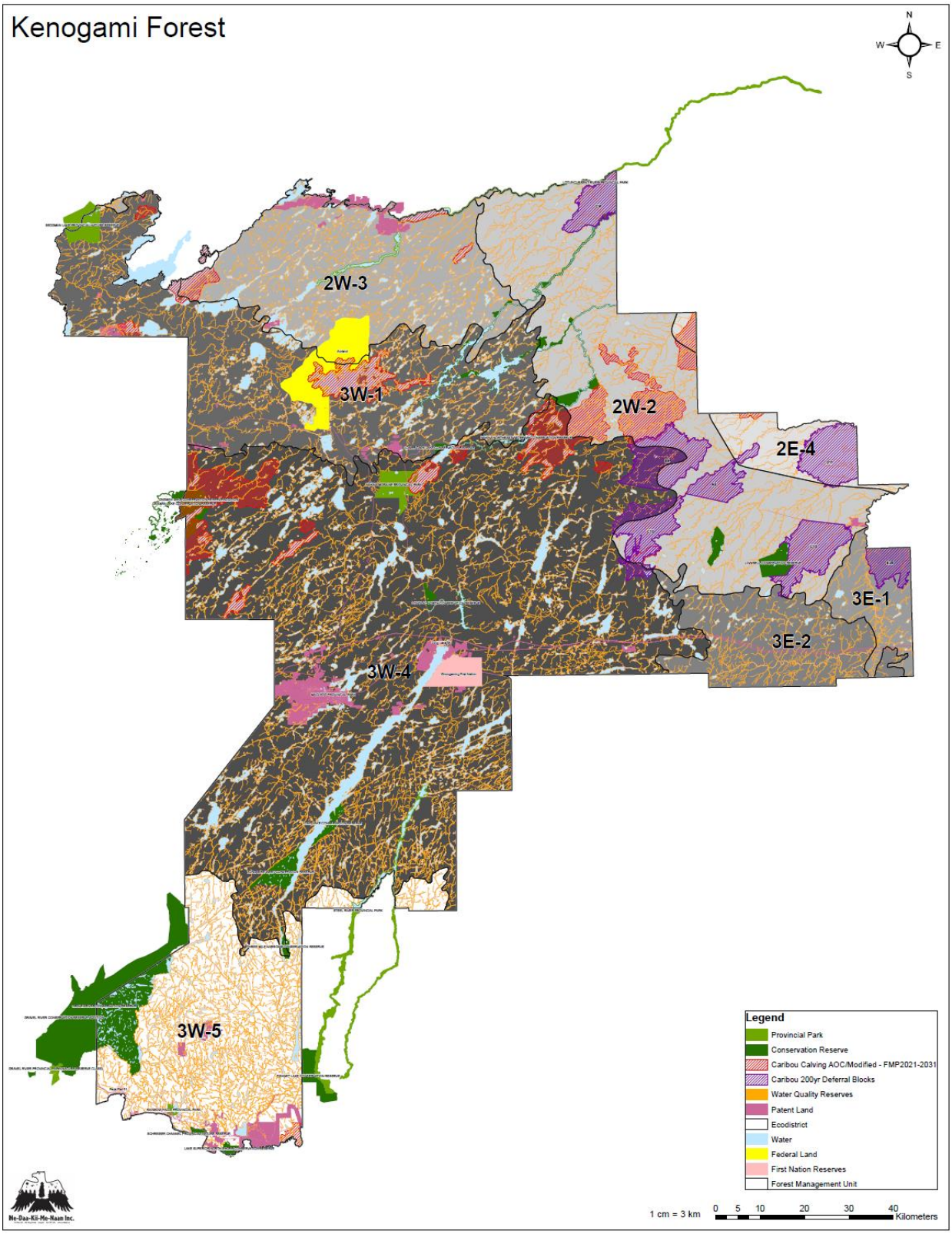


Figure 17. Additional Protected Areas on the Kenogami Forest (2021-2031 FMP)



5.0 Conclusions

The landform vegetation (LV) analysis conducted by the MNRF did not identify the need for any new candidate conservation area networks. Figures 4 through 12 do not identify any concentration areas that would make appropriate candidate areas. Feedback from Indigenous engagement and consultation has expressed a strong opposition to adding new conservation area networks.

Table 6 and 7, and Figures 16 and 17, show that the Kenogami Forest contains the designated conservation lands and secondary conservation lands of sufficient size to ensure the values they are intended to address are effectively protected based on a precautionary approach as required by the FSC Standard (V 1-0) indicator 6.5.7. Additionally, Table 7 shows over 14% of the required Conservation Area Networks are available in order to mee FSC standard indicators 6.5.2 and 6.5.7.

Resource management and interactions with the public are continuous and land use planning is periodic recurring time frames. Interested parties may suggest values a type of vegetation or a specific location, that would benefit from protection. The opportunity to add or change candidates (until they are formally protected) always exists. Additionally, a new enhanced forest resource inventory (eFRI) anticipated in the next few years which should improve the accuracy of the results as perhaps vegetation types may have changed. Any such initiatives would include MNRF running new Gap analyses using the new eFRIs (once they are available across ecodistricts).

More importantly, through this analysis of protected areas and engagement with Indigenous communities and interested and affected stakeholders, it was determined that no additional candidate protected areas are warranted or desired for the Kenogami Forest at this point in time. Any additional analysis and consideration for candidate protected areas in the future will take time to gain a better understanding and build a trusting relationship with local Indigenous communities, so that the incorporation of their values, concerns and desires on how to best manage the land on which they have lived for hundreds of years are given the appropriate consideration.

Decision

No additional conservation areas required on the Kenogami Forest. Indigenous consultation to date local communities are strongly opposed to adding new conservation area networks. Consultation with local communities did not identify any shortfalls in the landform-vegetation data presented to them.

Appendix 1 – Peer Review

Peer Review of the Kenogami Forest Conservation Area Gap Analysis (Feb. 4, 2021-draft)

Reviewed by Sarah J. Bros, R.P.F.

Merin Forest Management was contracted to undertake a peer review of the draft report of the Kenogami Forest Conservation Area Gap Analysis (Feb. 4, 2021) consistent with the requirements under 6.5.3 in the FSC® National Forest Standard of Canada (FSC-STD-CAN-01-2018-V1-0), referred to as the FSC Standard. Below are the results of that review. All comments in this report are intended to; 1) ensure the report meets the requirements of Indicator 6.5.2 in the FSC Standard, and 2) improve the report.

Scope of the Review

In reviewing this report, consideration was given for information available, and information used in assessing the gaps in the Conservation Area Network within the Kenogami Forest as prepared by Ne-Daa-Kii-Me-Naan Inc. and, the requirements of the FSC Standard.

The review focused on three key areas/questions:

1. Does the gap analysis meet the requirements of Indicator 6.5.2 of the FSC Standard?
2. Does the gap analysis report identify gaps in the conservation area network and did those gaps result in proposed candidate areas for protection?
3. Did the gap analysis include appropriate stakeholder and Indigenous engagement and, were the results of that engagement included in the analysis?

Each question forms a sub-heading in this review with corrective actions to address deficiencies in the report or in meeting the requirements of the FSC Standard. The corrective actions are:

- Major – address required changes to fully meet requirements of the Standard
- Minor – address changes to fully meet requirements of the Standard but are not required
- Suggestions – address improvements in the analysis that would improve the quality of the report or complete the analysis.

Q1: Does the gap analysis meet the requirements of Indicator 6.5.2 of the FSC Standard?

The intent of a gap analysis is to identify gaps in provincially protected areas (i.e. parks and conservation reserves). Ontario has a well-recognized system in place that identifies and protects ecologically important representative areas. Protected areas are selected and chosen based on their ecological, geological, and cultural heritage features. The Ministry of Natural Resources and Forestry (MNRF) uses an ecological land classification system (ELC) to define natural regions based on bedrock, climate, physical geography, and corresponding vegetation. These areas may contain:

- Old growth forest
- Lakes, rivers, and wetlands
- Archaeological sites or other cultural values
- Habitat for rare or endangered plants and animals.

Ontario uses a minimum threshold of 50 ha and/or 1% of the total area of a landform/vegetation association, whichever is greater and needed to ensure long-term conservation of biodiversity.

The FSC Standard requires the forest manager to "identify potential gaps in the completeness of the Conservation Areas Network in the management unit" using the best available information.

This gap analysis report was developed as a requirement of FSC certification of the Kenogami Forest. This report is the subject of this peer review. This review meets Indicator 6.5.3, FSC Standard. In conducting this review, it is important to note the Gap Analysis Report was prepared following Criterion 6.5 in the FSC Standard.

General Comments:

The Gap Analysis Report generally meets Criterion 6.5 of the FSC Standard however the report does not fully meet the requirements of the FSC Standard (see discussion below). Also, there are several editorial and content suggestions made that would improve the readability and flow of the report, including:

i. Background – include Purpose in heading or have a separate heading that outlines the purpose described in para. 4 of the report. ***Complete – heading changed from Background to Purpose***

ii. Section 1.1 – suggest including a sentence that protected areas are regulated under the PPCRA (Provincial Parks and Conservation Reserves Act). ***Complete***

iii. Section 1.2 – suggest including what the dataset (i.e. FRI) used by MNRF with the GapTool ***Complete***

iv. Section 1.2 – should include in the analysis areas not regulated under PPCRA but recommended for protection (as on most management units not all areas proposed for protection during Lands for Life (Living Legacy) received protection) ***Complete – these were included in the analysis & tables.***

v. Section 3.1 – suggestion removing reference to restrictions to conservation reserves unless confirmed by local Parks staff. (see reference to the PPCRA in report comments) ***Complete***

vi. Table 4 – suggest organizing this table by ecodistrict as it can then be tied back to Table 1 and Table 5 ***-not required, clear as is, and prefer not to.***

vii. Section 3.2 – you reference the tabular results of the gap analysis but have not included the table or at least a table of under-represented L/V types ***Complete – reference removed***

viii. Section 3.3 – caribou blocks identified in the text for 2011-2021 don't correspond to Figure 13 ***Complete –text revised***

ix. General comment – some of the discussion and use of number for protected areas, in the discussion under each ecodistrict, is unclear between whether the figures apply to the Kenogami Forest or the entire L/V type. Suggest clarifying. ***Complete –text revised prior to Table 5 and title of Table 5.***

Required Changes:

The report draws on the best available science (i.e. GapTool) used by the government to identify and protect ecologically important representative areas. The results of the GapTool identifies areas that are "under-represented" by eco-district and landform/vegetation (L/V) type. The report does a thorough job of presenting these results by ecodistrict for protected and under-represented areas and explores, in detail, additional areas, on the management unit, that are unavailable for forest management activities. For example, the report discusses the contributions of the following to the Conservation Areas Network on the management unit:

- long-term (i.e. 200 years+) deferrals for caribou
- riparian reserves unavailable for harvesting
- Intact Forest Landscapes (IFLs)
- Indigenous value areas

However, the report falls short of assessing each of these against the results of the GapTool for under-represented areas. To fully meet the requirements of the FSC Standard, further analysis is required to determine where each of these intersect/overlap with under-represented L/V types and, how these areas could contribute to improving on the amount of representative area by L/V type (ecodistrict) and, further, result in proposed candidate areas for protection. Additionally, once candidate areas for protection are identified these should be presented for comment and endorsement to affected Indigenous communities and stakeholders on the management unit. This discussion might also include government and ENGOs.

Issues: analysis does not fully meet Indicator 6.5.2 of the FSC Standard
Issue category: **major**
Comment: Complete the analysis and propose (or not) candidate areas for protection.
Company response: ***Not Required*** – Intersect/overlaps of protected areas identified in Table 7 are not needed. These areas are protected for more meaningful reasons than simply a landform/vegetation relationship. For example the FN Confidential areas have been identified as important to local Indigenous communities for their traditional and spiritual needs and other locations are not what was requested by the local Indigenous people. Table 4. Parks & Protected Areas by Ecodistrict of All L/V Achieved presents the requirements achieved for the Parks and Conservation Reserves and average 90% achievement for all. ***Complete -*** Additional consultation meetings with Indigenous and local communities has occurred since this report was peer reviewed and no additional areas are proposed and text clarified as requested. Additional explanation added to Section 5.0 Conclusions to clarify this as it was not included in the peer reviewed report.

Issues: analysis does not meet Indicator 6.5.1 of the FSC Standard
Issue category: **major**
Comment: The FSC Standard Indicator 6.5.1 states: an efficient process is used to engage Indigenous peoples and self-identified interested and affected stakeholder regarding the identification and management of designated conservation lands (as per 6.5, areas that are managed through the exclusion of forest management activities (except where required for restoration or maintenance of natural conditions (i.e. caribou management, cultural values)). The report acknowledges this will be addressed however, the report assumes there will be consensus regarding no candidate protected areas endorsed as a result of engagement.
Company response: ***Complete*** *- Additional consultation meetings with Indigenous and local communities has occurred since this report was peer reviewed. Interested stakeholders were contacted for feedback. Additional explanation added to Section 5.0 Conclusions to clarify this as it was not included in the peer reviewed report.*

Issues: analysis does not utilize all gap analyses available (i.e. WWF, to determine most complete science to use
Issue category: **minor**
Comment: the analysis would benefit from reaching out to Ontario Nature or WWF to obtain the WWF gap analysis that uses the “enduring features” approach as this is referenced in the FSC Standard under 6.5.2.

The analysis could draw on the parallels between enduring features approach and the Ontario approach (GapTool).
Company response: ***Not Required*** – Further analysis methodologies are not required as the protected areas identified in Table 7 were selected and are protected for more meaningful reasons than simply a landform/vegetation relationship or other enduring features characteristics of the areas such as Indigenous values and caribou habitat values (i.e. FN Confidential areas, caribou habitat deferrals). A second analysis methodology will not change the areas proposed in Table 7 which was acceptable to local Indigenous and non-Indigenous communities.

Q2: Does the gap analysis report identify gaps in the conservation area network and did those gaps result in proposed candidate areas for protection?

The report does a good job of identifying the gaps in the conservation area network within the management unit, however, as discussed under Q.1 above, falls short in completing the analysis by identifying candidate areas for protection that are reviewed by affected Indigenous Peoples and affected and interested stakeholders.

The analysis correctly includes deferred areas (i.e. caribou deferrals) and other areas removed from forest management activities as areas that may offset the gaps in protected areas within the management unit. The use of riparian reserves, area of concern reserves and caribou calving reserves is questionable as it does not meet the intent of 6.5 of the FSC Standard because roads can cross riparian reserves, area of concern reserves may not meet the threshold of 1% or 50 ha in most instances, and caribou calving and nursery areas will be harvested when they fall within the managed landbase and open DCHS blocks.

Suggestion: remove riparian reserves, area of concern reserves and caribou calving and nursery areas from the analysis for the reasons noted above. ***-Partially Complete*** *- Riparian areas have been removed. Caribou calving and nursery areas are for the 2011-2021 FMP period, which will expire soon. These have been included in Table 6 (not Table 7 2021-2031 FMP) and are included to show what would have been included if the FMP did not proceed as planned. At the time of writing this report, the 2021-2031 FMP is under development between Stage 3 and Stage 4 Draft FMP.*

As mentioned above, the analysis uses deferrals and other areas removed from forest management activities as areas that can contribute to the under-represented L/V types on the Kenogami Forest. However, the analysis is incomplete because it does not analyze what under-represented L/V types are addressed by these areas.

Suggestion: consider completing the analysis and presenting how much area by L/V type would be represented by these areas (deferred and other areas removed from harvest). - ***Not Required*** – Further analysis of protected areas identified in Table 7 with LV types are not needed. These protected areas in Table 7 have been selected for protection for more meaningful reasons than simply a landform/vegetation relationship. For example the FN Confidential areas have been identified as important to local Indigenous communities for their traditional and spiritual needs.

One of the suggested considerations in the gap analysis is landscape connectivity. The analysis discusses riparian areas, deferrals but does not delve into how these areas might provide landscape connectivity. Are there any caribou travel corridors identified on the Kenogami Forest that might contribute to connectivity across the landscape?

Suggestion: consider assessing landscape connectivity as it relates to caribou deferrals, caribou travel corridors, and riparian reserves. Is there a missed opportunity to propose candidate areas for protection through landscape connectivity? - ***Not Required*** *-There are no travel corridors in the caribou mosaic area but rather deferral blocks and water bodies provide linkages as per MNRF development of the mosaic. The previous travel corridor south through the discontinuous zone burned and no other suitable*

habitat available. The riparian areas were dropped from protected areas as requested by the peer review.

Although not a requirement to meet 6.5.2, HCVs are one element that could contribute to completing the Conservation Area Network. The report does not discuss how HCV's and HCV areas could contribute to improving the completeness of the Conservation Area Network.

Issues: analysis does not utilize HCVs and HCV areas in completing the Conservation Area Network.
Issue category: **minor**
Comment: the analysis should include how HCV's and HCV areas can contribute to the completion of the Conservation Area Network as per 6.5.2 in the FSC Standard.
Company response: Complete – ***Complete*** *–Text added to Section 3.4. IFLs and caribou deferrals (large landscape patches) are discussed in this report*

Major corrective actions under this question are addressed under Q.1.

Q3: Did the gap analysis include appropriate stakeholder and Indigenous engagement and, were the results of that engagement included in the analysis?

This question is addressed under Q.1 and any corrective actions are also addressed under Q.1.