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High Conservation Values in the Mazinaw – Lanark Forest

Assessment, management and
monitoring of forest conservation from a
global, regional and local perspective
based on the Forest Stewardship
Council Principle 9

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Acronyms

AOC	Area of Concern
COSSARO	Committee on the Status of Species at Risk in Ontario
EO	Element Occurrence
FSC	Forest Stewardship Council
FMP	Forest Management Plan
GLSL	Great Lakes St. Lawrence
HCVF	High Conservation Value Forest
HCV	High Conservation Value
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
MLF	Mazinaw-Lanark Forest
MLFI	Mazinaw-Lanark Forest Inc.
NHIC	Natural Heritage Information Centre
OMNRF	Ontario Ministry of Natural Resources and Forestry
SAR	Species at Risk

Reading this document – An HCVF assessment is primarily a communications document. It brings together all of the values information in one location to allow for a fair assessment of what is a true High Conservation Value (HCV). To accomplish this, there is a very heavy reliance on many other documents. Most of these are accessible through the Internet links that are included in this report. ***If the reader wishes to fully access these, this report should be read on a computer with a good internet connection.*** Here is some guidance on accessing the supporting documents:

- **Important:** Depending on your computer, connect to internet links ([blue text](#)) with either a single click or hold the control key and click on the link.

After following links within the document, return to previous page (PDF or WORD) press ALT left arrow

- The document is provided in either WORD 2007 format or PDF because these are the most widely available and functional format.
- Some web documents are large (> 20 or 30 megabytes, such as the Forest Management Plan documents and maps). They may take a minute or so to download.
- References are provided in several formats depending on the purpose: Web links are provided for key documents in the text ([blue fonts](#)) or footnotes, and have been verified as of the date of this report; a citation list is provided for general scientific papers not available on line, and other papers of general interest. Additional links are listed under “assessment methodology” within each element. There is some redundancy to allow for different means for users to access information.
- This document contains only a few maps and illustrations because the linked documents will provide better and more up to date graphical information.
- Comments are welcome on whether more maps and illustrations would help the readability of the document for the next version.

Please send comments to Edie Russell (edie.russell@frmg.ca)

Acknowledgements

Our appreciation goes to Mazinaw-Lanark Forest Staff for their great knowledge of the forest; the MLF Local Citizen's Committee for their advice and patience in connecting HCVs with the values they carefully safeguard; and to OMNRF staff who are professional and helpful. The work of the Planning Team in preparing the MLF Forest Management Plan is acknowledged as the primary basis for this report. Bethany Waite assisted with links and tables.

Made possible through a contribution from:



About Version

About Version 2.3

This was a general review of links and SAR status information to ensure they are up to date.

About Version 2.2

This was a general review of links and SAR status information to ensure they are up to date.

About Version 2.1

This was a general review of links and SAR status information to ensure they are up to date. References to the new 2021 [FMP](#) have been included.

About Version 2.0

This version updates some changes to SAR values and prescriptions to follow the COSSARO changes. As well Version 2 fixes links to internet web sites that were disrupted by MNR during a "migration to Ontario.ca". Some text was edited as well for clarity.

HCV or HCVF?

Terminology is important, and one of the confusing terms is the difference between HCV and HCVF (High Conservation Value Forest). Broadly speaking the former is the most common usage currently and refers to *specific* values. HCVF refers to an area that contains the value. When using the terms in practice, it is usually simplest and most accurate to refer to HCVs. The terms can be used interchangeably although this can confuse some people. This report almost always uses "HCV".

For further information on the HCV concept, the HCV Resource Network document called [Common Guidance for the Identification of High Conservation Values](#) provides an up to date explanation. A case study based on the Mazinaw Lanark forest was included in this widely distributed international document.

As well, in September of 2014, the companion document entitled "[Common Guidance for the Management and Monitoring of High Conservation Values: A good practice guide for the adaptive management of HCVs](#)" was published.

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Executive Summary

This report is an assessment of 'High Conservation Value Forest' undertaken on behalf of Mazinaw-Lanark Forest Inc. (MLFI) for the Mazinaw-Lanark Forest (MLF), in accordance with Principle 9 of the Forest Stewardship Council (FSC) Principles and Criteria. This assessment of HCV is guided by the "High Conservation Value Forest National Framework", which is ANNEX D of the [FSC National Canadian Standard](#).

Mazinaw-Lanark Forest Inc. manages the MLF under the authority of a Sustainable Forest License (SFL) granted by the Government of Ontario. First Resource Management Group (FRMG) carries out management of the MLF under contract with MLFI. The Forest Management Plan ([FMP](#)) is the guiding document for the management of values and is regulated and approved by the Province of Ontario. Considerable effort in values identification is made through the FMP process, and this is the foundation for assessment of HCVs in this report.

The Mazinaw-Lanark Forest has a total of just over 306,000 ha of Crown (provincially owned) land. Of that 248,000 is forested. The production forest (eligible for forest management activities) is 135,000 ha. The Forest is located southwest of Ottawa, Ontario, Canada.

An important aspect of HCV assessment is the mapping. There are many links to maps in this report. In order to have up to date maps, we use the MNR [FMP](#) which is the only source for approved FMP maps.

This HCV assessment resulted in the HCV designations in [Table 1](#). Identified High Conservation Values on the Mazinaw-Lanark Forest links to management and monitoring information. In this table you can follow links to the discussion in the text. To return to the Table press ALT left arrow.

Table 1. Identified High Conservation Values on the Mazinaw-Lanark Forest links to management and monitoring information.

HCV Cat.	HCV Element	Link to Document	Management	Monitoring	HCV Designation
Category 1 Concentrations of Biodiversity	1	MLF Species at Risk Peregrine Falcon , Bald Eagle , Olive-sided Flycatcher , Bank Swallow , Wood Turtle , Blanding's Turtle , Butternut , American Ginseng , Pale-bellied Frost Lichen	These Species at Risk, when they occur on the forest, are managed by specific prescriptions developed for each species. This is mandated by the 2007 Endangered Species Act and implemented through forestry operations planned in the Forest Management Plan for Mazinaw-Lanark. OMNRF is the lead agency. MLF Inc. is required to follow government direction (Table 9)	All of the prescriptions in the MLF FMP are monitored for their efficacy by a process governed by regulations of the Crown Forest Sustainably Act and Endangered Species Act. For clarity, the expert responsible for monitoring is listed in Table 9 , a summary of management and monitoring.	HCV Peregrine Falcon , Bald Eagle , Olive-sided Flycatcher , Bank swallow , Wood Turtle , Blanding's Turtle , Butternut , American Ginseng , Pale-bellied Frost Lichen
		Chimney Swift , Whip-poor-will , Cerulean Warbler , Common Nighthawk , Red-headed Woodpecker , Golden-winged Warbler , Rusty Blackbird , Northern Long-eared Bat , Cougar , Gray Ratsnake , Hog-nosed Snake , Common Five-lined Skink , Loggerhead shrike , Spotted Turtle , Snapping Turtle , Eastern Prairie Fringed-orchid , Broad Beech Fern , Purple Twayblade , Rusty-patched Bumble Bee , Gypsy Cuckoo Bumble Bee , West Virginia White	May occur in the forest, but no element occurrences are recorded; for some species, prescriptions have been developed and are in the FMP	No effectiveness monitoring required, as there are no prescriptions being used currently. If the value is confirmed, the FMP will be amended and the prescription followed. Monitoring will be implemented.	Possible HCV
		King Rail , Henslow's sparrow , Bobolink , Eastern Meadowlark , Barn Swallow , Canada Warbler , Black Tern , Yellow Rail , Least Bittern , Small-footed Bat , Musk Turtle , Spiny Softshell Turtle , Northern Map Turtle , Lake Sturgeon , American Eel , Channel Darter , Monarch	Occurs, but species is addressed through Normal Operations; or there is no interaction with forestry operations; no special prescription required.	No effectiveness monitoring required, as there are no prescriptions because there is no direct interaction with forestry.	HCV Riparian or Landscape Prescription
Category 2	2	Endemic Species			Possible HCV

		<u>(Hydnobius autumnalis)</u>			
	3	<u>Regional Wildlife Concentration</u>			No HCV
	4	<u>Regional Featured Species</u> <u>Heronries > 25</u>			Possible HCV
	5	<u>Edge of Range</u>			No HCV
	6	<u>Conservation/Protected Areas</u> Provincial Parks Conservation Reserves Madawaska Highlands Land Use Planning Area	These areas are regulated and forestry activity is not allowed. For detailed policy direction on individual areas see Table 5	Compliance along the boundaries of these areas is MLF responsibility	HCV
	7	<u>Large Landscape Level Forest</u>			No HCV
Category 3 RTE Ecosystems	8	<u>Rare ecosystems</u>			No HCV
	9	<u>Signif. Decline Ecosystem</u> Existing old growth stands	Areas are deferred from harvest	Company addresses case by case, consistent with FMP	HCV
	10	<u>Fragmented landscapes</u> Enhanced Management Areas	Access restrictions are in place through Land use Policy by MNRF	Compliance for access restrictions is monitored by OMNRF and the Company for forestry.	HCV
	11	<u>Unique Ecosystems</u> Madawaska Highlands LUP Area Palmerston Lake ANSI	MHLUP Area is a high level plan that determines forestry activities. Special prescriptions are in place.	Administered by OMNRF	HCV
Category 4 Ecosystem Serv.	12	<u>Water Source</u>			No HCV
	13	<u>Flood Protection</u> Provincially Signif. Wetland	Buffers are in place around PSWs	OMNRF and Company oversees compliance	HCV
	14	<u>Soil Erosion /slide Protection</u>			No HCV
	15	<u>Fire Barrier</u>			No HCV
	16	<u>Communities</u>			No HCV
Cat.5 Comm	17	<u>Livelihoods</u>			No HCV
Cat 6 Culture	18	<u>Cultural: Native & Non-native</u> Native values Mud Lake Logging Heritage Sites	OMNRF Native Liaison provides oversight of the Company approach to native values. The Company responds to other cultural values directly and provides protection on a case by case basis.	Values monitoring for native values is provided by the communities which actively participate in FMP planning.	HCV Possible HCV

	19	<u>Overlapping values</u>			No HCV
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Overview of HCV Assessment on the Mazinaw-Lanark Forest

Mazinaw-Lanark Forest Inc. (MLFI) manages the Mazinaw-Lanark Forest (MLF) under the authority of a Sustainable Forest License (SFL) granted by the Government of Ontario. MLFI is seeking certification under the Forest Stewardship Council (FSC) system. Part of the certification process is a requirement for the managers to complete an assessment of High Conservation Value Forest (HCVF) using the definition of the Forest Stewardship Council's Principle 9. According to the definition, High Conservation Value Forests are those that possess one or more of the following attributes:

Forest areas containing globally, regionally or nationally significant:

- concentrations of biodiversity values (e.g., endemism, endangered species, refugia);
- Large landscape level forests, contained within, or containing the management unit, where viable populations of most (if not all) naturally occurring species exist in natural patterns of distribution and abundance.
- Forest areas that are in or contain rare, threatened or endangered ecosystems.
- Forest areas that provide the basic services of nature in critical situations (e.g., watershed protection, erosion control).
- Forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

This assessment of HCV on MLF is guided by the "High Conservation Value Forest National Framework", which is Annex D: High Conservation Value*) Framework [FSC Canadian National Standard](#).

Understanding HCVs on public land in Ontario requires an understanding of Ontario's approach to non-timber forest values. The MLF is a large forest by most international standards at just over 300,000 ha. In the Canadian context, it is relatively small. MLF is a publicly owned and, by Canadian standards, intensively used by the forest residents and the large urban population in Ottawa and environs to the north of the forest. MLF is also in the Montreal Toronto Corridor, and no doubt attracts many users from this regional population. All of the Ontario SFLs are at a large enough scale and are highly visible, thus requiring a high level of scrutiny under the HCV National Framework (Section 4 - The issue of scale).

Current OMNRF provincial forest policy addresses a wide range of values using policy documents, or resource guides for special values. The role of the FSC HCV process is to verify that the regulated provincial planning and forest management system meet a global standard. There is no intention of changing the current values terminology, which is quite mature in Ontario. The public consultation process will be based on the use of local terminology rather than the FSC terminology. It is the responsibility of the managers to ensure that the full FSC meaning of HCV is conveyed to the forest management planning ([FMP](#)) process. Although this report will be public, it is not expected that there will be a wide distribution to the public because of its somewhat technical nature.

All of the MLF has conservation value. For example, a forest has "high" conservation value when "local communities use the forest for their basic needs or livelihoods." There is no doubt that this is the case for most of the forest. This forest is, and has been, the mainstay of loggers, trappers, tourism establishments, outfitters, and resort owners for a long time. For native communities it has been home for much longer. Therefore, defining the values which are "significant" and should receive HCV designation is the main function of this report. HCVs are clearly designated as part of the individual analysis in each section of the report. The summary of the HCVs appears in the Executive Summary.

The FSC standard and the HCV Toolkit, focused at the international level, state that consultation is required. In the MLF, law and common sense require extensive ongoing consultation, although

compromise and difference of opinion are routine. To this end, the [Proforest](#) HCVF Toolkit makes an important point on the often difficult process of distinguishing between HCVs and non-HCVs:

“Although some values may have simple yes/no alternatives, many will be measured on a continuum of gradually increasing importance. This means that, although defining HCVF should always be based on the best available scientific information, the decision on the threshold level at which a ‘value’ becomes a ‘High Conservation Value’ is inevitably a value judgment”.

In assessing HCVs for the MLF, the managers have been inclusive in their approach, in keeping with the FSC P&Cs and the precautionary principle. Because of the sensitivity around HCVs, “netting down” of values was the main challenge of this report. MLF and the OMNRF biologists, planners and foresters responsible for forest values do not claim the prescriptions and approaches are perfect, but they have been thoughtfully prepared, are based on the best available science and a system of effectiveness monitoring, and are operationally sound.

Purpose & Method

This report is provided to meet the requirements for an FSC certification assessment of the MLF in 2012.

Methodology -- HCV National Framework (Canada)

The framework provided in Annex D provides the basic approach and guidance for assessing HCVF. There are four criteria in Principle 9 relevant to forest managers. In short, these require: assessment of values, management prescriptions for values, and monitoring in order to ensure the prescriptions are effective. Management activities in HCVFs must “maintain and enhance the attributes which define such forests”. The four P9 criteria are:

- 9.1 requires an assessment
- 9.2 is guidance on consultation
- 9.3 requires a precautionary level of management
- 9.4 requires monitoring the effectiveness of the management

Considerable effort in values identification is made through the [FMP](#) process, and this is the foundation for assessment of HCVs in this report.

Areas of Concern and Conditions on Regular Operations

“Area of Concern” is the term used to describe the locations of values in the forest that may need special prescriptions to ensure protection. There are many of these AOCs. Some are quite routine, such as shoreline areas. So not all AOCs are HCVs – HCV are regionally significant values.

Assessment for HCV Attributes

Within the first phase of this HCV assessment, the National Framework provides a list of 19 questions that assist in determining whether individual attributes are HCVs. For each value the managers, with expert consultation, have defined thresholds for designating a High Conservation Value. In each element there is a statement of the values that are designated as HCV and therefore require consideration by the forest manager.

During assessment, values are designated as HCV, HCV no special prescription required, not HCV or possible HCV:

- HCV – follow guidance of P9 in which management is guided by the precautionary principle and monitoring demonstrates that specific prescriptions are effective.

- HCV Landscape or Riparian Management– means that the value is significant at least at the regional level, but there is no site level interaction with forestry and consequently no special prescription or monitoring is required. In other words, good landscape or riparian management will avoid impact on the value.
- Not HCV – follows guidance of P1 to P8 for management and monitoring
- Possible HCV – occurrence is not confirmed, needs further information about distribution and abundance, and or consultation required; follows P9 and precautionary principle

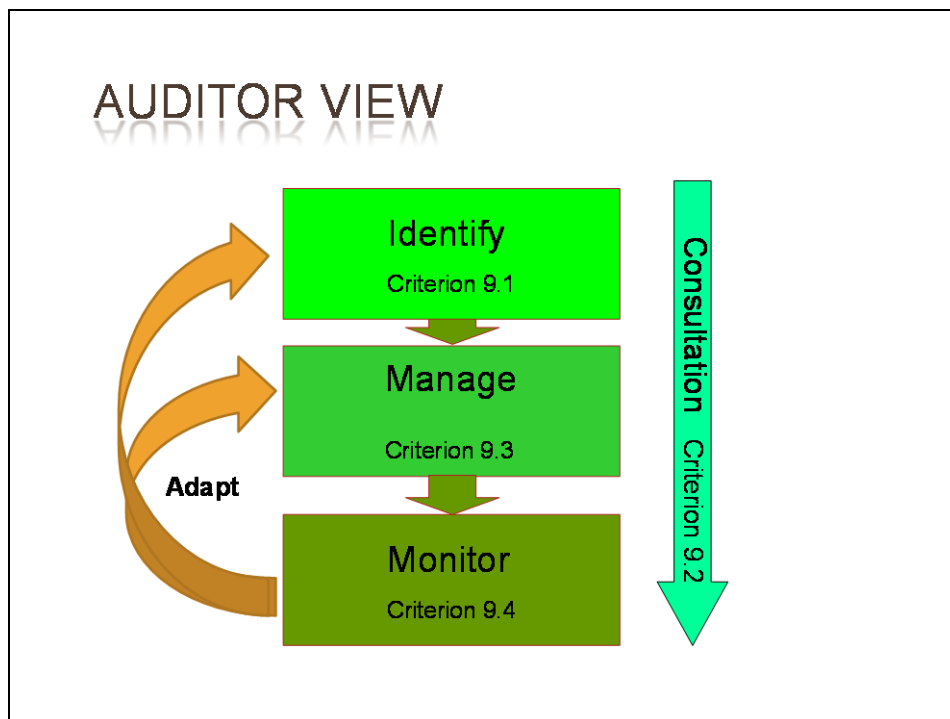


Figure 1. A simplified view of the FSC Principle 9 criteria.

Consultation

There are four components to the HCVF consultation consisting of:

- Broad review, based on the [FMP](#) process, to determine forest values generally which will include as a minimum individuals, local stakeholder representatives including the Local Citizen's Committee (LCC)
- Consultation with technical experts about species, ecosystems or values that are HCVF
- Focused review by regional, provincial and national stakeholders of the values and the management approach
- Open door policy – new HCVs and new management approaches will be considered at any time

Values were reviewed in a visit to the Local Citizen's Committee (LCC), March 12, 2012. The LCC is a knowledgeable group of local residents formed to advise on the production of the Forest Management Plan. They participate in the planning exercise on a regular basis. Company and government staff

tasked with [FMP](#) production attend LCC meetings. The LCC provided comments to the manager about what is appropriate to designate HCV.

As well, OMNRF's requirements for public consultation in bullet point 1, are documented in detail as part of the [FMP](#) process, and as part of the public record in the Appendices to the plan. This will serve as part of the HCV documentation process. The other three steps of the consultation process are documented in this report and in subsequent updates to this report.

FMP Consultation exercise

The public has been notified of opportunities to participate in the development of the Mazinaw-Lanark Forest's Forest Management Plan through advertisements placed in twelve local newspapers, through direct mailing to interested and affected agencies, groups, individuals and government and through notices on the Environmental Registry.

During the [FMP](#) the LCC members contacted constituents individually including trappers, lake associations, trail associations and individuals. Input was discussed at LCC meetings leading to recommendations to the planning team. Particularly, input was received regarding trails "area of concern prescriptions." Areas of Concern are the locations of values in the forest that may need special prescriptions to protect. There are many of these and not all of them are HCVs -- that is regionally significant values.

Other groups have been invited to comment and new comments will be considered at any time. Copies were sent to organizations which have expressed interest in the past: Ontario Federation of Anglers and Hunters, Ontario Nature, Canadian Parks and Wilderness Society, The Nature Conservancy

HCV Designation Decision by the Manager

Under the FSC system it is the manager who makes the final designation of HCVs. This decision must be transparent (as documented in this report) and based on expert and stakeholder consultation.

OMNRF expert opinion carries weight in these decisions. In Ontario's [FMP](#) system, as regulated following the Environmental Assessment decision of 1995, and subsequent reviews, the responsibility for non-timber values rests with the provincial government. To ensure that the management is effective, the government employs a range of experts including biologists, archaeologists, and native liaison officials. In P9, the standard refers specifically to the responsibility of "the applicant" towards HCVs. In the case of FSC, MLFI is responsible for the "special" values or HCVs. To carry out this responsibility, the manager must ensure that the government is meeting the spirit of the FSC standard. MLF Inc will ensure that HCVs are properly assessed and designated in the FSC context. This report is the responsibility of MLF Inc, and meets the requirement of 9.1 in the assessment.

Good Neighbour Policy

The Company shares Crown forests of the management unit with many other groups and individuals. There are countless parcels of patent lands and many provincial parks and conservation reserves adjacent to the Crown's managed forest. Given the proximity to Ontario's major population centres, the use of Crown land is high. A "good neighbour" policy is intended to provide direction that protects the interests of all stakeholders.

Private landowners adjacent to planned operations will be contacted during operational layout primarily to ensure that the limits of planned operations do not encroach on private land.

This policy is also compliant with FSC requirements for informing adjacent landowners about the management of HCVs.

Keeping HCVs up to date – Process

Part of the HCV methodology must be a process for keeping records and prescriptions up to date. As described above, the primary driver for this must be the [FMP](#) process, which is the open public record of forest management. It is a public record of forest management process and decision-making regulated by the Crown Forest Sustainability Act (Government of Ontario, 1994). The process for keeping that system up to date is part of the [FMP](#) system.

The contents of this HCV report will need to be reviewed periodically to ensure that it is up to date with the [FMP](#) and other changes in the forest. Of particular interest are the values designated “possible HCV” which need to be reviewed for changes to status. MLFI will ensure, as part of the responsibilities of the designated staff member for certification (currently the General Manager), that HCV are reviewed at appropriate time intervals. Annual maintenance audits by the certifier will also ensure that this is fulfilled.

Forest Description

The Mazinaw-Lanark Forest has a total of just over 306,000 ha of Crown (provincially owned) land. Of that 248,000 is forested. The production forest is 135,000 ha, which means it is eligible for forest management activities. The Forest is located southwest of Ottawa, Ontario, Canada.

The Mazinaw-Lanark Forest Management Unit (MLF) is administered by Mazinaw-Lanark Forest Inc. (MLFI) staff in cooperation with the Ontario Ministry of Natural Resources (MNRF). The primary role of MLFI is to prepare, implement and monitor the forest management plan, annual work schedules, produce an Annual Report, meet renewal obligations and ensure that all operations are conducted in accordance with MNRF’s legislated standards and the [Crown Forest Sustainability Act](#) (RSO 1994). This is in turn governed by other legislation that governs how forestry is conducted in Ontario. For example the [Environmental Protection Act \(RSO 1990\)](#) caused an EA to be conducted which contains specific direction on how management occurs. Similarly the [Endangered Species Act \(RSO 2007\)](#) makes significant operational demands on forestry. OMNRF approves and reviews all of the FMPs in the Province, and has regulatory control.

Mazinaw-Lanark Forest Inc. is the overarching Sustainable Forest Licensee (SFL) responsible for sustainable forest management in the Mazinaw-Lanark Forest. MLFI is a private company owned and funded by local forest products companies and a group of independent loggers. Its shareholders include 15 independent logging companies, 5 sawmills, and 1 pulp mill.

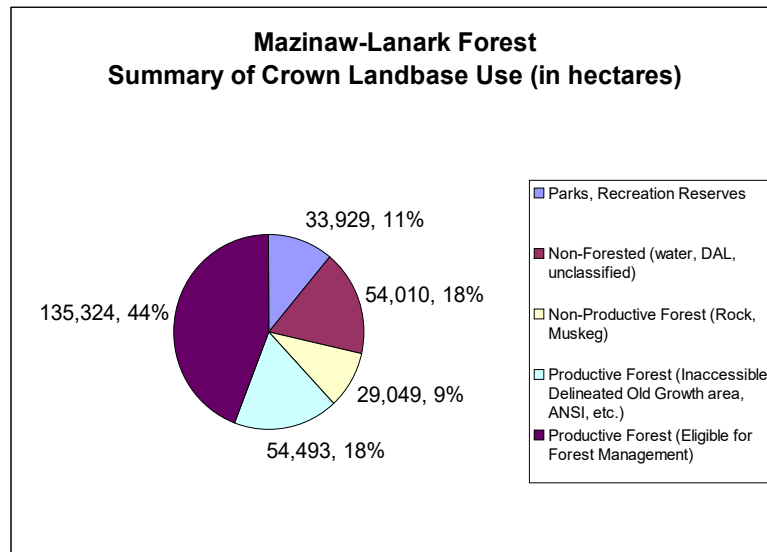


Figure 2. Summary of Crown Landbase (ha).

The population of the MLF is about 100,000, with an aboriginal population of about 5000. The communities have a relatively diverse range of economic activities, of which forestry is important, although representing only 5% of the total work force. There are support industries that also benefit from forestry.

The MLF forest straddles the granite bedrock of the Precambrian Shield area in the north and the limestone dominated substrate in the south. This produces a very diverse range of forest types and species, relative to most of Ontario. Great Lakes-St. Lawrence Forest is a mixture of coniferous trees such as eastern white pine, red pine, eastern hemlock and white cedar, and deciduous broad-leaved species, such as yellow birch, sugar and red maples, basswood and red oak. Species more common in the boreal forest, such as white and black spruce, jack pine, aspen and white birch also exist here. This forest contains many species of fungi, ferns, mosses and shrubs.

Due to the complexity of the management unit land base, many areas are unavailable for forest management during the forest management plan. The arrangement of Crown land is such that much is embedded amongst private land although there are areas of the management unit where there are larger more contiguous patches of Crown. Crown land isolated by private land introduces some uncertainty when it comes to access during the forest management plan. Many roads cross over private land that access Crown land and vice versa, meaning that many roads are shared by a variety of users. In many cases these roads are maintained by groups other than the forestry industry such as Townships or Ratepayer's Associations.

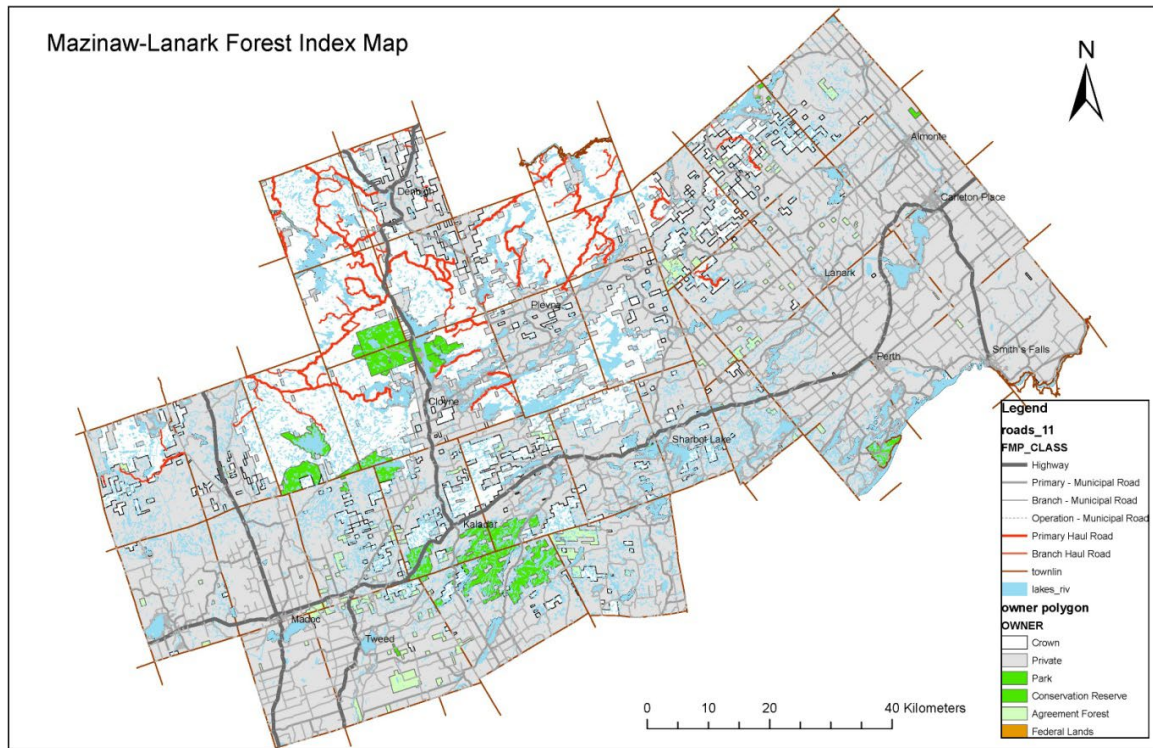


Figure 3. Mazinaw Lanark Index Map.

Phase 1: Process for assessing for the presence of HCV attributes

The following assessment for the presence of HCV attributes is based on the 19 questions posed by the National HCVF framework divided into six categories related to the definition of HCV.

Table 2. National Framework process for assessing the presence of HCV attributes--Six categories with 19 Elements.

Category 1: "...significant concentrations of biodiversity values."

1. Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or territorial/provincial authorities?
2. Does the forest contain a globally, nationally or regionally significant concentration of endemic species?
3. Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentrations of species (one or several species e.g. concentrations of wildlife in breeding sites, wintering sites, migration sites, migration routes or corridors – latitudinal as well as altitudinal)?
4. Does the forest contain critical habitat for regionally significant species (e.g. species representative of habitat types naturally occurring in the management unit, focal species, species declining regionally)?
5. Does the forest support concentrations of species at the edge of their natural ranges or outlier populations?
6. Does the forest lie within, adjacent to, or contain a conservation area: a) designated by an international authority; b) legally designated or proposed by relevant federal/provincial legislation; or c) identified in regional land use or conservation plans?

Category 2. "...large landscape level forests..."

7. Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species and sufficient habitat such that there is a high likelihood of long-term species persistence?

Category 3 "...rare threatened or endangered ecosystems."

8. Does the forest contain naturally rare ecosystem types?
9. Are there ecosystem types within the forest or ecoregion that have significantly declined?
10. Are large landscape level forests (i.e. large unfragmented forests) rare or absent in the forest or ecoregion?
11. Are there nationally/regionally significant diverse or unique forest ecosystems?

Category 4 "...basic services... watershed protection"

12. Does the forest provide a significant source of drinking water?
13. Are there forests that provide a significant ecological service in mediating flooding and/or drought, controlling stream flow regulation, and water quality?
14. Are there forests critical to erosion control?
15. Are there forests that provide a critical barrier to destructive fire (in areas where fire is not a common natural agent of disturbance)?
16. Are there forest landscapes (or regional landscapes) that have a critical impact on agriculture or fisheries?

Category 5 "...meeting basic needs of local communities."

17. Are there local communities? (This should include both people living inside the forest area and those living adjacent to it as well as any group which regularly visits the forest). Is anyone in the community making use of the forest? Is the use for their basic needs/livelihoods?

Category 6 "...communities' local cultural identity..."

18. Is the traditional cultural identity of the local community particularly tied to a specific forest area?
-

-
19. Is there a significant overlap of values (ecological and/or cultural) that individually did not meet HCV thresholds, but collectively constitute HCVs?
-

Category 1) Forest areas containing globally, nationally or regionally significant concentrations of biodiversity values.

1) Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or territorial/provincial authorities?

Rationale:

Ensure the maintenance of vulnerable and/or irreplaceable elements of species diversity. This indicator allows for a single species or a concentration of species to meet HCV thresholds.

Assessment Methodology:

- Ontario [Breeding Bird Atlas](#)
- [IUCN](#) Red List
- [COSSARO](#) -- species at risk
- [Mazinaw Lanark Forest Management Plan](#)

Consultation with experts included discussion with MNR SAR biologists. For this assessment, the NHIC database, the Ontario Breeding Bird Atlas, the Ontario Herptile Atlas, and the Forest Management Plan were the primary sources of information.

Assessment Results:

Table 3 below describes all of the species that are listed as special concern, threatened, or endangered nationally (COSEWIC) or provincially (COSSARO), as well as other species that are not “at risk” but are considered to be “rare” according to Ontario’s Natural Heritage Information Centre (NHIC) or other sources. The right most column provides the assessment for each of the species.

Rankings by the International Union for the Conservation of Nature (IUCN) were included in the Table because they give a more global context to the more local rankings. Often rankings in Ontario are influenced by the species being at the northern edge of its range. IUCN rankings tend to be lower because the global distribution is factored in. This does not minimize the responsibility of the Province or the forest company, because the decrease of habitat range is the hallmark of species in trouble.

Any “rare” species that had actually been observed in the Forest and recorded in a relevant database was considered to be a candidate for assessment. At the provincial level, S1, S2, and S3 ranks were relevant.

Mazinaw-Lanark Forest Inc. is committed to:

- Sustainable Forest management
- Protect endangered species and other values
- Meet the intent of the Endangered Species Act

About 60% of operational blocks on the Forest are affected by one or more endangered species. All of these areas have undergone logging operations intermittently over the past 200 years. MNR and SFL staff are identifying new endangered species values on a regular basis (the more we look; the more we find).

Table 3. MLF Species at Risk.

This is based on NHIC review of species in the vicinity of MLF, as well as local information. Shaded species are from the NHIC review.

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Birds			
<i>Falco peregrinus</i> <i>anatum</i> Peregrine Falcon	MNR Legal Status MNR map IUCN	1) Special Concern 2) Least Concern	1) Considered special concern in Ontario and Canada. Across North America, precipitous declines in populations were associated with widespread, intensive use of persistent pesticides, particularly DDT in the 1960s and 1970s. The Ontario Breeding Bird Atlas (OBBA) did not report any occurrences in the forest. Many occupied territories in Ontario as of 2012. 2) Preferred habitat is at low risk from forestry operations because typical nest sites are steep cliffs, and peregrines hunt over open areas. However, large AOC buffers have been established. Known nest sites are protected within a 3 km Area of Concern and a nest site management plan is prepared by MNR. Forest staff and tree markers have been trained in the identification of birds of prey and their nests through the Provincial Tree Marking Certification Course, if a nest is found within 3 km of proposed forestry operations, Stand and Site guide applies. 3) Peregrine Falcon is designated HCV and an AOC has been applied. HCV
<i>Ixobrychus exilis</i> Least Bittern	MNR Legal Status (no mgmt. plan avail) MNR map IUCN map	1) Thr 2) Least Concern	1) Considered to be threatened in Ontario and Canada. There were confirmed records for OBB Atlas squares within the forest. 2) Unlikely to be a direct risk to the species from forestry due to its marsh habitat. Inadvertent impacts on marshes are very unlikely. The main cause of decline in Ontario is loss of habitat due to the drainage of wetlands in southern Ontario. 3) The FMP contains Area of Concern prescriptions for wetlands that would protect important breeding habitat for this bird. HCV Riparian Prescription
<i>Buteo lineatus</i> Red-shouldered Hawk	MAP IUCN	1) NAR 2) Least Concern	1) An uncommon to rare breeding species throughout southern Ontario, preferring large forested areas with adequate wetlands nearby. 292 extant EOs in the NHIC database. Stable. Listed by both COSEWIC and OMNR as "not at risk". Formerly listed as special concern. 2) Prefers mature tolerant hardwood forests close to wetlands, streams, or ponds. In southern Ontario, forest fragmentation and urban expansion have been major causes of habitat loss. Forest harvesting that opens up the canopy too much is a factor throughout the range of this hawk in Ontario (see Naylor et al. 2003) Nests are located during the course of tree marking operations in tolerant hardwood stands. Nests and preferred habitat are at direct risk from forestry. 3) No longer designated in Canada; species stable and common through international range. Not HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Haliaeetus leucocephalus</i> Bald Eagle	Recovery Strategy MNR map IUCN	1) NAR 2) Least Concern	1) Breeding population in southern Ontario small, but expanding. Non-breeding occurrences (winter aggregations) relatively few and small (5-20 occurrences). Recent OBBA maps show nest confirmed in some OBBA squares. Listed by both COSEWIC and OMNR as "not at risk". Formerly listed as special concern. 2) Eagle populations in eastern North America declined as a result of widespread use of organochlorine pesticides such as DDT. Today Bald Eagles remain susceptible to illegal shooting, accidental trapping, poisoning and electrocution. Nests found during the course of forest management operations would be reported to OMNR. 3) Eagle nests in the Forest are still relatively rare. An AOC has been applied in this plan, so it is designated as HCV. HCV
<i>Asio flammeus</i> Short-eared Owl	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) Thr 2) Least Concern	1) An uncommon to rare and very local breeding species in open habitats through Ontario, mostly in the agricultural south and along the Hudson and James Bay coasts. Current trends not known. This owl nests in marshes and grassy areas, and possibly also on clearcuts. No nests found in the last Atlas; there was in first. 2) Risk due to forestry is minimal due to its use of open areas. 3) NHIC did not consider this species to occur in the forest so not listed HCV. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. Not HCV
<i>Chaetura pelagica</i> Chimney Swift	MNR Legal Status (no mgmt. plan avail) MNR Map IUCN	1) Thr 2) Vulnerable	1) An uncommon to common breeding species throughout its Ontario range. Trends not known. 2) Forestry may affect some nest trees, but data is very scarce. Stand and Site Guide (MNR) contains a prescription in the rare event a nest site is found. 3) As a listed species it is designated HCV and considered possible (Dec 2015). A prescription has been included in the Stand and Site Guide. Possible HCV
<i>Dendroica kirtlandii</i> Kirtland's Warbler	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) End 2) Near Threatened	1) Not recorded in this Forest. Only one extant EO currently - previously no breeding records since 1985. 2) Potential interaction with forestry due to its dependence on Jack Pine. Control of forest fires has been a cause of decline due to Jack Pine fire dependency for colonization. 3) Listed as Threatened, so designated HCV. Prescription developed in the event of an occurrence available if required. HCV

Scientific Name / Common Name	Information Source on status (MNRF, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Antrostomus vociferous</i> Whip-poor-will	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) Thr 2) Near Threatened	1) An uncommon-to rare breeding species throughout much of its Ontario range. Current trends are a steep decline. In the WRF, this species is on periphery of its range. Some occurrences verified in Wawa District of OMNRF. 2) Interaction with forestry possible. Main threat to species is likely habitat loss and degradation with the natural change of open areas and thickets to forests in the north and conversions of agricultural in the south. 3) Listed as Threatened, but no AOC has been applied indicating it has not occurred near operations, so it is designated possible HCV. Possible HCV
<i>Rallus legans</i> King Rail	MNR Legal Status IUCN	1) End 2) Near Threatened	1) King Rail is rare breeding species with a restricted range in Ontario. 2) Unlikely interaction with forestry unless wetlands are impacted. 3) Listed as Threatened, so designated as HCV. Note this species was not listed by NHIC as occurring directly in the forest, however the map shows close proximity. HCV Riparian Prescription
<i>Ammodramus henslowii</i> Henslow's sparrow	MNR Legal Status IUCN	1) End 2) Least Concern	1) Henslow's sparrow is endangered in both Ontario and Canada. Southern Ontario is within its breeding range; however no breeding evidence has been reported for several years. 2) Habitat loss of old fields from urbanization and changing agricultural practices. Also succession of fields to thicket and forests. 3) Listed species, so designated but small risk from forestry mitigated by landscape management. HCV Landscape prescription
<i>Lanius ludovicianus</i> Loggerhead shrike	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) End 2) Near Threatened	1) Loggerhead shrike is endangered in both Ontario and Canada. There are two subspecies in Canada: the eastern subspecies is endangered, it was once common in southern Canada but now its range is only in Southern Ontario and southeastern Manitoba; the western subspecies is threatened. The Loggerhead has been restricted to the southern edge of Canadian Shield due to habitat loss in Ontario. The three main breeding areas are Lindsay, Kingston and Ottawa. Breeding pairs were reduced from 52 pairs in 1992 to 18 pairs in 1997. 2) Habitat loss caused by intensive farming practices, natural succession, reforestation and development. 3) Listed species, so designated but not at risk from forestry. Possible HCV
<i>Dolichonyx oryzivorus</i> Bobolink	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) Threat 2) Least Concern	1) Bobolink is threatened both nationally and provincially. There is a widespread range in Ontario, south of the boreal forest. 2) Incidental mortality from agricultural operations, habitat loss and fragmentation, pesticide exposure bird control at wintering roosts are the main threats. 3) Listed species, so designated but not at risk from forestry. HCV Landscape prescription

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
<i>Dendroica cerulea</i> Cerulean Warbler	MNR Legal Status MNR map IUCN	1) Threat 2) Near Thr	1) Cerulean warblers are endangered nationally and threatened in Ontario. In Ontario their habitat has been reduced to the Carolinian Forest zone and southern part of the Great Lakes St. Lawrence Forest zone. Southern Ontario populations may be separated into two bands. One band runs from southern Lake Huron, north of lakes St. Clair and Erie, with an area of concentration lying roughly between the Long Point region and western Lake Ontario. Further north, a second band runs from the Bruce Peninsula and Georgian Bay area to the Ottawa River, with an area of concentration north of the juncture of the St. Lawrence River and eastern Lake Ontario. 2) Cerulean warblers are forest-interior birds requiring large relatively undisturbed mature, semi-open deciduous forest. Habitat loss from forest fragmentation and degradation. Predation from Brown-headed Cowbird is also a threat, this species increases in degraded forest habitats. 3) Listed as Threatened, but no AOC has been applied indicating it has not occurred near operations, so it is designated possible HCV. Possible HCV
<i>Sturnella magna</i> Eastern Meadowlark	MNR Legal Status Recovery Strategy MNR map IUCN	1) Thr 2) Near Threatened	1) Eastern Meadowlark is listed as threatened in Ontario and Canada. It inhabits a prairie habitat. 2) The main cause of decline for this species is loss of grassland habitat. 3) Listed species, so designated but not at risk from forestry. HCV Landscape Prescription
<i>Hirundo rustica</i> Barn Swallow	MNR Legal Status Recovery Strategy IUCN	1) Special Concern 2) Least Concern	1) Barn Swallow is threatened both nationally and provincially. Historical decline is a result from loss of artificial nesting sites, open barns, and agricultural practices. Cause of recent decline is unknown. 2) Associated with infrastructure, including possibly bridges. No forestry related occurrences have been reported. 3) Listed species, so designated but low risk from forestry. HCV landscape prescription
<i>Riparia riparia</i> Bank Swallow (aka Collared Sand Martin)	MNR Legal Status MNR Map IUCN	1) Thr 2) Least Concern	1) Bank Swallow is threatened both nationally and provincially and they occur in the forest. 2) Bank Swallows nests on banks of rivers and lakes, but also in active sand and gravel pits or old ones where the banks remain suitable. Therefore aggregate pits in forest operations can have an impact. The birds breed in colonies ranging from several to a few thousand pairs, so there is potential for a significant impact. 3) It is a listed species in the forest and has an AOC prescription. As such it is an HCV. HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Wilsonia Canadensis Canada Warbler	MNR Legal Status (no mgmt. plan avail) IUCN	1) Special Concern 2) Least Concern	1) 80% of its known breeding range is in Canada. The breeding range is deciduous and coniferous trees. It nests near the ground. It breeds at low densities across its range. In Ontario it is most abundant along the Southern Shield. It is considered a "probable nester". 2) Habitat loss due to reduced abundance of forests with well-developed shrub layer which impacts the breeding range. 3) A coarse filter landscape approach using the Landscape Guides, is used to manage Canada Warbler habitat by maintaining natural amounts of forest unit (i.e. OH1, LC1, PO1, BW1, MW2, MW3 FU's) and their mature and old forest seral stages. An AOC prescription is in place for nests. It is designated HCV. HCV
Chordeiles minor Common Nighthawk	MNR Legal Status (no mgmt. plan avail) IUCN map	1) Special Concern 2) Least Concern	1) Its range extends across Ontario. They use a variety of habitats such as: such as farmland, open woodlands, clearcuts, burns, rock outcrops, bogs, fens, prairies, gravel pits and urban rooftops. It will use tall trees and snags as foraging perches. 2) Cause of population decline is unknown. Suspected causes are in its southern wintering range through use of pesticides and loss of suitable habitat. 3) Listed as Threatened, so designated HCV. An AOC prescription is in place for nests. HCV
Contopus cooperi Olive-sided Flycatcher	MNR Legal Status (no mgmt. plan avail) IUCN map	1) Special Concern 2) Near Threatened	1) In Ontario, Olive-sided Flycatchers commonly nest in conifers such as White and Black Spruce, Jack Pine and Balsam Fir. 2) There is interaction with forest operations. Nests are located near natural openings (such as rivers or swamps) or human-made openings (such as logged areas), burned forest or openings within old-growth forest stands. Habitat will be provided for the Olive-sided flycatcher by retaining individual residual wildlife trees within harvest blocks. Shoreline and wetland AOC prescriptions address general habitat concerns. 3) As a listed species occurring in the forest, it is an HCV. An AOC prescription is in place for nests. HCV
Melanerpes erythrocephalus Red-headed Woodpecker	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) END 2) Least Concern	1) Red-headed Woodpecker is of special concern in Ontario and threatened nationally. It lives in southern Ontario with a widespread range, but rare. In the last 20 years the population has declined in Ontario by over 60%. Habitat requirements include a high density of dead trees. 2) Population decline caused by habitat loss due to forestry, agricultural practices, and removal of dead trees which are used for nesting. 3) HCV because SC designation and possible interaction with Forestry. An AOC prescription is in place for nests. HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Coturnicops noveboracensis Yellow Rail	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) Special Concern 2) Least Concern	1) In Ontario they are primarily found in the Hudson Bay Lowlands and localized marshes in southern Ontario. The preferred habitat is shallow wetlands. 2) The main threat to Yellow Rails is the draining of wetlands for urban development. Also, expanding Snow goose populations in the Hudson Bay lowlands destroying habitat. 3) This species located in the forest, although there is a very low probability of interaction with forest operations. Normal AOC Riparian / wetland prescriptions and AOC for breeding habitat ensure protection. HCV
Vermivora chrysoptera Golden-winged Warbler	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 2) Near Threatened	1) Golden-winged Warbler is of special concern in Ontario and threatened nationally. Their breeding range includes southern Ontario. 2) Habitat loss due to decline in early successional scrub habitat. Another cause of decline is hybridization with Blue-winged warbler. 3) HCV because SC designation and possible interaction with Forestry. An AOC prescription is in place for nests. HCV
Seiurus motacilla Louisiana Waterthrush	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) Thr 2) Least Concern	1) Louisiana Waterthrush is of special concern both provincially and nationally. In Ontario its ranges is in the lower Great Lakes. There are approximately 300 pairs living along the Niagara Escarpment and in the woodlands along Lake Erie and scattered in locations elsewhere including this area of central Ontario. 2) Declines occurred as forests were cleared, particularly in south-western Ontario. 3) HCV because SC designation and possible interaction with Forestry. An AOC prescription is in place for nests. HCV
Chlidonias niger Black Tern	MNR Legal Status Recovery Strategy MNR map IUCN	1) End 2) Least Concern	1) Black Terns were once common in Ontario and the decline has been occurring since the 1980s. They are scattered throughout Ontario, mainly breeding in marshes along the edges of the Great Lakes. 2) Threats of habitat loss occur due to wetland drainage and alteration. There is a very low probability of interaction with forest operations. 3) HCV because SC designation and possible interaction with Forestry. An AOC prescription is in place for nests. HCV
Euphagus carolinus Rusty Blackbird	MNR Legal Status IUCN	1) Special Concern 2) Vulner	1) Rusty Blackbird is listed as special concern in Canada. The Rusty Blackbird habitat included along lake, stream, and river shorelines, wetlands, flooded forests, and beaver ponds. During the breeding season they are primarily associated with wet boreal forest, specifically within conifer forests and muskeg. 2) The leading cause of population declines is associated with loss of wintering habitat. 3) There is interaction with forestry operations. Shoreline AOC prescriptions address general habitat concerns. An AOC is provided for nest locations. HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Aquila chrysaetos</i> Golden Eagle	MNR Legal Status MNR map IUCN	1) End 2) Least Concern	1) Golden Eagle is endangered provincially but not at risk nationally. In Ontario recent reports indicate that only about six pairs nest in the far northern part of the province at nest sites. But monitoring in southern Ontario at major "hawk watch" points, 200 Golden Eagles have been observed. The typical habitat for this species is mountain regions and dry, rugged open country and grasslands. Nests are usually constructed on a cliff ledge but occasionally nests in trees, and, in the far north, will nest directly on the tundra. 2) Human persecution is the historical cause of decline. 3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. NHIC did not identify this as on the forest, although some are in the vicinity. . Not HCV
<i>Tyto alba</i> Barn Owl	MNR Legal Status MNR map IUCN	1) End 2) Least Concern	1) Barn Owl is endangered provincially and nationally. This owl nests in barns and abandoned buildings, but it also uses natural cavities in trees, or holes in cliff faces. The species may be extirpated in Ontario, at the northern limits of its range. 2) Grassland type habitats preferred by the species are being reduced from urbanization and changing farm practices. 3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. NHIC did not identify this as on the forest. Not HCV
<i>Icteria virens</i> Yellow-Breasted Chat	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) End 2) Least Concern	1) In Canada, it occurs in southern British Columbia, the Prairies, and southwestern Ontario. It is concentrated in Point Pelee National Park and Pelee Island in Lake Erie. But extends eastward occasionally. 2) Likely never common here, the Yellow-breasted Chat prefers successional habitats where clearings have become overgrown with scrub and thickets. These habitats are disappearing as farmland becomes more intensive. 3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. NHIC did not identify this as on the forest. Not HCV

Mammals

<i>Myotis septentrionalis</i> Northern Long-eared Bat, or Northern Bat	MNR Legal Status (no mgmt. plan avail) IUCN	1) End 2) Near Threatened	1) This bat is considered to be common globally, but possibly provincially rare. It has a wide range in eastern North America. 2) These bats choose maternity roosts in buildings, under loose bark, and in the cavities of trees. Forest habitat is provided through the retention of cavity trees as required by treemarking guide. 3) NHIC identified it on the forest and it is listed. If actual locations are found, the prescription will be implemented. Possible HCV
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Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Myotis leibii</i> Small-footed Bat	MNR Legal Status Recovery plan IUCN	1) End 2) End	1) This bat is considered to have always been rare. It has a wide range in eastern North America. 2) This bat roosts mainly in caves, but possibly also alone or in nursery colonies under peeling bark. Forest habitat is provided through the retention of cavity trees as required by treemarking guide. 3) It is not a listed species but it is rare and as such in the unlikely event of finding one, local occurrences would be protected, regardless of designation as HCV. An AOC prescription is provided in the FMP (AOC ID BH). HCV Landscape Prescription
<i>Myotis lucifugus</i> Little Brown Myotis	MNR Legal Status IUCN	1) End 2) End	1) This species is suffering losses from White Nose Syndrome and this is the reason for the COSSARO listing as endangered. Distribution is not clear on forest. 2) A prescription exists in the FMP for Bat Hibernacula. There is no evidence that forestry has contributed to the endangered status for this species. 3) It is a listed species and so designated HCV. HCV Landscape Prescription
<i>Canis lupus lycaon</i> Eastern Wolf	MNR Legal Status (no mgmt. plan avail) IUCN map	1) Thr 2) Least Concern	1) The eastern wolf is classified as threatened in Ontario. The eastern wolf, sometimes called the Algonquin Park wolf, is a small subspecies of the widely distributed grey wolf (<i>Canis lupus</i>). Its distribution and taxonomy are unclear. 2) The wolf is a habitat generalist, using almost every habitat type and showing little preference. Populations of wolves are dependent on adequate populations of prey. Thus, habitat for this species is maintained appropriate silviculture that will ensure that all habitat types representative of a natural forest occur in amounts reflective of the natural bounds of variation, and (ii) through the provision of habitat for deer and moose which are the major prey of wolves. 3) No eastern wolves have been confirmed in the forest and no den sites or other outstandingly important habitats have been identified. Not HCV
<i>Urocyon cinereo-argenteus</i> Grey Fox	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) Thr 2) Least Concern	1) According to NHIC, this is a poorly understood species in Ontario. Formerly common until middle of the last century, and since then, only a few scattered records with little evidence of breeding. Current threats and trends poorly known. 2) It is a habitat generalist, and would not likely be affected by forestry. 3) There is no occurrence near the forest Not HCV
<i>Puma concolor</i> Cougar	MNR Legal Status IUCN	1) Special Concern 2) Least Concern	1) Cougars are a special concern in Ontario however there is a data deficiency to determine their national status. Cougars inhabit large forested areas that are relatively undisturbed by humans. Over the years there have been hundreds of sightings in Ontario. In northern Ontario the cougars present are of unknown origins and cougars in southern Ontario are considered to be escaped pets. 2) The disappearance of cougars is caused by land clearance for settlement and agriculture. 3) Forest management considerations will be evaluated if the presence of cougars is verified. Possible HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			

Reptiles

<i>Glyptemys insculpta</i> Wood Turtle	MNR Legal Status (Map is confidential) IUCN	1) End 2) End	<p>1) Endangered in Ontario and also ranked as endangered by IUCN. This is due to the relatively small range of the species in northeastern temperate NA.</p> <p>2) Habitat for these turtles consists of larger, slow-moving rivers and adjacent shrub and forest communities. Mortality on forest access roads can affect their slow-growing populations and there is some risk from forest harvest operations in some seasons. Where wood turtles occur, characteristics of the river and the immediately adjacent riparian zone may be more important habitat features than attributes of the forest cover. Wood turtles venture to and from upland forested areas to feed. The FMP contains an AOC prescription that protects known habitat used by these turtles.</p> <p>3) Listed species. Prescriptions are in place and these are being monitored and tested for effectiveness by OMNR in central Ontario.</p> <p>HCV</p>
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Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Emydoidea blandingii</i> Blanding's Turtle	MNR Legal Status (no recovery strategy avail) MNR map IUCN	1) Thr 2) End	1) Threatened in Ontario. Widespread in southern and central Ontario but NHIC says populations appear to be rather small. 2) IUCN describes the turtle as highly mobile. They move extensively between wetlands and nest in open grasslands, often well away from water. As such it is susceptible to forest operations. The Stand and Site Guide provides a prescription. OMNR is currently refining the distribution information for the species. 3) Listed species. Prescriptions for habitat protection are in place and these are being monitored and tested for effectiveness by OMNR in central Ontario. HCV
<i>Sternotherus odoratus</i> Musk Turtle	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 2) Least Concern	1) Musk Turtles are ranked as threatened in Ontario. Inhabits virtually any permanent body of freshwater having a slow current and soft bottom. Eggs are laid up to about 50 m from water. 2) They move extensively between wetlands and nest in open grasslands, often well away from water. As such it is susceptible to forest operations. The Stand and Site Guide provides a prescription. OMNR is currently defining the distribution information for the species. 3) Listed species. Prescriptions are in place and these are being monitored and tested for effectiveness by OMNR in central Ontario HCV Riparian Prescription
<i>Apalone spinifera</i> Spiny Softshell	MNR Legal Status (no mgmt. plan) MNR map IUCN	1) End 2) Least Concern	1) Spiny Softshell turtles are threatened both provincially and nationally. Their range is discontinuous from eastern to southwestern Ontario. They rarely move beyond the shoreline as it is a highly aquatic turtle associated with lakes and large rivers. 2) The main threat to these turtles is habitat loss from shoreline development or agricultural activity. 3) Listed species. No risk from Forestry. HCV Riparian Prescription
<i>Graptemys geographica</i> Northern Map Turtle	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 2) Least Concern	1) Northern Map Turtle is listed as special concern for both Ontario and Canada. It is found in southern Ontario, mainly along the shores of Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario, as well as along rivers such as the Thames, Grand and Ottawa. 2) The historic distribution of this species is not well known. It is not well studied in Ontario; however it is a largely aquatic species. Declines in southwestern Ontario, particularly, may be explained with the increase in shoreline development, decline in habitat quality and increased human disturbance. The introduction of invasive species also results in a loss of prey species for these turtles. 3) Listed species, so designated but minimal risk from forestry. HCV Riparian Prescription

Scientific Name / Common Name	Information Source on status (MNR, IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
<i>Clemmys guttata</i> Spotted Turtle	MNR Legal Status (no mgmt. plan avail) IUCN	1) End 2) End	1) The spotted Turtle is endangered provincially and nationally. There are about 75 known locations in Ontario. Although they are widespread in Ontario they are very localized to southern Ontario. 2) Spotted Turtles produce small clutches of eggs and they have low hatching success which will hinder the recovery of this species. Females lay eggs in soil and leaf litter in wooded areas close to wetlands. 3) Listed species, so designated but not at risk from forestry. HCV Riparian Prescription
<i>Chelydra serpentina</i> Snapping Turtle	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 2) Least Concern	1) Snapping Turtle is listed as special concern in Canada and Ontario. They are a freshwater species who prefer shallow waters. Prefer sandy or gravel areas to lay eggs and will often take advantage of man-made structures. Their range in Ontario is limited to southern Ontario and it is contracting. 2) The main threats to this species are amount of time it takes for them to reach maturity, often cross roads to find nesting sites resulting in mortality and egg predation in urban and agricultural areas. 3) Listed species, so designated but not at risk from forestry. HCV Riparian Prescription
<i>Elaphe gloydi</i> Eastern Fox Snake	MNR Legal Status Recovery Strategy IUCN map IUCN	1) THR 2) Near Threatened	1) The fox snake is threatened in Canada. Its range is the Great Lakes Basin where it inhabits coastal marshes, dunes, beaches, and sometimes adjacent woodlots. This harmless snake rattles its tail against leaves giving the impression of a venomous rattlesnake; therefore, persecution by humans may be one reason why it is now rare. 2) Current species ranges indicate this is not found near the forest. 3) Since it does not occur near the forest, it is not regarded as an HCV here. Not HCV
<i>Lampropeltis triangulum</i> Milk Snake	MNR Legal Status (not listed) IUCN	1) Not listed 2) Least Concern	1) The milk snake is globally very common and provincially common but is listed as "least concern" in Canada. 2) The Stand and Site prescription can't be applied for the milk snake because there are no known hibernacula, and it is nocturnal and remains underground much of the time. However, milk snakes could occur in riparian zones (Harding 1997), and these are protected with riparian buffers (see notes under wood turtle). They also use farmlands, meadows, and forest edges (OMNR 2000). 3) It is not listed by COSSARO and is very rare to find a milk snake hibernaculum. It is not considered an HCV. An AOC exists if a hibernaculum is found. Not HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Pantherophis spiloides</i> Gray Ratsnake	MNR Legal Status Recovery Strategy IUCN	1) Endangered 2) Least Concern	1) The Gray Ratsnake, also known as the Eastern Ratsnake, is of least concern in Canada and endangered in Ontario. There are two subspecies which have different status: with the Carolinian population being Endangered Nationally and the Frontenac Axis population being Threatened Nationally. They also prefer different habitats: Frontenac Axis prefers edge habitats and the Carolinian population prefers wooded areas and can be found in fields and meadows. 2) In southeastern Ontario their habitat is threatened by land development and predation. Habitat loss has been the main threat to the Carolinian population. 3) In general this has attributes of an HCV. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. Possible HCV
<i>Thamnophis sauritus</i> Eastern Ribbon Snake	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 4) Least Concern	1) The Eastern Ribbon snake is listed as special concern both provincially and nationally. Their range includes southern Ontario and locally common in parts of the Bruce Peninsula, Georgian Bay and eastern Ontario. 2) Ontario is the northern limits of the range and historical data is unknown to determine abundance trends. However it is likely that the decline is the result of loss of wetland habitat in Ontario. 3) In general this has attributes of an HCV. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. An AOC exists if a hibernaculum is found. Possible HCV
<i>Heterodon platirhinos</i> Hog-nosed Snake	MNR Legal Status Recovery Strategy IUCN	1) TH 2) Least Concern	1) Threatened Provincially. The species is widespread south of the Great Lakes and east of the Rockies, but it is not common anywhere. In Ontario, it is found in southern and central Ontario as far north. It is at the northern limits of its range in Ontario 2) Main threat is from human interactions because of the snakes' behaviour. Some interaction with forestry. 3) No occurrences in MLF but may be possible. An AOC exists if a hibernaculum is found. Possible HCV
<i>Plestiodon fasciatus</i> Common Five-lined Skink	MNR Legal Status Recovery Strategy IUCN	1) Endangered 2) Least Concern	1) The common five-lined Skink is listed as endangered provincially. It is Ontario's only lizard. There are two populations of this species. The first, the Carolinian population is found in the Carolinian forest and the Great Lakes/St. Lawrence populations which occurs in the south of the Canadian Shield. It is comprised of 84 populations and likely some occur on the forest. 2) The Great Lakes/St. Lawrence populations prefer rocky outcrops in mixed coniferous and deciduous forests with the biggest threat being is land development. 3) In general this has attributes of an HCV. If an occurrence is found the species will be designated as HCV and the appropriate AOC will be applied. Possible HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			

Fish

<i>Acipenser fulvescens</i> Lake Sturgeon	MNR Legal Status Recovery Strategy IUCN	1) END (upper St Lawrence) 2) END	1) Known in the area. 2) Although aquatic, this species is slow growing and sensitive to disturbance of its spawning areas, so any operations requiring roads must be careful not to introduce additional risk. 3) Sturgeon is an HCV due to their listing and their now uncommon occurrence in the area. There is minimal interaction with forest operations. HCV Riparian Prescription
<i>Notropis anogenus</i> Pugnose Shiner	MNR Legal Status Recovery Strategy MNR Map IUCN	1) End 2) Least Concern	1) Pugnose Shiner is endangered provincially. In Ontario it is present at five sites: three in southwestern Ontario and two in the St. Lawrence River. They have disappeared from two sites in Ontario over the last 50 years. 2) Threats include water pollution and siltation and removal of littoral vegetation which is used for feeding and breeding habitat. 3) It is a listed species and so an HCV. There is minimal interaction with forest operations. HCV Riparian Prescription
<i>Anguilla rostrata</i> American Eel	MNR Legal Status Recovery Strategy IUCN	1) End 2) End	1) American Eels are now listed as endangered provincially. They can be found along the St. Lawrence River and Lake Ontario and their tributaries. 2) Threats to the American Eel occur through inhibiting upstream migration from hydro dams and mortality during downstream migration from hydroelectric turbines. Sensitive to poor water crossings. 3) It is a listed species and so an HCV. Minimal interaction with forestry means there is no special prescription but proper water crossing installations are essential. HCV Riparian prescription
<i>Percina copelandi</i> Channel Darter	MNR Legal Status (no mgmt. plan avail) MNR Map IUCN	1) Special Concern 2) Least Concern	1) Channel Darter is threatened both nationally and provincially. In Ontario they inhabit the tributaries of Lake Ontario, Lake Erie, Lake St. Clair and the Ottawa River. 2) The main threats to the Channel Darter are sedimentation and decline in water quality caused by development and agriculture. 3) NHIC did not identify this in the forest, however current MNR mapping indicates it may occur. Minimal interaction with forestry means there is no special prescription. HCV Riparian prescription
<i>Exoglossum maxillingua</i> Cutlip Minnow	MNR Legal Status Recovery Strategy MNR Map IUCN	1) Thr 2) Least Concern	1) Cutlip Minnow is threatened both nationally and provincially. It is found in the St. Lawrence River tributaries. Recently it has been recorded in only six sites in Ontario. They prefer warm water stream making Ontario in the north end of its range. 2) Also prefer clear streams and are susceptible to siltation and flood damage. Watershed deforestation and agricultural development are possible threats. 3) It is a listed species but NHIC did not identify it in the forest. Minimal interaction with forestry means there is no special prescription. Not HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Notropis bifrenatus Bridle Shiner	MNR Legal Status (no mgmt. plan avail) IUCN	1) SC 2) Near Threatened	1) Bridle Shiner is threatened both nationally and provincially. There are about 17 sites in the eastern Lake Ontario drainage and St. Lawrence River where Bridle Shiner has been found in Ontario. 2) Bridle Shiner is affected by sediment and chemical runoff from agricultural practices. The introduction of Eurasian Water milfoil clogs spawning areas. 3) It is a listed species but NHIC did not identify it in the forest. Minimal interaction with forestry means there is no special prescription. Not HCV
Ichthyomyzon fossor Northern Brook Lamprey	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) SC 2) Least Concern	1) Northern Brook Lamprey is of special concern in Ontario and throughout Canada. In Ontario, it is found in rivers draining into Lakes Superior, Huron and Erie, and in the Ottawa and St. Lawrence Rivers. 2) They tend to live in small rivers which may be affected by forestry practices such as road construction. 3) It is a listed species. NHIC did not identify it in the forest. Not HCV
Moxostoma carinatum River Redhorse	MNR Legal Status (no mgmt. plan avail) MNR Map IUCN	1) SC 2) Least Concern	1) River Redhorse is of special concern both in Ontario and Canada. It is found in Lake Ontario, Trent and Grand Rivers, and the Ottawa, Mississippi, and Madawaska Rivers in eastern Ontario. 2) Threats include: pollution, siltation, stream regulation and habitat fragmentation caused by dams. 3) There is minimal interaction with forest operations. HCV Riparian prescription
Esox americanus Grass Pickerel	MNR Legal Status (no mgmt. plan avail) MNR Map IUCN	1) SC 2) Least Concern	1) Grass Pickerel is of special concern both nationally and provincially. In Ontario it inhabits the tributaries of: the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron; in Lake St. Clair and its tributaries; and inland in the Severn River system. 2) It occurs in wetlands with warm, shallow water and an abundance of aquatic plants. The biggest threat to the Grass Pickerel is loss of habitat and habitat quality. 3) It is a listed species but NHIC did not identify it in the forest. Not HCV

Vascular Plants

Juglans cinerea Butternut	MNR Legal Status (no mgmt. plan avail) IUCN	1) End 2) Endangered	1) Butternut is endangered both provincially and nationally. It is found throughout southwestern Ontario north to the Bruce Peninsula and the edge of the Precambrian shield. Most known trees are found on private land. Some do exist in national and provincial parks. 2) These trees are normally found scattered at low density in forests. The historical decline occurred as forests were cleared. 3) It is a listed species and so an HCV. There is a recovery strategy in place, with special prescriptions for this species based on the strategy. HCV
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Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Panax quinquefolius American Ginseng	MNR Legal Status (Map confidential) IUCN not listed	1) Thr 2) Not listed	1) American Ginseng is an herb which is endangered both nationally and provincially. It can be found in eastern and central Ontario. Ginseng was recorded in 65 sites; however, recent surveys suggest that a quarter of these sites have disappeared. 2) Ginseng grows in rich, moist, mature deciduous forest. The decline has occurred over the past 150 years from harvesting, timber extraction and clearing of land for development. These threats continue in the present. 3) Provincially, it is a listed species and so an HCV. There are special prescriptions for habitat protection for this species. HCV
Platanthera leucophaea Eastern Prairie Fringed-orchid	MNR Legal Status MNR map IUCN	1) End 2) Least Concern	1) Eastern Prairie Fringed-orchid is endangered both provincially and nationally. In Ontario, there are about 20 small populations in remnant prairie habitat in Bruce, Essex and Lambton counties, and in Tamarack swamps in the Bruce Peninsula to Ottawa area. 2) It grows in swamps and wet tall grass prairies. Threats have been the conversion of prairie land into farmland and the suppression of fire which maintains open areas and stimulates flowering. 3) It is a listed species and NHIC identified it in this forest, so an HCV. Possible HCV
Woodsia obtuse Blunt-lobed Woodsia	MNR Legal Status (no mgmt. plan avail) MNR map	1) End 2) Not listed	1) Blunt-lobed Woodsia is threatened in Canada and endangered in Ontario. Ontario is the northern limits of its range; therefore it was probably not historically common. Presently there are four known populations in the eastern part of Ontario. 2) Grows on steep rock faces or escarpments on the Precambrian Shield on south facing locations in Ontario. One population is threatened by the invasion of common buckthorn. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Potamogeton ogdenii Ogden's Pondweed	MNR Legal Status MNR map IUCN	1) END 2) Vulnerable	1) Ogden's Pondweed is endangered in Canada and the status in Ontario is unknown. It has been recorded in three locations on Ontario: Hastings County (1873), Murphys Point Provincial Park (1974), and Davis Lock on the Rideau Canal (1987) (MNR, 2010). 2) It is a submerged aquatic plant and the main threats are eutrophication from agricultural runoff, competition from invasive species and habitat loss. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Vaccinium stamineum Deerberry	MNR Legal Status MNR Map	1) Thr 2) Not listed	1) Deerberry is threatened both in Ontario and Canada. It grows very locally in two locations in Ontario: the Niagara Peninsula, and islands in the St. Lawrence River. It grows in dry, relatively open, sandy or rocky woodlands and thickets. 2) Threats to the remaining populations are a lack of seedling establishment, competition from woody species invading open areas and trampling by people in St. Lawrence islands National Park. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV

Scientific Name / Common Name	Information Source on status (MNR, IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Justicia Americana American Water-willow	MNR Legal Status MNR Map IUCN	1) Thr 2) Least Concern	1) American Water-willow is threatened both provincially and nationally. Ontario is the northern edge of its range. It can be found in the following locations: Lake Erie, such as Point Pelee, Pelee Island and some sites in the Niagara region. It is a colonizer species which helps stabilize shorelines. 2) Wetland drainage for agricultural land is the largest threat. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Phegopteris hexagonoptera Broad Beech Fern	MNR Legal Status MNR map	1) SC 2) Not listed	1) Broad Beech Fern is of special concern nationally and provincially. In Ontario, the species is found in forest remnants in southern Muskoka District, along Lake Erie, and in the St. Lawrence River region. It is close to the forest in some locations. 2) It grows in rich soils in deciduous forest such as Maple-Beech forests. Historical records suggest decline is related to forests being cleared. 3) It is a listed species and found near the forest by NHIC. Possible HCV
Liparis liliifolia Purple Twayblade	MNR Legal Status (no mgmt. plan avail) MNR map	1) Thr 2) Not listed	1) Purple Twayblade is a small inconspicuous orchid that has a very limited distribution in this province. 2) Habitat loss resulting from development has been responsible for the loss of approximately five stands of this orchid in Ontario. Natural succession is a problem at some of the remaining sites, as the orchids cannot tolerate conditions of shade created by dense vegetation. 3) It is a listed species found near the forest by NHIC. Possible HCV
Rotala ramosior Toothcup	MNR Legal Status (no mgmt. plan avail) MNR map IUCN	1) End 2) Least Concern	1) Toothcup grows to about 30 cm tall in areas which get periodic flooding such as lake shorelines and wet fields. It grows in two sites in Ontario. The historical distribution and status of Toothcup in Ontario is not well known. 2) Threats to remaining populations on lakes are cottage development and water level controls that would dampen natural fluctuations. It is a listed species and so an HCV. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Celtis tenuifolia Dwarf Hackberry	MNR Legal Status MNR map IUCN	1) Thr 2) Least Concern	1) In Ontario, the species is widely scattered but the three main sites are Pelee Island, Point Pelee and the shore of Lake Huron. 2) Likely never common in Ontario, the dwarf hackberry prefers disturbed sites and will gradually disappear from areas where it becomes shaded out. Little interaction with forestry due to habitat. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Carex juniperorum Juniper Sedge	MNR Legal Status (no mgmt. plan avail) MNR map	1) End 2) Not listed	1) Juniper Sedge is quite new to science, and thus it is not well studied. Sedges resemble grasses, but their stems are unjointed and often three-sided. It is a small, inconspicuous plant which spreads mainly by producing new shoots from the base. In Ontario it is found on the Napanee limestone plain in Hastings County. 2) The alvar habitat in which the sedge grows is quarried for limestone, and is grazed. Little interaction with forestry due to habitat. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Cypripedium candidum</i>	MNR Legal Status (no mgmt. plan avail)	1) End 2) Vulnerable	1) In Ontario, there are six remaining occurrences of this orchid, out of which only four, in the extreme southwestern corner of the province (Lambton County), are considered viable. Outliers occur in this forest. 2) Probably never common in Ontario, there is evidence of a decline. Natural succession produces shady conditions detrimental to the Small White Lady's-slipper, and this factor was probably responsible for the loss of one orchid stand in Ontario over the past twenty years. Other threats include habitat degradation, trampling of plants, ATV use in orchid habitats, and, possibly, the illegal collection of plants for commercial sale. Forestry could be a concern. 3) It is a listed species but was not found directly on the forest by NHIC. Not HCV
Small White Lady's Slipper	MNR map IUCN		

Mosses and Lichens

<i>Physconia subpallida</i>	MNR Legal Status	1) END 2) END	1) Pale-bellied Frost Lichen is endangered both nationally and provincially. It is known in three locations in Ontario, there are six remaining occurrences of this orchid, out of which only four, in the extreme southwestern corner of the province (Lambton County), are considered viable in Ontario: Frontenac, Lanark and Renfrew (MNR, 2010). It grows on hardwood trees such as: White Ash, Black Walnut and American Elm. 2) The major threat is air pollution and timber harvest. 3) It is a listed species and so an HCV. It was not listed by NHIC but older records and the MNR map indicate it may occur. A special prescription for habitat protection has been prepared and a recovery strategy is in place. HCV
Pale-bellied Frost Lichen	Recovery Strategy MNR map IUCN		
<i>Leptogium rivulare</i>	IUCN	1) THR 2) Near Threatened	1) Flooded Jellyskin was formerly listed but has been removed. It occurs around ponds. 2) The threats for this species are ponds being threatened by recreational use and housing development. Also the main tree species the lichen lives on is Black Ash which is threatened by the Emerald Ash Borer. 3) It is not listed by NHIC. Minimal interaction with forestry means there would be no special prescription. Not HCV
Flooded Jellyskin			

Insects

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
<i>Danaus plexippus</i> Monarch Butterfly	MNR Legal Status IUCN	1) SC 2) Least Concern	1) Special concern in Canada. The range of this butterfly has expanded over the last 50 years (Schappert 1996). 2) Herbicides could affect several species of milkweed plants (<i>Asclepias</i> spp.) on which the larva depend, and the nectar-producing flowers that are important to adults. Road construction could provide habitat for monarchs by creating conditions suitable for common milkweed and nectar-producing flowers. Harvesting creates early successional habitat that provides conditions suitable for nectar-producing flowers. 3) This species is SC for its migratory risk, but not for impact from forest operations. NHIC listed it on the forest. It is widely distributed in Ontario in summer. Conservation issues are mostly from agriculture in the U.S. HCV Landscape prescription
<i>Gomphus quadricolor</i> Rapids Clubtail	MNR Legal Status MNR Map	1) Thr 2) Not listed	1) The Rapids Clubtail is threatened provincially. It has only been found in the following four rivers in Ontario: the Thames, Humber, Credit and Mississippi. 2) The main threat is degradation of river habitat caused by activities that alter the water quantity and quality, such as dams and pollution. 3) It is a listed species but NHIC did not identify it in this forest. Minimal interaction with forestry means there is no special prescription. Not HCV
<i>Hemileuca</i> sp. Bogbean Buckmoth	MNR Legal Status MNR Map	1) End 2) Not listed	1) Bogbean Buckmoth is endangered both provincially and nationally. It is found in only two widely separated fens. 2) It is susceptible to the effects of exotic invasive plants and loss of habitat from flooding or drying from manipulation of water levels at the main site. 3) It is a listed species but NHIC did not identify it in this forest. Minimal interaction with forestry means there would be no special prescription. Not HCV
<i>Bombus affinis</i> Rusty-patched Bumble Bee	MNR Legal Status MNR Map IUCN	1) End 2) Critically Endangered	1) Rusty-patched Bumble Bee is endangered in Ontario and Canada. It was once commonly found in southern Ontario. Active searches throughout Canada have only found small population over the past seven years. 2) It is threatened by disease, pesticides, and habitat fragmentation. 3) It is a listed species and NHIC listed it near this area, although the map does not indicate its location, which may be confidential. If occurrences are found, a special prescription will be created if appropriate. Possible HCV
<i>Bombus bohemicus</i> Ashton's Cuckoo Bumble Bee (NEW common name)	MNR Legal Status IUCN	1) End 2) Data deficient	1) Historically throughout province. Recently only local. Note new common name. 2) It is threatened by disease, pesticides, and habitat fragmentation. 3) It is a listed species and NHIC listed it for this area. If occurrences are found, a special prescription will be created if appropriate. Possible HCV

Scientific Name / Common Name	Information Source on status (MNR, 2) IUCN IUCN MAPS)	Status 1) COSSARO** 2) IUCN	HCV Assessment & Decision 1) Occurrence (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) HCV Decision (Not HCV, HCV, possible HCV, HCV Riparian or Landscape Prescription)
Group			
<i>Pieris virginiensis</i>	MNR Legal Status	1) SC 2) Not listed	1) West Virginia White is listed as special concern in Ontario. In Ontario it is known in about 50 sites primarily in central and southern Ontario but does extend through Manitoulin and St. Joseph islands. The largest populations are in the western Lake Ontario region. 2) Habitat loss has been the largest cause of the decline. It prefers moist, deciduous woodlands, and the larvae feed only on the leaves of toothwort (<i>Dentaria diphylla</i> ; <i>Dentaria X maxima</i>), which grows on the forest floor. 3) It is a listed species, NHIC did not locate it on this forest, but the range covers the area and there is no specific map and so an HCV. If occurrences are found, a special prescription will be created. Possible HCV
West Virginia White			

Molluscs

<i>Ligumia nasuta</i>	MNR Legal Status	1) Special Concern 2) Not listed	1) Eastern Pondmussel is of special concern in Ontario. It can only be found in Lake St. Clair and a recently discovered population on a tributary of the St. Lawrence River. 2) It is threatened by habitat loss and degradation and invasive species. 3) It is a listed species but NHIC did not identify it on this forest and the map confirms it. Not HCV
Eastern Pondmussel	MNR map		
<i>Obovaria olivaria</i>	MNR Legal Status	1) End 2) Least Concern	1) Hickorynut is endangered both provincially and nationally. It inhabits mid-sized to large rivers in southern Ontario. Lake Sturgeon is the one known host for this mussel. 2) The species is affected by degraded water quality in many freshwater systems in southern Ontario and the decline of Lake Sturgeon in some rivers where the mussel can still occur. 3) It is a listed species but NHIC did not identify it on the forest. Minimal interaction with forestry means there would be no special prescription. Not HCV
Hickorynut	IUCN		

* Stand and Site Guide --

**** NHIC rankings and definitions:**

Endangered (Regulated): A species facing imminent extinction or extirpation in Ontario which has been regulated under Ontario's Endangered Species Act (ESA).

Endangered (Not Regulated): A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.

Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

Special Concern: (formerly Vulnerable) A species with characteristics that make it sensitive to human activities or natural events.

S Ranks -- NHIC assigns **subnational ranks** (SRANKS) for species and vegetation communities in Ontario. These SRANKS complement the global ranks (GRANKS), and also range from S1 (extremely rare in Ontario, generally 5 or fewer locations) to S5 (demonstrably secure in Ontario). The SRANKS are not formal designations and do not confer any protection to the species. However, the SRANKS are used by COSSARO and other groups to set conservation priorities.

G Ranks – Global Ranks similar to subnational ranks. For general information http://en.wikipedia.org/wiki/NatureServe_conservation_status

HCV Designation Decision:

Based on a review of current status of species at risk, as rated by provincial, national and international agencies, the HCV designations are as follows: Olive-sided Flycatcher, Peregrine Falcon, Bank Swallow, Wood Turtle, Blanding's Turtle, Butternut, American Ginseng, Pale-bellied Frost Lichen

Although important, habitat for the other species assessed in Table 3 is not considered to be of "outstanding significance"; management prescriptions are in place for all of these species.

2) Does the forest contain a globally, nationally or regionally significant concentration of endemic species?

Rationale:

Ensure the maintenance of vulnerable and or irreplaceable elements of biodiversity.

[Endemic](#) refers to species that are **unique** to a defined geographic location, such as an island, nation or other defined zone, or [habitat](#) type. Endemic is sometimes misunderstood as simply occurring in an area. In this report endemic means occurs only in a defined area.

Assessment Methodology:

- [Birdlife International](#)
- [IUCN](#); [Nature Serve](#); [Conservation International](#)
- Terrestrial Ecosystems of North America (Ricketts et al.1999)

The presence of any endemic species identified by an appropriate agency (e.g. NHIC, COSEWIC) would meet the threshold of this criterion.

Assessment Results:

As with most northern temperate forests which have evolved with short-term disturbance (fire and wind) and long term disturbance (continental glaciers), endemism is rare. Moreover, the Crown forests of Ontario consist of a huge expanse of contiguous forest cover over landscape that does not inhibit genetic mixing. These conditions are likely to prevent speciation and endemism.

[Nature Conservancy of Canada](#) (NCC) and [NatureServe Canada](#) published a report in 2020 called "Ours to Save: The Distribution, Status and Conservation Needs of Canada's Endemic Species" ([LINK](#)). The Mazinaw-Lanark Forest was no in or near an endemic hotspot. They reported a small scavenger beetle (*Hydnobius autumnalis*) that is only known from eastern Ontario. This is a very difficult to locate species and is considered as a possible HCV at this time. They note that most Canadian endemic species that occur in Ontario are found in northern areas and in adjacent provinces.

[Birdlife International](#) (verif June 2012) does not show any biodiversity "Endemic Bird Areas in Ontario. Conservation International does not identify any "[Hotspots](#)" in Canada ().

In their book "Terrestrial Ecoregions of North America", Ricketts et al. (1999) provided an analysis of the geographic patterns of species richness and endemism and a series of maps for illustration. According to Ricketts et al., the Eastern Forest-Boreal Transition ecoregion may contain some species of endemic terrestrial snails. Subsequent work by COSEWIC placed about 8 species on their list of "high priority candidates". All Ontario species were ranked either G5 or G4 by [NatureServe](#) : *Mesodon clauses* (G5) *Mesodon zaletus* (G5) *Patera pennsylvanica* (G4) *Webbhelix multilineata*(G5). This means that endemism was not a factor, and all of these species were not immediately at risk due to their wide distribution.

Ricketts et al. suggest that, except for possibly the endemic snails, there are no other endemic plants or animal species in this area.

HCV Designation Decision:

At this time, only *Hydromys autumnalis* is a known endemic species in the area. It is a possible HCV. It is not listed as a Species at Risk by COSSARO.

3) Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentrations of species (one or several species e.g. concentrations of wildlife in breeding sites, wintering sites, migration sites, migration routes or corridors – latitudinal as well as altitudinal)?

Rationale:

Addresses wildlife habitat requirements critical to maintaining population viability (regional “hotspots”).

Assessment Methodology:

- MLF [Forest Management Plan](#)
- [BirdLife International; Conservation International – Important Bird Areas](#)
- [Bird Studies Canada](#)

For the assessment of regional concentrations we examined various databases, including the OMNRF NRVIS data set, document wildlife concentration areas such as critical breeding or winter habitat for a single species or concentration areas for a diversity of species as they are identified in the field. Also important here is the information recorded in the [FMP](#) with regard to special wildlife management areas.

Assessment Results:

Below is a discussion of the findings from a review of available data sets as indicated above.

Important Bird Areas

According to Bird Studies Canada, an [Important Bird Area](#) (IBA) is a site providing essential habitat for one or more species of breeding or non-breeding birds. These sites may contain threatened species, endemic species, species representative of a biome, or highly exceptional concentrations of birds. There were no [IBAs](#) identified on the forest.

White-tailed Deer Winter Yarding Areas

The MLF [FMP](#) describes *Deer Wintering Areas* (DWA as “operational management zone was created to meet the *Stand & Site Guide* requirements to identify areas of the management unit with an objective to emphasize white-tailed deer habitat...” These delineated areas are where deer tend to concentrate in the winter. There are three deer yards mapped for the Mazinaw-Lanark Forest:

- Effingham Deer Yard
- Canonto Deer Yard (with Clyde Forks Deer Yard)
- Dalhousie Deer Yard

Management in these areas is done through conditions on regular operations referred to as Critical Thermal Cover (CTC). The conditions contain specific direction for critical thermal cover requirements. Deer require at least 10 - 30% of their wintering areas to be critical thermal cover. Conifer stands or any stand where the composition includes >40% hemlock or cedar with canopy closures greater than 60% in trees >10m are preferred. Silviculture prescriptions must be consistent with the direction given for each of the deer yards discussed in the conditions on regular operations section. Each of the deer wintering areas have been identified on the Areas Selected for Operations Maps.

White tailed deer have an important role in the region because of their cultural and economic impact. It is the reason that the [FMP](#) contains specific measures for deer. Arguably, the biological role of deer in the area is important but does not meet the test of “wildlife habitat requirements critical to maintaining population viability” (NBS HCV Framework). Deer populations have been expanding as climate warming proceeds. In short deer have been particularly abundant through most of south and central Ontario for a number of years. These areas are not designated HCVs.

Moose Emphasis Areas (MEA):

In Ontario, Moose Emphasis Areas are defined as a management zone where specific focus for management of moose habitat was desirable. As with deer wintering areas, the OMNRF Stand and Site Guide (2010) gives operational direction for these areas. Conditions on regular operations were developed for MEAs and specify how regular operations will be modified in spatially defined parts of the MEA to manage for summer and winter cover. Conditions are:

- 5-10% of the area is comprised of wetlands, including moose aquatic feeding areas (MAFAs)
- productive, nutrient rich sites predominate
- modelling suggests a high probability of achieving at least moderately high moose densities.

As a result of consultation and ecologist's reports, only one area, called Cashel, was delineated. It covers the area just north of Lingham Lake in Grimsthorpe township east towards Bon Echo Park and north towards Weslemekoon Lake. As with the DEA above, MEA do not meet the test of "wildlife habitat requirements critical to maintaining population viability" (NBS HCV Framework). The MEA have not been designated as a HCV.

Critical Fish Spawning Areas

OMNRF identifies Brook Trout spawning areas during the course of their values collection. This is a seasonal concentration for this species, and is important to the population. The [FMP](#) includes an AOC prescription to protect these sites. In addition, the proposed locations where forest access roads will cross streams are reviewed carefully by MNRF and the Managers to ensure that spawning habitat will not be significantly negatively affected during road construction. Water is protected through application of the [Stand and Site Guide](#).

In the forest, the impact of crossings is minimized through the selection of an appropriate crossing location (to avoid critical fish habitat), crossing design (e.g., a culvert or a bridge), and through seasonal timing restrictions on construction that ensure spawning periods are avoided.

Brook Trout spawning areas have not been identified as HCVs because they are relatively widespread throughout southern Ontario as identified [in Guidelines for Managing Brook Trout in Ontario](#). (Verified 2023 Aug). They are managed through the Riparian prescription in the AOC Table ([FMP](#)) called "Groundwater recharge areas associated with brook trout spawning sites."

Heronries

Great Blue Herons are colonial nesters, especially vulnerable to human disturbance during the nesting season when large numbers of birds are concentrated in a relatively confined area. There are numerous heronries on the forest, and OMNRF has an effective survey protocol to find them. Herons are an abundant species throughout central Ontario (Naylor et al, 2003). The colonies are also widespread through the forest. On that basis, they are not regarded as regionally significant, and they were not designated as HCV.

Heronries are protected from disturbance during regular forest management activities through application of an effective AOC prescription described in the [FMP](#) and the OMNRF [Stand and Site Guide](#). This prescription was tested extensively for effectiveness in a study of about 150 colonies by Agro and Naylor (1994), and 150 more colonies by Naylor et al. (2003). The effectiveness monitoring work showed that the prescription provides effective long term protection for colonies in all types of harvest cuts in both the Great Lakes-St. Lawrence and boreal forest regions.

Heronries are colonial nesters, especially vulnerable to human disturbance during the nesting season when large numbers of birds are concentrated in a relatively confined area.

Comments from the [Significant Wildlife Habitat Technical Guide \(SWHTG\)](#) indicate large colonies may have regional significance:

"The great blue heron is also a colonial nesting bird. It is not underrepresented(rare) at the provincial scale. Great blue herons can nest in colonies ranging from 5 or 6 nests to well over 100 nests. In smaller landscapes where great blue herons are common, the planning authority may decide that only those colonies with greater than a specific number of nests (e.g. >25), should be considered significant."

On that basis, only large (>25 nests) heronries are regarded as regionally significant however none of this size are known currently on the forest. They were designated as possible HCV.

Waterfowl Staging Areas

Staging areas are generally shoreline/aquatic habitats where waterfowl are known to rest during migration. Large accumulations of waterfowl are typically identified as HCVs because they can be nationally or internationally significant. Along the coast of Lake Ontario, to the south of the forest, there are four of these designated. Our source for national and international significance was [Birdlife International](#). None of them occur in the forest itself, and as so there are no HCVs designated.

HCV Designation Decision:

The above forest values are common in the forest and will receive protection through the [FMP](#) planning process which prescribes the specific protection and/or forest management required to maintain these species and their habitat. In a societal context, white-tailed deer, moose and waterfowl all represent game species which are important provincially to hunters. All of the discussed species are common on the forest. Heronries with more than 25 nests are possible HCVs but none occur at this time.

4) Does the forest contain critical habitat for regionally significant species (e.g. species representative of habitat types naturally occurring in the management unit, focal species, species declining regionally)?

Rationale:

Population persistence.

Assessment Methodology:

- Results from Forest Management Plan habitat models
- Species representative of naturally-occurring habitat types or focal species
- [Ontario Herpetofaunal Atlas](#)
- [Ontario Tree Atlas Project](#)
- Ontario [Wetland Evaluation System](#)

NOTE: Species identified in the NHIC database and ranked nationally or provincially are discussed in Element 1. Declines in ecosystem types, such as some old growth forest types, are covered in element 9.

Assessment Results:

This question asks if any species found in the forest is a keystone or focal species that is especially significant. Focal species ([Lambeck 1997](#)) are a group of species whose requirements for persistence define the attributes that must be present if a landscape is to meet the requirements of the other species that occur there. Related to this, the keystone species concept was first defined by Paine (1966) as a species that plays a disproportionately large role in ecosystem function, relative to its numerical abundance or biomass. Practical definitions of keystone and focal species can be difficult to develop. In landscapes which are more stable over very long time periods, special relationships may develop between species. These relationships can be fragile. In temperate forest, with species that have been significantly disturbed and stressed for millennia, the ecology can be quite resilient to natural disturbance. Our assessment therefore identified focal species, and regional representative species, but also recognized their robust, resilient ecology in this part of the world means they are less of a candidate for HCV status.

Focal and Keystone Species

In central Ontario, there are several species that might be considered keystone species because their activities create habitat for other species. In particular, these are the Beaver, Pileated Woodpecker and Red-shouldered Hawk. Beaver ponds are used by numerous other furbearers, by waterfowl, herons, ospreys, and fish, and add greatly to the species richness of an area. Pileated woodpecker nesting and roosting cavities have significant value for other cavity-dependent wildlife (see Naylor et al. 1996). Red-shouldered hawk nests are used by other hawks and also by owls.

Ontario officially uses two concepts that are similar to “focal” species - featured species and regionally representative species. Featured species (Thomas et al 1979) are species whose habitats, and sometimes populations, are managed for their importance to society, possibly as game species (e.g., moose or deer), keystone species (e.g., pileated woodpecker), important furbearers (e.g., marten), or for other reasons (e.g., at risk). The Moose, White-tailed Deer and Bald eagle are species that would qualify under this category.

The eastern wolf (*Canis lupus lycaon*), sometimes called the Algonquin Park wolf, is another species at risk (special concern in Canada and Ontario) that could qualify under this category, but it is not considered to be a focal species for the purposes of forest management. It is a small subspecies of the widely distributed grey wolf (*Canis lupus*). The ML Forest is near the expected range, but no dens or individual animals have been confirmed here. The wolf is a habitat generalist, using almost every habitat type and showing little preference (see D'Eon and Watt 1994, Bellhouse and Naylor 1997). Populations of wolves are dependent on adequate populations of prey (Moose, Deer, Beavers). In Ontario there are habitat guidelines for the prey of wolves but not for the wolves themselves.

The eastern cougar is classified as endangered in Ontario. It does not qualify as an HCV under this category because it is not considered to be a focal species for the purposes of forest management. The forest is within its expected range (former range), but no dens or individual animals have been confirmed. Should there be evidence of cougars, it will be considered as a possible HCV.

Regionally Representative Species

These are generally common species whose habitat needs, when considered together, reflect the majority of forest habitat conditions on the landscape. Individual species on the list of “regionally selected species” represent a variety of life history strategies, a variety of preferences for habitat types and development stages, and have habitat needs that are reasonably well known and amenable to modeling with the tools available to forest managers.

In the [FMP](#), there are five species chosen as representative regional species. The habitat supply available for these species was modeled in the 2011 [FMP](#). Pileated woodpecker habitat is found in the greatest amounts and remains relatively constant through the projection period. The amount of Lynx denning habitat increases dramatically from the plan start at 2011. Moose foraging and winter habitat remains fairly consistent through the projection period with a slight increase in both types of habitat. Black-backed woodpecker and ruby-crowned kinglet habitat both experience the same projection with a low level of habitat at the plan start but an increase towards the end of the projection period.

The habitat supply available for these species is used as a test of the ecological sustainability of the forest management direction outlined in the [FMP](#) over the long term. None of these species are considered rare or otherwise significant in the HCV context. In the FMP Section 3.5 Objectives and indicators (page 82 - 85) require the forest to move toward more natural forest landscape through three specific objectives:

- condition that provides for non-spatial wildlife habitat for species dependent on late development stage forest conditions
- provides for forest dependent provincially featured species
- provides for spatial wildlife habitat for species dependent on over mature forest conditions and forest-dependent provincially featured species

These efforts fall into normal [FMP](#) considerations, and are not intended for specific HCVs. There are no additional HCVs arising from these objectives.

HCV Designation Decision:

The species that were reviewed under this element are ecologically interesting and important. They are integral to the proper functioning of the ecosystem, much as the tree species forming the canopy are integral. In the same way that tree cover is the main focus of forest management, these species are widespread and are always a consideration of management. Many of these species are also important socially and economically to the region as game species which support a portion of the local economy. They are not designated as HCVs.

5) Does the forest support concentrations of species at the edge of their natural ranges or outlier populations?

Rationale:

Relevant conservation issues include vulnerability to range contraction and potential loss of genetic adaptation at the edge of the geographic range.

Assessment Methodology:

- Range and population estimates from national or local authorities and local experts
- Species identified as ecologically significant through consultation with local experts

Assessment Results:**Edge of Range Species**

The MLF lies on the edge of the granite to the north and the limestone plains to the south. Tree cover reflects this through a shift in dominant species. The net result is that a number of species are at the northern or southern limits of their ranges. Most of these tree species are secure according to national and provincial agencies (COSEWIC, NHIC). Animal species that may be HCVs have already been assessed under previous HCV elements.

Other plant species that are at risk were described in Element 1 and designated as HCV. The MLF includes some species that are not listed as species at risk but are relatively uncommon because they are at the edges of their geographic ranges. These qualify for assessment under this question.

MLF is located in the transitional Great Lakes-St. Lawrence forest where the northern boreal forest meets forest that is more characteristic of the deciduous Carolinian forest. This represents a unique forest ecosystem due to this overlap of forest biomes but means that forest species from the Boreal and Carolinian forest are usually found in the forest but in itself is not unique to the Great Lakes-St. Lawrence forest ecosystem. For example, southern extensions of boreal species do occur. Black Spruce (*Picea mariana* L.) or Jack Pine (*Pinus banksiana*) stands occur, but usually black spruce is present in a low frequency in the stand, and often jack pine has been planted or seeded by humans. Neither is found in a significant occurrence that would meet the significance threshold for an HCV.

Species more characteristic of the Carolinian forest such as: black cherry, eastern hemlock, basswood, ironwood, red oak and white ash are all common in the forest and are even found further north than MLF, so they are not considered edge of their range. More likely candidates for HCVs would be the more southern species such as black walnut, bitternut hickory, shagbark hickory, white oak, butternut (also a species at risk) or even western extensions of a species common in the Acadian Forest (red spruce) ecosystem. This mixing of species is not unusual in a transitional forest area such as MLF. Anecdotal information exists attributing a small grove of shagbark hickory to planting by native peoples. This is unconfirmed however.

Through the tree marking system the managers have developed and implemented an active program for maintaining and increasing the relative abundance of tree species on the forested landscape. All of these species are relatively common throughout the Great Lakes-St. Lawrence forest region and throughout the northern (and southern) edge of their ranges.

HCV Designation Decision:

Edge of range species occur here but their occurrence is not significant or noted in any of the sources examined. A number of the edge of range species are also SAR, and they were designated in Element 1. No new HCVs were identified in this element.

6) Does the forest lie within, adjacent to, or contain a conservation area:

- a) designated by an international authority;**
b) legally designated or proposed by relevant federal/provincial legislative body;
c) identified in regional land use plans or conservation plans.

Rationale:

This question ensures compliance with the conservation intent of a conservation area, and ensures that regionally significant forests are evaluated for consistency with the conservation intent (Note: Conservation areas that are withdrawn from industrial activity do not constitute HCV for management purposes, but forest management activities may need to be adjusted adjacent to park boundaries in some cases).

Assessment Methodology:

- [Ontario GeoHub](#)
- [Crown Land Use Policy Atlas](#) Ontario Government
- [National Ecological Framework for Canada](#)
- [Ontario Living Legacy Land Use Strategy](#)
- [Canadian Heritage Rivers System](#)
- NHIC database [Natural Heritage Information Centre](#) MNRF
- [RAMSAR sites](#)
- International Biological Program sites
- [Canadian Conservation Areas Database](#)
- [Ecological Framework of Canada](#)

Assessment Results:

Conservation areas and any designations by Canadian or International organizations were examined. The following reports on international and provincial designations of various kinds. Specific information can be found by following the links to the particular organization. The primary source for land use information is the Crown Land Use Policy Atlas of the Ontario Government

The International Biological Program (IBP) was an effort between 1964 and 1974 to coordinate large-scale ecological and environmental studies. Sites are located in the vicinity of the forest, but these were not included in regulated protected areas for various reasons. These also still are noted in provincial records (below)

International and National Designations

There are no protected or candidate [UNESCO](#) World Heritage Sites, or [RAMSAR](#) Wetland Sites in the forest. There are no National Parks in the Forest.

Heritage Rivers

None were designated in this forest.

Provincial Designations

The province of Ontario has a variety of classifications for conservation areas. There are both Regulated Areas and Unregulated areas. **Table 4** below lists the types of sites found within the Forest, and **Table 5** lists regulated areas by name and type and links to the OMNRF policy document that mandates the allowed uses in the conservation areas. This is where restrictions on forestry and road building are described.

The Canadian Council on Ecological Areas (CCEA) has a mission to assist with the establishment and management of a network of protected areas. They have provided a map link to the Ontario conservation areas. This is called Conservation Areas Reporting and Tracking System (CARTS). It was available in previous HCV reports. CARTS has evolved into the [Canadian Protected and Conserved Areas Database](#) (CPCAD) database. This is under development as of July 2023.

Of the four regulated designations, Parks and Conservation Reserves have the most restrictions. IUCN would regard Parks as Category I and Conservation Reserves as Category II. There would be some exceptions, and some multiple designations (I and II) would occur. Enhanced Management Area and Forest Reserves would be lower categories. The [Crown Land Use Policy Atlas](#) provides detailed maps and the original policy regulations and these can be reached through Land Information Ontario (referenced in [Table 5](#)). Additional mapped information can be obtained at the [FMP](#) website, under values. These are referred to loosely as regulated, because there are clear policy documents based in regulation that guide the acceptable use. For management purposes, the only attribute of concern to forest management is the Park or Conservation Reserve Boundary, across which logging operations must not trespass. Forest Reserves are not regarded as HCVs because few restrictions apply. Enhanced Management Areas are designated in Element 10. Unregulated areas are more guidelines for use and exceptions occur. Parks and Conservation Reserves are both considered HCVs.

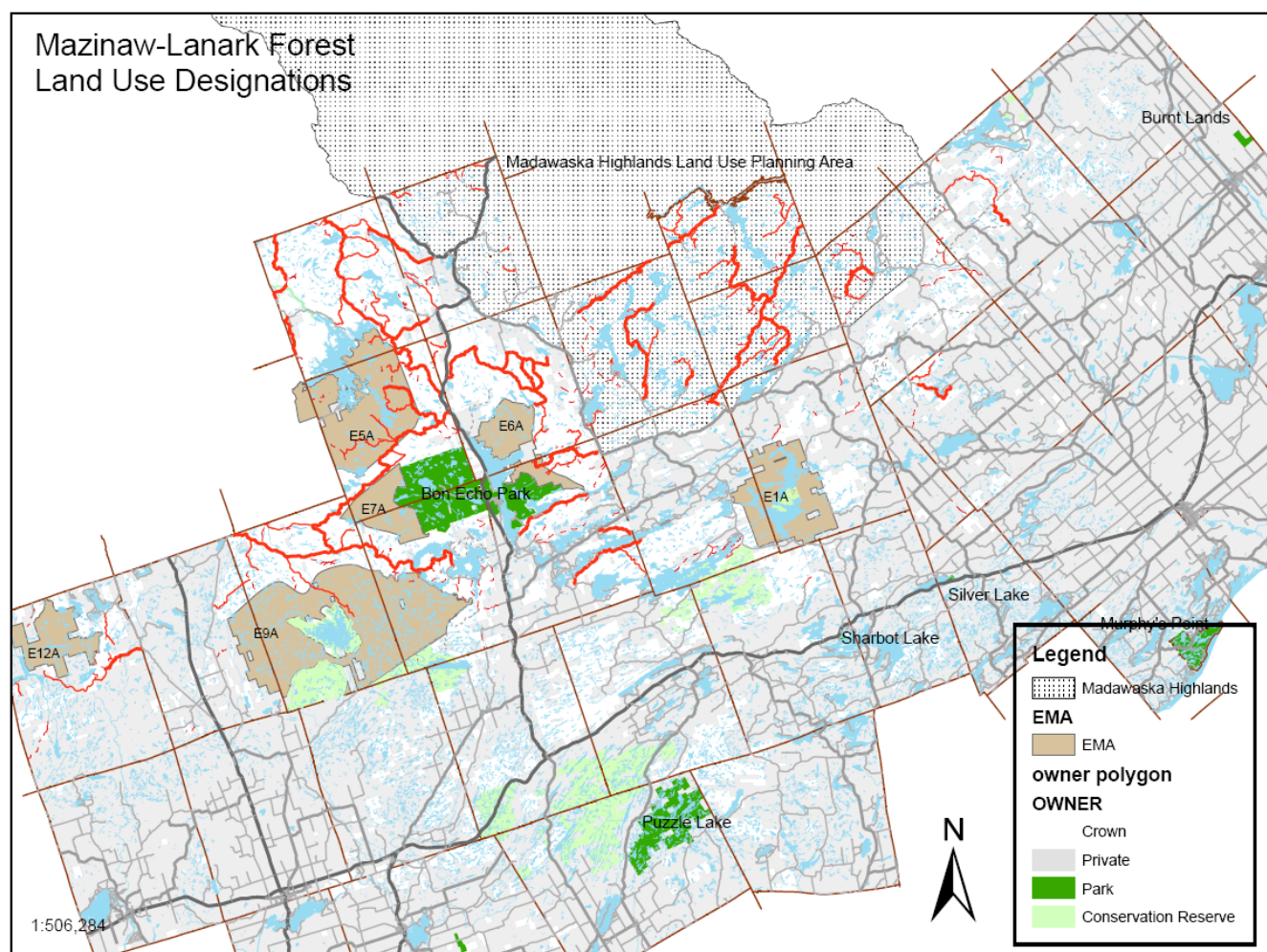
The [Madawaska Highlands Land Use Plan](#) (not currently available online due to Ontario Government embargo) is a higher level planning document that restricts land use activities in some parts of the forest. The plan was written to provide direction on how to balance diverging public opinions on how different development activities would be directed in this relatively inaccessible region. The plan outlines the management direction, identifies the natural heritage values that need to be protected and directs how Crown land is to be managed to meet the needs and desires of those using or wishing to make use of the area, while ensuring ecological sustainability. The full plan is available from OMNRF. This is a significant land use decision that supersedes all of the land uses in the area including forestry - The Madawaska LUP area is an HCV.

Unregulated areas include some designations which apply to private land. Private land designations are not in the license area of the MLF. Some designation such as Provincially Significant Wetland (PSW) applies to both crown and private land. PSWs are not regarded as regulated conservation areas here, so they are assessed below in element 13. Unregulated sites are included here because MNRF identifies these in some of their information. These sites have less weight legally and have resulted from past government initiatives: Life Science Site, Conservation Area, Wetlands - Provincially Significant, International Biological Program and Significant Waterfowl Areas. The assessment of HCVs means that a broad range of values need to be assessed, even if they are not in the end HCVs. None of the unregulated sites have a level of significance that warrants HCV status.

Deferred Forestry -- New Parks and Protected Areas

Following the approval of Ontario's Living Legacy Land Use Strategy, new provincial parks and conservation reserves were established within the boundaries of the Forest. These are shown in [Table 5](#) below. There are no outstanding areas that are designated as candidate protected areas that have not been regulated.

Figure 4. Provincial parks, Conservation Reserves, Enhanced Management Areas and Madawaska Highlands Land Use Plan.



HCV Designation Decision:

There are no protected or candidate UNESCO World Heritage Sites, Biosphere Reserves or RAMSAR Wetland Sites on the Forest – not HCV. Provincially significant wetlands are evaluated later in element 13.

Regulated conservation areas are HCVs. See [Table 5](#) for details and policy document link:

- Conservation Reserve
- Provincial Park

As well, the Madawaska LUP area is an HCV.
Enhanced Management Areas are designated in Element 10.
Provincial Wetlands are designated in Element 13
Forest reserves are not HCVs.

Table 4. Conservation Lands within the Forest based on Natural Heritage Information Centre Natural Areas*.

Regulated Land Use Designations	These land use designations appear on the Crown Land Atlas and have a Provincial Policy document describing allowed land use activities.
Conservation Reserve	An area of public lands identified by the OMNRF and managed to permit natural ecosystems to operate with minimal human interference. Generally, commercial timber harvest, mining, and commercial hydro-electric power are excluded from Conservation Reserves.
Enhanced Management Area	An area identified by OMNRF intended to maintain the values indicated by the EMA category (fish & wildlife, intensive forestry, enhanced recreation, remote access, resource-based tourism, natural heritage). EMAs warrant specific management policies to maintain their special values.
Forest Reserve	An area of public land identified by the OMNRF where protection of natural heritage and special landscapes is a priority, but some resource use can take place with appropriate conditions. Commercial forest harvest, new hydroelectric power development, and peat extraction are not allowed; mining and most other resource and recreational uses are permitted, provided they are consistent with the values being protected.
Provincial Park	A provincially owned and managed park. The level of development and the type and intensity of use permitted within the park depends on its classification (e.g., waterway, wilderness, natural environment, recreation) .
Not regulated*	These classifications are made by government because the land has some interesting feature. In some cases these are significant enough to become HCVs. Crown Land Atlas does not record a specific policy regulating allowed activities
ANSI	OMNRF identified areas having provincially or regionally significant representative ecological features. There are none of these on Forest that have not already been incorporated into other protected areas. Some are on private land and not part of the License area.
Life Science Site	Crown land recognized as having significant life science features by MNRF based on a scientific report.
Conservation Area	A property owned and managed by a conservation authority.
Wetlands - Provincially Significant	Any wetland that has been evaluated by the OMNRF using the Ontario Wetland Evaluation System (OWES), and recognized as having special ecological significance.
International Biological Program	IBP sites contain some locally important natural feature. Normally these are not regionally significant.
Significant Waterfowl Area	Six significant waterfowl areas were originally identified in the Tweed District Land Use Guidelines (1983)

* The unregulated sites are included because MNRF identifies these in some of their information. The assessment of HCVs means that a broad range of values need to be assessed, even if they are not in the end HCVs.

Table 5. Regulated Conservation zones within MLF: Parks, Forest Reserves, Conservation Reserves, and Enhanced Management Areas wholly or partly within the Forest (data from OMNRF).

Identification numbers in the table are from the [Crown Land Use Policy Atlas](#). Readers can view policy information for each area but due to limited access the following procedure needs to be followed: copy the AREA ID # in the column below; Click on the link; Paste the AREA ID# number into Search menu. This link is to the OMNRF Crown Land Policy Report Search Tool at the Land Information Ontario (LIO) website.

Name	Type	Area ID#	Area (ha)	Description	Location
Provincial Park					
Puzzle Lake	Natural Environment	P4	3724	The site consists of a convoluted network of ridges, valleys and twisted shorelines in Site District 5E-11. There is a tremendous variety of habitats and microclimates.	44°36'14.3"N 76°58'0.5"W View Photo
Sharbot Lake	Recreation	P356	69	Sharbot Lake Provincial Park has a diverse landscape of sandy beaches, lush meadowland, wooded ridges and rocky terrain. The park is situated near the southern edge of the Precambrian Shield. The park fronts on Black Lake and Sharbot Lake.	44°46'10.1"N 76°41'21.8"W No Photo Available
Bon Echo	Natural Environment	P8	1702	There are 5 regulated additions to this natural environment class park, which can be grouped into are 3 general areas: Mazinaw Cliff - Horton Lake, McCaw Lake Bog and Barrens, and Mazinaw Lake - Semicircle Lake.	44°53'59.8"N 77°12'13.4"W View Photo
Murphy's Point	Natural Environment	P415	1239	Murphys Point is located on the north shore of Big Rideau Lake in a lake-dotted, rolling, rocky countryside typical of the Frontenac Axis. The park contains representative biological and geological features of Site District 5E-11.	44°52'17.34"N 76°11'58.84"W No Photo
Burnt Lands	Nature Reserve	P47	516	The Burnt Lands site is the only extensive alvar ecosystem in Site District 6E-11. It supports a diversity of plant and animal species, many of which are provincially or regionally rare. Burnt Lands Provincial Park is comprised of three parts.	45°16'3.14"N 76°10'44.13"W View Photo
Silver Lake	Recreation	P416	43	Silver Lake Provincial Park has a landscape of rocky outcrops and swampy lowlands, characteristic of the southern Precambrian Shield. The park is situated in Site 5E-11. It is located at the east end of Silver Lake.	44°39'10.0"N 78°35'32.61"W View Photo

Enhanced Management Areas					
Bon Echo Area	EMA (Remote Access)	FMP	3538	This remote access area is situated west of Bon Echo Provincial Park. The area is important to the forest industry and recreational users, including snowmobile trails and hunt camps.	No Photo Available
Copeway Lake	Remote Access	FMP	3909	This relatively remote area in Lake Township includes many small lakes and the Crowe River, making it popular with hunters, anglers and baitfish dealers.	44°44'31.67"N 77°47'28.75"W View Photo
Crotch Lake	Remote Access	FMP	7766	Crotch Lake is popular with campers, boaters, anglers and supports a number of tourism establishments. This scenic lake is surrounded by rugged terrain and boasts a number of significant wildlife species.	46°25'29.19"N 82°35'58.72"W No Photo Available
Lingham Lake	Remote Access	FMP	20291	This relatively remote area is used extensively by hunters, anglers, fur trappers, the baitfish industry and contains a commercial outpost camp; with road access limited to one main access road to Lingham Lake and numerous recreational trails.	44°45'38.91"N 77°24'36.01"W View Photo
Mazinaw Lake	Remote Access	FMP	3883	This large area is dominated by tolerant hardwood and white pine forest abutting Bon Echo Provincial Park and by the very popular Mazinaw Lake. The area is used extensively by the forest industry, fur harvesters, hunters, anglers and snowmobiles.	44°55'0.0"N 77°12'0.0"W View Photo
Weslemekoon Lake	Remote Access	FMP	11126	Weslemekoon Lake is a large lake with public access limited to the north and south ends. Most cottages are water access only. This area is also important to the forest industry and local recreationists.	No Photo Available
Conservation Reserve					
Crotch Lake	CR	C2	376	A stand of relatively undisturbed medium-aged to mature conifer forests on a dry, rocky portion of the northern shoreline of Crotch Lake in Site District 5E-11.	No Photo Available
Hungry Lake	CR	C3	3525	One of the largest, relatively undisturbed granite bedrock barrens in ecological Site District 5E-11. The vast outcrops of bare granite are cloaked in blueberry and low shrubby juniper and savannah-like forests of red and white oak.	45°32'22.2"N 79°01'46.8"W View Photo
Lingham Lake	CR	C11	1988	Large shallow lake known for excellent bass fishery and waterfowl habitat in Site District 5E-11. Uplands dominated by a young to medium aged mixed and deciduous forest of Trembling Aspen, Red Maple, Red Oak, Sugar Maple, White Pine and White Birch on granite bedrock thinly covered with sandy till soils.	44°45'38.9"N 77°24'36.0"W View Photo
Mellon Lake	CR	C14	8151	Mellon Lake has the typical bare rock ridge and valley topography characteristic of Site District 5E-11. It is linked with two other significant natural ecosystems in the area: the Kaladar Jack Pine Barrens and the Puzzle Lake area.	44°34'9.18"N 77°0.5'34.6"W View Photo
Elzevir Peatlands	CR	C17	2246	One of the largest mostly continuous peatlands in southern Ontario. This area, in ecological Site District 5E-11 has a collection of low ridges that poke through a flat wetland system.	No Photo Available
Mount Moriah	CR	C18	2319	The most dramatic landscape feature in south central Hastings County -- hundreds of feet above the surrounding land -- Mount Moriah is also an intact natural ecosystem. The soils are thin, supporting juniper and blueberries.	46°31'44"N 83°3'15"W View Photo
White Lake	CR	C46	187	This site represents both wetland and upland ecosystems which overlay marble bedrock and ground moraine glacial deposits. In some areas, the wetland lies over marine deposits, and provides unique representation of such ecosystem/landform features within Site District 5E-11.	45°19'25.6"N 76°32'37.48"W View Photo

Forest Reserve					
Mellon Lake	FR	FMP	483	There are two main parts: One area, under a mining lease, is located slightly north-east of the Mellon Lake Conservation Reserve and contains forest communities on marble and amphibolite that are not found anywhere else on the site; the second area, under a mining claim, is located directly adjacent to the central-east portion of the Mellon Lake Conservation Reserve and has typical bare rock ridge and valley topography known in Site District 5E-11.	No Photo Available

Category 2) Forest areas containing globally, regionally, or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

7) Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species and sufficient habitat such that there is a high likelihood of long-term species persistence?

Rationale:

Under this question, the forest must not only be large enough to support potentially most or all native species, but 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).

Assessment Methodology:

- World Wildlife Fund Canada [Ecoregion Conservation Assessment](#)
- [Global Forest Watch](#) (Canada)
- Ontario Living Legacy Land Use Strategy (link currently embargoed by MNRF)
- OMNRF Lands for Life Assessment

Assessment Results:

Large forest landscapes driven primarily by natural forest disturbances are not part of this forest. This is a landscape that is largely inhabited, although sparsely in some areas. In the region encompassing the MLF some blow down and insect outbreaks in small patches are the principal natural disturbances. Forest harvesting is planned and conducted to emulate forest fires to the extent possible, as directed by the Crown Forest Sustainability Act.

As stated earlier, MLF Inc. consider the entire forest to be of conservation value. The intent of management is to maintain all ecological values as fully functioning and sustained over the long term (species, ecosystems, and ecological processes). A complex suite of guidelines, manuals, models, acts and regulations, followed by population monitoring, effectiveness monitoring, and independent forest audits ensures that the managed portion of the forest is ecologically “intact”. This question could therefore define the entire Crown land portion of the forest. However, Appendix 5 of FSC Canada’s National Boreal Standard focuses on forested landscapes that are thought to be “unfragmented” because they contain few roads and other infrastructure. Accordingly, applicable thresholds for qualifying areas are as follows:

- Globally significant threshold > 500,000 ha and free of permanent infrastructures/roads and <1% non-permanent human disturbance
- Nationally significant threshold 200,000 to 500,000 ha free of permanent infrastructures/roads and <5% of non-permanent human disturbance
- Regionally significant threshold 50,000 to 200,000 ha and free of permanent infrastructures and <5% non-permanent human disturbances.

As described by the WWF [Ecoregion Conservation Assessment](#) reports (now archived), and the North American Assessment (Ricketts et al 1999), the Forest lies within the “highly fragmented Eastern Forest-Boreal Transition ecoregion”. This ecoregion encompasses the “southern Canadian Shield in Ontario and Quebec”, and covers approximately 347,000 km². Under WWF’s criteria, it is estimated that only 10 percent of the ecoregion remains as “intact” habitat. Much of the area has been influenced by forestry, settlements, summer homes and cottages, ski facilities and agriculture. None of the identified intact areas lie within the MLF.

[Global Forest Watch](#) has mapped what they consider to be the remaining “intact” forests of Canada using their own criteria which are (1) “a contiguous mosaic of natural ecosystems in the forest landscape, essentially undisturbed by human influence”, and (2) at least 50,000 hectares in size. None of the intact forest was identified in the MLF.

HCV Designation Decision:

Based on a review of available data and conservation assessments, there is no area which qualifies as an inaccessible patch of forest of at least 50,000 hectares. Element 10 below addresses fragmented portions of ecosystems, and an HCV is identified there. This area is designated a possible HCV.

Category 3) Forest areas that are in or contain rare, threatened or endangered ecosystems.

8) Does the forest contain naturally rare ecosystem types?

Rationale:

Rare forest types may contain unique species and communities that are adapted only to the conditions found there. For this reason, they may qualify as “concentrations of biodiversity values”.

Assessment Methodology:

- NatureServe Database linked to [US National Vegetation Classification](#)
- [Crown Land Use Policy Atlas](#) - Ontario Government
- [Conservation International](#)

OMNRF collects studies on various natural areas in the forest and these are compiled in the “Natural areas” section of the NHIC website.

In addition, an analysis was performed by the Company to identify uncommon ecosystems in their own Forest Inventory, by selecting for very low occurrences of ecosystems as identified by their Ecosite identification Chambers et al. (1997).

Assessment Results:

NHIC studies on the MLF were associated with ecosystem types that had already been placed in some form of conservation area, as described in element 6 above. The [Madawaska Highlands Land Use Plan](#) also addressed some potential rare types. It appeared that the natural heritage surveys conducted and compiled by NHIC covered most of the significant rare types. No new HCVs were designated under this element but this is a reflection of the already significant protection afforded.

International Biological Program sites were also listed by NHIC. Discussions with OMNRF indicate that these sites, despite the name, are of more local interest and result from some early work in ecosystem classification that came from an international initiative. The more important of these sites were regulated into protected areas.

Conservation International does not identify any biodiversity hotspots within Canada.

The NHIC website directs enquires about rare ecosystems to the U S National Vegetation Classification. A search of this database keyed the general forest type to *Pinus strobus* - (*Pinus resinosa*) - *Quercus rubra* Forest commonly referred to as [Eastern White Pine - \(Red Pine\) - Northern Red Oak Forest](#). The conservation status of this is G4, which is not at risk.

The Company's own investigation of uncommon ecosystem types (as defined in the Forest Management Guide for Great Lakes-St. Lawrence Landscapes) produced five forest units that fit the criterion. This analysis was purely by species occurrence and not connected to ecosystem characteristics. It was used to investigate possible unique ecosystems. Over 35000 stands were sorted by species.

- BY1, Yellow Birch ecosite. This ecosite is uncommon in the forest with only 7 occurrences of stands with a small percentage. Yellow birch is a common species although it is rarely dominant, and does not occur in abundance enough to rise to a working group.

- PJ1 and PJ2 Jack Pine is a northern species which was commonly planted in this area. None of the 18 stands occurred naturally and not often in pure stands. Further north in Algonquin Park natural Jack Pine stands occur.
- SB1 Black Spruce usually occurs with other species, although wetland areas do have small pockets dominated by this species. It would not occur on upland sites as it does in the north. It is not characteristic of Boreal ecosites, but rather individual trees mixed in other forest ecosystems. Interesting, but not significant regionally.
- SP1 is more than 70% conifer, and usually dominated by spruce with only 4 occurrences of this species combination.

After the analysis, there does not appear to be an ecological pattern that emerges from this search of uncommon species. Species assemblages of these uncommon types seemed to be a product of frequency distributions rather than a natural and integrated ecosystem type. Further investigation of the inventory may produce a natural community type that could fit the “rare” and significant. This is not a robust analysis such as that of Chambers et al (1997) which classified ecosystems in a more conventional way. No HCVs resulted from this attempt by the Company.

Anecdotal information exists attributing a small grove of shagbark hickory to planting by native peoples. This is unconfirmed however.

HCV Designation Decision:

It appeared that the natural heritage surveys conducted and compiled by NHIC covered most of the significant rare types. No new HCVs were designated under this element; this is a reflection of the already significant protection afforded.

9) Are there ecosystem types within the forest or ecoregion that have significantly declined?

Rationale:

Vulnerability and population viability are the key issues under this question. This indicator includes rare forest ecosystem types that may be rare due to historic harvest practices (e.g. late seral red and white pine in eastern Canada).

Assessment Methodology:

- MLF [FMP](#) (Historic Forest Condition and Trends)
- [Natural Heritage Information Centre](#)
- [WWF Ecoregion Conservation Assessment \(archive\)](#)
- [Conservation International](#)

Assessment Results:

In the assessment several websites were consulted. However few are able to discern existing old growth conditions at the level that is required for assessing HCVs. For that, the best source is the current MLF [FMP](#). In that document there is a very detailed discussion. The Local Citizens’ Committee and the Planning Team spent considerable effort on this value. The following points discuss the approach taken on MLF as a result of the planning exercise.

The [FMP](#) acknowledges that there is very little of the management unit that has not been harvested at one time or another. Currently levels for wildlife dependent on old forest or young forest are imbalanced due to the high amount of forest unit area contained in the mature age classes. This imbalance will be rectified through the age class structure created through forest management. Deferring harvest of some areas so that it can become older is the only way to create this habitat component in the future. Similarly, the amount of old growth forest on the management unit is also below the natural level in the Mazinaw-Lanark Forest. The imbalance of certain types of wildlife habitat and the amount of old growth forest is a result of past forest harvesting practices. These are future considerations and do not factor into the selection of HCVs.

Most old growth forest desirable levels will be easily achieved because of the current age of the forest. Most forest in Mazinaw-Lanark Forest will be meeting old growth classification within 50 years making achievement of old growth objectives relatively easy. There are seven Forest Units from the MLF [FMP](#) which are considered for future old growth objectives (INTcc, MXCcc, MXHcc, PRcc, ORcc, HDus, PWus).

Appendix II of the [FMP](#) also contains instructions for tree marking to safeguard old growth characteristics. In the managed forest of Mazinaw-Lanark, normal selection harvest practices retain the structural component of the uneven-aged stands and ensure that there is retention of: cavity trees, mast trees, scattered conifers, super canopy trees and downed woody debris after harvest (old growth characteristics). The silvicultural ground rules and Conditions on Regular Operations guide these standard practices in the [FMP](#). These characteristics do not meet the level of significance for an HCV.

Existing Old Growth Stands

Existing stands of old growth are the most likely candidate HCVs because of their rarity. From the inventory, there are two areas ([NRVIS Wildlife and Forestry values map](#)) that exhibit features considered to be old growth, and one other small area. The three areas that are identified this way are an area of old growth Red Spruce (*Picea rubens* Sarg.) in Effingham township, Bancroft District, an area of White Pine (*Pinus strobus* L.) in the north-west corner of Lavant township (Perch Lake Area), Kemptville District and a smaller area southwest of Norcan Lake. The [FMP](#) (p36) withdraws these three existing old growth areas. These withdrawals have been in place in the MLF management plans for a long time. They represent a small proportion of the productive forest classified as unavailable.

HCV Designation Decision:

Three areas in the MLF are designated HCV for declined ecosystems.

- Red Spruce (*Picea rubens* Sarg.) in Effingham township, Bancroft District
- White Pine (*Pinus strobus* L.) in Lavant township (Perch Lake Area), Kemptville District.
- White Pine stand in South Canonto township, Bancroft District

10) Are large landscape level forests (i.e. large unfragmented forests) rare or absent in the forest or ecoregion?

Rationale:

In regions where large functioning landscape level forests are rare or do not exist (highly fragmented forest), remnant forest patches may require consideration as potential HCVs (i.e. best of the rest). The question identifies remnant forest patches or blocks where landscapes that do not contain permanent infrastructure do not exceed size thresholds.

Assessment Methodology:

- GIS Roads layer for MLF
- [WWF Ecoregional assessment](#)
- [Global Forest Watch](#) Intactness mapping
- OMNRF Lands for Life assessment (currently embargoed)

Assessment Results:

The [FMP](#) acknowledges that there is very little of the management unit that has not been harvested at one time or another. Since the time of European exploitation of White Pine in the 19th century, there has been a long history of harvesting on the forest which has created a great deal of access. At the same time, this forest has a large amount of Crown land isolated by private land that is declared unavailable for forest management activities. Large areas of the forest have also been identified as being inaccessible due to terrain or rivers. The MLF is a balance of well roaded areas and inaccessible areas.

Enhanced Management Areas

In order to assess HCVs for this element, the [FMP](#) was used as the guide for areas that are regulated and that have restrictions on forestry. Enhanced Management Areas (EMAs) are regulated area on Crown Land that include restrictions on forestry, road building activities as well as many other activities.

Areas of Natural and Scientific Interest (ANSIs) are areas of land and water that represent significant geological and biological features. For the most part ANSIs tend to be small areas that do not meet the intent of fragments of landscape level forests. One larger ANSI, the Fortune-Schooner ANSI, is located in the Madawaska Highlands in Miller township. The ANSI is comprised of a “core protection zone” as well as a “resource management zone”. The core protection zone is an area of over 1,700 hectares of Crown productive forest where many resource extraction activities such as forest management are not permitted to occur. It is identified as unavailable for forest management in the planning inventory (i.e. the [FMP](#)). The resource management portion of the ANSI continues to be available for forest management activities. In this ANSI the, protection of values unique to this area is the primary goal of management. An AOC was created in the [FMP](#) to ensure that values are appropriately protected during forest operations. The Fortune-Schooner ANSI meets the intent of an HCV and has been designated. Other ANSIs have been described and designated as HCVs earlier in element 6. They were designated there, but they also meet the intent of this element.

Operational management zones represent areas with separate objectives (ie. accessibility, wildlife or other constraints on forest operations). There are four types of operational management zones have been identified on the management unit:

1. Deer Wintering Emphasis Areas (DWEA)
2. Moose Emphasis Areas (MEA)
3. Madawaska Highlands Land-Use Planning Area (MHLUP)
4. Enhanced Management Areas (EMA)

The latter two meet the intent of this element to preserve large landscape fragments. MHLUP was designated in element 6 because it is designated land use areas where specific conditions on forest operations apply ([Table 5](#)) to protect multiple values.

Global Forest Watch does not list any locations with potential for contributing to large landscape level forest.

HCV Designation Decision:

EMAs are designated as HCVs based on their contribution to reducing fragmentation of a naturally functioning ecosystem. ANSIs have been designated earlier in element 6.

11) Are there nationally/regionally significant diverse or unique forest ecosystems?

Rationale:

Vulnerability; species diversity; significant ecological processes.

Assessment Methodology:

- [Crown Land Use Policy Atlas](#) - Ontario Government
- MLF [FMP](#)
- WWF Ecoregion Conservation Assessment

Assessment Results:

In Ontario, Areas of Natural and Scientific Interest (ANSIs) have been identified by OMNRF during various exercises. For the MLF these sites have been incorporated either in protected areas (parks and Conservation Reserves) or are managed as part of the Madawaska Highlands Land Use Planning area.

A number of unregulated Crown land exclusions from forestry activities in the form of Areas of Natural and Scientific Interest (ANSI) exist on the management unit. An example is the Fortune-Schooner ANSI which is located in the Madawaska Highlands in Miller township. The ANSI is comprised of a “core protection zone” as well as a “resource management zone”. The core protection zone is an area of over 1,700 hectares of Crown productive forest where many resource extraction activities such as forest management are not permitted to occur

and is identified as unavailable in the planning inventory as such. The resource management portion of the ANSI continues to be available for forest management activities. It is not specifically designated as HCV; rather the overall MHLUP is designated.

Palmerston Lake Life Science ANSI

Palmerston Lake Life Science ANSI contains a cedar swamp. This ANSI is 1,600 ha (3,953.5 ac) in size and has been designated of provincial significance. The conditions that create this unusual and important fen and swamp features are rare, if not unique, in this site district (MNRF, 2005). The [FMP](#) contains a specific prescription for this area and it is also a part of the MHLUP restrictions.

The Madawaska Highland Land Use Plan (MHLUP) ¹

The Madawaska Highland Land Use Plan (MHLUP) is a land use policy area document in the Crown Land Use Policy Atlas which has numerous implications for forest management planning activity on the management unit. The MHLUP has a number of sustainability targets that relate to forest condition. In terms of planning of operations, the MHLUP has very specific criteria for planning of clearcut harvest areas. The MHLUP has a constraint of no clearcuts greater than 100 ha. The MHLUP however utilizes a clearcut definition different than what is used in the [FMP](#). During planning of operations in the [FMP](#), analysis of the selected harvest areas ensured that there were no clearcuts that exceeded the 100 ha size constraint in the MHLUP area.

Within the MHLUP area, there are four Areas of Natural and Scientific Interest (ANSI) of provincial significance (Summit Lake, Fortune Schooner, Centennial Lake, Darling). There are three zone classifications for areas within these ANSIs. The zones are: Core Protection, Resource Management, and Access. Within each zone is a series of management strategies designed to protect the area's values while supporting compatible use. There is a number of modified resource management practices related to forest management, vegetation protection, aggregate resource extraction, and access (e.g. trails, roads). Overall, the MHLUP meets the HCV intent, and is designated.

HCV Designation Decision:

All of the original ANSIs that are on Crown land portion of the forest have been included in protected areas and the new designation supersedes the ANSI designation. These are designated HCV in element 6 under other land use categories, so designation here is redundant.

The MHLUP meets the HCV intent, and is designated. Existing ANSIs within the Madawaska Highland Land Use Plan are designated as HCVs as part of the MHLUP. Palmerston Lake Regional ANSI is also designated as an HCV.

Category 4) Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).

12) Does the forest provide a significant source of drinking water?

Rationale

The potential impact to human communities is so significant as to be 'catastrophic' leading to significant loss of productivity, or sickness and death, and there are no alternative sources of drinking water.

Assessment Methodology

- Mississippi Valley Conservation Authority
- Local terrain mapping
- Provincially Significant Wetlands

¹ Madawaska Highland Land Use Plan is available from MLFI, as MNRF has currently removed it from their website.

Assessment Results

There are a number of sources of drinking water for the vicinity of the MLF. There is a need for caution with any industrial operations in the vicinity of the water sources.

The Conservation Authorities in the MLF have recently produced a draft Source Water Protection Plan as mandated by the Ontario government. This is called the [Mississippi-Rideau Source Protection Plan](#) 2013 and Potential concerns are addressed carefully due to the high profile that water receives. This plan did not identify any issues related to forestry activities.

There are a number of agencies (see above) that have provided input to the protection of safe drinking water quality for local communities. Other factors (e.g. hydro dams) also affect water flow, regulation and quality in the watershed area.

The Forest Management Planning process has a number of provisions for the protection of water quality. In accordance with provincial regulations, forest managers must allow for activities adjacent to the aquatic feature (e.g., stream, lake, wetland). Prescriptions for buffers vary according to the ecology of a given body of water; for example, coldwater trout streams and lakes, critical fish habitat and headwaters will have more significant and continuously treed buffers than a warm water lake or stream.

The [FMP](#) for the MLF does not have any specific Area of Concern prescriptions for Municipal Water Supply or smaller water supply concerns.

There are guidelines contained in the [OMNRF Stand and Site Guide](#) that control the construction of water crossings. Forest companies can face fines if damage, including fuel spills, siltation, or erosion, occur during construction. Furthermore, logging on the MLF is carried out using appropriate partial harvest systems, which means that in most areas, a significant level of forest cover is maintained on the managed forest landscape at all times. This helps to reduce potential impacts of harvesting on water flow regulation and quality.

HCV Designation Decision:

There are no HCVs designated related to source water in this forest.

13) Are there forests that provide a significant ecological service in mediating flooding and/or drought, controlling stream flow regulation, and water quality?

Rationale:

Forest areas play a critical role in maintaining water quantity and quality, and a service breakdown could have catastrophic impacts or could be irreplaceable.

Assessment Methodology:

- Government policy, monitoring & response programs ([Ontario Low Water Response, Surface Water Monitoring Centre](#))
- Conservation Authority Mandate & Watershed Plans (MVCA, MRCA and CVCA)
- [Provincially Significant Wetlands](#)

Assessment Results:

It can be said that all of the MLF provides significant ecological services in mediating flooding, controlling stream flow regulation and water quality. As a whole, the Forest contributes positively to these natural processes as a result of the fact that continuous forest cover is maintained across a significant proportion of the managed landscape.

Historically, periods of dry weather and low water levels or drought have been relatively uncommon in Ontario (about every 10-15 years). However, recent studies on changing weather patterns indicate low water levels may become more common, potentially compounded by the province's steadily increasing demands for water².

² OMNR, [Low Water Response](#).

Provincially Significant Wetlands

There are also a number of wetlands in the forest that provide critical ecosystem service functions such as ground water recharge and discharge, flood damage reduction, shoreline stabilization, sediment trapping, and nutrient retention and removal.

These wetlands also provide critical habitat for many bird, amphibian, reptile and mammal species, including many of the furbearers. Wetland areas of various sizes and types are scattered throughout the MLF and are often associated with lake, river and stream systems. These aquatic systems often serve as important travel corridors and feeding areas for many wildlife species. Wetlands are also important for fisheries habitat. Some species of fish, such as northern pike and muskellunge rely on wetlands as spawning areas. For other species, wetlands can be valuable feeding or food-producing areas, providing frogs, insects, bait fish and other food.

Area of Concern prescriptions that are used to protect wetlands are consistent with the Provincial Policy Statement. According to prescriptions, an approved Environmental Impact Study is required prior to any operations within 120 metres of Provincially Significant Wetlands (see AOC prescriptions in the [FMP](#)). An approved protocol for evaluating wetlands as to their level of provincial significance exists but, in fact, very few wetlands have actually been evaluated by MNRF. It is virtually certain that more provincially significant wetlands could be found, if they were evaluated. However, wetlands are generally protected in the forest by a variety of guidelines designed to protect water quality. Thus, important wetlands on Crown land that lack a designation as “provincially significant” would not be in jeopardy from forest management operations.

The only PSWs within/adjacent to the Lanark harvest blocks are Joe’s Lake, Pakenham Mountain Wetland Complex, and White Lake-Lowney Lake Wetland Complex.

HCV Designation Decision:

All of the Provincially Significant Wetlands on the MLF are designated HCVs.

14) Are there forests critical to erosion control?

Rationale:

This question seeks to identify forests that contribute to the stability of soil, terrain or snow, including control of erosion, sedimentation, landslides, or avalanches.

Assessment Methodology:

- Review of OBM base maps showing topography
- Review of local terrain mapping
- MLF [FMP](#)

Assessment Results:

There is some steep topography that could be candidates for designating HCVs under this question on the MLF. The hills of the Madawaska Highlands are renowned for their aesthetic appeal. However, as a risk factor, the slopes are very stable and no incidence of slides have been reported. The primary concern for erosion would be associated with forest clearing on steep terrain and/or areas comprising fine-textured soils prone to erosion through mechanized harvest operations. The intent of this Element is to distinguish areas susceptible to major land slides, rather than site level erosion. Hence the “ecological services” heading. There have never been reports of significant slides and so the is not an HCV.

HCV Designation Decision:

There is no evidence of high risk areas for compromised soil stability, sedimentation or erosion through forest operations. Existing risk is managed through provincial guidelines to protect the physical environment from negative impact – therefore there is no HCV designation under this category.

15) Are there forests that provide a critical barrier to destructive fire (in areas where fire is not a common natural agent of disturbance)?

Rationale: Are there forest areas where there is a high risk of uncontrolled, destructive fire and in which forest areas or forest types can act as a barrier to the spread of fires?

Do these forest areas contain or are they adjacent to human settlements or communities that would be at risk from uncontrolled, destructive forest fire?

Managers should accept HCV designations for forests adjacent to communities and manage using the precautionary principle in consideration of the safety of the inhabitants. How this is defined should be determined locally, and be led by communities.

Assessment Methodology:

In the past, this element is not considered an HCV in Canada. Recent fires in the boreal forest have affected communities significantly, including in the PF. In most areas, fire management strategies near communities will be considered as a priority should local municipalities decide they are needed.

Assessment Results:

Since the recent fire disasters in communities in western Canada there has been a heightened interest in FireSmart Communities. In northern Alberta and Saskatchewan communities are proceeding with this program. Other communities have established Forest Protection Areas surrounded by an approximate 10km area where full debris disposal is required. This program and the possible areas around communities would be designated HCV. In central and eastern Ontario communities are starting to look into a more formal program.

HCV Designation

As FireSmart Community Zones are not yet designated, no HCV is designated.

16) Are there forest landscapes (or regional landscapes) that have a critical impact on agriculture or fisheries?

Rationale:

Mediating wind and microclimate at the scale of ecoregions affecting agriculture or fisheries production. Riparian forests play a critical role in maintaining fisheries by providing bank stability, sediment control, nutrient inputs and microhabitats. More local effects of forest areas (e.g. adjacency of forests to agriculture and fisheries production) may be more relevant in the HCV component regarding meeting basic needs of local communities.

Assessment Methodology:

- [Ministry of Agriculture, Food and Rural Affairs](#)
- [Ministry of Northern Development](#)
- Review 2011-2021 [FMP](#) AOC Prescriptions

Assessment Results:

This assessment is more significant, in the HCV sense, in other parts of the world where forestry and agriculture are more closely tied together. Although agriculture and fisheries are of course significant, the assessment below applies to HCVs in the forest itself.

Agriculture

Agriculture represents slightly less than half of the economic activity as forestry in the vicinity of the forest license. There is little interaction between forestry and agriculture directly, although many people work in both industries simultaneously. There were no concerns raised by the LCC or the [FMP](#) Planning Team with regard to Agriculture.

Fisheries

There are no commercial fisheries and so no HCV related to that. Recreational fishing is an important social and economic contributor to the MLF and this is discussed below in element 17. There are many tourist establishments that rely on recreational anglers for part of their business

HCV Designation Decision:

Although agriculture is of localized importance in some areas within the MLF, it is unlikely that the agricultural sector face any significant impact or risk from forest management on Crown lands (e.g. changes in wind and microclimate/microhabitat). There are no identified important fisheries production areas that warrant increased protection from forest operations that are not already addressed in the current planning approach. Resorts and Fishing Lodges are regarded as part of the values contributing to its designation in element 18.

Category 5) Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).

17) Are there local communities? (This should include both people living inside the forest area and those living adjacent to it as well as any group which regularly visits the forest).

Question 17 further asks:

- Is anyone within the community making use of the forest? (Look at members or subgroups rather than treating the community as homogenous.)
- Is the use for their basic needs/ livelihoods? (Consider food, medicine, fodder, fuel, building and craft materials, water, and income)
- If it is not possible to say that it is NOT fundamentally important, then assume that it is.

Rationale:

This attribute looks at level of dependence of local communities on the forest to meet their basic needs.

Assessment Methodology:

- MLF [FMP](#) Supplementary Documentation H
- Socio economic Description in 2021-2031 [FMP](#)
- Discussions and correspondence with First Nations during forest management planning consultation sessions
- Discussions and correspondence with non-native communities and stakeholders during forest management planning consultation process

Good Neighbour Policy

The Company shares Crown forests on the management unit with many other groups and individuals. There are countless parcels of patent lands and many provincial parks and conservation reserves adjacent to the Crown's managed forest. Given the proximity to Ontario's major population centres, the use of Crown land is high. A "good neighbour" policy is intended to provide direction that protects the interests of all stakeholders.

Private landowners adjacent to planned operations will be contacted during operational layout primarily to ensure that the limits of planned operations do not encroach on private land.

Communities

The MLF stretches over a number of communities in this part of the Province. The local managers have established a working relationship and an understanding for the needs of the communities. For one example, [North Frontenac](#) (Perth) has produced an excellent profile of the relationship between the communities and the local environment. It contains statistics, trends and existing conditions help residents and stakeholders to understand the community. The profile of the Township of North Frontenac is intended to provide a summary of collected information and may be considered as a reference document or as a background for the Official Plan.

Communities within the Forest or that receive wood from the forest include:

- Addington Highlands
- Bancroft Town
- Bonnechere Valley South Algona

- Brudenell, Lyndoch and Raglan
- Calvin
- Central Frontenac
- Hastings Highlands
- Hastings Highlands – Monteagle
- Lanark Highlands
- Laurentian Valley Alice and Fraser
- Madawaska Valley Sherwood, Jones and Burns
- Madoc Township
- Marmora and Lake Marmora
- North Algona Wilberforce
- North Frontenac
- Quinte West Trenton
- South Algonquin
- Tay Valley
- Tyendinaga

Subsistence/Health

The Forest is used extensively by local native and non-native communities alike. Access to Crown lands for recreational and non-commercial consumptive use is generally unrestricted. Areas such as hunting grounds, berry-picking areas, medicinal plant areas, etc have been identified and are subject to prescriptions developed during the forest management planning process. For both native and non-native communities, the use of the forest for food and materials is generally supplementary and not the primary source. Important sources of drinking water were discussed previously in Question 12.

Timber Values

A demographic profile published in the [FMP](#) (Supplemental Documentation) showed the extent to which these communities depend on the forest industry (Statistics Canada 2006 population estimate). Despite a downturn in the forestry sector in 2008, central Ontario is noted for the remarkable stability of the workforce. Employment through central Ontario Woodlands operations has remained relatively stable due to the commitment of the family businesses to stick out the economic downturn. The statistics have probably not changed dramatically, despite economic challenges. This has been attributed to the smaller nature of the Companies and their long history in the Community. Many are family owned companies that have many community ties. This tends to stabilize the jobs.

Table 6. Area provided to each licensee in the 10-year allocations.

Operator Area (ha) % of Area	Area (ha)	% of Area
Herb Shaw & Sons Ltd.	3820	18%
Lavern Heideman & Sons Ltd.	2610	12%
Gulick Forest Products	175	1%
JB Forest Products	1128	5%
George Stein Ltd.	962	4%
Chisholm's Ltd.	978	5%
Freymond Logging Company	513	2%
MLFI Tendered Sales	1902	9%
MFMC	9429	44%
Total	21517	100%

The subject of the forest industry as an HCV was discussed with the Local Citizen's Committee (LCC). There was all around support for the concept; designation of the industry and the working forest as an HCV has much popular support. There is no doubt the forest is a source of livelihoods that is critical to the communities. In practical terms, it would only be symbolic and cause paperwork for future auditors. In practice the Forest Management Plan is the management and monitoring for the timber values of the forest. Timber is functionally an HCV, because the primary purpose of the [FMP](#) is the sustainable management of the overall forest, with

economic benefits as a recognized benefit and value. Because the value is inherent in this exercise, “Timber Values” were not specifically designated HCV.

Cottage Lakes

There are a number of important cottage lakes in the forest. There is active participation of cottagers in the planning exercise, and a well-developed set of AOC prescriptions and forest practices in the [FMP](#). Cottagers are very protective of their lake environment, and actively communicate their concerns. An AOC was developed as a result of consultation with cottage/ratepayer associations during the development of the [FMP](#). The AOC has been applied to lakes where there is a perceived concern on behalf of residents of the impacts of forest operations on lakes with cottage/recreational values. The status of the Cottage Lakes did not warrant HCV status, as it is a widespread lifestyle across central Ontario.

Other Forest Values

Other commercially and culturally important values such as bear management areas, traplines, cottage lakes, recreation trails and tourism areas are comprehensively documented through the public consultation and values mapping portion of the forest management planning process. Ontario has many policies in place to ensure that multiple uses on the forest are recognized and accommodated, both within and in parallel processes to forest management planning.

Resource Based Tourism

Tourism plays a major role to the economy of the area within the MLF. The natural resources found on both Crown and private lands are extremely important in promoting the area as a tourism destination. Crown lands are used for fishing, hunting, hiking, canoeing, boating, cross-country skiing, wildlife viewing and for recreational vehicles such as snowmobiles and ATVs. The opportunities that are supplied on Crown land support a variety of local commercial tourism establishments, such as resorts, lodges and tour companies, which exist mainly on private lands within the unit.

The option for [Resource Stewardship Agreements](#) (RSA) has been offered to all of the resource-based tourism businesses. This is a contractual agreement between a Ministry of Tourism and Recreation licensed resource-based tourism operator and the SFL holder outlining the forest values important to each party, and recommended prescriptions to protect tourism values (Resource Stewardship Agreements and the Forest Management Planning Process – A Primer for Tourist Operators, January 2003).

The SFL holder is committed to maintaining the viability of the tourism industry by protecting tourism values in the forest management planning process through application of the Timber Management Guidelines for the Protection of Tourism Values and the use of RSAs as one method of protecting and sustaining these values. As well, Remote Access EMAs (discussed in element 6) are intended to maintain the remote character of selected areas. Typically, these are relatively large areas which provide the public and tourism operators with high-quality remote recreational experiences including hunting, fishing, canoeing, and camping.

Registered letters were sent to identified operators within the management unit to inform them of the RSA process. During the development of the [FMP](#), there was no interest expressed in developing a RSA for the Mazinaw-Lanark Forest.

The local snowmobile clubs maintain the majority of the numerous snowmobile trails that traverse the forest with the assistance from the Ontario Federation of Snowmobile Clubs (OFSC). Substantial effort and funding has been devoted towards improving existing trails and building new trails in the area. The numerous trails are used intensively by local communities and attract a considerable amount of tourists. In recent years there has been an increase in the amount of use of trails/abandoned logging roads by the four-wheel truck and ATV communities. Many of the events are advertised on the internet and read by many potential users in urban centres to the south.

HCV Designation Decision:

Although there were significant economic aspects of the forest there are no HCV designations under Category 5.

Category 6) Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

18) Is the traditional cultural identity of the local community particularly tied to a specific forest area?

Rationale:

In the context of this standard, people are considered local when they permanently reside within commuting distance by car or boat from the management unit, or where they are part of the First Nation whose lands and territories contain or are contained within the management unit.

Assessment Methodology:

- [Crown Land Use Policy Atlas](#) - Ontario Government
- [Canadian Heritage Rivers](#)
- [Algonquin Land Claim Area](#) OMNRF;
- Background Native Information Report ([FMP](#) supplementary documentation)

Assessment Results:

The following values were assessed from discussions with OMNRF experts in planning, and native liaison. The Local Citizen's Committee provided helpful comments. The [FMP](#) was the primary source of information.

Indigenous Values

For reasons of confidentiality, the "Native Background Information Reports" developed for [FMPs](#) are available through the First Nation or the MNRF Resource Liaison Officer upon consent of the associated First Nation. Native Values identified were incorporated into the final Forest Management Plan or into the operations at the Annual Work Schedule level. For purposes of this HCV report, native values will be discussed only in a generic way and no specific community information will be given.

Algonquin Land claim is progressing and has been considered in allocations for the current FMP.

History:

- 1983 -- Algonquins of Golden Lake presented Canada and Ontario with a formal claim on behalf of the Algonquin Nation for recognition of continuing Aboriginal rights and title to the Ottawa River watershed in Ontario.
- 1985-- Algonquins of Golden Lake served Ontario with Notice of Claim under the Proceedings against the Crown Act that the portion of land under claim which includes much of the Bancroft-Minden FMU had never been surrendered to or purchased by the Crown.
- June 1991 -- Land claim negotiations between Ontario and the Algonquins of Golden Lake began, following the completion of evidence gathered through historical and legal research.
- June 1991 -- Algonquins provided Canada and Ontario with evidence of current 2011-2021 traditional use of the territory including within this FMU.
- December 1992 Canada formally entered the negotiations
- 2016 - Algonquins of Ontario Agreement-in-Principle is ratified and signed by Ontario, Canada and the Algonquin Negotiation Representatives.

The Algonquins have historically used many of the lands that make up the area of their asserted traditional uses of the Algonquin People. This area encompasses lands that go well beyond those lands of the Mazinaw-Lanark Forest. The areas include parts of the Nipissing Forest, Bancroft Minden Forest, Ottawa Valley Forest, large parts of Algonquin Park and other areas not in a forest management unit that are still part of the Ottawa River Watershed. The number of Algonquin people that may have rights has increased in recent years. The increased number of those people being determined through their communities to be Algonquin has resulted in an increase

in use of the forest for other uses. Those uses continue to be primarily harvesting activities that include sustenance fishing, hunting and gathering. There is a continued interest in seeking trapping opportunities, commercial baitfish opportunities, birch bark gathering for other products, etc.

The Algonquins continue to be engaged in forest management and milling operations. For example, the Algonquins of Pikwakanagan conduct forest operations in Algonquin Park and in the Ottawa Valley Forest. Other communities, such as the Bonnechere Algonquin First Nation and the Algonquins of Greater Golden Lake First Nation have several community members engaged in forest operations in both the woodlands and mill operations.

There are sixteen First Nation and Métis communities located in or adjacent to the MLF management unit whose interests and or traditional uses may be affected by forest management activities. These communities are the Algonquins of Ontario communities including Greater Golden Lake, Bonnechere, Algonquins of Pikwakanagan First Nation, Snimikobi, Kijicho Manito Madaouskarini, Whitney and Area, Ottawa Algonquins, Antoine, Mattawa/North Bay; Williams Treaties First Nation communities including Alderville First Nation, Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation; Kawartha Nishnawbe and the Mohawks of the Bay of Quinte. Representatives from these communities were invited to participate on the forest management planning team and many were actively involved in the planning process. It's important to note, however, that not all First Nation and Métis communities are part of the Statistics Canada Census used to create the Social and Economic Description, therefore only six First Nation communities appear in the description found in Supplementary Document E.

The communities represented by Statistics Canada Census are:

- Algonquins of Greater Golden Lake First Nation
- Bonnechere Algonquin First Nation
- Algonquin Nation Kijicho-Manito
- Shabot Obaadjiwan First Nation
- Whitney and Area Algonquins
- Snimikobi (Beaver Creek) Algonquin First Nation

In past planning processes, MNRF and the SFL company invited all Algonquin Communities as well as two Williams Treaty First Nation Communities and one non-status Mississauga community to participate in a manner of their choice. MNRF is the lead agency in consulting with these communities. MNRF welcomes any information at any time including outside of the planning timelines and even after plan completion. The ultimate desire is to continue to document Aboriginal values to ensure that those values are appropriately addressed.

Having regard to the sensitivity of information detailed in the BIRs, NDMNRF sought advice from communities about the degree to which the information provided should be made public. The full AOO BIR is included in this FMP. The BIR can be found in [FMP](#) Supplementary Documentation C.

In addition to the map information, the Background Information Reports submitted may be confidential and only available for review by the MNRF, and the First Nation that developed the report. Any information in the reports is to be used for local use only and not available for any further distribution without the consent of the leadership of the First Nation responsible for the production of the report. The MNRF has agreed to this restriction to assist in protecting the integrity of any identified values and information.

It can, however, be noted that the Background Information Reports were to ensure that site specific Aboriginal values receive an appropriate level of protection in any potential forest operations that may occur. Burial grounds, cultural and spiritual sites are the kinds of information that were essential. Through the review of the reports when received and in cooperation with the First Nation, all values identified in the reports that would require protection that are not already protected through other planning processes (i.e. – shore protection/reserves) will be protected appropriately.

Algonquin values are expected to be identified throughout much of this area.

Table 7. Summary of Native Values designated as HCV

<i>Constructed Stone Features</i>

Natural Stone Features
Culturally Modified Trees
Historical Indigenous Camp
Material Gathering Sites
Indigenous Cultural Heritage Landscapes
Significant Indigenous Harvesting Area

* *Further description available in Table 9.* Overview of HCVs identified, responsibilities for inventory and monitoring, detailed management prescriptions and procedures for evaluating the effectiveness of management prescriptions.

Heritage Rivers and Lakes

There are a number of rivers that either originate in or flow through the MLF that are recognized locally, provincially, or nationally as having significant cultural and historical significance.

Mud Lake

The Local Citizen's Committee mentioned a special ecosystem called Mud Lake in the Mississippi River near Ardoch. It is notable as a productive wild rice producing Lake in Eastern Ontario. It has particular significance to the Native communities. It was part of a major dispute about land use in the late 1970s. It is an HCV, although no special prescription is required in the [FMP](#) due to the protection afforded to wetlands by the [stand and site guide](#).

Logging Heritage Sites

From LCC meeting a number of ideas were presented suggesting that there are old logging cultural sites, such as log chutes, or old equipment. Although no specific locations were obtained, the idea was endorsed in principle and these sites would be considered Possible HCVs.

HCV Designation Decision:

Due to their high cultural and historical significance to both native and non-native communities, and their natural heritage values the following areas are designated HCV:

- All culturally significant values identified to MLFI by First Nation Communities
- Values identified by the Local Citizen's Committee for their local cultural importance.
- Mud Lake in the Mississippi River

Possible HCV – Old logging Heritage Sites

19. Is there a significant overlap of values (ecological and/or cultural) that individually did not meet HCV thresholds but collectively constitute HCVs?

Rationale:

This question can be used for items of special value that may not be captured within the first 18 questions. In essence it is a fine filter questions for special values that may not tightly fit the concept of HCVF. In the case of the MLF there are some HCVs that represent overlapping values.

Assessment Methodology:

The managers and report authors reviewed the list of values assessed through each of the elements of the framework and looked for areas of overlap. Typically these follow large natural features such as significant Lakes and Waterways. The MLF sits relatively high in the watershed, and does not have rivers that were historical routes. Cultural features overlying good resource areas can lead to overlap warranting HCV designation. For example, significant hunting areas near communities can generate both commercial value and local sympathy. In this forest we judged these values to be important and widespread. This abundance has led to overarching protection exemplified by the Madawaska Land Use Plan. In effect the MHLUP captures the overlap in values. As such, it is the embodiment of the "overlap" value that this element seeks to assess. If it had not been identified earlier, it would be an appropriate HCV here.

HCV Designation Decision:

There are no overlapping HCVs designated in this question that have not been previously described.

Managing and Monitoring HCV attributes

The overall goal of managing HCV in keeping with the FSC criterion 9.3 is to safeguard the value. Several points from the standard have guided approach to managing HCVs:

- The Forest Management Plan provides the direction for HCV management; there is no separate list of prescriptions or objectives for HCVs.
- “Specific and implemented measures” – detailed prescriptions are written for the values during the planning process
- “Maintenance or enhancement” – based on the concept of no net loss, managers must aim at ensuring the value is sustained.
- “Precautionary approach” – the precautionary approach sets a high standard for management because it requires a demonstration that no impact is occurring.

It is worth repeating that the plan and the planning exercise drive the approach to HCVs. The planning process contains a significant amount of public consultation, which has also been verified to meet FSC standards through the certification assessment process.

Table 9 provides an overview of the HCV values that were identified in Part 1 of this report. It also describes the responsibility of MNRF for inventory and monitoring. The Company is responsible for implementation of the detailed management prescription. There is a shared responsibility between MNRF and the Company for evaluating the effectiveness of management prescriptions. These prescriptions must be shown to be effective.

Monitoring for HCV attributes are also described in this Table. Only monitoring for designated HCV attributes are listed in this table. The information provided covers only who is responsible and basic information reviewing the monitoring process. It is beyond the scope of this report to review all of the monitoring procedures. As this document is refined more precise description of the location of monitoring procedures will be referenced.

Table 8. MNRF support staff for HCV management and monitoring.

Expertise	Contact
FMP monitoring & management requirements	Natalie Heyblom 289-763-8921 Natalie.heyblom@ontario.ca
Management Forester	Dimitrii Boyko 343-401-0031 Email – dmitrii.boyko@ontario.ca
Planning and Land use Regional planning	Stacy Pinkney Regional Strategic Analysis and Issues Management Coordinator (Acting) 705-749-8169 stacy.pinkney@ontario.ca
Management Biologist Species at Risk	Leeanne Leduc 705-706-7295 Email – leeanne.leduc@ontario.ca

Maps

Detailed maps of the forest values are available at the [FMP](#) website.

Table 9. Overview of HCVs identified, responsibilities for inventory and monitoring, detailed management prescriptions and procedures for evaluating the effectiveness of management prescriptions.

HCV	Attribute (If more precise than HCV name)	Responsibility -- Inventory and Monitoring	Prescription (detailed management – abridged see FMP for detail requirements)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
<i>Falco peregrinus</i> Peregrine Falcon	Nesting Sites Any natural cliff face on which a peregrine falcon is nesting or has nested at any time during the previous 15 years (excluding any part of the cliff face less than 15m between top and base of cliff face), and the area within 1 kilometre of this area.	OMNRF is responsible, conducts special surveys, and responds to reported sightings. Observers for the Ontario Breeding Bird Atlas are likely to find nests and report them to MNRF. VFMC and operators report to OMNRF the new values that are discovered during forestry operations.	MNRF prepares a nest site management plan following approved guidelines, on a case-by-case basis. An AOC extending 3 km from the nest is applied. Within that zone, MNRF determines acceptable levels of disturbance, including timing and the amount and proximity of forest management activities. The AOC is comprised of reserve and three Modified Management Zones (MMZ). Reserve: Delineated cliff face habitat and 0-125 m • Harvest, renewal or tending operations are not permitted. MMZ1: 125-250 m • Harvest, renewal or tending operations are not permitted from March 15 to September 1 at the base of the cliff. • Moderate or high impact operations are not permitted from March 15 to September 1 at the top of the cliff. MMZ2: 250-500 m • Moderate or high impact operations are not permitted from March 15 to September 1 at the base of the cliff. • High impact operations are not permitted from March 15 to September 1 at the top of the cliff. MMZ3: 500-1000m • High impact operations are not permitted from March 15 to September 1 at the base of the cliff.	Compliance: MNRF and MLF compliance staff routinely ensure the prescription is applied appropriately. May also be checked by auditors during the independent forest audits that occur every 5 years. Effects & Effectiveness: Leeanne Leduc Management Biologist, Bancroft 705-706-7295 leeanne.leduc@ontario.ca
<i>Haliaeetus leucocephalus</i> Bald Eagle	Bald Eagle nests and nesting habitat within 400 m Nests known or suspected to have been occupied at least once within the past 5 years	OMNRF biologists are required to determine the presence of nests and whether inactive or active. Tree markers, other technical staff, and loggers are trained. OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC ID -- BAEA-P, BAEA-A, BAEA-I The appropriate prescription is selected based on whether the nest is primary, alternate, or inactive. AOC consists of a reserve and a Modified Management Zone (MMZ). Primary Nest AOC Reserve: 0 – 100 m • No harvest, renewal or tending operations are permitted. MMZ1: 100-200 m • No medium or high potential impact operations are permitted from February 15 to August 15, • Harvest that retains mature forest with ≥60% relatively uniform canopy closure (canopy openings not to exceed individual tree crowns) is permitted within 100-200 m of primary nests*; no harvest is permitted if initial canopy closure is < 60%. MMZ2: 200 – 400 m • No high potential impact operations are permitted from February 15 to August 15, • Regular harvest is permitted subject to residual pattern requirements. Alternate Nest AOC described in FMP Table 10 Inactive Nest AOC described in FMP Table 10	Compliance: MNRF and MLF compliance staff routinely ensure the prescription is applied appropriately. May also be checked by auditors during the independent forest audits that occur every 5 years. Effects & Effectiveness: Leeanne Leduc Management Biologist, Bancroft 705-706-7295 leeanne.leduc@ontario.ca

<i>Chordeiles minor</i> Common Nighthawk	Suitable nesting habitat used at least once within the past 10 years by individual birds or breeding pairs.	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC ID CONI AOC consists of Modified Management Zone (MMZ) only. MMZ : delineated habitat polygon • Harvest, renewal, and tending operations are not permitted from May 15 to September 15.	Effects & Effectiveness: For information contact Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Contopus cooperi</i> Olive-sided Flycatcher	Nesting Territories known or suspected to be occupied	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC ID # WsarB Operational Prescription: 10 ha patch of suitable non-forested wetland habitat (or the entire wetland polygon if <5/10/15/20 ha) associated with individual Element of Occurrence observation points or other reliable sightings associated with breeding activity, or o as otherwise defined by an ESA habitat description or habitat regulation. (Direction applies to suitable breeding habitat delineated by MNRF prior to, or found during, operations) AOC consists of a Reserve. Delineated habitat comprises the AOC. Conditions on Harvest, Renewal and Tending: Reserve: Variable AOC depending upon species • No harvest, renewal or tending operations are permitted	Effects & Effectiveness: For information contact Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Riparia riparia</i> Bank Swallow Colonies	To have been occupied by ≥100 pairs of bank swallows once within the past 5 years	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC ID BS AOC consists of three Modified Management Zones (MMZ). MMZ1 : 0 -10 m • No harvest, renewal or tending operations are permitted from May 1 to July 31 if colony is occupied MMZ2 : 10-25 m • No moderate or high impact activities are permitted from May 1 to July 31 if colony is occupied MMZ3 : 25-50 m • No high impact activities are permitted from May 1 to July 31 if colony is occupied	Effects & Effectiveness: For information contact Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Glyptemys insculpta</i> Wood Turtle	Suitable aquatic and terrestrial habitats occupied by the wood turtle within the past 80 years.	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC ID WT The AOC consists of two types of Reserve and a Modified Management Zone (MMZ). Reserve1: General Aquatic Habitat Features and/or Nesting Areas, and adjacent area 0 – 30 m • Harvest, renewal, and tending operations are not permitted within 30 m of known or suspected nesting areas, and/or delineated aquatic habitat features. MMZ: outer limit of Reserve1 to 500 m (30-500 m) • Operations involving heavy equipment (e.g., mechanical harvesters, skidders, bulldozers) or otherwise representing a potential injury risk to turtles are not permitted from May 1 to September 30.	Compliance monitoring: occurs as part of the routine monitoring undertaken by MLF and MNRF. Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca

<i>Emydoidea blandingii</i> Blanding's Turtle	Suitable aquatic and terrestrial habitats occupied by the turtle within the past 80 years.	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC id BT. Variable, AOC will be comprised of delineated habitat area. The active season for Blanding's turtle is from May 1 to September 30. • The nesting period for Blanding's turtle is June 1 to June 30. Harvest, Renewal and/or Tending Operations: • Harvest, renewal and tending operations are not permitted within 30 m of known or suspected nesting sites or within 30 m of suitable summer habitat. • Operations involving heavy equipment (e.g. mechanical harvesters, skidders, bulldozers) or otherwise representing a potential injury risk to turtles are not permitted within suitable winter habitat (any season), within 150 m of suitable summer habitat during the active season, or within 151-300 m of suitable summer habitat during the nesting period.	Compliance OMNRF and MLFI compliance staff routinely ensure prescription is implemented. Effects & Effectiveness: Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Juglans cinerea</i> Butternut	Small clumps and individuals as encountered in operations.	OMNRF provides training for Butternut Inspectors who monitor this species as part of ESA	Butternut are looked at as part of regular operations. Normal prescriptions require management of this species when encountered.	Effectiveness Monitoring is the responsibility of OMNRF. For additional information: Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Panax quinquefolius</i> American Ginseng	See below	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC id AGL Operational Prescription: Reserve 0-20m • New roads are not permitted. • Landings are not permitted. MMZ 1: 20-120m • New roads are not permitted within 20-120 m of the ginseng patch unless there is no practical or feasible alternative, the potential impact on ginseng habitat and the potential for illegal collection can be mitigated (e.g., corridor width <10 m, no grubbing, no disruption of hydrological flow, locate road as far from ginseng patch as possible and where patch is not visible from road), and the road, including specific location, is identified and justified through the AWS or AWS revision (subject to restrictions on the mapping of classified values). • Winter roads will be used unless there is no practical or feasible alternative. • All roads within the AOC will be decommissioned or otherwise subject to access control measures	Compliance OMNRF and MLFI compliance staff routinely ensure prescription is implemented. Effects & Effectiveness: For information contact Cameron, Graham Management Biologist, Bancroft graham.cameron@ontario.ca

<i>Panax quinquefolius</i> American Ginseng	Patch of ≥ 20 American ginseng plants and habitat	As above	AOC consists of a Reserve and Modified Management Zone (MMZ). Reserve: Delineated Patch & 0-20 m <i>from patch edge</i> • No harvest, renewal or tending operations are permitted. MMZ1: 20-120 m <i>from patch edge</i> • Harvest that retains a minimum relatively uniform canopy closure of 70% (dominant and codominant trees) is permitted. Harvest will normally be restricted to single tree selection. • Harvest, renewal, and tending operations that leave ruts or a significant area of exposed mineral soil are not permitted.	Compliance OMNRF and MLFI compliance staff routinely ensure prescription is implemented. Effects & Effectiveness: For information contact <u>Cameron, Graham</u> Management Biologist, Bancroft graham.cameron@ontario.ca
<i>Panax quinquefolius</i> American Ginseng	Patch of < 20 American ginseng plants and habitat	As above	AOC consists of a Reserve only. Reserve: Delineated Patch & 0–30 m <i>from patch edge</i> • No harvest, renewal and tending operations are permitted.	As above
<i>Physconia subpallida</i> Pale-bellied Frost Lichen	Suitable habitats associated with occurrences of the palebellied frost lichen within the past 20 years.	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC is a reserve. Reserve: Delineated AOC • No harvest, renewal or tending operations are permitted.	Compliance OMNRF and MLFI compliance staff routinely ensure prescription is implemented. Effects & Effectiveness: For information contact <u>Cameron, Graham</u> Management Biologist, Bancroft graham.cameron@ontario.ca

Landscape Species	SAR Species - Olive-sided Flycatcher ; Canada Warbler ; Evening Grosbeak ; Black Tern ; Rusty Blackbird ; Yellow-banded Bumble Bee ; Monarch Butterfly ; Black Ash		Protection of species requiring landscape level management is described by the FMP Ontario's Forest Management Guide (Great Lakes St Lawrence Landscape Guide) creates and uses landscape classes to measure Landscape Guide indicators. Indicators are defined as "variables that are used to describe the current landscape mosaic, make predictions on the future landscape mosaic and assist in evaluating the effectiveness of the Landscape Guide." The forest management plan uses these regional indicators as the biodiversity indicators for objective achievement.	<i>Joel Martineau</i> <i>Management Forester</i> <i>Phone</i> 613-202-2126 <i>Email</i> joel.martineau@ontario.ca
Riparian Species	Lake Sturgeon ; Northern Brook Lamprey ; Silver Lamprey ; Yellow Rail ; Snapping Turtle ;		Protection of species located near water is covered by FMP Conditions on Water Crossing Installation and Maintenance <ul style="list-style-type: none"> Those responsible for installation and maintenance will monitor operations and select operating practices, materials, and mitigation techniques at each water crossing to prevent any serious harm to fish. Section 35 of the Fisheries Act prohibits the death of fish or permanent alteration to, or destruction of fish habitat; The installation of a water crossing will use mitigative techniques that will ensure that all in water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, reduce flows or result in the stranding or death of fish Install culverts on a straight section of stream. When installation of a culvert on a straight section of stream is not possible, minimize the change in stream morphology and impacts on fish habitat; 	<i>Joel Martineau</i> <i>Management Forester</i> <i>Phone</i> 613-202-2126 <i>Email</i> joel.martineau@ontario.ca
Groundwater Recharge Areas with Brook Trout (<i>Salvelinus fontinalis</i>)	Groundwater recharge areas associated with known brook trout spawning sites.	OMNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS).	AOC consists of a Modified Management Zone (MMZ). MMZ: mapped recharge area <ul style="list-style-type: none"> Regular harvest, renewal, and tending operations are permitted. 	Effectiveness Monitoring is the responsibility of OMNRF. For additional information

Madawaska Highlands Land Use Planning Area	Resource Management Zone of the plan applies to forestry	Land use designation is the responsibility of OMNRF. It implements the Madawaska Highland Land Use Plan	The Madawaska Highland Land Use Plan (MHLUP) covers part of Mazinaw-Lanark Forest. It gives "higher-level" direction for specific activities that occur within the defined boundaries. The MHLUP has implications for forest management planning activity on the management unit. The MHLUP management zone affects forest operational consideration. It also has strategic evaluative objective indicators attached to it. The MHLUP provides operational constraints such as block size as well as specific provisions for harvest operations in resource management zones within the boundaries.	Effectiveness Monitoring is the responsibility of OMNRF. For additional information: Linda Touzin, R.P.F. A/Southern Region Forest Program Specialist Tel: 613-258-8268 Email: linda.touzin@ontario.ca Or Contact local planner: Anda Rungus (anda.rungis@ontario.ca 613 254 8414)
Regionally Significant Area of Natural and Scientific Interest – Palmerston Lake	Regionally Significant Area of Natural and Scientific Interest outside of MHLUP	OMNRF is responsible for oversight of this area.	The AOC consists of a modified management zone. Conditions on Harvest, Renewal and Tending - Apply selection or shelterwood silvicultural system Use natural regeneration. - Inside well pronounced ravines with steep slopes and wet or moist bottom, apply selection system and retain residual basal area of 18m ² /ha where feasible. - No harvesting and mechanical site preparation within 15 m measured from the edge of vegetation communities capable of providing an effective barrier to the movement of also known as Bruno Marsh.	Contact regional planning Stacy Pinkney Regional Strategic Analysis and Issues Management Coordinator (Acting) 705-749-8169 stacy.pinkney@ontario.ca
Provincially Significant Wetlands	Locations as identified by Provincial Evaluation System used by OMNRF certified biologists.	OMNRF is responsible for identification and classification as provincially significant.	An MNRF approved Environmental Impact Statement (supporting position that operations will not be detrimental to wetland values) is required prior to any operations within 120 metres of Provincially Significant Wetlands A Buffer of 120m is applied. An area of concern (AOC) prescription in the FMP excludes forestry operations from within a 120 metre buffer around the wetland. Any planned operations within 120 m of a provincially significant wetland are only permitted subject to submission and approval of an Environmental Impact Statement (EIS). If new provincially significant wetlands are identified, amendments will be made to the FMP to ensure consistency with Ontario's Wetlands Policy Statement. See also the discussion on wetlands under Question 13 below.	Monitoring for compliance occurs if any activities are scheduled in the wetland. Provincially significant wetlands are controlled through the Public Lands Act, or the Planning Act. They are guided by the Provincial Policy Statement Contact regional planning Stacy Pinkney Regional Strategic Analysis and Issues Management Coordinator (Acting) 705-749-8169 stacy.pinkney@ontario.ca

Old Growth Stands still existing	Late Seral Stage Forest Units	Inventory and effectiveness of prescriptions is the responsibility of MLF Inc. MNRF has the responsibility to ensure the plan is followed.	The Old Growth Policy (2003) was incorporated into the LTMD by developing plan objectives and indicators for pattern and distribution of old growth forest, achieving and maintaining a natural level of old growth forest on the landscape, and by developing objective indicators for wildlife habitat for species that are dependent on late development stage conditions. Deferring harvest of some areas so that it can become older is the only way to create this habitat component in the future. Similarly, the amount of old growth forest on the management unit is also below the natural level in the Mazinaw-Lanark Forest. The imbalance of certain types of wildlife habitat and the amount of old growth forest is a result of past forest harvesting practices. Three stands with old characteristics have been identified and are deferred from harvest. All operations will follow specific strategies as described in the Madawaska Highlands Land Use Plan (pg. 65 – 71) where that plan applies. Some old growth has been identified under the MHLUP.	If a stand has been harvested, compliance monitoring occurs as part of routine silvicultural monitoring. Effects & Effectiveness: OMNRF monitors to determine the objective achievement including establishment of old growth stands. Contact Management Forester
Indigenous Values	Registered Archeological sites and other locations as determined by Communities.	Confidential to the First Nation Communities.	Confidential to the First Nation Communities. As well, this includes Registered Archeological sites, for which buffers are required as outlined in Guide for the Protection of Cultural Heritage Values.	

Conditions on Regular Operations for AOO Values 01: Historic Traditional Use Trails: Trail which may or may not be in current use and have historical value and may retain archaeological potential.

1. Value 01: Historic Traditional Use Trails: Trail which may or may not be in current use and have historical value and may retain archaeological potential. Trail types may include traditional portages, winter trails and resource use access trails (sugar bush trails etc.). Historical trails will most often be identified through AOO values collections and communicated. Trails may or may not be able to be identified during operations. The locations of values identified through operations must be communicated to the AOO.
2. Value 02: Canoe-Grade White Birch Tree and Cedar Trees These values will be identified during operations as well as through AOO values collections. It is essential that the locations of these values identified through operations be communicated to the AOO as soon as possible.
3. Value 03 Constructed Stone Features These values consist of human-made formations and arrangements of stone. These values indicate; ancient trail markers, caches, rock shelters, pit houses, other habitations, hunting blinds, ceremonial uses, burials etc. These values may occur singularly or in clusters. Some known values may be identified and mapped through values collections. If these values are encountered during operations they will be communicated to AOO. In some specific cases the value may need further assessment by an AOO Consultation Office staff person, ANR or other qualified person determined by the AOO. These values may also be identified through AOO values collections.
4. Value 04 Other Stone Features of Cultural Significance These values may include; significant singular glacial erratic's or groups of erratic's, unique natural arrangements of large stone, rock faces and outcrops. These values are unlikely to be identified during operations. If value lies within area of archaeological potential, archaeological resources may be associated with the location of the value.
5. Value 05 Culturally Modified Trees These values include trees which retain visible signs of historical modification due to usage such as; trail marker trees, historic canoe making modifications (birch and cedar), traditional sugar bush tapping modifications, and other types of culturally modified trees. These values may be identified primarily through AOO values collections.
6. Value 06 Historical and High Cultural Value Camps These values may be significant due to locations of the camp or site area, type of historical or current camp or site use. These values may include camps for cultural gatherings, historical traditional Algonquin hunting, fishing, and gathering camp locations. These camps may range from may be a site with little sign of modern use, may have permanent, temporary structures or no visible structures on site. These values will most often be identified through AOO values collections. The amount of protection required to protect the value will vary according to significance of camp to the AOO. The conditions cannot be applied to sites encountered during operations where there are no structures present, and where no information from AOO identifying the site has been made available.
7. Value 07 Material Gathering Sites: These sites include locations of medicinal plants, edible plants and craft materials. These values may include species that are considered to be uncommon or rare or of high cultural significance and may be sensitive to certain operations. These values do not include individual plants or species that depend on disturbance and growing in open disturbed locations. These values will only be identified through AOO values collections.
8. Value 08 Algonquin Cultural Heritage Landscapes: These sites may be historical or in current use. These values may include sacred and ceremonial sites, pictographs, petroglyphs sites, significant landscape topography, areas of archaeological potential not captured by APA AOC (relic shorelines sites), known archaeological sites (unregistered sites) etc. These values will likely only be identified through AOO values collections studies and other sources of information.
9. Value 09 Significant Algonquin Harvesting Area These values may include; important wildlife habitat features; important areas for harvesting; associated hunt camp locations etc. These values cannot be identified through operations. These values will be identified through AOO values collections. Values may be communicated directly to the SFL/MNRF where potential conflict with planned operations is identified.

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Appendix 1. The Assessment Team

Jeff Barton – Jeff has worked in the private, public and international sectors assisting clients in their efforts to strengthen their business or municipality. He is currently employed by First Resource and is the General manager of Mazinaw-Lanark Forest. He has worked with clients in Central America and Eastern Europe on projects related to sawmilling and production of bioenergy.

Tom Clark -- Tom is an ecological consultant specializing in wildlife ecology. A large part of Tom's work is forest management auditing in Canada and the U.S. using Forest Stewardship Council standards. He has been part of the early development of FSC in Canada working with SmartWood (Rainforest Alliance). He has also done many regulatory forest audits in Ontario. He is a Board member of Westwind Forest Stewardship, the forest Management Company holding the License for the French Severn Forest -- the first large public forest FSC certified in Canada. He is also on the Board of the Muskoka Conservancy. He lives in Bracebridge, Ontario. His Web Page is www.tomclark.ca.

Matt Mertins – Matt is the general manager of Mazinaw Lanark Forest Inc. and a Registered professional Forester.

Appendix 2. Review Comments with Company Response

Review of Assessment for the license forest area of Mazinaw Lanark Forest Inc, Cloyne, Ontario Canada

1. Executive summary of the document

In this section the review evaluates:

- Are the key findings clearly presented and summarized?
- Does the summary accurately reflect the findings and recommendations of the main document?

Findings:

Table 1 needs some work to clearly and accurately present and summarize the report, mainly editorial.

The summary does not site which standard the FSC Principles and Criteria the report was prepared in accordance with until. A reference should be provided, either on the cover page or in the Executive Summary.

Table 1 Comments:

- Under table title, delete "TC to delete the NOT HCVs prior to completion"
- Should repeat header rows at the top of each page of Table 1 for easier reading from page to page.
- If this summary is intended to be informative on its own, should considering adding the wording associated with the Categories of the Framework. It is unclear what the HCV Element numbers match up to and in what reference document.
- Chimney Swift and Black Tern are not included under HCV designation in the first row of Table 1, but are defined to be HCV later in the document. Add these species to the HCV designation column, or delete the entire species list under HCV in this row so it can reference all species at risk included under "Link to Document".
- Eastern Pondmussel and Hickorynut should be moved to the 3rd row of Element 1 since they are designated as "HCV no special prescription required".
- Delete Milksnake and Eastern Ribbonsnake from the 2nd row under HCV designation since all species listed under "Link to Document" in this row are "Possible HCV".
- Yellow Rail link is broken – links to Golden-winged Warbler.
- HCV Element 6 and 18: It is not clear what the 4x "HCV"s under "HCV designation" relate to. Add row lines to match up to "Link to Document" column or clarify in some other way.
- Elements 2, 3, 4, 5, 7, 8, 12, 14, 15, 16, 17 and 19, should be deleted from the table or wording should be added (e.g. simply add "None" to the table or add a separate, following paragraph to explain why they are blank).

Issues: None ☐ Minor ☐ Major ☒ N/A ☐

Clarify and correct the Executive Summary so that it accurately represents the body of the report.

Company response – The FSC standards are now included. Originally, due to the GLSL standard being in draft, the reference and explanation was complicated and left ot later in the report. It is moved forward. Unfortunately WORD was not able to allow header rows on each page. This may have been an issue with different WORD versions being used.

The specific editorial suggestions were appreciated. They were corrected.

2. Scope of the assessment

In this section the review evaluates:

- Is the assessment area and surrounding landscape clearly defined?
- Is there a basic summary of the company and its operations in the area?

c) Are the impact and scale of proposed operations adequately described?

Findings:

The scope of the assessment is well-written and clearly described in three sections of the report: Overview of HCVF Assessment, Purpose & Method and Forest Description.

A clear description of the nature and management of Mazinaw-Lanark Forest is provided in the Forest Description section, highlighting the actual area available for forest management activities, as well as the manner in which MLFI is connected and responsible for various forest management planning and operational activities in the forest area. It is clear that the Provincial Government (MNR) also plays a large role and that management activities are bound by legislation. It could also be said that operations are subject to review and approval by the MNR before implementation.

Figure 3 clearly defines the Crown forest area that comprises the MLF and also helps illustrate the complexity of management described with respect to operating on a landbase that has a large, dispersed amount of private land. Remove the shapefile names from the legend (roads_11 and owner_polygon) and rename the heading of each (Road Class and Land Ownership) to increase the clarity of the map. Impact and scale are well-described, but it may be of benefit to mention the annual harvest area as a percentage of the Crown landbase and/or production forest to further these points, for example, x% of the MLF is allocated for harvest annually. A sentence about actual harvest area may also add more to the understanding of the scale of management in this forest.

It is important to explain “impact and scale of proposed operations” on an ecological and social level, which has clearly been done, as well as on an economic level. It is important for the reader to realize the economic impacts of precautionary principles on operations. This is alluded to on the bottom of page 17 (assessment results of Category 1).

The most recent standard on the FSC Boreal website is August 6, 2004. Correct the reference on page 11 under Purpose & Method. The correct reference is provided in footnote 1, so this is not a major error. The Boreal standard also refers to the “criteria” as Categories. Ensure that consistent terminology is used throughout the report. It should also be clearer that the 19 questions listed in Table 2 are what are referred to as Elements in other parts of the document, especially the Executive Summary, as previously noted in this review.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐

Correct reference to which standard was used and ensure consistent terminology is used throughout document.

Company Response -- Note added about MNR approval of FMP. Improved description of actual and planned operations by adding to Executive Summary.. The map was simplified. Reference corrected and link added. The terminology used is consistent with the conventional use today by HCV Resource Network. There may be some older references in outside documents that are not consistent.

3. Wider landscape context and significance of the assessed area

In this section the review evaluates:

- a) Is the wider landscape convincingly and adequately described?
- b) Are the key social and biological features of the wider landscape clearly described?

Findings:

The position of the MLF is well-described in several sections, with references to its proximity to large urban centres and high value for recreational and cottager use, as well as its importance to many surrounding communities for basic needs and livelihoods. It is clear that the MLF is

important to many individuals and is a good example of a multi-use forest. The social value and landscape-wide ecosystems and geology are well-described. The FMP provides a very extensive description of the wider landscape and could be referenced in the Forest Description section.

A Good Neighbour Policy is described as a tool to mitigate conflict between operations and recreational users, as well as adjacent private landowners. The complexity of operating in a high-use, mixed tenure landbase is described, highlighting the access uncertainties that are created by isolated Crown land parcels.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐

4. HCV assessment process including consultation processes

4.1 Composition and qualifications of the assessment team

In this section the review evaluates:

- a) Was there adequate access to relevant expertise to assess biological and social values?

Findings:

The report makes several references to the Provincially-approved and mandated guides, manuals and legislation that guide the forest management planning process and define the standards for values protection. Values protection is based on the best-available science, as defined by technical experts in the field.

The Local Citizen's Committee was consulted for comment on all values and are considered experts and representatives of social value in the area. It is also highlighted that the entire FMP process goes through a public review and consultation, as well as specialized consultation with First Nations.

It would be beneficial to provide a list of the assessment team and their qualifications, at least providing a reference to the FMP list of authors/contributors/reviewers.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐

Reference the FMP for a list of the assessment team and their assessment role/expertise.

Company Response – Bios added.

4.2. Data sources and data collection methodologies

In this section the review evaluates:

- a) Are data sources and data collection methodologies clearly described or referenced and summarized (and presented in annexes if appropriate), and are they adequate to identify HCVs?
- b) Were reasonable efforts made to fill gaps in the data, proportionate to the impact and scale of the operations?

Findings:

The data sources and collection methodologies are references in Table 3 as information source and rank/status for species at risk and in the assessment methodology and results for other elements. The FMP is a major one. It appears that they were adequate enough to identify HCVs and that a high level of effort was made to review and explore data sources.

The FMP process represents a substantial process and effort in real on-the-ground data collection and continues throughout the course of the FMP through continual values identification and mapping. Credit should be taken for this effort and as such, should be

referenced as the “effort to fill gaps in the data”. Reasonable effort is made and should be acknowledged.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐

It would be beneficial to make reference to high level of effort made in values collection through the FMP process and day-to-day operations throughout the implementation of the plan.

Company Response – Comments added in several places in the text.

4.3. Consultation processes

In this section the review evaluates consultation for identification, management and monitoring:

- Were relevant stakeholders appropriately consulted?
- Is this documented in a verifiable manner?
- Were their views or the information they provided incorporated into the relevant process?

Findings:

In the Consultation section (page 12), it is stated that “the other three steps of the consultation process are documented in this report and subsequent updated to this report”. The reviewer could not locate this documentation. It is unclear if additional discussion on consultation is supposed to occur later in the document or if the process simply occurs as part of the document writing. The report references consultation with MNR species at risk biologists, ecologists and other experts in assessment methodology for each Element – this should be referenced in the consultation section.

A summary of all consultation components should be included. Other groups that were invited to comment should be listed (if there were more in addition to the six listed), including MNR invitation to review if applicable, to demonstrate that relevant stakeholders were appropriately consulted. The consultation section does not indicate if First Nations were consulted as part of the HCV process.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐

Ensure all four consultation components are documented in the report.

Company Response – We added further description to the Consultation section from the FMP. The group of stakeholders are the ones which have expressed an interest IN HCVs in the past.

5. Identification, location and status of each HCV

5.1. Addressing all six HCVs

In this section the review evaluates how the report assesses the individual 19 elements

Findings:

Cat 1 (A) Element 1:

Table 3 provides a clear and repeatable evaluation of a long list of Species at Risk. This is an effective way of presenting the information and rationale and is generally well-written. It would be of benefit to briefly describe the relationship between the 10-year FMP, the Area of Concern prescription concept, what the basis and process for developing AOCs is, how they are implemented on the landscape and how they meet the intent of conserving HCVs before they are referenced, for the first time, in Table 3. The reviewer realizes this is likely explained in other documents associated with the FSC certification process, but as a stand-alone document, it is unclear what an Area of Concern or Condition of Regular Operation is and how they relate to HCVs. A short paragraph (perhaps under Purpose & Method) would suffice.

Opportunities for improvement are listed below:

- Pg. 18 – Under Peregrine risk assessment, should state the full name of the Stand and Site Guide and provide footnote reference, as it is the first time it is mentioned in the document.
- Pg. 18 – Red Shouldered Hawk risk assessment and decision: it should be made clearer that nests are not only located during tree marking, but protected through an AOC concern as defined in the FMP, therefore mitigating the “direct risk from forestry”.
- Pg. 19 – Bald Eagle – same comment as above, make clear that an AOC prescription is included in the FMP that provides protective measures to any discovered nests.
- Pg. 19 – Chimney Swift editorial – under risk assessment “...contains a prescription in the rare event a nest is found”. Add “t” to “even”.
- Pg. 24 – Northern Bat – The wording in the Decision section is unclear. It is included as an HCV and has a general AOC but no special prescription required?
- Pg. 24 – Eastern Wolf – editorial work in Risk Assessment section.
- Pg. 25 – Cougar – Under Decision, clarify wording, for example “Forest management considerations will be evaluated if the presence of cougars is verified”.
- Pg. 26 – Musk, Northern Map, Spotted and Snapping Turtles – The risk assessment and decisions for these species seem contradictory. If AOCs were included in the FMP, it could be assumed that forest management can have an impact on the species. If this is not the case, should provide text to explain. Ensure the same evaluative thinking that was followed for Wood and Blanding’s turtles provided in this table as other turtles.
- Pg. 35 – Bogbean Buchmoth – Risk Assessment and Decision allude that this should be a “HCV no special prescription” not a “Possible HCV”.
- Pg. 38 – The species listed under HCV Designation Decision do not align with Table 3 or the Executive Summary. Editing is required.

Company Response – AOCs are now described in several sections and one section heading. Conditions on Reg Ops is now described in Purpose section. Links added.
 Northern Bats explained in the text. Turtles explained -- there is little risk of impact from forestry because the turtles listed do not venture far from water, unlike Wood and Blanding’s Turtles.
 Bogbean is both possible and no prescription. We opted for possible. Designation section was updated.

Element 2: No endemic species identified. Appropriate background and assessment given.

Element 3:

Editorial and content comments:

- Under Assessment Methodology, change “BMF” to “MLF”. Clarify or provide reference to what a Draft Schedule is.
- Under MEA, should state reasoning similar to DEAs as to why the MEA was not included as a HCV.
- Brook Trout: a reference or references should be provided to the statement “...because they are relatively widespread throughout southern Ontario”.

Company Response – . Editorial changes made. Brook Trout overview Map included.

Element 4:

Under discussion of Ontario’s featured species, should reference previous Elements. E.g. Bald Eagle is included as a HCV under Element 1, deer and moose were discussed in Element 3 and were determined to not fit the intent of HCV due to their population and large habitat distribution.

It could be of benefit to reference the section of the FMP that discusses regionally significant species in a footnote since it is discussed so briefly and is the result of a complicated and in-depth process.

The Designation Decision is appropriate since, although the forest does contain critical habitat for regionally significant species, it is not limiting. The forest management plan has evaluated potential impacts and provided any necessary mitigation.

Company Response – Editorial changes made. Specific reference was made to the Representative Species section in the FMP.

Element 5: Appropriate. There are sufficient measures in place that ensure on-the-ground maintenance and improvement of tree species diversity.

Element 6:

No Forest Reserves are shown in Figure 4 but they are listed as a HCV in the HCV Designation Decision.

If the Unregulated Land Use designations are not present in the MLF or are not designated as HVCs, their inclusion in Table 4 does not add to the report. It is not clear from the table if they are or are not present in the MLF and why they are not included as HCV if they are. Should clarify.

Company Response – The unregulated sites are included because MNR identifies these in some of their information. The assessment of HCVs means that a broad range of values need to be assessed, even if they are not in the end HCVs. Text was added to the Table to explain this.

Cat 2 (B) - Element 7

Effective explanation and evaluation of element. It is clear that the MLF does not meet the criteria of a large landscape level forest.

Cat 3 (C) - Element 8:

The assessment results list SB1 as a possible HCV but the Designation Decision does not include it. Clarify one way or the other.

Company Response – This was a misstatement.

Element 9:

Good reference to the high level of detail on old growth provided in the FMP and the history and resulting age class structure of the landbase. The reference to NRVIS Wildlife and Forestry values map should be linked or deleted since it is not clear where the reader might find this map.

The FMP also identifies young forest as limited and below desirable levels due to the current age class structure, fire suppression and low harvest levels that create young forest conditions. The managers could consider this to be a rare ecosystem type and therefore an HCV that stands to benefit from forest management. No specific prescription would be required.

Company Response – Map references added in several locations including the Exec summary. Young forest - This is true but it was not regarded as at risk. Creating early succession habitat is relatively easy compared to old growth, although in central Ontario it is no doubt uncommon.

Element 10: Appropriate cross-referencing with Element 6 and helpful detail given on ANSIs and EMAs.

Element 11: HCV Designation Decision could be clarified by adding references to which element MHLUP and the Palmerston Lake Regional ANSI are designated under and/or breaking the paragraph into two after "...so designation here is redundant", since it appears the MHLUP is designated as a HCV under multiple elements, including 11.

Company Response – Edits done.

Cat 4 (D) - Element 12: Appropriate.

Element 13: Accurate statement that maintaining continuous forest cover through sustainable forest management provides significant ecological services. Important point made about wetlands being protected from negative impact through regular operational standards, whether they are designated as PSW or not.

Element 14: The assessment results and designation decision are not definitive. "...some steep topography that could be candidates for designating HCVs...", the "primary concerns" listed and then the decision of no evidence of high risk areas sedimentation or erosion reads as contradictory. The FMP provides endless direction on the protection of soil and water from erosion and sedimentation and no doubt minimizes the risk negative impacts of forest operations. The last sentence of the designation decision is accurate and well-written but the wording in the rest of the element could be improved to better support this decision.

Company Response – Clarification made.

Element 15: Appropriate.

Element 16: Appropriate.

Cat 5 (E) Element 17: The current economic uncertainty of the forest industry, even in comparably more stable eastern Ontario, seems slightly understated. Have there been reduced harvest levels, woodlands and mill employment since 2008? The impact of SAR on Timber Value would also be appropriate in this section.

Cottage lakes are listed as an HCV candidate in the assessment section but it is not explained why they were not included as one in the designation decision. Clarification would be beneficial.

Company Response – Employment through central Ontario Woodlands operations has remained relatively stable due to the commitment of the family businesses to stick out the economic downturn. We added a comment about this.

Cottage Lakes were a candidate for assessment but due to their fairly common presence across the region, they were not assessed as HCVs.

Cat 6 (F) Element 18: History should include a statement that clarifies that the land claim negotiations are still ongoing. Some of the text is non-specific to the MLF (for example, "...conduct forest operations in Algonquin Park and in the Ottawa Valley Forest") and does not add to the report. It would appear that the text was prepared for generic use and it is unclear whether there are First Nations that work in the MLF.

Company Response -- relatively stable due to the commitment of the family businesses to stick out the economic downturn. We added a comment about this.

Element 19: Appropriate.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐

Editorial/content errors need to be reconciled under Element 1 so that Executive Summary and text body align.

The rest of the comments in this section are suggestions for clarity purposes that could improve the readability and credibility of the report.

5.2. Data quality

In this section the review evaluates:

- Whether data is detailed, recent and complete enough to make informed decisions on HCVs.
- Is the precautionary principle appropriately invoked in the use of data?

Findings:

The use of direct web links to sources in the HCV report is helpful. It is made clear throughout the document that the FMP provides additional information and was used to make informed decisions on HCVs, in addition to consulting other sources. Places where more information and/or discussion would clarify HCV designation decisions are highlighted in 5.1 above.

The precautionary approach is invoked through the implementation of the FMP and the values protection measures dictated through AOCs. Provincial scientists and specialists define the standards and guidelines and carry out effectiveness monitoring. Monitoring also occurs at a local level by MLFI staff and MNR staff. This is communicated in Table 7 (requiring some edits and additions as discussed in Section 7 below).

Issues: None ☒ Minor ☐ Major ☐ N/A ☐

Data is complete and accurately evaluated.

Company Response – Added links as requested

5.3. Reference to HCV toolkits

Findings:

The FSC Canadian Boreal Standard is referenced as the closest accredited standard to the forest, first in the Overview section. A link is provided but is not live. The version is misquoted in the Purpose & Method section – should be August 6, 2004, not 2005.

The Proforest HCVF Toolkit is also referenced.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐

Fix version reference in Purpose & Method section. Add standard and version used to Executive Summary.

Company Response – Links and references fixed.

5.4. Decision on HCV status

In this section the review evaluates whether the HCV decisions are clear

Findings:

The decisions are clearly stated but do not always align with the assessment discussion. It appears that changes may have occurred without updating the entire evaluation. The authors should read through the HCV decisions noted in 5.1 comments to ensure consistency. Make

editorial changes to Executive summary, Table 3 and HCV summary on page 38 to make sure they all state the same HCV decision for each value.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐
Review HCV decisions and ensure a consistent approach is used.

Company Response – HCV designations clarified as directed in 5.1.

5.5. Mapping decisions

In this section the review evaluates how the report provides maps of HCVs, including the protection of maps for values that are confidential.

Findings:

The only HCV maps provided in the version of the report reviewed were of Element 6. Maps of Element 18 were stated to be confidential, which is appropriate. The Table of Contents lists Appendix 1 as “Map Locations for the HCVF report”. It is assumed this will be added for the final version. It is noted in the preamble that most maps will be linked documents to provide the best and most up-to-date version.

The only other maps referenced in the document are: Areas selected for Operations Maps (not linked or referenced), Google Earth maps of CARTS areas (linked), and NRVIS Wildlife and Forestry values map (not linked or referenced).

Issues: None ☐ Minor ☐ Major ☒ N/A ☐
Unable to fully evaluate at this time.
The lack of maps is identified as major but will be dealt with easily when Appendix 1 is added. When maps are added, they should be linked or related to specific elements of the framework.

Company Response –

Maps are added in a section entitled “Maps rather than in the Appendix which was too late in the document.”

6. Management of HCVs

6.1. Assessment of threats or risks to each HCV within the landscape context

In this section the review evaluates how the report assesses threats or risks from current or planned management activities to each HCV within the assessment area identified.

Findings:

There is a risk assessment provided for each HCV evaluation. It sufficiently describes whether forest management activities pose a threat to the values discussed. Comments are noted in 5.1.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐

6.2. Do proposed management plans adequately maintain or enhance HCVs?

This is out of the scope of this review. The management prescriptions in Table 7 were reviewed and are in line with Provincial standards for value protection.

It is not possible to comment beyond this the results of operational and higher-level monitoring are required to assess the success of the proposed management plans.

Issues: None ☐ Minor ☐ Major ☐ N/A ☒

6.3. Protection of HCVs from land use conversion

Issues: None ☐ Minor ☐ Major ☐ N/A ☒

7. Monitoring of HCVs**7.1. Are monitoring plans clearly described?**

In this section the review evaluates whether methodologies are clearly described and appropriate to meet stated objectives?

Findings:

Table 7 in the report is intended to contain information on responsibility, prescriptions, monitoring and associated expert.

To improve readability of Table 7, should repeat header rows at the start of each page. Either include AOCID for all, or for none. Lines separating rows would also improve readability.

It does state on page 67 that it is "...beyond the scope of this report to review all of the monitoring procedures", however, it appears that significant amounts of information is yet to be placed in the Table 7.

Black Tern and Blanding's Turtle are blank in Table 7.

Monitoring column in Table 7 is blank for HIBS, Butternut, Ginseng, PBFL, FLJS, Brook Trout (this was not designated as a HCV, delete from table), Plant species of Provincial Conservation Concern, Non-forested wetland SAR plant habitat, ANSIs, Palmerston Lake, CHVs, and Lavant Long Lake and Darling Long Lake (these values are not mentioned anywhere else in the report). There is often not a specific contact provided for responsible expert.

Attribute and/or responsibility columns are blank for Cerulean Warbler, Common nighthawk, Olive-sided Flycatcher, HIBS, Ginseng, Red-headed Woodpecker, Golden-winged Warbler, Louisiana Waterthrush, Butternut, PBFL, FLJS, Brook Trout (this was not designated as a HCV, delete from table), Plant species of Provincial Conservation Concern, Non-forested wetland SAR plant habitat, MHLUPA, ANSI, Late Seral Stage forest units, Palmerston Lake, CHVs, Lavant Long Lake and Darling Long Lake.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐

Table 7 is not complete and should be reviewed.

Company Response – Black Tern removed and Blanding's Turtle has been added, in keeping with designations.

As with Table 3, repeating header rows was not working likely due to a formatting issue between different versions of WORD. Lines were added.

Table 7 was edited.

7.2. Are monitoring plans adequate?

In this section the review evaluates whether monitoring plan adequately deal with significant changes arising from management operations or likely external threats/risks to HCVs

Findings:

See 7.1 above. More information needs to be added for the monitoring plan to be adequately illustrated in the report, including a specific contact for HCV experts responsible.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐

Table 7 is not complete and should be reviewed.

Company Response – Table 7 was edited and expert contact provided for each HCV.

Additional information on the monitoring plans in the FMP was added in this section.

7.3. Are plans for a regular review of data built in to the management and monitoring plan

In this section the review evaluates how the report will be updated in future.

Findings:

The section “Keeping HCVs up to date – Process” describes how the report will be reviewed in the future. The report does not reference the year the FMP was completed or when it will be renewed. Adding this would be beneficial.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐

Add FMP year and schedule for update and renewal.

8. Responsible management of other conservation values

8.1. Conversion of non-HCV ecosystems

Issues: None ☐ Minor ☐ Major ☐ N/A ☒

8.2. Responsible management of other conservation Values

Issues: None ☐ Minor ☐ Major ☐ N/A ☒

Disclaimer:

“This review was conducted by Lacey Rose in good faith on the basis of information provided by the authors, CMC Ecological Consulting and MLFI. Ms. Rose can take no responsibility for the accuracy of information provided by MLFI (the reviewee) and cannot be held liable in any way for any damage or loss resulting from the use or interpretation of this review by MLFI or any third party. “