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High Conservation Values in the Sudbury Forest

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

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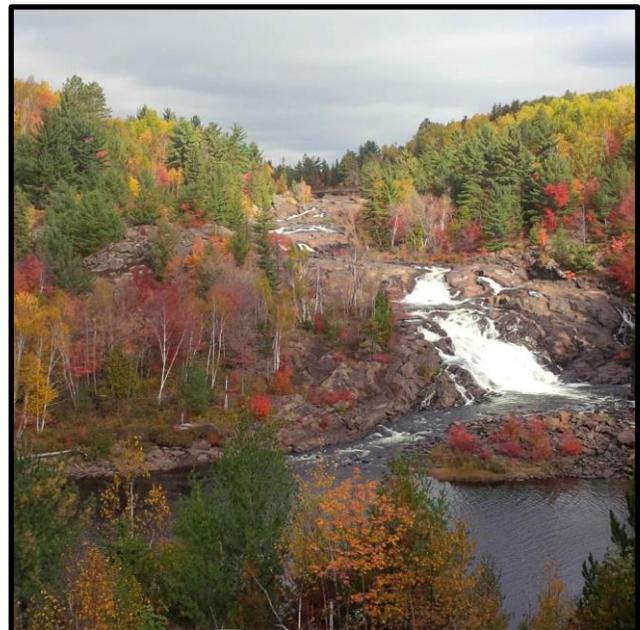


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Important information for reading this document – A High Conservation Value (HCV) assessment is primarily a communications document. It brings together all of the values information in one location to allow for a fair assessment of what is a true High Conservation Value (HCV). To accomplish this, there is a very heavy reliance on many other documents. Most of these are accessible through 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 high speed internet connection.*** Here is some guidance on accessing the supporting documents:

- **Important:** Depending on your computer, links may work with a single click, but some will require you to hold the control key and click on the link.

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- The document is provided in either MS WORD format or PDF because these are the most widely available and functional formats. Apologies for occasional error messages provided by WORD. It will ask about security, but all of the links provided are reliable.
- A few 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 normally more up to date graphical information.
- Common Names in this report are capitalized to improve readability for people unfamiliar with the breadth of species (despite the desires of APA and other style guides).
- Comments are welcome on whether more maps and illustrations would help the readability of the document for the next version.

Please send comments to Tom Clark (tom@tomclark.ca)

Acknowledgements

The authors acknowledge the Sudbury Forest Local Citizen’s Committee for their advice and patience in connecting HCVs with the values they carefully safeguard. Tim Lehman (MNR) provided helpful new information during the draft completion. MNR staff, who are charged with legally safeguarding values were helpful and professional. The work of the Planning Team in preparing the Sudbury Forest Management Plan is acknowledged as the primary basis for this report. This version of the report is based upon the original work of Tom Clark and Kandyd Szuba, updated with changes from the 2020-2030 Draft FMP by Peter Street R.P.F.

Thanks also to Rob Craig, NHIC Information Analyst and Mike Oldham , NHIC Botanist for assistance with the species list.

Please also send any comments you may have to Mark Lockhart (mlockhart@nipissingforest.com).

Acronyms

AOC	Area of Concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CRO	Condition on Regular Operations
EO	Element Occurrence
EMA	Enhanced Management Area
FMP	Forest Management Plan
FSC	Forest Stewardship Council
GLSL	Great Lakes St. Lawrence
HCVF	High Conservation Value Forest
HCV	High Conservation Value
IBA	Important Bird Area
IFL	Intact Forest Landscape
LLF or LLLF	Landscape Level Forest or Large Landscape Level Forest
MNR	Ministry of Natural Resources and Forestry
SF	Sudbury Forest
VFM	Vermilion Forest Management Ltd.
NHIC	Natural Heritage Information Centre
SAR	Species at Risk
SFL	Sustainable Forest Licence

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, please refer to Annex D: High Conservation Value (HCVF) Framework – FSC National Forest Stewardship of Canada (V 1-0).

For a video overview of HCVs in international conservation

[**CLICK HERE**](#)

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Overview of High Conservation Value (HCV) Assessment on the Sudbury Forest

The Vermilion Forest Management Company Ltd. (VFM) manages the Sudbury Forest (SF) under the authority of a Sustainable Forest License (SFL) granted by the Government of Ontario. The SF was FSC certified on May 16th 2006. Part of the certification process is a requirement for the managers to complete an assessment of High Conservation Values (HCVs) using the definition of the Forest Stewardship Council's Principle 9. More information about the company is available at the Vermilion Forest Management website (<http://www.sudburyforest.com>) .

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).

Understanding HCV on public land in Ontario requires an understanding of Ontario's current approach to non-timber forest values. The SF is a large forest, publicly owned and, by Canadian standards, fairly intensively used by the forest residents and the large urban population in Sudbury and environs in the centre of the forest. The scale of the forest alone pushes the requirements for HCV analysis to a high level as described by Annex D: High Conservation Value (HCVF) Framework – FSC National Forest Stewardship of Canada (V 1-0).

Current MNRF 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 in the SF is to verify that the regulated provincial planning and forest management system meet a global standard. There is no intention of revising the current values lexicon, 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 intended for wide distribution to the public.

All of the Sudbury Forest has conservation value. Environmental values are often prominent in conservation, and they figure prominently in this HCV analysis. But also, by definition, a forest has "high" conservation value when "local communities use the forest for their basic needs or livelihoods." This is, no doubt, the case for most of the SF. This forest is, and has been, the mainstay of loggers, trappers, tourism establishments, outfitters, resort owners and, of course, the public for a long time. For Indigenous communities, it has been home for much longer.

Table 1. High Conservation Values - Summary.

This report is a summary of assessments of High Conservation Values (HCVs) in accordance with Principle 9 of the FSC Principles and Criteria for the Sudbury Forest The [Forest Management Plan](#) (FMP) is the guiding document for the management of values and is regulated and approved by the Province of Ontario. This assessment is guided by Annex D: High Conservation Value (HCVF) Framework – FSC National Forest Stewardship of Canada (V 1-0) This HCV assessment resulted in the following HCV designations:

Note this Table contains links which are intended to assist in reading the document efficiently. **Use cursor to highlight web links and links within the document, then Control Left Click for GO TO. ALT left arrow ← returns to original screen location**

HCV Cat.	HCV Element	Value assessed for HCV status (and link to discussion in document)	Management Overview	Monitoring Overview	HCV Designation (CLICK link to view prescription)
Category 1 Concentrations of Biodiversity	1	SF Species at Risk Peregrine Falcon , Bald Eagle , Bank Swallow , Whip-poor-will , Least Bittern , Barn Swallow , Massasauga Rattlesnake , Hog-nosed Snake , Northern Bat or Northern Long-eared Bat , Little Brown Bat , Small-footed Bat , Blanding’s Turtle , Wood Turtle	SAR listed have prescriptions developed specifically for each species (2007 Endangered Species Act) through the Forest Management Plan . MNRF is the lead agency.	Prescriptions in the FMP are monitored for effectiveness by MNRF science program. Expert responsibility for monitoring is in Table 8 .	HCV Peregrine Falcon , Bald Eagle , Bank Swallow , Whip-poor-will , Least Bittern , Barn Swallow , Massasauga Rattlesnake , Hog-nosed Snake , Northern Bat , Little Brown Myotis , Small footed Bat , Blanding’s Turtle , Wood Turtle
		Chimney Swift , Yellow Rail , , Eastern Ribbon Snake , Musk Turtle , Eastern Fox Snake , Silver Lamprey , Butternut , Northern Map Turtle , Spotted Turtle , Snapping Turtle , Milk snake , American Ginseng	May occur in the forest, but no element occurrences are recorded; for some species, prescriptions have been developed in the event the species is identified in the forest.	No effectiveness monitoring required of these prescriptions, as currently there are no occurrences of these species.	Possible HCV Prescription developed in 2020 FMP or on a case by case basis.
		Bobolink , Eastern Meadowlark , Canada Warbler , Black Tern , Common Nighthawk , Olive-sided Flycatcher , Cougar , Loggerhead shrike , Lake Sturgeon , American Eel , Channel Darter , Northern Brook Lamprey , Yellow-banded Bumble Bee , Monarch ,	Occurs, but species is addressed through Conditions on Normal Operations; or there is no interaction with forestry operations; no	No effectiveness monitoring required, as there are no prescriptions because there is no direct interaction with forestry.	HCV no special prescription required

HCV Cat.	HCV Element	Value assessed for HCV status (and link to discussion in document)	Management Overview	Monitoring Overview	HCV Designation (CLICK link to view prescription)
		other NHIC identified plants see Error! Reference source not found.	special prescription required.		
Category 1 Concentrations of biodiversity	2	Endemic Species			None
	3	Seasonal Concentration of Wildlife Deer wintering area	Operators follow prescription in FMP (Stand & Site Guide)	Compliance monitoring by VFM	HCV management
		Self Sustaining Trout Lakes	Buffer in FMP	Compliance by MNRF and VFM	HCV management
		Large Heronries (>25 nests)	Large heronries follow the prescription provided in the stand and site guide (MNRF)	Monitoring is by MNRF as described in the Stand & Site Background	Possible HCV
	4	Regionally Featured Species Elk Cervus elaphus	See Elk Mgmt Plan ; Elk in SF managed by deer and moose guides	Monitoring prescribed in Elk mgmt plan	HCV no special prescription required
	5	Edge of Range Species White Elm, Black Cherry, Ironwood, Yellow Birch, Bur & Red Oak, Silver Maple, Ash & Basswood (>2ha)	MNRF prescriptions in silvicultural guide & FMP	VFM trains operators for CRO & compliance	HCV management
	6	Conservation/Protected Areas 6 b - Parks, and Conservation Reserves (Table 4) Wolf Lake Old Growth Forest 6 c Temagami Land Use Plan	Park areas are regulated (=no forestry) Wolf Lake is a Enhanced management area	Compliance monitoring along the boundaries (no trespass) by VFM & MNRF	HCV management
Cat 3	7	Large Landscape Level Forest	Intact (remote) forest: TLUP enhanced management area; specialized AOCs	Compliance by MNRF and VFM	HCV IFL NAM_69
Cat 3 RTE Ecosyst.	8	Rare ecosystems Cedar-Yellow birch ecosystem	Stands identified for associated ecosite types in planning inventory	Covered by Silvicultural Ground Rules; CRO Supp Doc 6.1(q) 3.2	Possible HCV

HCV Cat.	HCV Element	Value assessed for HCV status (and link to discussion in document)	Management Overview	Monitoring Overview	HCV Designation (CLICK link to view prescription)
	9	Significantly Declined Ecosystem 1 Late seral White & Red Pine 2 Late seral Tolerant hdwd (N of Hwy 17) 3 All Hemlock stands 4) Significant Ecological Areas	MNRF developed the provincial old growth strategy and is responsible for monitoring it; FMP Old Growth Strategy.	MNRF monitors provincial policy HCV monitoring	HCV management
	10	Fragmented landscapes Enhanced Management Areas w Access control	Created & Monitored through the Ont Living Legacy Land Use Plan	MNRF is responsible for land use controls	HCV management HCV IFL NAM_69
	11	Unique Ecosystems Woodwardia Bog & West Bay Wild Rice	Same as Provincially Significant Wetlands	Compliance monitoring by Company	HCV Management
Category 4 Ecosystem Serv.	12	Water Source Municipal Water Supplies Springs	For guidance see Source Water Protection	MNRF oversees compliance with reserves on MSW	HCV Management
	13	Flood Protection Provincially Significant Wetland	FMP provides 120 m buffer around PSW.	Compliance MNRF and VFM staff ensure	HCV PSW
	14	Soil Erosion /slide Protection			None
	15	Fire Barrier			None
	16	Other industry			None
Cat. 5 Com	17	Communities & Livelihoods Georgian Bay Biosphere Reserve	The portion of the Biosphere reserve in SF is not near forestry	The portion of the Biosphere reserve in SF is not near forestry	HCV – no special prescription required
Cat 6 Culture	18	Cultural: Native & Non-native 18a) Native Values All identified native values are considered HCV 18b) Historical Rivers & areas of the SF	Protection is determined based on the value. Normally buffers apply.	Compliance MNRF and VFM compliance staff	HCV management of NV HCV manage heritage
	19	Overlapping values			None

In the SF, law and common sense require extensive ongoing consultation, although compromise and difference of opinion are routine. To this end, the [HCV Common Guidance](#) lists some best practices which are reviewed here:

- Key stakeholders should be made aware that an HCV assessment is being conducted -- The FMP process which is the foundation of consultation in Ontario is widely publicized and includes regular monthly meetings with the public through the Local Citizen's Committee. National and Provincial ENGOs are also informed. The report itself is a public document and comments are always welcome.
- Participation can take many forms... planning, participation on focused consultations – LCC have a representative on the planning team, LCC is kept updated.
- Report should contain evidence that relevant stakeholders were consulted – this report describes consultation. LCC minutes are available to the public if there is an interest in detailed discussions of values issues.
- Feedback on conclusions to the consultees as appropriate – the HCV report is publicly available. Copies are sent to people who express an interest or ask questions.

In assessing HCVs for the Sudbury Forest, VFM 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 HCVs was the main challenge of this report. VFM and the MNRF biologists and 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, in most cases a system of effectiveness monitoring, and are operationally sound. The managers are always open to reconsidering any of the approaches to HCVs.

2015, 2016 and 2020 Updates to version 4.4

This report builds upon the earlier reports, and on the ongoing development of appropriate management techniques for sensitive values on the forest. Comments and suggestions about any of the prescriptions are welcome at any time and should be directed to VFM.

This report builds on the 2020-2030 FMP for the current list of species at risk. As is discussed later, due to the regulatory framework in Ontario, the [FMP](#) is the defining document for implementation of values. This has the advantage that government compliance program can legally enforce HCV activities.

Purpose and Method

This report is provided to meet the requirements for the FSC certification assessment of the Sudbury Forest. The plan included in this report is VFM's best effort at outlining the steps necessary and already being taken for careful management of HCVs. Comments and suggestions are welcome at any time and should be directed to VFM.

HCV National Framework (Canada)

The framework provided in Annex D: High Conservation Value (HCVF) Framework – FSC National Forest Stewardship of Canada (V 1-0) has been used for this report.

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 HCVs must “maintain and enhance the attributes which define such forests”. The four P9 criteria are:

9.1 requires an assessment

- 9.2 the development of strategies to maintain or enhance HCVs
- 9.3 the implementation of strategies to maintain or enhance HCVs
- 9.4 requires monitoring the effectiveness of the management

As shown in [Figure 1](#), the FSC standard follows a simple continuous improvement cycle.

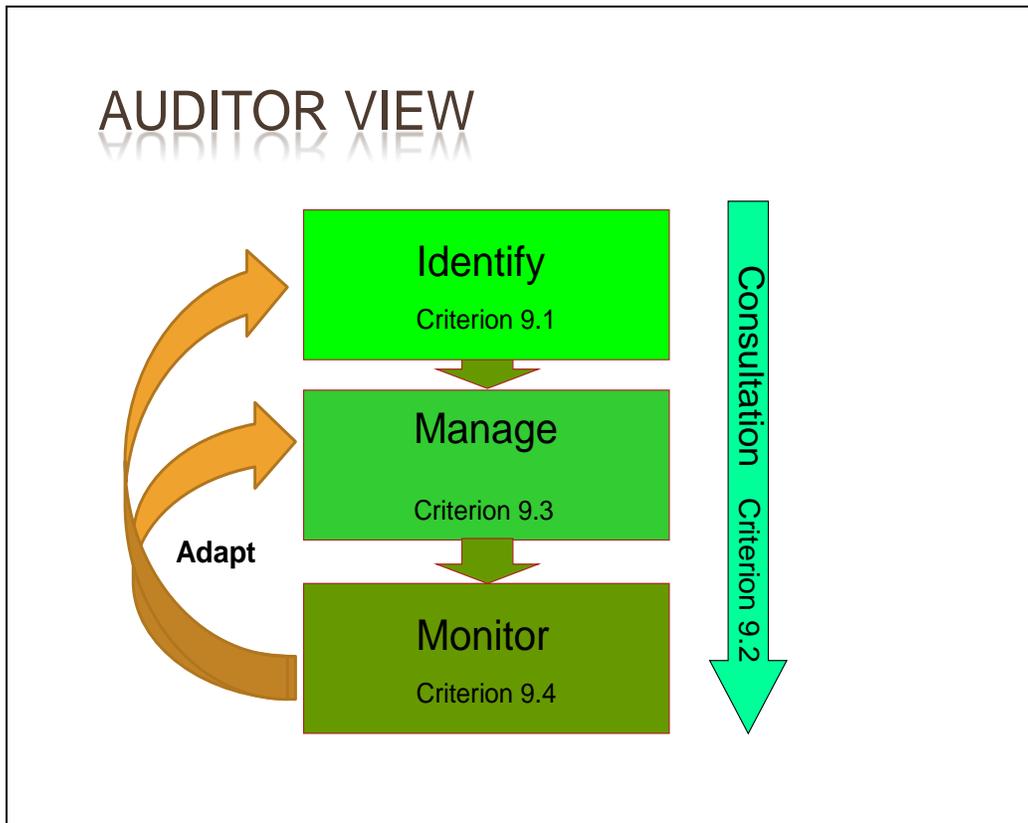


Figure 1. A simplified view of the FSC Principle 9 criteria showing the continuous improvement (adaptive management) cycle.

Assessment for HCV Attributes

The National Framework provides a list of 19 questions that assist in determining whether individual attributes are HCVs. For each value the SF managers, with expert consultation, have defined thresholds for designating a High Conservation Value. Thresholds are levels, numbers, types or locations. The thresholds can relate to the number of species from a particular taxonomic group, a minimum size of a forest type, or the presence of a particularly important species. In some instances the threshold is qualitative. Even though there is evidence that a value may not require HCV status, they are designated simply on intuition, or a groundswell of interest; HCV assessment follows the precautionary principle. In some instances, the process is more art than science.

The [Common Guidance](#) has a practical description of how large forests, such as the Canadian SFLs, should make reasonable efforts to identify and set thresholds for HCVs:

“Reasonable efforts should be made to fill gaps in the data, proportionate to the impact and scale of the operations. Where data are incomplete (spatially, temporally, taxonomically, etc.), expert consultation and field verification (i.e. physically visiting at least a sample of areas of very large

sites and consultation) will be important. Given that it may be impractical or impossible to survey an entire site and its area of influence, field verification should focus on those areas most likely to contain HCVs.”

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

HCV Designation Decision by the Manager

Under the FSC system the manager makes the final designation of HCVs. This decision must be transparent (as documented in this report) and based on expert, stakeholder and First Nations input and advice. **It is the Forest Manager who determines the HCV status for this report, in this case it is the General Manager of VFM.**

OMNRF’s 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 Indigenous liaison officials. In P9, the standard refers specifically to the responsibility of “the applicant” towards HCVs. In the case of FSC, VFM is responsible for the “special” values or HCVs, but in the Ontario system, the government is legally responsible. To carry out this responsibility, the manager must ensure that the government is meeting the spirit of the FSC standard. VFM will ensure that HCVs are properly assessed and designated in the FSC context. The Company holds the responsibility for operation protection of the values by properly implementing the prescriptions for each of the values. This report is the responsibility of VFM, and meets the requirement of 9.1 in the assessment.

Consultation

There are four components to the HCV 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). First Nation & Metis consultation occurs and is guided by MNRF, as a Nation to Nation mandate defined by the [MNRF declaration Order](#). The Company also discusses issues of an operational nature with the communities, and safeguarding of values is preeminent. All FNM values are considered HCV.
- Consultation with technical experts about species, ecosystems, local community values, First Nation values and any other values that are considered potential HCVs
- 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.

MNRF’s requirements for public consultation in bullet 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 also serve as part of the HCV documentation process.

The Local Citizen's Committee LCC is a knowledgeable group of local residents, representing various stakeholder interests. This group is charged with advising the District Manager and the Planning Team on the production of the Forest Management Plan. LCC values were identified first through the FMP process and that is the source for most of the values. The FMP process provides the core values that are designated HCV. The FMP process is the main LCC contribution, since there is a huge time commitment to values discussion at those ongoing monthly meetings. The LCC provided further clarification to the identification of some of the local values during the HCV meeting, including recommending several new values.

Bullet 2 refers to consultation with technical experts. This is done through consultation with local biologists. These contacts are described as part of the management and monitoring (Table 8. Overview of HCV identified on Sudbury, responsibilities for inventory and monitoring, detailed management prescriptions and procedures for evaluating the effectiveness of management prescriptions.)

After the initial circulation of Version 1 (consultation with regional stakeholder, bullet 3), there were comments provided by World Wildlife Fund. A number of modifications occurred based on the WWF comments at the time. Other groups have been invited to comment, although given capacity challenges comments are infrequent. New comments will be considered at any time. Organizations receiving copies are The Nature Conservancy (TNC), World Wildlife Fund Canada (WWF), Nature Conservancy of Canada (NCC), Ontario Nature, Ontario Federation of Anglers and Hunters (OFAH) and Canadian Parks and Wilderness Society (CPAWS).

The SF HCV report was part of an earlier regional review for Ontario conducted by WWF Canada (Clark, T. and A. Hayes 2007). The results of this report were presented to a workshop sponsored by The Nature Conservancy (U.S.) in Toronto at that time, which brought together a number of ENGOs to review the progress and problems with HCV reporting in Ontario. In addition to TNC and WWF, participants included Forest Ethics, Nature Conservancy of Canada, and Ontario Nature. The HCVs listed in this version have been updated with the species at risk identified in the 2020 FMP and are not much different from previous versions of this report.

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 how and why the forest is managed as it is. It is a public record of forest management process and decision-making. The Crown Forest Sustainability Act mandates this process (Government of Ontario, 1994). The process for keeping the FMP up to date is part of the FMP system.

It is easy to disregard the effort that goes into the FMP process. This is a two and half year effort with dozens of people involved. Data collection for the plan is ongoing continually. For more information it is recommended the reader considered the whole process as described in the [FMP Manual](#).

Reporting on HCVs is a necessary and important part of the FSC process. The contents of this HCV report need to be reviewed periodically to ensure that it is up to date with FMP, and is in keeping with FSC P9. Of particular interest are the values designated "possible HCV" which need to be reviewed periodically. VFM will ensure, as part of the responsibilities of the designated staff member for certification (currently the General Manager), that HCV is regularly updated (not necessarily annually). Annual maintenance audits by the certifier will ensure that the report remains relevant and useful.

Forest Description

The Sudbury Forest is a Forest of approximately 1.1 million ha, located around the city of Sudbury, Ontario. The total area forecast for regular harvest for the 10-year term is 62,154 ha. More information about harvest is available at the [VFM website](#). The Forest is located in two of Hill's site regions (4E and

5E) and encompasses 5 of Hill's site districts (4E-4, 4E-3, 5E-5, 5E-6, and 5E-8). The Sudbury Forest is entirely within the Great Lakes St Lawrence Forest Region (GLSL). The MNR defines the GLSL Forest Region (please refer to the VFM [website](#)), as a transitional forest between the Hardwood Forests Region to the south and the Boreal Forest Region to the north. The Sudbury Forest exhibits this transition well, with tolerant and mid-tolerant hardwoods in the south along the French River and in Killarney Park and pure stands of spruce, poplar and jack pine in the northern portion of the forest. Wildlife habitat is diverse and rich; fisheries are a significant resource and wetlands contribute to both fish and wildlife habitat and to recreational activities such as birding, hunting and fishing.

The Great Lakes-St. Lawrence forest region commonly includes such species as red maple (*Acer rubrum*), occasional sugar maple (*Acer saccharum*), red oak (*Quercus rubra*), basswood (*Tilia americana*), white pine, (*Pinus strobus*) red pine (*Pinus resinosa*), hemlock (*Tsuga canadensis*) and mid-tolerant hardwoods such as yellow birch (*Betula alleghaniensis*) and ash (*Fraxinus* spp.). Predominant species found in the northern, more Boreal portion of the SF include conifers such as black spruce (*Picea mariana*) and white spruce (*Picea glauca*), jack pine (*Pinus banksiana*), larch (*Larix laricina*), balsam fir (*Abies balsamea*) and eastern white cedar (*Thuja occidentalis*). The rest is comprised of shade-intolerant hardwoods, which include trembling aspen (*Populus tremuloides*) and white birch (*Betula papyrifera*).

Provincial parks and Natural Heritage Areas provide a significant contribution to the protection of other forest resources. In those parts of the forest where timber operations are permitted, the effects of timber operations on non-timber resources are mitigated through planning for 'Areas of Concern' (AOC). AOCs are applied around sensitive values, providing a zone of protection for the value through a required set of operational restrictions including timing and modifications to the actual operations within the AOC. Operational restrictions can include no harvesting within the AOC.

Several major highways provide main transportation corridors in the Forest (see Figure 2.2). Highway 17 traverses the central section in an east-west direction and intersects Highways 69 North and South in the City of Greater Sudbury. Highway 144 to Timmins goes in a northwest direction from the City of Greater Sudbury. The remainder of the Forest has a complex network of secondary highways, municipal roads, local road boards, private roads, and forest access roads. The forest access roads scheduled to be constructed or maintained throughout the five-year term are detailed in Section 13.0 of the FMP.

Private land comprises approximately 26% of the Sudbury Forest. Most of the private land is concentrated within the City of Greater Sudbury and the rural areas of Hagar, St. Charles, Alban and Noelville.

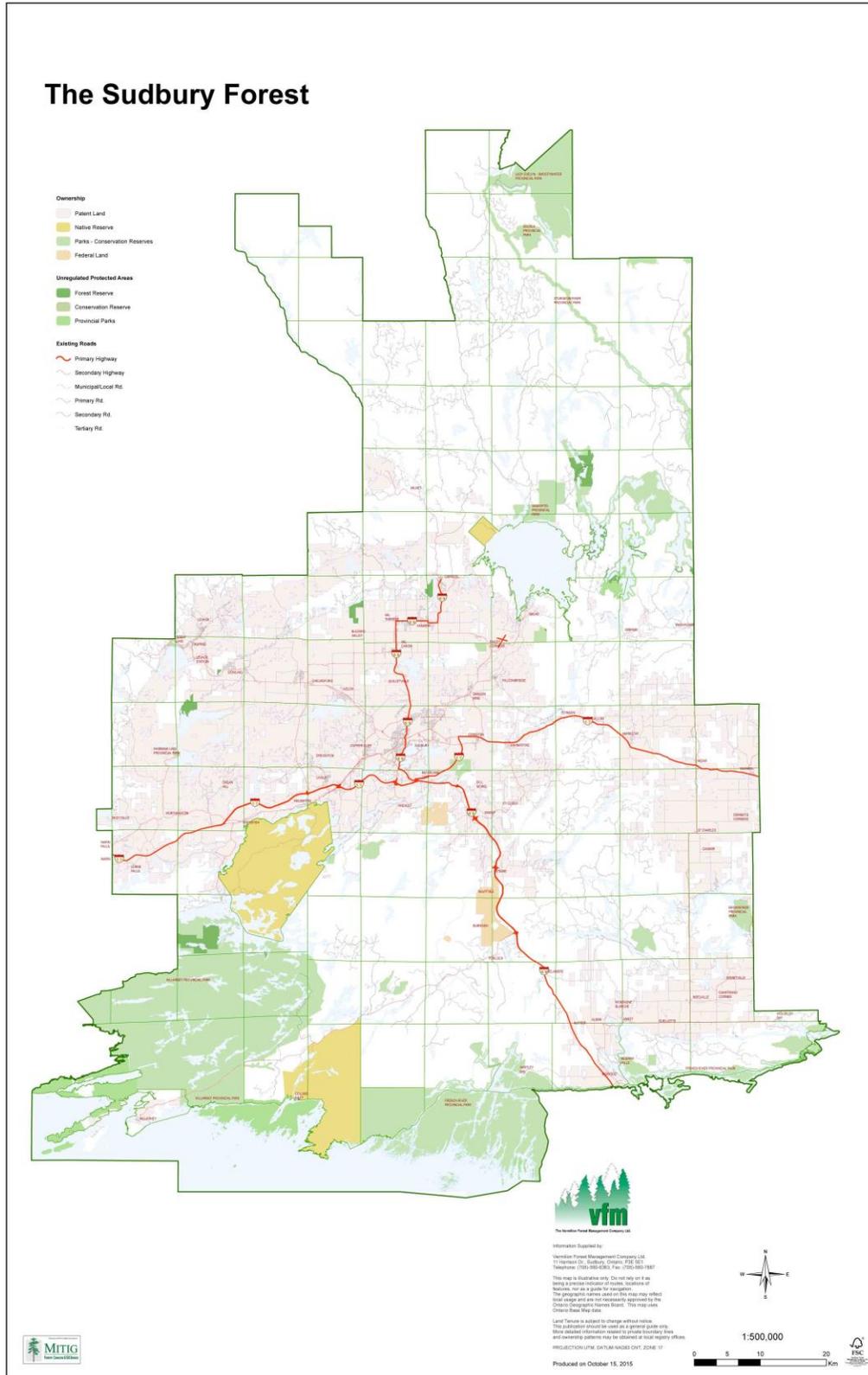
First Nations

Seven First Nations are located within or near the Sudbury Forest management unit. These include:

1. Henvey Inlet First Nation, which has three separate parts to the reserve, south of the French River.
 2. Atikameksheng Anishnawbek First Nation just south of Sudbury (formerly known as the Whitefish Lake First Nation; Coast District, At East End Of Whitefish Lake West Of Stuart Lake)
 3. Wahnapiatae First Nation near Capreol
 4. Whitefish River First Nation on the route to Manitoulin Island
 5. Dokis First Nation southwest of Lake Nipissing.
 6. Temagami First Nation on Lake Temagami, has traditional land use areas in the Sudbury Forest.
 7. Wikwemikong Unceded Indian Reserve #26 on Manitoulin Island
 8. Wikwemikong Indian Reserve #3 Point Grondine is located within the Sudbury Forest, on the north shore of Georgian Bay between Killarney Provincial Park and highway 69.
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- 1) Henvey Inlet First Nation is located on the French River Reserve 11 km south of the French River and the Henvey Inlet Reserve, located on the northeast shore of Georgian Bay. Henvey Inlet First Nation has a land base of 12157.8 hectares, comprising of 135 members living on the reserves with another 242 living off the reserves.

- 2) [Atikameksheng Anishnawbek First Nation](#) is located approximately 19 km west of the Greater City of Sudbury. The current land base is 43,747 acres. As of April, 2014 the total population is 1147 members.
- 3) Wahnapiatae First Nation, a signatory to the Robinson-Huron Treaty of 1850 is located 50 kilometres (km) north of Sudbury. With a land base of 1063 hectares, Wahnapiatae First Nation comprises approximately 320 members with about 60 of those living on the reserve.
- 4) Whitefish Lake First Nation is located approximately 15 kilometres (km) southwest of the City of Greater Sudbury and are member to the North Shore Tribal Council. With a land base of 17,704.5 hectares, Whitefish Lake First Nation consists of approximately 840 band members living both within and off of the reserve.
- 5) Dokis First Nation is located approximately 16 kilometres southeast of Lake Nipissing, on the French River. It has a land area of approximately 12262.2 hectares. It is divided into 2 large parts consisting of a north island, Okikendawt, and a large southern peninsula. The main settlement is found on Okikendawt Island. Road access to the First Nation is by a gravel road which connects with highway 64, approximately 30 kilometres to the northwest. There are approximately 951 members, most off reserve.
- 6) Temagami First Nation is located 88.5 kilometres (km) northwest of North Bay. With a land base of 293.4 hectares, Temagami First Nation has a member registration of 639 members, with 192 living on reserve and 447 members living off reserve.
- 7) Wikwemikong Unceded Indian Reserve #26, located on Manitoulin Island, 160 kilometers (km) southwest of Sudbury and 35 km southeast of Little Current, is home to the People of the Three Fires –Odawa (Traders), Ojibway (Faith Keepers) and Pottawotami (Fire Keepers). The largest of six First Nations' communities on Manitoulin Island, Wikwemikong is recognized as Canada's only unceded Indian Reserve. With a land base of 55,000 hectares on the reserve with additional hectares under resolution (boundary review), Wikwemikong Unceded Indian Reserve consists of approximately 5,500 members living both within and off of the reserve.
- 8) Wikwemikong unceded Reserve #3 Point Grondine is located within the Sudbury Forest, on the north shore of Georgian Bay between Killarney Provincial Park and highway 69.

Figure 2. Sudbury Forest 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 questions posed by in Annex D: High Conservation Value (HCVF) Framework – FSC National Forest Stewardship of Canada (V 1-0). These elements are divided into six separate categories related to the definition of HCV above. The Elements are numbered sequentially to 18, but are in six groups Table 1.

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:

Ensures 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:

- Natural Heritage Information Centre (NHIC) Conservation Data Centre (http://nhic.mnr.gov.on.ca/nhic_cfm)
- Ontario Breeding Bird Atlas (<http://www.birdsontario.org/atlas/map.jsp>)
- [IUCN Red List](#)
- [COSEWIC](#) list of species at risk and COSEWIC status reports
- [COSSARO](#) list of species at risk
- Ontario Herptile Atlas maps
- Sudbury [Forest 2020-2030 Management Plan](#)
- [NatureServe](#) Status

The Endangered Species Act RSO 2007 came into effect in 2008. This has changed the approach to managing many species. All SAR habitat is regarded as HCV. In developing the SAR list for the FMP, Section 2.1.4.1, MNRF biologists reviewed local information and MNRF's Natural Heritage Information Centre (NHIC) records to determine the occurrence of threatened and endangered species and species of special concern on the Sudbury Forest.

This provides a list of occurrences on the Sudbury Forest, but this may not be the complete list, depending on the difficulty in finding some species. Therefore, the periodic review by local biologists is still an important step. [Table 2](#) is based on a combination of sources. Note that [Table 2](#) IS NOT A CONTROLLED DOCUMENT. Because species designations may change without warning, the final source for management of species at risk is the Forest Management Plan and the prescription listed in that plan. In general the assessment of the HCV status of a species will change very infrequently. The FMP list is provided in Appendix 2.

Appendix 2 is also the SAR list for indicator 6.4.1 in the FSC national standard.

Assessment Results:

Table 2 below describes all of the rare species with records of occurrence within the boundaries of the Sudbury forest (excluding Killarney Provincial Park, French River Provincial Park, and the OLL park additions). The table includes species that are considered to be "at risk" (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).

Any “rare” species that had actually been observed in the Sudbury Forest and recorded in a relevant database was considered to be a candidate for assessment. At a global scale, the presence of G1 (globally extremely rare) and G2 (globally very rare) occurrences were considered to be the relevant NHIC designations. At the provincial level, S1, S2, and S3 ranks were considered to be relevant. No G1/G2 species have been identified on the Sudbury Forest.

Species which may occur on the forest but are very rare are assigned the classification of “possible HCV”. In the event of an actual nesting site or other critical habitat being located, the habitat would be considered HCV. The FMP would be amended to include an appropriate prescription. This change was made in Version 2 of the report. There are no special management prescriptions that apply at this time. Many species are managed under a “coarse filter” approach. Basically this means: provide natural amounts of each forest type and selected age classes on the landscape, apply a natural landscape pattern, retain wildlife trees on harvested sites to create natural structural conditions. All species benefit from this type of activity.

In this version of the report, for SAR, habitat is designated HCV based on its biological merit and consistency with the intent of the FSC definition. Some HCVs which are not impacted by forestry operations, there is no prescription required.

Some species such as American Pelican, Shortjaw Cisco and Shortnose Cisco occur in Georgian Bay, and are not within the bounds of the SFL. They were excluded for this reason, and for simplicity.

As stated earlier, 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 no special prescription required** – means that the value is significant at least at the regional level, but there is no interaction with forestry and consequently no special prescription or monitoring is required. In other words, normal good forestry practices avoid impact on the value.
- **Possible HCV** – occurrence is not confirmed (usually because of difficulty in locating individuals), needs further information about distribution and abundance, and or consultation required; follows P9 and precautionary principle
- **Not HCV** – follows guidance of P1 to P8 for management and monitoring

Table 2. HCV designation decisions based on: Species listed as endangered or threatened by COSSARO, and covered by the Endangered Species Act; Other listings or notable reports are also included Nature Serve, COSEWIC, CITES or IUCN; or listed as “rare” by NHIC and with records of occurrence on the Sudbury Forest (excluding Killarney Provincial Park, French River Provincial Park, and the OLL park additions).

Note that the COSSARO ranking is linked to the Endangered Species Act ([Species at Risk in Ontario List](#)) and all designations should reflect those regulatory requirements. This Table was updated to that list in August 2015 and again in September 2016 see the footnote* at the bottom of this Table for links and details.

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (Rankings defined below**) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
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Birds

<p><i>Falco peregrinus anatum</i> Peregrine Falcon</p>	<p>MNRF Legal Status Recovery Strategy MNRF map IUCN Map</p>	<p>1) Considered threatened in Ontario and special concern in Canada. Across North America, precipitous declines in populations were associated with widespread, intensive use of persistent pesticides, particularly DDT in the 1960s and 1970s. 2) Preferred habitat is at low risk from forestry operations because typical nest sites are steep cliffs, and peregrines hunt over open areas. Known nest sites are protected within a 3 km Area of Concern and a nest site management plan is prepared by MNRF. 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. Because SARA lists as threatened, the peregrine falcon is designated HCV. 3) The 2020 FMP has a prescription for the protection of nest site (PF).</p> <p>HCV</p>
<p><i>Ixobrychus exilis</i> Least Bittern</p>	<p>MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN map</p>	<p>1) Considered to be threatened in Ontario and Canada. On assessment, there were no confirmed records for OBBA 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 2020 FMP contains Area of Concern prescriptions for Provincially Significant Wetlands that would protect important breeding habitat for this bird (PSW). The 2020 FMP also has a prescription for the protection of wetland bird breeding habitat (WB). NHIC did not find records in vicinity, so not HCV.</p> <p>HCV</p>

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Buteo lineatus</i> Red-shouldered Hawk	MNRF Legal Status (not listed) IUCN map	<p>1) An uncommon to rare breeding species throughout central Ontario, preferring large forested areas with adequate wetlands nearby. 292 extant EOs in the NHIC database. Stable. Listed by both COSEWIC and MNRF as "not at risk". Formerly listed as special concern.</p> <p>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. No longer designated in Canada; species stable and common through international range.</p> <p>3) The 2020 FMP has 3 AOC prescriptions for red shouldered hawk nests (alternate - RSHA, inactive – RSHI & primary- RSHP nests).</p> <p>Not HCV</p>
<i>Haliaeetus leucocephalus</i> Bald Eagle	MNRF Legal Status Recovery Strategy MNRF map IUCN	<p>1) Breeding population in central Ontario are small, but expanding. Several locations in SF</p> <p>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 MNRF. Eagle nests occur near the Forest but had not been recorded on the map from MNRF. It is Special Concern and is designated HCV.</p> <p>3) The 2020 FMP has 3 AOC prescriptions for bald eagle nests (alternate - BEA, inactive – BEI & primary- BEP nests).</p> <p>HCV</p>
<i>Asio flammeus</i> Short-eared Owl	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	<p>1) An uncommon to rare and very local (irregular) 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.</p> <p>2) Risk due to forestry is minimal due to its use of open areas.</p> <p>3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. Listed so requires HCV designation.</p> <p>4) The 2020 FMP has an AOC prescription to protect ground nests (GN)</p> <p>Possible HCV</p>

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Chaetura pelagica</i> Chimney Swift	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	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 (MNRF) 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). 4) A prescription has been included in the Stand and Site Guide and there is a prescription in the 2020 FMP for Chimney Swift Colonies (CYS). Possible HCV
<i>Caprimulgus vociferus</i> Whip-poor-will	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) An uncommon to rare breeding species throughout much of its Ontario range, although common in some regions such as the Frontenac Axis north of Kingston. Current trends not known. 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, so designated HCV. 4) The 2020 FMP has an AOC prescription for ground nests & Whip-poor-will habitat (GN & WW). HCV
<i>Lanius ludovicianus</i> Loggerhead Shrike	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	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 south-eastern Manitoba. 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 HCV but not directly at risk from forestry due to habitat difference. Possible HCV – no special prescription required
<i>Dolichonyx oryzivorus</i> Bobolink	MNRF Legal Status Recovery Strategy MNRF map IUCN	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 no special prescription required

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Sturnella magna</i> Eastern Meadowlark	MNRF Legal Status Recovery Strategy MNRF map IUCN	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 no special prescription required
<i>Hirundo rustica</i> Barn Swallow	MNRF Legal Status Recovery Strategy IUCN map	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 HCV but low risk from forestry. 4) The 2020 FMP has a prescription to protect barn swallow nests (BNS). HCV
<i>Riparia riparia</i> Bank Swallow	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	1) Bank Swallow is threatened both nationally and provincially. It occurs in the Sudbury 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) There were no element occurrences reported Error! Reference source not found. although this is likely a reporting problem. As such it was upgraded to an HCV. 4) The 2020 FMP has an AOC prescription to protect nests (BKS) HCV
<i>Wilsonia Canadensis</i> Canada Warbler	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) The Canadian Warbler is special concern in Ontario and threatened in Canada. 80% of its known breeding range is in Canada. The breeding range is deciduous and coniferous trees and nests near the ground. It breeds at low densities across its range. In Ontario it is most abundant along the Southern Shield. 2) Habitat loss due to reduced forests with well-developed shrub layer which impacts the breeding range. 3) There is impact from forestry operations. By maintaining natural amounts of deciduous and lowland conifer areas in a mature and old forest condition. Known nests, or those encountered during operations, will be protected using conditions on regular operations. HCV no special prescription required

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Chordeiles minor</i> Common Nighthawk	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Common Nighthawk is of special concern in Ontario and threatened in Canada. Its range is extended 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 pesticide use and suitable habitat loss. 3) Listed as Threatened. A generic AOC prescription (GN) is in place for nests. Possible HCV – no special prescription required
<i>Contopus cooperi</i> Olive-sided Flycatcher	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Olive-sided Flycatcher is threatened in Canada and listed as Special Concern in Ontario. It is found in natural forests edges and openings. In Ontario they commonly nest in White and Black Spruce, Jack Pine and Balsam Fir. The cause of decline over the past 30 years is unclear. It was assessed as Threatened because of a 79% decline from 1968 to 2006, a 29% decline since 1996, and because there is no evidence that the decline has ceased. 2) Threats include habitat loss; another possible cause some evidence suggests is that there is lower nest success rates in managed forests compared to that of natural forests. Also a decline in prey could be a threat. 3) Listed as Threatened, so designated HCV. HCV – no special prescription required
<i>Coturnicops noveboracensis</i> Yellow Rail	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) Yellow Rail is listed as special concern in Ontario and Canada. In Ontario they are primarily found in the Hudson Bay Lowlands and localized marshes in southern Ontario. It is estimated there are 10,000 Yellow Rails today. 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) Listed species, but low risk from forestry. 4) The AOC prescription in the 2020 FMP for Provincially Significant Wetlands (PSW) will potentially provide habitat protection. Possible HCV
<i>Chlidonias niger</i> Black Tern	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) Black Tern is of special concern in Ontario and not at risk in Canada. 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. 3) Listed species, so designated HCV but low risk from forestry. 4) The AOC prescription in the 2020 FMP for Provincially Significant Wetlands (PSW) will potentially provide habitat protection. HCV no special prescription required

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Euphagus carolinus</i> Rusty Blackbird	MNRF Legal Status (not listed) IUCN map	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. Not at risk designation suggests it is not an HCV. Not HCV

Mammals

<i>Myotis septentrionalis</i> Northern Long-eared Bat, or Northern Bat	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) This bat is considered to be common globally, but is becoming provincially rare. It has a wide range in eastern North America. Recent White nose syndrome has caused it to be listed in Ontario. 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) Listed as an Endangered species. It is uncommon and as such local occurrences would be protected if located, regardless of designation as HCV. 4) The 2020 FMP has an AOC prescription to protect Bat hibernacula (BH) and Bat maternity roosting sites (BMR). HCV
<i>Myotis lucifugus</i> Little Brown Bat (Myotis)		1) As with Northern Bat, this species 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 this forest. It is listed as least concern by IUCN. 2) A prescription exists in the Stand and Site Guide 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. It received General Habitat Protection - January 24, 2013 under ESA. 4) The 2020 FMP has an AOC prescription to protect Bat hibernacula (BH) and Bat maternity roosting sites (BMR). HCV

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Myotis leibii</i> Small-footed Bat	MNRF Legal Status (no mgmt. plan avail) MNRF map (under repair) IUCN map	<p>1) As with other bats, this species is suffering losses from White Nose Syndrome and this is the reason for the COSSARO listing as endangered. Listed as of June 2014.</p> <p>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.</p> <p>3) It is not a listed species but it is rare and likely to decline. 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 for general bat hibernacula.</p> <p>4) The 2020 FMP has an AOC prescription to protect Bat hibernacula (BH) and Bat maternity roosting sites (BMR).</p> <p>HCV</p>
<i>Canis lupus lycaon</i> Eastern Wolf	MNRF Legal Status (no mgmt. plan avail) IUCN map	<p>1) Not listed in Ontario, the wolf is classified as special concern in Canada and 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.</p> <p>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. Habitat for this species is maintained by 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.</p> <p>3) No eastern wolves have been confirmed in the forest and no den sites or other outstandingly important habitats have been identified.</p> <p>4) The 2020 FMP does have an AOC prescription to protect all types of wolf dens (WD).</p> <p>Not HCV</p>
<i>Puma concolor</i> Cougar	MNRF Legal Status (no mgmt. plan avail) IUCN map	<p>1) Cougars are endangered 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.</p> <p>2) The disappearance of cougars is caused by land clearing for settlement and agriculture.</p> <p>3) Forest management considerations will be evaluated if the presence of cougars is verified.</p> <p>Possible HCV – no special prescription required</p>

Reptiles

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Emydoidea blandingii</i> Blanding's Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	<ol style="list-style-type: none"> 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. MNRF is currently refining the distribution information for the species. 3. Listed species. Prescriptions are in place and these are being monitored and tested for effectiveness by MNRF in central Ontario. 4. The 2020 FMP has an AOC prescription to protect Blanding's turtle habitat (BT). <p>HCV</p>
<i>Sternotherus odoratus</i> Musk Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	<ol style="list-style-type: none"> 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. Occur near western edge of the forest. 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. MNRF is currently defining the distribution information for the species. 3) Listed species. It occurs near forest so listed as possible. 4) The 2020 FMP has an AOC prescription to protect Musk turtle habitat (TN & SP). <p>Possible HCV</p>
<i>Glyptemys insculpta</i> Wood Turtle	MNRF Legal Status Recovery Strategy IUCN map	<ol style="list-style-type: none"> 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. It has not been found on the forest but occurs to the south of the forest along the Ottawa River. 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. 3. Listed species. MNRF monitors and does surveys but has not located the species on the forest. 4. The 2020 FMP contains an AOC prescription that protects known habitat used by these turtles (WT). <p>HCV</p>

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Graptemys geographica</i> Northern Map Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	<p>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. It also has been found just west of the forest.</p> <p>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 south-western 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.</p> <p>3) Listed species, so designated but not at risk from forestry.</p> <p>4) The 2020 FMP has an AOC prescription to protect Northern Map turtle habitat (TN).</p> <p>Possible HCV</p>
<i>Clemmys guttata</i> Spotted Turtle	MNRF Legal Status (no mgmt. plan avail) IUCN map	<p>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 localized to southern Ontario.</p> <p>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.</p> <p>3) Listed species. It has not been found on the forest and does not seem to be close.</p> <p>4) The 2020 FMP has an AOC prescription to protect Spotted Turtle habitat (ST)</p> <p>Possible HCV</p>
<i>Chelydra serpentin</i> Snapping Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	<p>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.</p> <p>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.</p> <p>5) As a SC species it is HCV.</p> <p>6) The 2020 FMP has an AOC prescription to protect Snapping turtle habitat (TN).</p> <p>Possible HCV</p>

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
<i>Sistrurus catenatus</i> Massasauga Rattlesnake	MNRF legal status MNRF map IUCN map	1) The Massasauga is found only in Ontario, primarily along the eastern side of Georgian Bay. It occurs on SF. 2) The most significant threats to the Massasauga are persecution by humans, mortality on roads, and loss of habitats. Forestry is mainly a concern due to roads through habitat. 3) In general this has attributes of an HCV. These animals are difficult to locate and not normally in areas near operations. An AOC prescription is included in the FMP. 4) The 2020 FMP has an AOC prescription to protect Massasauga rattlesnake habitat (EMR) HCV
<i>Heterodon platirhinos</i> Hog-nosed Snake	MNRF Legal Status Recovery Strategy IUCN map	1) Threatened Provincially and Nationally. 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) Occurs in SF. Prescription and monitoring has been developed. It is considered HCV, although actual occurrences would be rare. 4) The 2020 FMP has an AOC prescription to protect hibernacula habitat (SNH) HCV

Fish

<i>Ichthyomyzon fossor</i> Northern Brook Lamprey	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	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. Minimal interaction with forestry means there is no special prescription. HCV no special prescription required
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Vascular Plants

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
NHIC listed plants	Error! Reference source not found.	<p>Callitriche heterophylla Cephaloziella rubella var. elegans Juncus acuminatus Elymus lanceolatus ssp. psammophilus Liatris cylindracea Lophozia capitata Neottia auriculata Peltandra virginica Potamogeton confervoides Sagittaria cristata Solidago houghtonii Sporobolus heterolepis Trichodon cylindricus</p> <p>HCV no special prescription required</p>
Juglans cinerea Butternut	MNRF Legal Status (no mgmt. plan avail)	<p>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. MNRF lists occurrences nearby the forest. It is not currently known from any spots in the forest.</p> <p>2) These trees are normally found scattered at low density in forests. The historical decline occurred as forests were cleared.</p> <p>3) It is a listed species but not currently found in the forest and so a possible HCV. There are special prescriptions for this species should an occurrence be found.</p> <p>Possible HCV</p>
Panax quinquefolius American Ginseng	MNRF Legal Status (no mgmt. plan avail) (Map confidential)	<p>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. No occurrences reported by NHIC on the SF, but they did regard as a possibility.</p> <p>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.</p> <p>3) It is a listed species. There are special prescriptions for this species should an occurrence be found.</p> <p>Possible HCV</p>

Insects

Scientific Name / Common Name or Group	Info Sources MAPs** IUCN Recovery Plans	HCV Assessment & Decision 1) Status (from COSSARO report) (<u>Rankings defined below**</u>) 2) Risk assessment 3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)) 4) AOC Prescription in the 2020-2030 FMP
Yellow-banded Bumble Bee (<i>Bombus terricola</i>)	MNRF Legal Status No map available as it covers a wide area	1) The Yellow-banded Bumble Bee ranges from the Mixedwood Plains of southern Ontario to the Hudson Bay Lowlands in the north. Less is known about historical or recent abundance of Yellow-banded Bumble Bee in the northern portion of its range. 2) Forestry does not appear to be a factor. 3) It is a listed species. Minimal interaction with forestry means there is no special prescription. HCV no special prescription required
<i>Danaus plexippus</i> Monarch Butterfly	MNRF Legal Status (no mgmt. plan avail)	1) Special concern in Canada. 2) Herbicides could affect several species of milkweed plants (<i>Asclepasis</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. It is widely distributed in Ontario. It is not an HCV in this area. HCV no special prescription required

*Summary of 2015 COSSARO evaluation results for species where there was a change in status affecting the local list. These species were assessed to determine if they should be included in this SAR list. This consists of evaluating whether they occur on the forest. This was verified by MNRF SAR staff as [the latest update to the SAR list](#). Yellow-banded Bumble Bee (*Bombus terricola*) was added to the HCV SAR list.

Algonquin Wolf – Threatened, not in PF area; Black Redhorse (*Moxostoma duquesnei*) –Threatened, not in PF area; Blue Ash – Threatened - not in PF area; Broad-banded Forestsnail (*Allogona profunda*) – Endangered [not in PF area](#); Eastern Milksnake Not at risk; Proud Globelet (*Patera pennsylvanica*) Endangered [not in PF area](#); Red-necked Phalarope - Special Concern [not in PF area](#); Tri-colored Bat – Endangered [not in PF area](#); **Yellow-banded Bumble Bee (*Bombus terricola*) - Special Concern (Note added to HCV SAR list)**; Warmouth (*Lepomis gulosus*) Endangered, [not in PF area](#).

HCV Designation Decision:

Based on a review of habitat requirements, current threats, range maps, known occurrences on the Sudbury Forest, potential impacts from forest operations, the status of populations and a supplementary literature review, the HCV designations are as described as follows:

HCV

[Peregrine Falcon](#), [Bald Eagle](#), [Bank Swallow](#), [Whip-poor-will](#), [Least Bittern](#), [Barn Swallow](#), [Massasauga Rattlesnake](#), [Hog-nosed Snake](#), [Northern Bat](#), [Little Brown Myotis](#), [Small footed Bat](#), [Blanding's Turtle](#), [Wood Turtle](#)

A number of possible HCVs were identified. These are species which might occur within the forest, but for which no habitat features are recorded and/or there are no records of recent observations. Pre-harvest assessments, which are used to guide forest management decisions, are also an important means of verifying the presence of non-timber values.

Also a number of HCV with no special prescription required are listed. These are species which occur on the forest but which are not affected by forest operations.

2) Does the forest contain endemic species?

Rationale:

To ensure the maintenance of vulnerable and or irreplaceable elements of biodiversity. Endemic species are more likely to be addressed under Principle 6 because their range or extent is geographically restricted. Hence, meeting the threshold of "critical or outstanding" likely requires a concentration of endemic species.

Assessment Methodology:

- WWF Ecoregion Conservation Assessment
- Conservation International Biodiversity "Hotspots"
- Terrestrial Ecosystems of North America (Ricketts et al.1999)
- Birdlife International

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

Assessment Results:

Conservation International does not show any biodiversity "hotspots" in Ontario and Birdlife International does not identify any Endemic Bird Areas (EBAs) in Canada.

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, and this is so for the Sudbury Forest, except for the city of Sudbury where mining and urban development have resulted in the relatively semi-permanent loss of tree cover. Under normal forested conditions in the SF, species tend to be spread across large areas and many regularly undertake movements long enough to ensure genetic mixing. These conditions are likely to prevent speciation and endemism.

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, there are no known concentrations of endemic species on the Sudbury Forest.

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:

- BirdLife International
- Conservation International
- Important Bird Areas
- Bird Studies Canada
- Ducks Unlimited Canada
- Natural Resource Values Information System for Ontario (NRVIS)
- 2020-2030 [Forest Management Plan](#) for the Sudbury forest

Assessment Results:

Various databases, including the MNRF NRVIS data, document wildlife concentration areas such as critical breeding or winter habitat for single species or concentration areas for a diversity of species as they are identified in the field.

Below is a discussion of the findings from a review of available data 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 Sudbury Forest.

White-tailed Deer Winter Yarding Areas

According to the [FMP](#) for the SF, deer yards occur mainly in the southern part of the forest, near Killarney Provincial Park. In deer yards, it is important to maintain the juxtaposition of food (deciduous browse) and conifer cover (see MNRF’s *Forest Management Guidelines for the Provision of White-tailed Deer Habitat* by Voigt et al., 1997). Cedar and hemlock are the most common conifer species utilized for cover in local deer yards, and white pine and white spruce are locally important for deer winter shelter. Normally, harvesting is only permitted in yarding habitat where browse shortages have been identified and habitat enhancement can be expected as a result of forest operations. Modified hardwood removal is permitted with retention of conifers for cover and oak for mast production. The 2020-2030 FMP contains Conditions on Regular Operations to protect deer wintering areas.

Deer yards meet the definition of a “regionally significant seasonal concentration area” and are relatively uncommon in the SF. They are therefore considered to be HCV.

Moose Emphasis Areas (MEAs)

The 2020 Draft FMP has a Management Objective (#10) which “Designates areas on the Sudbury Forest where habitat targets and road use strategies are developed to enhance moose populations. The indicator for this objective is the development of moose emphasis areas (MEAs) dispersed across the forest in areas with moderate to high moose carrying capacity potential. MEAs must cover a minimum of 10-15% of the forest area,

and each MEA must be at least 2,000 ha in size. In selecting candidate MEAs, preference was given to areas 10,000 ha in size or greater. The following criteria must also be met, as directed by the Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (2010).

- Wetlands: 5 to 10% of each MEA
- Browse: 5-30% of each MEA
- Mature conifer: 15-35% of each MEA
- Hardwood / mixedwood: 20-55% of each MEA

Road use strategies in MEAs are also to be developed to mitigate 4x4 truck traffic to lessen potential hunting pressures. Other areas of the forest may also have road access strategies, as determined by CLUPA, and habitat management for moose.

MEAs are considered a possible HCV.

Critical Fish Habitat and Spawning Areas

MNRF identifies fish habitat and spawning areas during the course of their values collection efforts. In addition, the proposed locations where forest access roads will cross streams are reviewed carefully by MNRF and Vermilion Forest Management Ltd. to ensure that spawning habitat will not be significantly negatively affected during road construction. Sturgeon, as a listed species qualifies as an HCV, but because no spawning areas occur in areas likely to be impacted by bridge building, and because the river systems are large, is considered a possible HCV.

In general, waterways are protected through application of the Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales. The Federal Fisheries Act also protects water quality. In the SF, 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. The 2020 FMP contains seven AOC prescriptions to protect fish habitat and spawning areas (including two prescriptions, which restricts access to self-sustaining lake trout lakes).

In general, fish habitat and spawning areas have not been identified as HCVs because these areas are abundant in the SF and a very conservative approach to protection is employed. Sturgeon spawning areas are considered a possible HCV.

Heronries

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. There are numerous heronries on the Sudbury Forest, and MNRF has an effective survey protocol to find them. Heronries are protected from disturbance during forest management activities through application of two effective AOC prescriptions (one for active nests and one for inactive nests). These prescriptions were 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. Individual heron colonies are considered to be HCVs. In this report Heronries with >25 nests are regarded as HCVs and special management may be required if any are located. Smaller colonies will still receive full protection. The abundance of small colonies throughout Ontario indicates smaller colonies are not at the threshold for an HCV.

Waterfowl Staging Areas

Staging areas are generally shoreline/aquatic habitats where waterfowl are known to rest during migration. Ducks Unlimited Canada works closely with provincial government agencies to ensure that critical habitats for migrating and breeding waterfowl are conserved. In Ontario, the organization notes that areas of special importance for waterfowl are the Richelieu, Ottawa and St. Lawrence rivers. It is in these locations that the province's most important waterfowl staging areas coincide with the greatest population densities. A literature search of available Internet sources suggests that other critical staging areas for waterfowl in Ontario are generally located either to the south (around the southern Great Lakes) or to the north (into the Boreal and Taiga landscapes) of the SF. This is not an HCV.

High-value, and Remote Self-sustaining Lake Trout Lakes

MNRF's "Regulatory Guidelines for Managing the Lake Trout Recreational Fishery in Ontario" (MNRF 2007) explained that "lake trout lakes are rare", and note that only 1% of Ontario's lakes contain lake trout, but this represents 25% of the lake trout lakes in the world. Self-sustaining trout lakes, containing naturally reproducing populations of either lake trout or brook trout, are distributed across the Sudbury Forest. These fish species have stringent habitat requirements (e.g. lake trout require deep, cold, well-oxygenated lakes with clean, windswept rock rubble shorelines for spawning) and are commonly considered to be barometers of health in cold water ecosystems.

Due to the high demand and [limited supply for self sustaining lake trout lakes](#), and the potential for significant adverse effects due to increased access into these lakes where access is currently limited, the District MNRF developed AOC prescriptions restricting new access into these lakes. These AOC prescriptions include a harvest reserve and restrictions on road construction, as illustrated on FMP operations maps. The level of protection to be applied is determined by the lake quality for fisheries habitat, and the degree to which the lake is currently accessed. These were considered HCVs.

HCV Designation Decision:

In accordance with the rationale provided above, the following is designated **HCV** under this category:

- Deer Wintering Areas (deer yards)
- High-value, and Remote Self-sustaining Lake Trout Lakes

Possible HCVs are Heronries with 25 or more nests and Sturgeon spawning areas. None are known 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:

- NHIC G3, S1-S3 species and communities
- Results from Forest Management Plan habitat models
- Species representative of naturally-occurring habitat types or focal species
- Species identified as ecologically significant through consultation
- Northern Ontario Plant Database (<http://www.northernontarioflora.ca>)
- Ontario Herpetofaunal Atlas (<http://nhic.mnr.gov.on.ca/MNR/nhic/herps/ohs.html>)
- Ontario Tree Atlas Project (<http://www.uoguelph.ca/arboretum/SpProjects/TreeAtlas1.htm>)
- Supplementary Literature Review

NOTE: Species identified in the NHIC database and ranked nationally at risk by COSEWIC were discussed in Element 1.

Assessment Results:

Keystone Species

Under this Element, the HCV toolkit asks if any of the rare, threatened or endangered species found in the forest is a keystone or focal species. A keystone species was defined by Paine (1966) as a species that plays a disproportionately large role in ecosystem function, relative to its numerical abundance or biomass. 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. Practical definitions of keystone and focal species can be difficult to develop.

In the SF, the beaver, Pileated Woodpecker, and Red-shouldered Hawk might be considered keystone species because their activities create habitat for many other wildlife. 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).

Focal Species

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 Bald Eagle, Eastern Massasauga Rattlesnake, and Wood Turtle are species at risk that would qualify under this category. Because there are known records of occurrence of these species in the SF, they have already been discussed under Element 1 and designated there.

The eastern wolf (*Canis lupus lycaon*), sometimes called the Algonquin Park wolf, is another species at risk that could qualify under this category, but it is not considered to be a focal species for purposes of forest management. It is a small subspecies of the widely distributed grey wolf (*Canis lupus*). The SF is within its expected range, but no dens or individual animals have been confirmed here. The closely-related grey wolf (and presumably also the eastern 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). Thus, 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. Like the eastern wolf, it does not qualify as an HCV under this category because it is not considered to be a focal species for purposes of forest management. The SF is within its expected range, but no dens or individual animals have been confirmed here.

Regionally representative species are generally common species whose habitat needs, when considered together, reflect the majority of forest habitat conditions on the landscape. For the 2020-2030 FMP, general wildlife habitat was assessed and tracked through the use of the Landscape Guide Indicators, with the associated milestones that provide direction for achievement through time.

The elk (*Cervus elaphus*) may qualify as an HCV because it is regionally significant as a reintroduced species. The eastern elk is thought to have been extirpated in Ontario. However, a free-ranging naturalized population of the western elk has occurred in the vicinity of the southern SF for some time, and a province-wide restoration effort has augmented the local elk population. Since 1996, more than 100 elk from Alberta have been released in the area in an effort to expand and revitalize the naturalized population. The status of the introduced animals will be monitored by MNR and others for the next several years. The local elk currently share their range with moose and, to a lesser extent, deer. The FMP for the SF explains that elk habitat will benefit from application of the moose guidelines, provisions for maintaining moose wintering areas, and forestry practices which generate winter browse. Because the elk is a focal species and is regionally rare, it is considered to be an HCV in the Sudbury Forest. There is no special habitat prescription for Elk at this time. In general good moose management provides acceptable habitat for Elk (2010 FMP) states:

“The local elk currently share their range with moose and, to a lesser extent, deer. The Sudbury Elk Restoration Committee (SERC) maintains that harvest practices and AOC prescriptions that benefit moose and deer will also be beneficial to elk. “

HCV Designation Decision:

Elk has a special high profile status in this area that could be considered focal and is designated the species as HCV – no special prescription required.

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 for:
- Red listed species
- Focal species
- Forest tree species ([Tree Atlas](#))
- Species identified as ecologically significant through consultation

Assessment Results:

Edge of Range Species

The SF is in the transitional area between the Great Lakes-St. Lawrence and Boreal forest regions in Ontario. Tree cover reflects this shift in dominant species and is even reflected in different natural disturbance patterns across the forest (i.e., more frequent stand-replacing fires in the boreal portion, and more partial burns in the south). The net result is that a number of species are at the northern or southern limits of their ranges. Most of these species are secure according to national and provincial agencies (COSEWIC, NHIC). The animal species that may be HCVs have already been assessed under previous Elements.

The Sudbury Forest includes some tree 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 Element.

Species considered rare or at the northern limit of their natural range on the Sudbury Forest include: basswood, beech, black cherry, burr oak, elm, green ash, hemlock, red oak, red spruce, silver maple, white ash, and yellow birch. The Forest Resource Inventory does not show any stands (tree species composition in the “less than 10%” category) for Cherry, Elm, or Oak. However, 12 stands contained at least 10% white ash or ironwood; none of these were allocated in the current FMP. Basswood also occurs in some numbers occasionally. Ash and Basswood were added to the list of edge species on the advice of the LCC and local experts. White Elm is a species of open areas and Silver Maple occurs in wet areas in this eco-district. Red Spruce has been reported but occurs as planted sources. No natural stands were reported, nor does the [tree atlas](#) cite any occurrences. It is not HCV.

The 2020-2030 FMP for the SF includes objectives, corresponding indicators and targets that will be used to maintain or enhance all of the above-listed these species in the forest if they are encountered (FMP 10 Objective #8). Associated strategies are listed in the Conditions on Regular Operations, Supplementary Document 6.1(q), Section 3.2. All healthy (AGS) individuals of rare tree species will be retained, except where removal is required to regenerate that species, or where there is a forest health risk (e.g. invasive species) or risk to human safety. Individuals with poor health or major defects (UGS) can also be retained for diversity reasons. Tree markers must also be mindful to maintain species in proportions reflective of the pre-harvest condition. When reproduction of valuable, minor stand component species is desired (red oak, white ash, etc.), several (not individual) good stems will be maintained to ensure adequate pollination.

HCV Designation Decision:

These species are considered as HCVs in the Forest. Silver Maple is also HCV although because of the wet sites may not be encountered. White and Black Ash and Basswood were added to the list of edge species on the advice of the LCC and local experts. These are designated as an HCV when stands are greater than 2 ha, which is a significant occurrence. Hemlock is discussed separately under Element 9. Black ash is expected to be listed as a species at risk by COSSARO in January of 2022 due to anticipated threat from Emerald Ash Borer.

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 Element 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:

- UNESCO World Heritage sites
- RAMSAR sites
- Biosphere reserves
- International Biological Program sites
- Canadian Conservation Areas Database
- WWF/MNRF Lands for Life Conservation Assessment (protected areas “gap analysis”)
- NHIC database
- Areas under deferral pending completion of land use planning and/or completion of protected areas system

Assessment Results:

International Designations – 6 a) designated by an international authority

There are no protected or candidate UNESCO World Heritage Sites, or RAMSAR Wetland Sites in the Sudbury Forest. The [Georgian Bay Biosphere Reserve](#) occurs south of the SF and some proposed areas reach into the protected part of the forest. If designation as protected occurs, these will be added to the protected areas in this section. In the meantime, the biosphere reserve is designated as an HCV in element 17, cultural values. Note that a biosphere reserve by definition of UNESCO includes both protected and managed landscape.

Provincial Designation - 6b legally designated or proposed by relevant federal/provincial legislative body

The province of Ontario has a variety of classifications for special areas, and permits different degrees of industrial and other activity within them. Table 3 below lists the types of sites found within the Sudbury Forest, and **Table 3** lists them by name and type.

[Figure 3](#) below shows that parks, other protected areas, and enhanced management areas occupy a significant portion of the Sudbury Forest and vicinity. Within the boundaries of the SF, protected areas encompass:

- 144,571 hectares of regulated provincial parks (134,304 ha) and Conservation Reserves (10,266 ha)
- 10,266 hectares of conservation reserves
- 133,242 hectares of enhanced management areas of which 73,588 of which are access related, 52,144 of which are recreation oriented, and 4,966 are natural heritage. 2543 ha is associated with Great Lakes Coastal Area.

Table 3. Special sites found within the Sudbury Forest. The descriptions are from the NHIC web site, and the SF FMP.

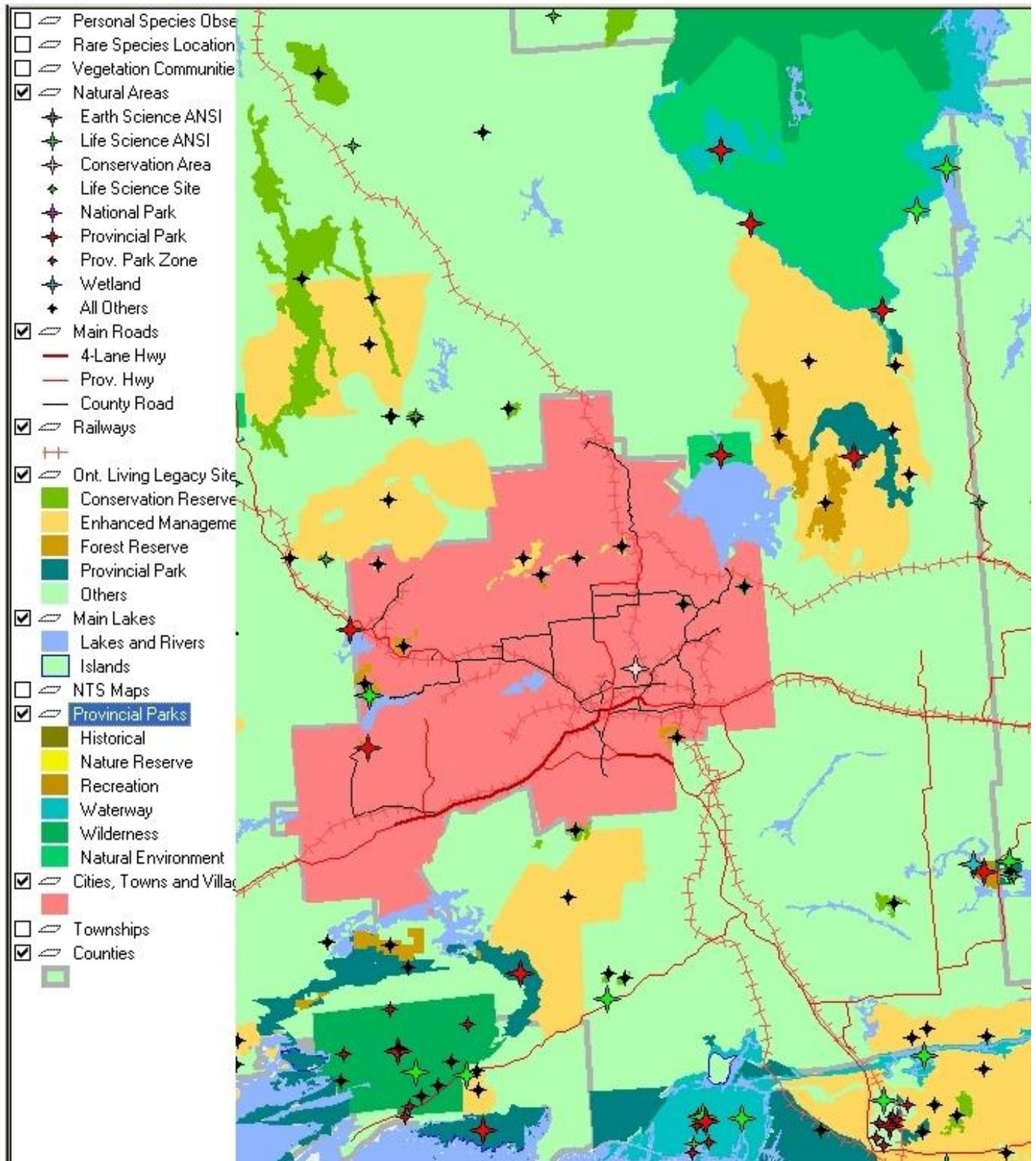
Classification	Description
ANSI	MNRF identified area having provincially or regionally significant representative ecological features
Life Science Site	Crown land recognized as having significant life science features
Conservation Area	A property owned and managed by a conservation authority.
Conservation Reserve	An area of public lands identified by the MNRF 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 MNRF 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.

Classification	Description
Forest Reserve	An area of public land identified by the MNRF 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.
Life Science Site	An area recognized as having special ecological features. Environmentally Sensitive Areas (ESA's) are areas identified by municipalities as being ecologically important; these areas are tracked by the NHIC as life science sites.
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) .
Wetlands - Provincially Significant	Any wetland that has been evaluated by the MNRF using the Ontario Wetland Evaluation System (OWES), and recognized as having special ecological significance.

Table 4. Parks, forest reserves, conservation reserves, and enhanced management areas wholly, partly within the Sudbury Forest or immediately adjacent to SF (data from MNR).

Category	Protected Area Name
Parks	
Wilderness	Killarney Provincial Park and Killarney Additions Lady Evelyn Smoothwater Provincial Park
Recreation	Windy Lake Provincial Park Fairbank Provincial Park Mashkinonje Provincial Park and Maskinonge Additions
Waterway	French River Provincial Park and French River Additions Sturgeon River Provincial Park and Sturgeon River Additions (party in SF) Obabika River Provincial Park (partly in Sudbury Forest) Solace Provincial Park (partly in Sudbury Forest) Chiniguchi Waterway Provincial Park Killarney Coast and Islands Provincial Park Killarney Lakelands and Headwaters Provincial Park
Natural Environment	Wanapitae Provincial Park
Conservation Reserves	Attlee Attlee Central Forest Cherriman Township Eden Township Forest Garson Forest Morton Lake MacLennan Esker Forest Tilton Forest Pinetorch Lake North Yorston
Other Land Use designations (not considered protected areas)	
Forest Reserves	Chiniguchi FR Killarney Lakelands and Headwaters FR Killarney Park Additions FR Kukagami Lake FR Wolf Lake Old Growth Forest FR
Former FRs (for reference)	Cow Lake FR Capreol/Hanmer Delta FR Dowling/Fairbank Daisy Lake Uplands FR MacLennan Esker Forest (portion with FR classification) Nelson Delta East FR Sturgeon River Additions FR
Conservation Areas	Lake Laurentian CA
Enhanced Management Areas	Chinuguchi River North EMA Collins Inlet Headwaters EMA Donald Lake EMA Eighteen Mile Island EMA and Wilderness Area EMA Hess Lake/Mischaud Lake EMA Great Lakes Coastal Areas EMA Kitchener Township EMA Killarney East EMA Nelson Delta EMA Onaping-Friday-Scotia Lakes EMA (not adjacent) Seal Lake Moraine and Delta Complex EMA Sturgeon River Sand Dunes EMA Vermilion River EMA
ANSIs (from NHIC database)	Muskrat Creek-West Bay ANSI Carlyle Township Sinkhole Bog ANSI Loudon Basin Peat Bog ANSI Vermilion River ANSI Woodwardia Bog ANSI West Bay Wild Rice Bed LS

Figure 3 . Provincial parks, forest reserves, conservation reserves, ANSIs, conservation areas, significant wetlands, and enhanced management areas in and adjacent to the Sudbury Forest. (Map created on NHIC web site.)



The 2020-2030 FMP includes an Area of Concern for park boundaries (PB) consisting of a 30 metre modified harvest area and a 200 m “no new roads” zone. This AOC prescription applies to all existing and new parks. The intention is to protect the integrity of the park boundary itself and to reduce access. In addition, if a value (e.g., an eagle nest) has been identified within a park, the portion of the AOC prescription that would fall outside the park boundary is applied to ensure the value receives an appropriate level of protection.

Wolf Lake and other Special Areas

On May 10, 2005 MNRF proposed a “disentanglement initiative” through an EBR notice that would reduce overlap between recommended protected areas (forest reserves) and existing mining claims ([EBR Number XB05E4002](#)). This was approved and Wolf Lake and Special Areas – F179 and F208 are no longer forest reserves and are part of E180n. Vermilion Forest Management believes that these special areas should be managed to maintain their special values. For this reason, the following areas have been designated HCVs. All of these sites are discussed further under Element 18, heritage rivers and waterways.

- F175 – Wolf Lake Old Growth Forest
- P173 – Sturgeon River
- Now part of E180 -- F179 – Capreol/Hanmer Delta
- Now part of E180 -- F208 – Vermilion River Delta (Dowling/Fairbank)

Provincially Significant Wetlands

Wetlands are considered a HCV under element 13 of the framework.

According to the FMP for the Sudbury Forest, seven wetlands have been evaluated for provincial significance within the Forest, and five were classified as provincially significant. MNRF pointed out that some of the evaluations were not to up to date protocols. It is more accurate to state that there have only been four evaluations completed and four wetlands designated as PSWs – Muskrat Creek, Sucker Creek, Vermilion River and Vermilion River Delta (with these last two considered one).

An area of concern (AOC) prescription in the 2020-2030 FMP excludes forestry operations from within a 120 m buffer around the wetland (PSW). 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 Element 13 below.

The 2020-2030 FMP states that operations within or adjacent to all wetlands within the boundaries of the forest will be conducted in such a way as to result in no loss of wetland form or function. Please refer to the 6.1 of the FMP’s Supplementary Documentation, Part q) Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations, Section 3.8. Many wetlands also receive additional protection through prescriptions designed to protect other values such as fish habitat, osprey and heron nest sites, and moose aquatic feeding areas. A more detailed view of wetlands is available from **Map 2**.

MU889_2020_FMP_MAP_ValFish_01.pdf
MU889_2020_FMP_MAP_ValFish_02.pdf

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 Sudbury Forest. These are included in Figure 3 above. While some areas are yet to be regulated, all have been withdrawn from the operable land base of the Sudbury Forest and are now protected. The framework for proceeding with the selection of additional candidate protected areas is laid out in the provincial Room to Grow policy¹. In 2003, the MNRF identified a Room to Grow Task Team to lead the coordination and completion of Room to Grow in the province. Although there is no active work on Room to Grow at this point, it still exists as a policy. VFM will adjust for new decisions as they occur.

¹ Room to Grow. Final Report of the Ontario Forest Accord Advisory Board on Implementation of the Accord.

Land Use Plans – 6 c) identified in regional land use plans or conservation plans.

Temagami Land Use Plan

Forestry and all land uses in the area north east of the of the Sturgeon River has been reviewed through a focused high profile land use planning exercise that resulted in the Provincially regulated [Temagami Land Use Plan \(TLUP\)](#) (MNR June 2004). This plan is integrated with the implementation plan called [Temagami Integrated Planning](#). (MNR June 2007. North Bay District Office.) (TIP).

In the TLUP area are five provincial parks covering 104,248 ha. Surrounding the parks are eight conservation reserves that make up 42,836 ha of protected area. The remaining land base is subject to the TIP Temagami Integrated Planning process. This plan is regulated through a number of lower tier plans for the 13 conservation lands in the TLUP that are listed in the [Crown Land Use Atlas](#). The FMP is also a lower tier plan and is integrated with the TLUP.

The goal of TLUP and the implementation document (TIP) is to manage land use for sustainable development of the planning area's natural resources, while ensuring the sustainability of its ecosystems ([MNR 2004](#) and [Crown Land Use Atlas \(March 2006\)](#)). This includes some no-harvest areas, access control areas, and other special use designations. First Nations have been consulted with respect to the decisions in the TLUP and they were part of the original discussion. A large number of groups and people had input into TLUP.

Parties that are interested in amending TLUP or TIP should contact the Provincial government (MNR). Forest management tools such as road use management strategies and area of concern prescriptions in the Forest Management plan are closely aligned to land use direction in each area to protect the values identified in the land use plan. Control of the land uses are beyond the control of VFM.

HCV Designation Decision:

There are no protected or candidate UNESCO World Heritage Sites, or RAMSAR Wetland Sites on the Sudbury Forest – not HCV. The [Georgian Bay Biosphere Reserve](#) is HCV in section 17.

Provincially significant wetlands are not IUCN protected, but are considered to be HCVs under element 13 flood protection.

The area of the Temagami Land Use Plan is a designated HCV.

All protected areas (Parks and Conservation Reserves) meet IUCN test for type 1 and 2 and are HCVs. They are considered adjacent to the forest, as they do not fall within the boundary of the SFL (by land use designation) but [management needs to be applied](#).

Any candidate protected areas that may be identified in a land use process will be designated HCV.

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 Element, 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). In the region encompassing the SF, fire, blowdown, and insect outbreaks are the principal natural disturbances. However, forest fires are actively suppressed by the MNRF, and although some fires continue to occur, their frequency and size class distribution have probably been altered compared to a pre-settlement distribution of fires. Thus, only blowdown and insect outbreaks are essentially uncontrolled in this region. Forest harvesting is planned and conducted to emulate disturbance patterns created by fires, as directed by the Crown Forest Sustainability Act.

Assessment Methodology:

- MNRF Lands for Life Assessment
- Ontario Living Legacy Land Use Strategy
- Landscape Ecology Analysis Program results for 2005-2025 Sudbury FMP
- Global Forest Watch Intactness Mapping
- Roads layer for the Sudbury Forest

Assessment Results:

VFM considers the entire SF to be of conservation value and manages the forest to maintain it as a fully functioning forest in which all ecological values are 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 SF is ecologically “intact”. This Element could therefore define the entire Crown land portion of the SF. However, the HCV framework (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, the Sudbury 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. This report does not regard any of the areas in the SF as intact forest landscape.

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. According to GFW mapping, the SF

contains a part of only one “intact” (unaccessed) area to the northeast of Sudbury and west of New Liskeard, referred to as Intact Forest Landscape (IFL) NAM_69. Most of this (and just over 50,000 ha) IFL is already included in The Solace and Lady Evelyn Smoothwater Provincial Parks and multiple conservation reserves. These parks and conservation reserves also link two IFLs together (NAM_69 and NAM_71).

The area north east of the Sturgeon River has been assessed as part of 6 c) “identified in regional land use plans or conservations plans” and it is designated as an HCV because of the [Temagami Land Use Plan \(TLUP\)](#) which covers this area. It was designated as an HCV in that element. TLUP is the provincially mandated management strategy for this area. It is the higher level plan under which the FMP sits. The goal of the plan is to manage land use in such a way to achieve the sustainable development of the planning area’s natural resources, while at the same time ensuring the sustainability of its ecosystems (MNR 2004). This includes some no-harvest areas, access control areas, and other special use designations. It is beyond the capacity of an SFL company to change a provincially mandated land use plan. First Nations have been consulted with respect to the decisions in the TLUP. Forest management tools such as road use management strategies and area of concern prescriptions in the Forest Management plan are closely aligned to land use direction in each area to protect features identified in the land use plan.

Through the application of unique AOC prescriptions, and gates and signage under the Public Lands Act, the FMP provides suitable direction in combination with overlapping protected areas to meet the intent of keeping landscapes intact, while still allowing for appropriate levels of disturbance to maintain the health and diversity of the forest. This management strategy is consistent with the goals of the TLUP and the recent FSC Policy Motion 65 to protect Intact Forest Landscape (IFL) that is being developed for the new FSC Canadian Standard.

Definitions and direction for IFLs are pending, and further review may be warranted under the new FSC national standard, however the current interim direction of FSC’s Motion 65 advice note is being used. Under this interim direction up to 20% of the IFL within the management unit may be accessed providing at least 50,000 ha is left intact. The IFL area within the management unit is approximately 30,000 ha. The regular and bridging area within the IFL, including FMP Amendment #20-002, amounts to 1,547 ha. An incursion, including a buffered road footprint would need to be <6,000 ha to comply with the current FSC advice note.

Remote and roadless areas are an important feature of the Sudbury Forest and much of the land base is encompassed by land use policy direction for maintaining or enhancing remoteness. The CLUPA provides specific direction within several Enhanced Management Areas (EMA) for this purpose. The FMP also has direction for managing road density and remoteness as part of Objective #15. A remote area assessment map (MU889_2020_FMP_MAP_LandPat_07.PDF) and analysis has been developed as part of this objective.

HCV Designation Decision:

Based on a review of available data and conservation assessments for the SF, IFL NAM_69 is identified as an intact forest HCV and managed in accordance with Motion 65 direction. (See also the discussion under Category 3, Element 10 for fragments of LLLF).

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
- Natural Heritage Information Centre Database
- WWF Ecoregion Assessment
- Conservation International

At a global scale, the presence of G1 (globally extremely rare) and G2 (globally very rare) occurrences were considered to be the relevant designations. At the provincial level, S1, S2, and S3 ranks were considered to be relevant. These are the same criteria used under Element 1.

Assessment Results:

Conservation International does not identify any biodiversity hotspots within Canada.

NHIC rare community data are unavailable for northern Ontario. During the 2010 revision process for this report we evaluated the following discussion and sought other sources for “rare ecosystems”. The following ecosystem types are still very hard to distinguish on the ground and do not follow conventional ecosystem classifications in Ontario. Therefore, we have not designated them as HCV, but we have left the discussion in this report. The first ecosystem is reported from the mid-west US and we did not consider it to be likely to occur in the SF.

In a previous version of the HCV report, a search of the NHIC database for Site Districts 5E-7 (the northernmost tip of which is in the SF) and 5E-8 revealed only one rare forest community type that occur in the SF – the “white pine coniferous mineral swamp type” which has a rank of S2 G3G4 according to NHIC. This forest type may be the same as NatureServe’s “*Pinus strobus*-*Osmunda* spp. Forest” or “White Pine-Red Maple Swamp type (ranked G3G4 by NatureServe).

VFM performed a search of the FRI to identify all forest stands on managed Crown land that had the following combination of characteristics: dominated by white pine, containing a combination of white pine and red maple, and on wetter sites (ecosites 31-35). The search revealed only one stand approximately 1 hectare in size that met these criteria (stand # 997065, map sheet 175305100). The classification appears to be an artifact of the inventory system. It was not consider this stand to be HCV. Similarly, a query of the new 2020 inventory found no natural occurrences of coniferous swamp (ELC ecosites 127, 128, or 129) dominated by white pine.

Cedar Yellow Birch Forest Type

A search of the NatureServe database for forest communities in Ontario revealed only one other rare forest community type that could occur in the Sudbury Forest in addition to that described above: “*Thuja occidentalis*-*Betula alleghaniensis* Forest”. This is upland white-cedar - hardwood forest type is found in the northern Great Lakes region of the United States and Canada, and portions of central Canada. Stands occur on poorly drained soils, occasionally bordering on wet, organic soils. The soil is typically moderately acidic, sandy clay with a thin litter layer (i.e., not swamp or muskeg site types). The canopy of this community is dominated by *Thuja occidentalis* and a variety of hardwoods, most typically *Betula alleghaniensis*, *Betula papyrifera*, and *Populus tremuloides*, but occasionally *Acer rubrum*, *Acer saccharum* and *Fraxinus nigra*. Associated conifers include *Abies balsamea*, *Picea glauca*, and, rarely, *Tsuga canadensis*. The understory usually contains a well-developed shrub/sapling layer, including *Abies balsamea*, *Acer spicatum*, *Corylus cornuta*, *Diervilla lonicera*, *Linnaea borealis*, *Ribes triste*, *Rubus pubescens*, and *Taxus canadensis*. Herbaceous species include *Aralia nudicaulis*, *Eurybia macrophylla* (= *Aster macrophyllus*), *Clintonia borealis*, *Coptis trifolia*, *Cornus canadensis*, *Dryopteris carthusiana*, *Galium triflorum*, *Gymnocarpium dryopteris*, *Lycopodium* spp., *Maianthemum canadense*, *Mitella nuda*, *Onoclea sensibilis*, and *Trientalis borealis*. Moss species include *Pleurozium schreberi*, *Rhytidiadelphus triquetrus*, and others. Diagnostic features include the mixed dominance of *Thuja occidentalis* and hardwoods, particularly *Betula alleghaniensis*, in an essentially upland site type.

NatureServe has determined that this community type is equivalent to MNRF’s V9 vegetation type (“White Cedar-Hardwoods, Dwarf Raspberry – Mountain Maple-Herb Rich”) described by Chambers et al. (1997, p. 114). According to Chambers et al. (p. 71), this vegetation type is only found on Ecosite 34. In a search of the 2010 FRI for all stands classified as Ecosite 34, with white cedar or yellow birch as the most abundant species and with a component of the other species (either yellow birch or white cedar), 9 stands were identified. Their attributes are shown below in Table 5. Cedar stands in general, when managed, are done so by a shelterwood harvest system.

Table 5. Possible occurrences of the Thuja occidentalis-Betula alleghaniensis Forest type in the Sudbury forest, 2010 FRI.

Crown Managed Forest Containing Yellow Birch & White Cedar

Area (Ha)	Ecosite	Species Composition	Age
34	ES34	BY 30HE 20PO 20AB 10BF 10CE 10	111
14	ES34	BY 30HE 30CE 20AB 10MR 10	99
29	ES34	BY 40CE 30MR 20BW 10	93
49	ES34	CE 40BW 20BY 10MR 10PO 10PW 10	101
22	ES34	CE 40BY 20BW 10MR 10PO 10SW 10	113
37	ES34	CE 40SW 20BF 10BW 10BY 10PO 10	101
12	ES34	CE 50BY 20AB 10BF 10HE 10	96
63	ES34	CE 50BY 20BF 10BW 10SW 10	107
32	ES34	CE 50BY 40SW 10	37
27	ES34	CE 60AB 10BF 10BY 10PO 10	91
319			

The above stands will be designated as possible HCVs pending confirmation that they represent the *Thuja occidentalis-Betula alleghaniensis* forest type described as rare in the NatureServe database.

This exercise was repeated using the new 2020 planning inventory and provincial ELC (Banton et al. 2009). The Central Region veg-type V9 occurs in upland ELC types G026, G071, G086, G100, or G115. The following is a list of four stands meeting the ecosite criteria, dominated by white cedar with yellow birch present on Crown land.

PRI_ECO	SPCOMP	LEADSPC	POLYID	OWNER	HA
G100TtM n	CW 40BY 20MR 20BF 10PW 10	CW	021612	1	178
G100TtM n	CW 70AB 20BY 10	CW	038168	1	9
G100TtD n	CW 50BY 20BW 20MR 10	CW	099925	1	142
G115TtM n	CW 40SW 10BY 10MR 10MH 10AB 10SB 10	CW	124642	5	65
Total					394

None of these four stands are allocated for harvest in the 2020-2030 FMP.

HCV Designation Decision:

One rare community type has been designated **possible** HCV in the Sudbury Forest based on assessments the interpreted forest inventory. Confirmation on the ground will be necessary to ensure this condition is present. Management direction is to promote maintenance of this condition using the prescriptions for cedar and edge of range species, should this condition be in an allocation.

- *Thuja occidentalis-Betula alleghaniensis* Forest (or White Cedar-Hardwoods, Dwarf Raspberry – Mountain Maple-Herb Rich Vegetation Type (V9))

9) Are there ecosystem* types within the forest* or ecoregion* that have significantly declined or under sufficient present and/or future development pressures that they will likely become rare in the future (e.g., old seral stages)

Rationale:

Vulnerability and population viability are the key issues under this Element. 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:

- NatureServe
- Natural Heritage Information Centre
- WWF Ecoregion Conservation Assessment
- Conservation International
- Sudbury Forest 2020-2030 FMP (Section 3.0 Old Growth on the Sudbury Forest, Supplementary Documentation 6.1)

Assessment Results:

Forest Composition

The FMP Historic Forest Condition for the SF discusses changes in forest composition since 1880. Ontario Land Survey (OLS) data² were analyzed by MNR and compared to the current composition of the SF as shown in the Forest Resource Inventory (FRI). Compared with the benchmark period of circa 1880, this analysis suggests that the pine forest type has decreased significantly (see Table 6).

Table 6. Proportion of forest cover by working group in OLS data and in the 2005 FRI (from 2005-2025 FMP for the SF; reconfirmed in 2010 FMP).

Working Group	OLS (1857-1899)	FRI (2005)	Change
Balsam Fir	7.03	3.75	not significant
Birch (total) [†]	10.30**	23.54	increased
Cedar	3.78**	0.58	inconclusive
Hemlock	1.00	1.55	not significant
Larch	4.62**	0.07	inconclusive
Maple (total) [†]	1.97*	4.24	increased
Red Oak	0.05**	2.05	increased
Jack Pine	6.11**	12.88	increased
Poplar	23.35**	28.20	increased
Pine (total) [†]	29.94**	13.37	decreased
Spruce (total) [†]	5.35**	9.65	increased

* significant difference between OLS and FRI data at the 95% confidence interval.

** significant difference between OLS and FRI data at the 99% confidence interval.

[†] Species listed as "inconclusive" had an insufficient sample size and we are not able to state with certainty that the changes found along township boundaries reflect changes to the whole forest area.

[†] Specific species of pine (i.e. red pine and white pine), maple, spruce and birch were not always specified in the land surveys, therefore all entries were lumped at the Genus level.

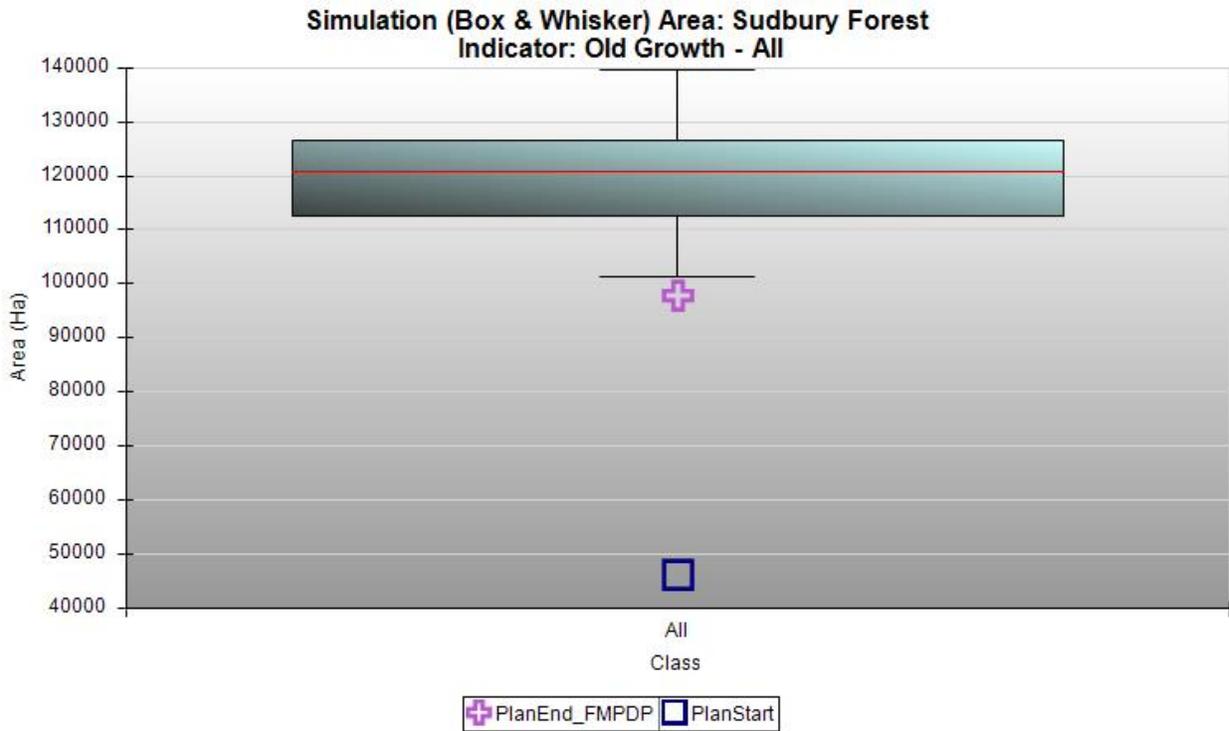
Although pine has decreased compared to pre-industrial levels, as of 2020 there is still a very large area of white pine (91,369 hectares) and red pine (15,419 hectares) in the SF, and most of this is in the managed portion of the forest.

Late Seral Stage Forests

The 2020-2030 FMP, Supplementary Documentation Section 6.1 (p) identifies the Old Growth Strategy for the SF. This Strategy identifies that the amount of old growth forest on the landscape is dynamic and management objectives are described in relation to the range of natural variation, i.e., the amount and spatial arrangement that would naturally occur over time in the absence of management. Desired habitat levels, or targets, are therefore based on the natural range of variation which is provided within the OLT (Figure 5).

Figure 5. Area of old growth habitat at the start and end of the 2020-2030 in relation to the simulated range of natural variation (SRNV).

² Leadbitter, 2000; Leadbitter, Naylor and Euler, 2002; Pinto unpublished, 2003; and Jackson et al, 2000.



The total amount of old forest at plan start is 45,376 ha (2020) and this increases to 92,016 ha at plan end (2030), assuming all of the allocated stands are harvested. Over time the amount of old forest increases because a proportion of existing stands are protected and the rate of aging is greater than the rate of harvest for stands below the age of onset. Figure 6 shows the start and end conditions by standard forest unit. The area of old white pine forest units was 10,782 ha at the start of the 2010 FMP and 13,645 ha for the end of the 2010 FMP and 13,563 ha in the new inventory for plan start of the 2020 FMP and 26,893 ha at plan end. The end-point of the 2010 plan is almost identical to the start point of the 2020 FMP even though there is not always direct overlap spatially.

Figure 6. Area of old forest at the start and end of the 2020-2030 FMP (\geq age 1 of onset and no harvest depletion record) by Standard Forest Unit.

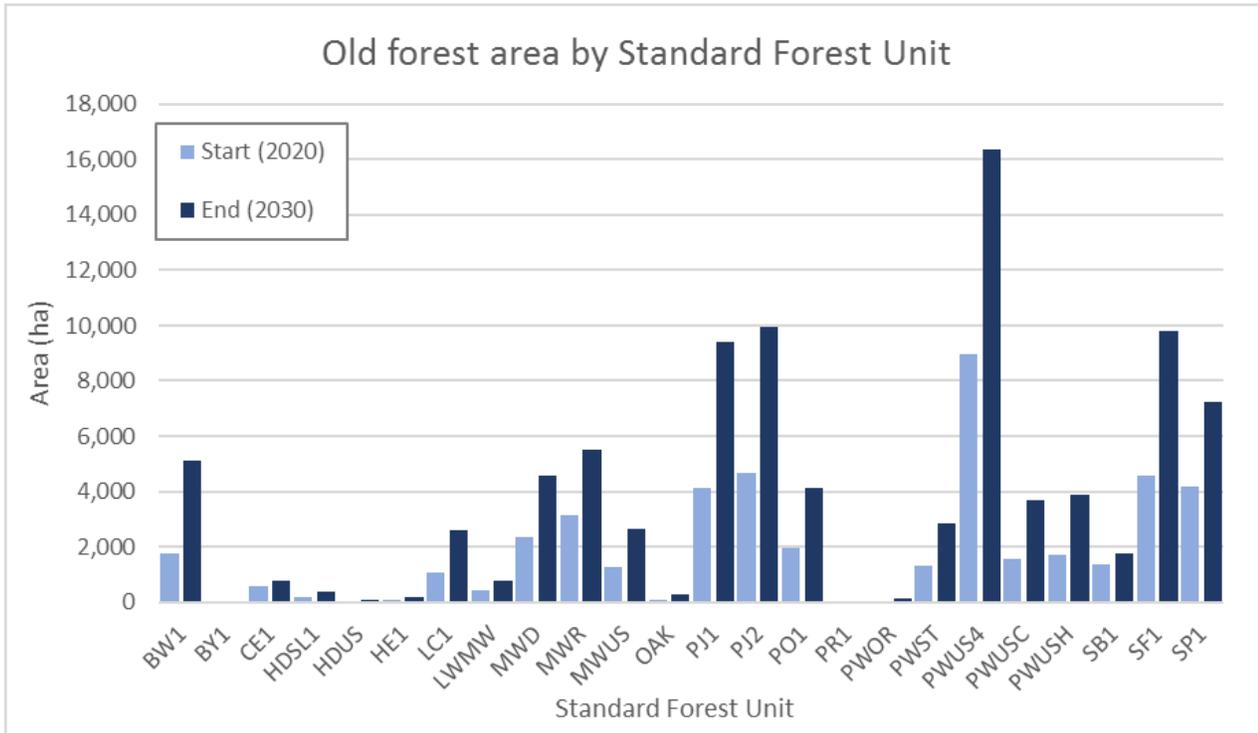
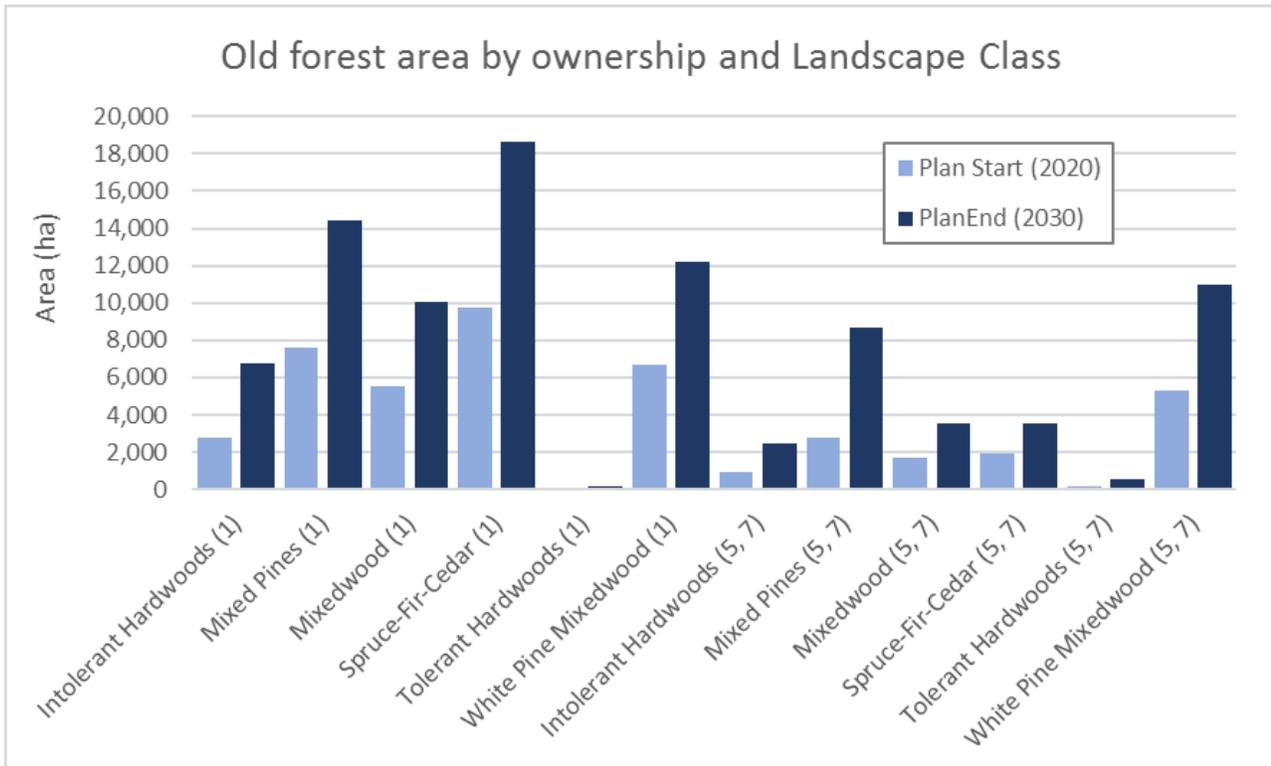


Figure 7. Area of old forest at the start and end of the 2020-2030 FMP (\geq age of onset and no harvest depletion record) by Landscape Class and ownership.



The area of old forest increases on both regular Crown land ownership (1) and within regulated parks, conservation reserves and forest reserves (ownership = 5, 7). Increases occur from plan start to plan end consistently across all Landscape Classes.

Included in the old growth strategy is the identification of Significant Ecological Areas on the MNRF values maps (LIO non-sensitive values data). These areas were established due to concentrations of older red and white pine and are identified as 'no-cut' deferral areas where they fall outside of Parks or Conservation Reserves (Figure 8).

The Significant Ecological Areas Include:

Name	Area(ha)
Haentshcel	564
Demorest	908
Wolf Lake	2,539
Marconi	69
McCarthy	1,107
Scollard	928
Cherriman	742
Cow Bay	576
Total	7,433

The hemlock (HE) forest unit has a total of 6,313 ha (1% of total Crown production forest) and typically grows in association with tolerant to mid-tolerant hardwoods. Because of this characteristic it is often managed together with the hardwoods, as was the case for FMPs prior to 2005. However, hemlock is identified as a separate habitat unit in the standard forest unit algorithm with no grouping option, so it must be classified as a separate forest unit. This is a comparatively small forest unit but is highly valued for wildlife habitat. The average species composition of HE is 52% hemlock combined with other hardwood, hard maple, and other conifers. There is an ongoing infestation of the hemlock looper in the forest which could reduce the current abundance of hemlock even more. Management Objective 8 in the 2020-2030 FMP, identifies that "the Planning Team felt the indicator for this objective should focus on compliance with a condition on regular operations (CRO) for the maintenance of rare species at the northern end of their range. In addition to Hemlock, this would also apply to yellow birch, black cherry, red oak, beech, white ash, burr oak, elm, red spruce, green ash and basswood.

HCV Designation Decision:

Pine has decreased compared to pre-industrial levels in the SF, but there is still a very large area in the PWUS forest unit. The 2020-2030 FMP for the SF contains strategies to increase the abundance of pine on the landscape, and to increase the amount in mature and old age-classes. For these reasons, the general Pine forest type is not designated as HCV. In contrast, late seral pine stands are rare and considered an HCV; it is believed to exist in the forest but an improved inventory is needed to identify it. Stands of old growth tolerant hardwoods and old growth pine managed under the selection or shelterwood systems that have not yet received partial harvesting treatments are all considered to be HCVs.

Old growth hemlock is in very short supply in the forest and is also considered to be an HCV, but this extends to all Hemlock stands which are currently under threat of Hemlock Looper and eventually the [Hemlock Woolly Adelgid](#), an invasive insect.

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 Element identifies

remnant forest patches or blocks where landscapes that do not contain permanent infrastructure do not exceed size thresholds.

Assessment Methodology:

- WWF Ecoregional assessment
- Global Forest Watch Intactness mapping
- Roads layer for Sudbury Forest
- MNRF Lands for Life assessment

Assessment Results:

According to WWF’s “Terrestrial ecoregions of North America: a conservation assessment”, the Eastern Forests – Boreal Transition ecoregion containing the Sudbury Forest is affected by public roads, logging roads, forest management, and settlement patterns. WWF estimates that only 10% of the broader ecoregion remains unaffected by human infrastructure, forest management, and other industrial activities.

Global Forest Watch has mapped what they consider to be the remaining “intact forest fragments” (see <http://www.globalforestwatch.ca> and <http://www.globalforestwatch.ca/FLFs/flfs-on2.png>). This is from a 2006 data analysis and updated in 2016.

The “fragments” identified by GFW are relatively abundant on the landscape. The SF consists of a contiguous matrix of forest in a variety of successional stages, except for urban areas, agricultural areas, and the area around the City of Sudbury that the mining industry deforested through open pit smelting. Most of the GFW “fragments” are already in parks and protected areas. The rest of the forest is managed by VFM to maintain its ecological values, according to the manuals and guidelines developed by MNRF for this purpose. As described under Category 2, Element 7, an intact patch is identified that overlaps SF and several parks and conservation reserves.

On the forest, there are twelve Enhanced management Areas (EMAs) which provide the public and tourism operators with high-quality remote recreational experiences. These sites have access restrictions through the regulated Land use Strategy in the Crown land Atlas. Although these are not as intact as very large landscapes they contribute to an un-fragmented forest. As such these areas are considered HCVs.

Enhanced Management Area	LU code
<u>GREAT LAKES COASTAL AREAS SUDBURY</u>	E 39g-3 & 4
<u>EIGHTEEN MILE ISLAND</u>	E 168a
<u>DONALD LAKE</u>	E 176a
<u>CHINIGUICHI RIVER NORTH AREA</u>	E 183r
STURGEON RIVER SAND DUNES	E 185n
<u>KITCHENER TOWNSHIP</u>	E 196a-1
HESS LAKE/MICHAUD LAKE	E 196a-2
<u>KILLARNEY EAST AREA</u>	E 211a
COLLINS INLET HEADWATERS	E 303n
<u>EIGHTEEN MILE ISLAND</u>	W 1003
Yorston River Selkirk Creek	EMA E353r (SMA49)
Fry Lake	E352r

Table 7. Enhanced Management Areas contributing to intactness

HCV Designation Decision:

Twelve HCV Enhanced Management Areas contributing to intactness are designated under Element 10. Based on a review of available data and conservation assessments for the SF, IFL NAM_69 is also identified as an intact

forest HCV and managed in accordance with Motion 65 direction. (See also the discussion under Category 2, Element 7 for significant landscapes).

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

Rationale:

Vulnerability; species diversity; significant ecological processes.

Assessment Methodology:

- NHIC Natural Areas
- NatureServe Communities
- Ontario Areas of Natural and Scientific Interest
- WWF/MNRF L4L Conservation Assessment (protected areas “gap analysis”)
- WWF Ecoregion Conservation Assessment

Assessment Results:

Six Areas of Natural and Scientific Interest that were identified by NHIC were discussed under Element 6:

- Muskrat Creek-West Bay ANSI
- Carlyle Township Sinkhole Bog ANSI
- Loudon Basin Peat Bog ANSI
- Vermilion River ANSI
- Woodwardia Bog ANSI
- West Bay Wild Rice Bed LS

HCV Designation Decision:

All of the ANSIs except the Woodwardia Bog and West Bay Wild Rice Bed, are already in protected areas and as such are covered by the protected areas designation already in place. Because the Woodwardia Bog and West Bay Wild Rice Bed may not be in protected areas, they are considered to be HCVs. These are protected through the same management as [Provincially Significant Wetlands](#).

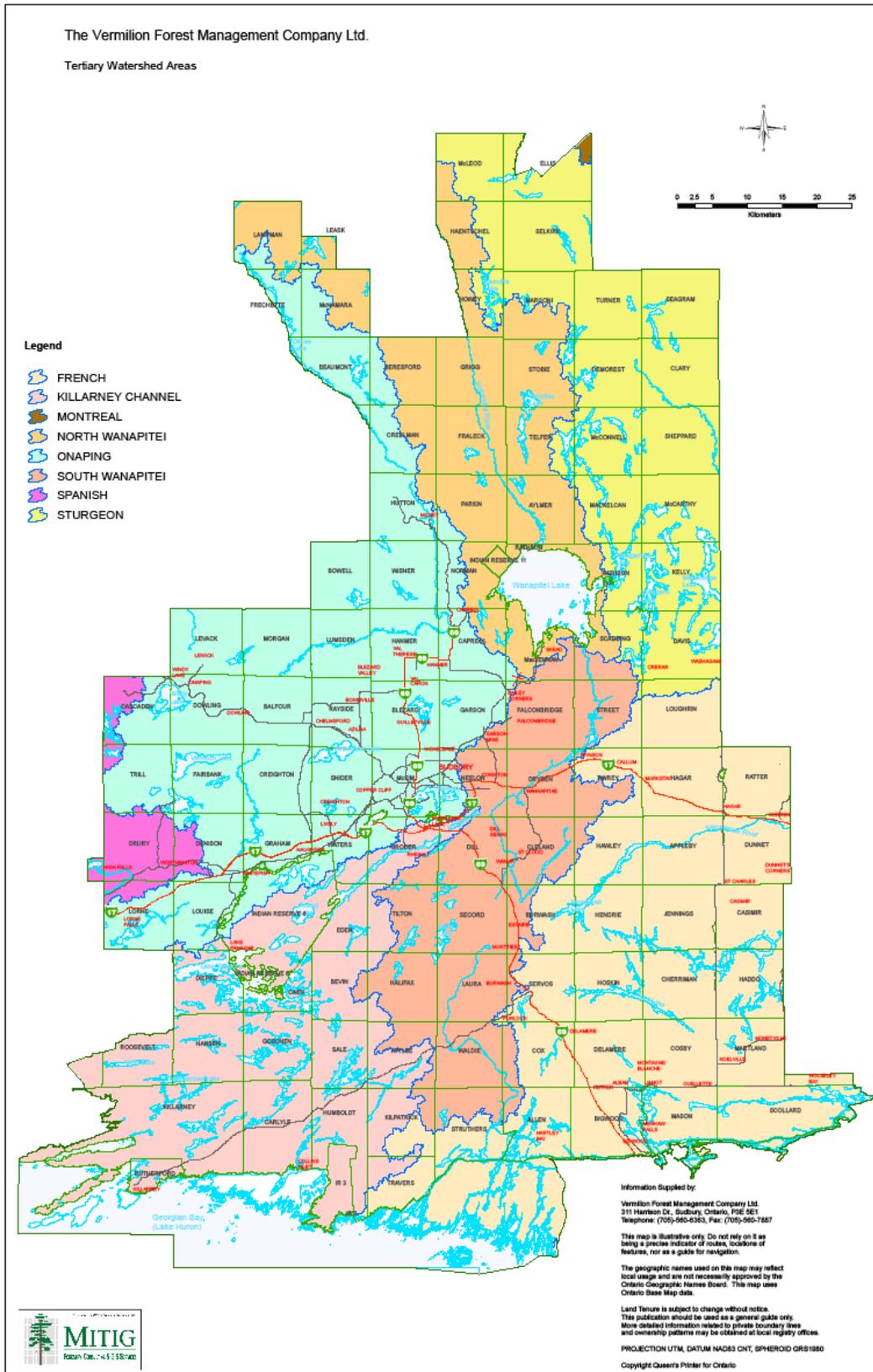
Category 4) Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).**Context:**

Much of the Sudbury Forest is encompassed by the Vermilion, Wanapitei, and Whitefish River watersheds (

Figure 4) Management of water is a shared responsibility among a number of agencies and companies. The government agency with legislative authority is Public Works and Government Services Canada (PWGSC)³ that is the federal department responsible for managing water levels for navigable waters, and this includes the larger rivers. Water management is directed by long-established operational guidelines, the Canadian Environmental Protection Act, the Navigable Waters Protection Act and the Fisheries Act. In addition, provincial flood rights and limits, and local building by-law restrictions are considered.

³ Public Works and Government Services Canada. <http://www.pwgsc.gc.ca/ontario>

Figure 4. Sudbury Watersheds.



During the spring melt and in unusual weather conditions, PWGSC relies upon an integrated water management approach, which is directed by the lead agency, the Ontario Ministry of Natural Resources and Forestry. This approach is carried out in co-operation with local private and municipal watershed representatives, including the Nickel District Conservation Authority, Sudbury, Ontario Power Generation, provincial agencies, and federal watershed management partners.

The [Nickel District Conservation Authority](#) was established in June, 1973 with jurisdiction over an area of 7,576 square kilometres. The watershed area includes the Vermilion River and all its tributaries, part of the Wanapitei River lying upstream of its confluence with Elbow Creek to the most northerly portion, and a portion of the watershed of the Whitefish River upstream of the outlet of Round Lake. The Conservation Authority works in partnership with the Province of Ontario, through the Ministry of Natural Resources and its member municipality, namely the City of Greater Sudbury.

Water control is a partnership between several agencies. In the Wanapitei watershed, Ontario Power Generation has 3 major structures for producing power. The Conservation Authority has a few water control structures mostly for controlling levels. Inco Ltd. has water retention structures for both water quality and quantity. Domtar has several small ones, with a recreational aspect. MNRF has some structures managed under the Lakes and Rivers Improvement Act. There is one private dam operated for power production. All management agencies are being encouraged to follow draft dam safety procedures.

The goal of the partners is to balance varying needs and watershed considerations throughout the watershed. Important considerations for these water management partners include: public safety, early warning of potential flood conditions, low and high water levels, sport fishery habitats and spawning beds, year-round tourist operations, cottager and boating needs, waterfowl nesting, water quality and oxygen levels, ice and water damage, water intake and sewage outfalls, and Ontario Hydro operations.

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

- Nickel District Conservation Authority (NCDA) [Source Water Protection](#)
- Municipal Websites (Sudbury)
- Private wells and known springs as identified by landowners adjacent to planned operations ([FMP](#))
- Municipal Water Supply
- OBM base maps showing topography
- Local terrain mapping
- Provincially Significant Wetlands

Assessment Results

There are several sources of drinking water for the city of Sudbury (home to much of the population in the SF). About 70% of the water supply is surficial (NDCA information), therefore there is a need for caution with any industrial operations in the vicinity of the water sources. This includes Ramsey Lake, in the town centre. There are no forestry activities near any of the primary sources of drinking water for Sudbury. The Conservation did not identify any issues or concerns with the FMP. Potential concerns are addressed carefully due to the high profile that water receives. Other communities within the SF rely on groundwater or surface-water as a source of drinking water for residents. 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.

Related to this, the Company will protect springs (ground water discharge areas) when they are found. There is one occurrence (confidential) of a spring being identified on the SF.

The Forest Management Planning process has a number of provisions for the protection of water quality. In accordance with provincial regulations, forest managers must establish reserves whose widths correspond with ground slope adjacent to the aquatic feature (e.g. stream, lake, wetland). Prescriptions for reserves also 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 continuous treed reserves than a warm water lake or stream.

The 2020-2030 FMP for the Sudbury Forest has an Area of Concern prescriptions for Municipal Water Supply (MWS).

The [Stand and Site Guide](#) and [background](#) control the construction of water crossings and forest companies can face fines if damage, including fuel spills, siltation, or erosion, occur during construction.

Furthermore, with the exception of the more boreal sections of the forest, logging on the SF is carried out using partial harvest systems, which means that in most areas, a significant forest cover is maintained on the managed landscape at all times.

HCV Designation Decision:

There are a number of Municipal water supplies identified in the FMP and one spring. These are designated HCV, based on their sensitivity and importance to local people.

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 ([Nickel District CA](#))
- [Provincially Significant Wetlands](#)
- Literature Review – Effects of forest disturbance on water yield

Assessment Results:

It can be said that all of the SF 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.

In the past water yield is used as an indicator for the forest sustainability criteria of Soil and Water Conservation. Water yield is calculated as a percentage of productive forest area in second order stream watersheds that has been disturbed (clearcut or fire) over the last ten years. Due to the extensive amount of selection and shelterwood harvesting in the Sudbury Forest >90%, erosion is not considered a major factor. Recent FMPs in Ontario do not use water yield as an indicator.

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. To ensure wetland protection, the Ontario government adopted a Provincial Policy Statement (PPS) under Section 3 of the Planning Act.

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 Sudbury Forest, 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 on the Sudbury Forest that are used to protect wetlands are consistent with the Provincial Policy Statement. According to prescriptions, an approved Environmental Impact Statement is required prior to any operations within 120 metres of Provincially Significant Wetlands (see AOC prescriptions in the FMP Table 11 and AOC Supplementary Documentation, in the 2020-2030 FMP). An approved protocol for evaluating wetlands as to their level of provincial significance exists but, in fact, very few wetlands have been evaluated. It is virtually certain that many more provincially significant wetlands could be found, if they were evaluated. However, wetlands are generally protected in the SF 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.

Seven wetlands have been evaluated for provincial significance within the Sudbury Forest. Four of these are considered as significant: Muskrat Creek, Sucker Creek, Vermilion River and Vermilion River Delta (the last two are linked). An MNR approved Environmental Impact Statement (supporting position that operations will not be detrimental to wetland values) is required prior to any operations within 120 m of Provincially Significant Wetlands.

In addition to managed Crown lands in the SF, there are other properties owned and managed by the Nickel District Conservation Authority that represent floodplain lands, wetlands or sites containing unique natural, historic or scenic features within the Sudbury Forest. These also contribute to the maintenance of water quality and flood control within the Vermilion River, part of the Wanapitei River and a portion of the Whitefish River watershed. These are not part of the SFL area.

The most significant fluctuations in water levels and stream flow on the forest occur as a result of climate effects as well as use levels and flow regulation required for hydro generation. Forest managers have no direct control over water level fluctuations and flow regulation associated with the hydroelectric industry, climate effects, or other water users but must ensure that forest operations have no significant negative impacts.

HCV Designation Decision:

Four wetlands were designated HCV in element 6 (Conservation areas). We note that the Vermilion River is designated as an HCV in element 18 (traditional cultural identity) and this will include the provincially significant wetland on that river. There is some overlap in designation.

14) Are there forests critical to erosion control?

Rationale:

This Element 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
- 2005 SF FMP (section 2.2.1)

Assessment Results:

There is little extremely steep topography or highly unstable terrain that would indicate obvious candidates for designating HCVs under this Element on the Sudbury Forest. We note there are some hilly areas in the forest but this would be called “broken topography” rather than mountainous and is not prone to landslides. The primary concerns 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 2020-2030 FMP (Sections 3.18.2, Conditions on Regular Operations in the Supplementary Documentation and Operational guidelines⁴ direct how operations on sensitive sites should occur. Operational scale maps provide contours to show relief of topographic features.

HCV Designation Decision:

There is no evidence of high-risk areas for compromised soil stability, sedimentation or erosion through forest operations on the Sudbury Forest. 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)?

This Element is deemed not relevant to forest ecosystems in Canada (see Appendix 5 in FSC Canada National Boreal Standard, Version 3.0).

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:

- Review Literature
- Search Ontario Ministry of Agriculture and Food
- Search Ontario Ministry of Northern Development and Mines
- Review 2010-2020 FMP AOC Prescriptions
- Discussion with local MNRF fisheries managers

Assessment Results:**Agriculture**

The Sudbury Forest is in the transitional area between the boreal forests to the north and the hardwood forests and agricultural lands to the south. Local topography in the Sudbury District is influenced by the underlying Precambrian bedrock of the Canadian Shield, making much of the area unsuitable for intensive agricultural activity.

The North’s agricultural sector is small compared to other parts of Ontario; dairy and beef farming account for 80% of commercial activity. Presently, only about 1/3 of the North’s agricultural land (Class 1 through 4) is in production. Forestry, tourism and mining still comprise the main economic sectors in the region.

Toward the southern portion of the SF (Site district 5E-5) the landscape is characterized by extensive tracts of developed agricultural land interspersed with sections of Crown forest. The soils are thin and the topography is flatter than other parts of the forest. Some forest areas previously identified as patent under the Agricultural Rural

⁴ MNR. 1997. Forest Management Guidelines for the Protection of the Physical Environment.

Development Agreement (ARDA) program were reverted to Crown ownership and made available for forest management. This resulted in an increase in the forest area.

Fisheries

Recreational fishing is an important social and economic contributor to the Sudbury Forest. There are approximately 90 tourist establishments in the SF that rely on recreational anglers for part of their business. More than 30% of these businesses are located along the French River. More than 40% of anglers in Sudbury target walleye, while trout species contribute 15% to the catch (DFMP 1990). Lake trout and brook trout waters dominate the northern portion of the Forest. Prior to the advent of the snowmobile, most of these waters were inaccessible (Timber Management Guidelines for the Protection of Fish Habitat, (1988)). Coldwater lakes and streams are low in nutrients, and thus have low productivity. These fisheries are sensitive to over-exploitation, which often results from new access. One of the objectives of road access strategies in remote and recreation enhanced management areas is to minimize the potential for increased angling pressure.

Information to designate waters as cold water, cool water or warm water fisheries is limited. However, waters for which data are lacking are classified as coldwater fisheries, and a more restrictive prescription is used in light of the known sensitivity of coldwater fish habitat. Forest management activities in riparian areas on the SF are implemented in a way to minimize harmful alteration or disruption of fish habitat.

HCV Designation Decision:

Agriculture: Although agriculture is of localized importance in some areas within the Sudbury Forest, it is unlikely that the beef and dairy industries that comprise a majority of the agricultural sector face any significant impact or risk from forest management on Crown lands (e.g. changes in wind and microclimate/microhabitat) - not HCV.

Fisheries: A conservative approach to the protection of fish habitat on the Sudbury Forest is taken throughout all planning exercises. Interaction with forestry is minimal and at this time we did not identify important production areas. However, the concentration of Fishing Lodges on the French River are regarded as part of the values contributing to its designation in Element 18 (Traditional Cultural Identity).

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).

Element 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:

- NRVIS data
- Socio economic Description in 2020-2030 FMP (Section 2.2 of the text)
- 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

Subsistence/Health

The Sudbury Forest and surrounding areas are 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 Element 12.

Timber Values⁵

In any given year there are from 15 – 20 communities receiving wood fibre from the Sudbury Forest or provide employment to the forest industry. In addition there are Aboriginal communities within or adjacent to the Sudbury Forest and whose interests and traditional uses may be affected by forest management activities. Communities receiving wood fibre from the forest (> 1%) or having employment related to the forest industry are: Espanola, Nairn, Alban, Noelville, Monetville, Sturgeon Falls, Englehart, Falconbridge, Ostrum, Capreol, Sault Ste. Marie and Kirkland Lake.

The 2020-2030 FMP has an Objective (#21) “to provide a sustainable, continuous, and predictable wood supply that will meet, as closely as possible and for as long as possible, the current recognized industrial demand on the Sudbury Forest.”

The subject of the forest industry as an HCV was discussed. 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, as the element requires. This industry is critical to the communities inside the forest and to some outside of it. In practical terms, HCV designation would be symbolic (and cause paperwork for future auditors). In practice the [Forest Management Plan](#) is the management and monitoring for the forest. The forest industry 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.

For simplicity, timber values were therefore not specifically designated HCV.

Tourism

There are a number of important cottage lakes in the forest and seven AOC prescriptions were developed for their protection (Sudbury Forest 2020-2030 FMP, Table 11). The purpose of these AOCs is to protect the important viewscapes of Armstrong Lake, Trout Lake, Lake Panache, Edith Lake, Naraka Lake, Millerd Lake as well as other unspecified lakes. There are a number of different protection measures employed. The lakes are typical of the shield country and are widely distributed all through central and northern Ontario. Cottagers are very protective of their lake environment, and actively participate in the planning process as stakeholders.

Georgian Bay Biosphere Reserve

Biosphere Reserves are internationally recognized by UNESCO where communities are within a shared landscape to achieve “sustainable livelihoods, vibrant culture and robust economies based on a healthy

⁵ Section 2.0, Management Unit Description. 2020-2030 Sudbury Forest Management Plan.

environment.” The Georgian Bay Biosphere Reserve is an area of 347,000 hectares along 200 km the coast from Port Severn to the French River. It is in the world’s largest freshwater archipelago, also known as the 30,000 Islands.

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.

HCV Designation Decision:

The lakes are typical of the shield country and are widely distributed all through central and northern Ontario. They are locally significant, but are not HCV designations under Category 5. The biosphere reserve has a stated purpose of sharing the forest to create opportunities and work within an internationally recognized ecosystem. This gives it the characteristics of an HCV and is so designated. There is no special prescription required due to the location.

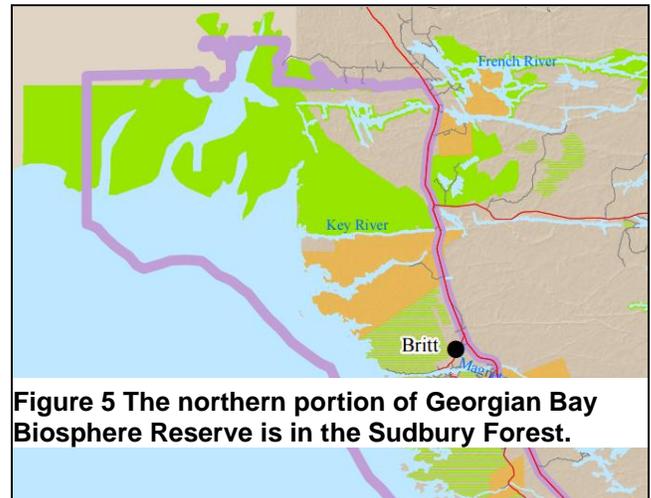


Figure 5 The northern portion of Georgian Bay Biosphere Reserve is in the Sudbury Forest.

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, ‘local’ is defined as in the national Boreal 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 Atlas
- NRVIS data on cultural values
- Heritage River Parks on the Forest
- Canadian Heritage River Program
- Background Native Information Report
- FMP -- Discussions and correspondence with First Nations during forest management planning consultation sessions
- FMP -- Discussions and correspondence with non-native communities and stakeholders during forest management planning consultation process

Assessment Results:

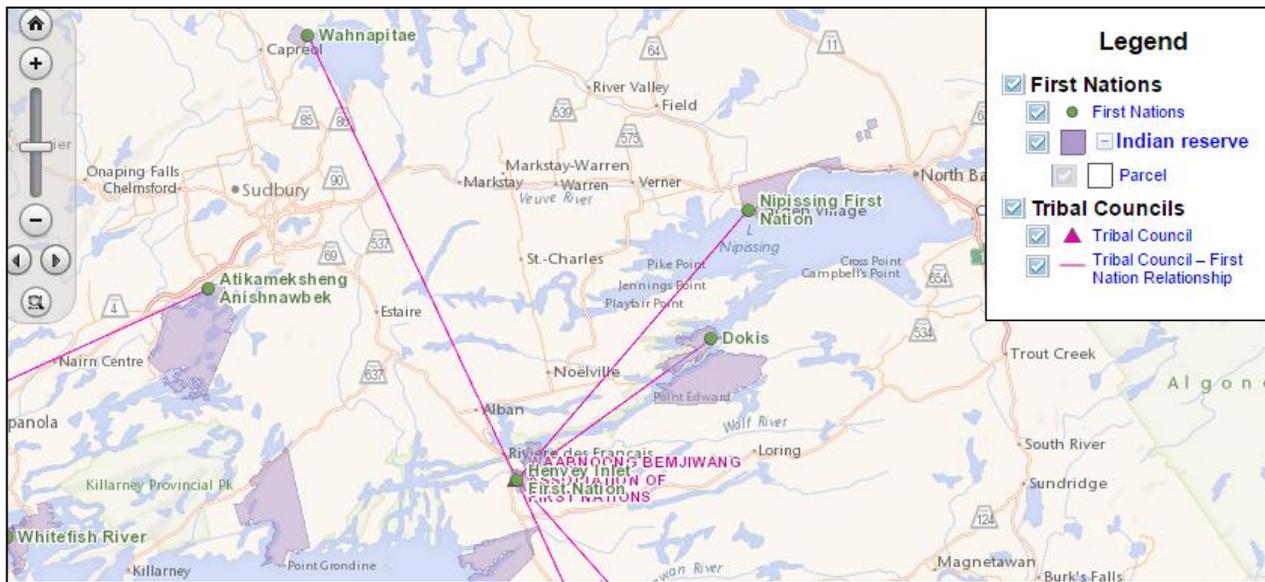
Native Values

For reasons of confidentiality, the “Native Background Information Reports” developed for FMPs are available through the First Nation or the MNR Resource Liaison Officer upon consent of the associated First Nation. The

Forest Management Plan does not include all Native Values. Additional Native Values identified will be incorporated into the operations at the Annual Work Schedule level. For purposes of this HCV report, native values will be discussed in a generic way and no specific location information will be given.

Eight First Nations are located within or near the Sudbury Forest management unit. These include Dokis First Nation, Henvey Inlet First Nation, Atikameksheng Anishnawbek First Nation (formerly known as the Whitefish Lake First Nation), Wahnapiatae First Nation and Wikwemikong Unceded Indian Reserve. Point Grondine Indian Reserve #3 is located within the Sudbury Forest, on the north shore of Georgian Bay between Killarney Provincial Park and highway 69. In addition, Temagami First Nation has traditional land use areas in the Sudbury Forest along with the Métis Nation of Ontario, Region 4 and 5.

Figure 6. [First Nations map](#) in the vicinity of the Sudbury Forest from Aboriginal Affairs and Northern Development Canada.



- 1) Henvey Inlet First Nation is located on the French River Reserve 11 km south of the French River and the Henvey Inlet Reserve, located on the northeast shore of Georgian Bay. Henvey Inlet First Nation has a land base of 12157.8 hectares, comprising of 135 members living on the reserves with another 242 living off the reserves.
- 2) Atikameksheng Anishnawbek First Nation is located approximately 19 km west of the Greater City of Sudbury. The current land base is 43,747 acres. As of April, 2014 the total population is 1147 members.
- 3) Wahnapiatae First Nation, a signatory to the Robinson-Huron Treaty of 1850 is located 50 kilometres (km) north of Sudbury. With a land base of 1063 hectares, Wahnapiatae First Nation comprises approximately 320 members with about 60 of those living on the reserve.
- 4) Whitefish Lake First Nation is located approximately 15 kilometres (km) southwest of the City of Greater Sudbury and are member to the North Shore Tribal Council. With a land base of 17,704.5 hectares, Whitefish Lake First Nation consists of approximately 840 band members living both within and off of the reserve.
- 5) Dokis First Nation is located approximately 16 kilometres southeast of Lake Nipissing, on the French River. It has a land area of approximately 12262.2 hectares. It is divided into 2 large parts consisting of a north island, Okikendawt, and a large southern peninsula. The main settlement is found on Okikendawt Island. Road access to the First Nation is by a gravel road which connects with highway 64, approximately 30 kilometres to the northwest. There are approximately 951 members with 161 people living on reserve and 372 living off reserve.
- 6) Temagami First Nation is located 88.5 kilometres (km) northwest of North Bay. With a land base of 293.4 hectares, Temagami First Nation has a member registration of 639 members, with 192 living on reserve and 447 members living off reserve.
- 7) Wikwemikong Unceded Indian Reserve #26, located on Manitoulin Island, 160 kilometers (km) southwest of Sudbury and 35 km southeast of Little Current, is home to the People of the Three Fires –Odawa (Traders),

Ojibway (Faith Keepers) and Pottawotami (Fire Keepers). The largest of six First Nations' communities on Manitoulin Island, Wikwemikong is recognized as Canada's only unceded Indian Reserve. With a land base of 55,000 hectares on the reserve with additional hectares under resolution (boundary review), Wikwemikong Unceded Indian Reserve consists of approximately 5,500 members living both within and off of the reserve.

- 8) Indian Wikwemikong unceded Reserve #3 Point Grondine is located within the Sudbury Forest, on the north shore of Georgian Bay between Killarney Provincial Park and highway 69.

VFM uses a predictive tool, supplied by MNRF, to identify areas of high archaeological potential. While it is a coarse filter approach, it does serve to flag areas with a high probability of having some archaeological significance. VFM has made a commitment to the local First Nations to notify them if the services of an archaeologist have been engaged to confirm sites, before the archaeologist enters or crosses any of the high potential areas identified by the model. Mapping of cultural values (non-sensitive) is available at Map 5 MNRF Values Maps – Cultural Heritage Values.

Recognizing that the Forest contains many values that are not just of an archaeological nature, the Native Values identified in the SF FMP are addressed in the eight AOCs described below.

Table 11. Summary of “Generic” Native Values from the 2020-2030 SF AOC prescriptions FMP Table 11

AOC Code	Description of Value
NV1	Native Values (Cemeteries, Old Villages and Spiritual Sites, Pictographs, Archaeological Sites, Fur Trading Post, Traditional Gathering Sites of Medicinal Plants and Berries)
NV2	Native Values (Traditional Habitation Sites, Hunting Camps, Old Mines, Logging Camps and Sawmills)
NV3	Native Value (Winter Trails, Old Wagon Roads and Winter Horse Trails)
NV4	Native Values - Reserve Boundaries
NV6	Portages identified by local First Nations
NV7	Native Value (Traditional Fishing Area)
NV8	Native Value – white birch collection areas
NV9	Temagami Trails (Nastawgan winter trails and portages) NEW 2010 FMP

Heritage Rivers and Lakes

There are a number of rivers that either originate in or flow through the Sudbury Forest that are recognized locally, provincially, or nationally as having significant cultural and historical significance. The SF contains spectacular waterways, and it is not surprising that the managers regard a number of them to be HCVs.

In particular, the French River was used for centuries as a travel corridor and trade route by First Nations and early European explorers and voyageurs. While exhaustive archaeological surveys have never been conducted, without a doubt these areas contain a large number of significant archaeological sites. In recognition of this the French River has been designated as a Canadian Heritage River by Parks Canada. The objective of the Canadian Heritage River System is to give national recognition to Canada's outstanding rivers and to ensure long-term management and conservation of their natural, cultural, historical and recreational values. The French River Park is located within the Great Lakes Heritage Coast Signature Site, one of 9 such areas featured in the Ontario's Living Legacy Land Use Strategy (1999). Signature Sites are identified for their range of natural and recreational values and their potential to contribute to future recreation and tourism. French River Park, encompassing the area adjacent to Lake Huron, and the Great Lakes Coast have protected area status and are not HCVs, except for the proposed park expansions. Some portions of the French River are covered by Resource Stewardship Agreements (RSAs), which provide additional protection through special management requirements. Areas that coincide with the RSAs are considered as HCV along the French River (RSA 1, 2, 3 & 5).

The land use area called Eighteen Mile Island (E168a) is an enhanced management area that complements French River Park and vicinity. It is a large area of about 10,000 ha, and is a restricted access area. The Crown Land Use Atlas describes it as:

“A large, scenic island located on the upper French River, containing a mature hardwood forest with sugar maple, hemlock and yellow birch. The southern shoreline is located along the French River Provincial Park, an area of high recreation and tourism values. Forest management activities are important in areas set back from the river.”

This area also includes a small parcel of land (MNRF designation W9) located on the west end of Eighteen Mile Island on the French River designated under the Wilderness Areas Act (1980). Such an area is set aside “...as a wilderness area for the preservation of the area as nearly as may be in its natural state in ... for the protection of the flora and fauna, for the improvement of the area, having regard to its historical, aesthetic, scientific or recreational value...”. Although this could be considered a protected area, the “wilderness” designation is not clear and so it is considered HCV.

The Vermilion River, while not a designated as a Canadian Heritage River, also has high local/regional cultural and historical significance. The Vermilion River area has one of Ontario’s few “natural heritage” designated Enhanced Management Areas (E180n). The forest reserves along this dramatic oxbow river were combined into the EMA (Dowling/Fairbank forest reserve; Capreol/Hanmer Forest Reserve (MNRF F179); Cow Lake Forest Reserve (MNRF F207); Nelson Delta East (MNRF F216)). The Vermilion River Delta Wetlands are part of the Dowling Faribanks area, and there is some ambiguity in the records.

The following text is from the Crown Land Atlas description of the area (CD contents Landuse Files E180n; and MNRF Crown Land Atlas file E180n):

“The Vermilion River and its associated provincially significant wetlands, located on the fringe of a highly populated and developed urban/rural area, is a unique physiographical and biological feature in the Sudbury Region. The many river meanders, accompanied by numerous ox bow lakes, are an excellent example of river dynamics in concert with vegetative succession. The size and uniqueness of this riverine system extending some 35 kilometres between Onwatin Lake and the Capreol/Hanmer Delta in the northeast to the Vermilion River Delta Wetland Conservation Reserve and Vermilion Lake in the southwest at a regional scale is unquestionable.

The Vermilion River area contains glaciofluvial outwash deposits, glaciofluvial delta deposits, ice-contact kame moraines and eskers, and glaciolacustrine beach deposits were deposited during the Pleistocene Period of continental glaciation. The full ecological and scientific value of this wetland and its possible provincial significance can only be realized through more thorough and detailed study of its inherent features and functions.

LAND USE INTENT: The Vermilion River wetland complex is accessible and has great educational, recreational and interpretive potential within the Sudbury Region. Land use direction and resource management activities within this area to protect the hydrologic and/or biological connection between the ox bows and riparian wetland pockets along the linear corridor and to be compatible with the natural and recreational values of the proposed

The Vermilion River has four associated Forest reserves:

- Dowling/Fairbank forest reserve and the proposed Vermilion River Delta Conservation Reserve (MNRF F208) includes the provincially significant Vermilion River Delta wetland and an area of upland forests representative of site district 5E-4 . The wetland is dominated by a complex of abandoned channels and remnant levees. It contains a diverse array of swamp and marsh communities, along with important waterfowl staging habitat. It is currently being reviewed
- Capreol/Hanmer Forest Reserve (MNRF F179) This "perched" glacial delta in site district 5E-4 was once the mouth of an ancient river flowing into a small glacial lake which occupied the Sudbury Basin. This landform, on the north rim of the Sudbury basin, is now elevated above the surrounding landscape. There is a history of ancient lake fluctuations on this landform, including four terraces that were eroded into the flanks of the delta.

- Cow Lake Forest Reserve (MNR F207) This forest reserve is just west of Town of Dowling, near the boundary between Site Districts 5E-4 and 4E-3. It is a diverse site that contains landscapes of rolling bedrock hills, ground moraine and glacial outwash. Typical habitats include poplar, red maple white pine and old jack pine forests, rock barrens and a variety of wetlands.
- Nelson Delta East (MNR F216) This site is a hilly bedrock landscape in site district 5E-4 that overlooks the glacial landforms around the Nelson Delta site. The northern portion of the site contains portions of the Vermilion River provincially significant wetland. The hilltop and hillside habitats here include poplar, spruce, jack pine and cedar forests, grassy meadows, alder swales and treed and open wetlands. There are flat lacustrine deposits in bedrock pockets that support wetlands.

Both Capreol (F179) and Vermilion Delta (F208) are currently being reviewed by the government and may be removed from Forest Reserve status due to mining considerations. As noted under Element 6, VFM will continue to regard these forest as HCVs and will not change the current management approach.

The Sturgeon River area downstream from the Sudbury Forest in the Nipissing Forest, is identified as HCV for water quality and municipal quality concerns for Sturgeon Falls. Within the Sudbury forest, The Sturgeon River was initially identified as a future park (MNR designation P173), through the Living Legacy. This is being reconsidered. This is previously discussed under Element 6. The reasons for the park area include 1) representative earth science features including a much larger glacial river that spread beyond the present river to deposit sand and gravel which describe higher river shorelines with channel scars over a broad bedrock-walled valley; and 2) Floodwood Forest, one of the most representative areas in Site District 5E-4 with deposits covered in spruce, pine and oak, gently rolling ground moraine deposits supporting pine stands, and treed wetlands between moderately rolling hills. On balance the forest managers at VFM have opted to designate this area as HCV regardless of the final outcome of land use discussions now underway. It is designated under Element 18 because there are multiple values beyond just water quality.

Wanapitei River, Lake Wanapitei and Wanapitei Park are the central feature of the Sudbury Forest, along with Chinguchi Lake (MNR E183r, F174, P174) and Wolf Lake (MNR F175) extending to the northeast. These features can be characterized with the following descriptions based largely on the Crown Land Atlas:

“Lake Wanapitei and Wanapitei R (North branch) -- Lake Wanapitei has been identified by MNR as a lake trout lake. It is also one of the sources of fresh water for the City of Greater Sudbury. It provides an excellent base for recreational activities, including small craft boating, canoeing, cottaging, warm and cold water sport fishing, camping and bathing. The majority of the shoreline is held under Crown ownership. Access is provided by logging and cottaging roads, the Canadian National Railway line and numerous water access points. Land use activities including seasonal residential development, mineral exploration and development and aggregate extraction have increased in this area in the past few years. Commercial fur trapping and baitfishing also occur. Another important use of the Lake is made by Ontario Hydro. A dam at the south end of Outlet Bay controls water levels on the Lake for hydro-electric power generation purposes for the Stinson, Coniston, and McVittie generating stations downstream on the Wanapitei River.

Wanapitei R West is south of the City of Greater Sudbury and includes the southern reaches of the Wanapitei River is dominated by industrial users including logging, mining and hydro. Fisheries resources and the moose populations in some areas have been subjected to overharvesting partly attributed to the relative ease of access provided by roads initially constructed for logging and mining purposes. This increased level of accessibility is also in conflict with the desire of some recreationists and tourist operators to maintain a natural environment recreation experience. A portion of this area is located within the Great Lakes Heritage Coast Signature. This area is called a general use area (G2049a) encompassing 641 ha on the north shore of Lake Wanapitei. It contains a lowland swamp forest and jack pine rocklands which border the mouth of Parkin Creek and the adjacent Lake Wanapitei shoreline.

Wanapitei Indian Reserve No. 11 on the northwest shore of Lake Wanapitei is outside of the scope of this report.

Wanapitei Park was established in 1985 on the north shore of the Lake. Modifications were made to the park boundary in 1997 resulting in an enlargement of the park to the north. Public recreation, preservation of natural landscapes and scientific research is the main focus of management.

The Wanapitei area is used by a number of other forest users and consequently any impacts on values or other users by forestry activity near the river or lake is carefully monitored. There are three RSAs in place (RSA 11,12, 13).

Chiniguchi EMA (E183r) along with and Wolf Lake Wolf Lake Forest Reserve (F175) and Chiniguchi Waterway Park (P174) and Forest Reserve (F174) are important for recreation, tourism and resource sector (forestry, mining). The EMA and Wolf Lake Forest reserve would be the portion of the landbase that is designated HCV, since other portions are already protected. The following description of the EMA is from the Crown Land Atlas, along with collateral descriptions of the parks:

“The [EMA] contains interconnecting lakes and rivers and rugged scenic topography with good recreational capability, including the Matagamasi Lake to Chiniguchi Lake and the Matagamasi Lake to Laura Lake canoe routes and Maskinonge Lake to Washagami Lake to Chiniguchi and Sturgeon River canoe route. There are 17 lake trout lakes and two tourism lakes in this area. Although a good portion of the area is road accessible, there are also a number of remote pockets which provide excellent remote recreation opportunities including fishing and hunting. Cottage development occurs on a number of lakes in the southern and western portions. This area is well used by a number of tourism establishments and contains active forestry operations. Mineral potential is high and there is considerable mining exploration activity. This accessibility is regarded as being in conflict with the desire of recreationists and tourist operators to maintain a natural environment recreation experience. Land use direction and resource management activities will be compatible with protecting the natural and recreational values of the area including: the existing Wanapitei and Sturgeon River provincial parks [now under discussion] and the proposed Chiniguchi Waterway Provincial Park and proposed Kukagami and Wolf Lake forest reserves. Some boundary modifications may occur to Chiniguchi Waterway Provincial Park (see P174) [and Forest Reserve F174]. This Site District 4e-4 waterway park extends north from the south end of Maskinonge Lake (where it is situated adjacent to the Sturgeon River waterway park), through Matagamasi Lake, the park connects with the Wolf Lake Old Growth Forest Reserve (F175), providing a contiguous protected area from Wanapitei Lake to the Sturgeon River area. The park includes an established provincial canoe route, providing outstanding year round recreational opportunities. The canoe route is based on ancient Aboriginal travel ways following traditional portages. There is a variety of cultural features including pictographs along the route. Maskinonge Lake has been identified as a tourism lake. There are seven lake trout lakes in the park.

Wolf Lake Old Growth Forest Reserve (F175) contains the largest contiguous area of red pine "working group" stands older than 140 years in Site Region 4E. This may be the largest remaining contiguous old growth red pine dominated forest in Ontario. Wolf Lake has high recreational values, being situated along the Matagamasi to Chiniguchi Lake canoe route. There area five lake trout lakes: Wolf, Franks, Dewdney, Silvester and Matagamasi lakes. Note weblinks are provided to the Crown Land Atlas website.

Name	Area ID	Hectares
Eighteen Mile Island	E168A	10,718
Donald Lake	E176A	11,921
Kitchener Township	E196A	20,005
Killarney East Area	E211A	29,313

HCV Designation Decision:

All identified native values are considered HCV.

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:

- French River boundaries designated by Resource Stewardship Agreements (RSAs), and 18-mile island (MNRF E168a and W9)

- Wanapitei River (boundaries designated by RSAs), Chiniguchi Lake (MNRF E183r), Chiniguchi Proposed Park (P174), Chiniguchi Forest Reserve (F174) and Wolf Lake (MNRF F175)
- Vermilion River (MNRF E180n) along with associated Forest Reserves Dowling/Fairbank forest reserve and the proposed Vermilion River Delta Conservation Reserve (MNRF F208); Capreol/Hanmer Forest Reserve (MNRF F179); Cow Lake Forest Reserve (MNRF F207); Nelson Delta East (MNRF F216)
- Sturgeon River following the current MNRF designation P173 (regardless of proposed change in status)

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 Element can be used for items of special value that may not be captured within the first 18 Elements. In essence it is a fine filter approach for special values that may not tightly fit the concept of HCV. In the case of the Sudbury forest there are some HCVs that represent overlapping values. In particular, Element 18 designated the French and Vermilion Rivers. Both Rivers cover a wide range of values from natural heritage to cultural, provincially significant wetlands. Although there is not much risk from forest management due to the extensive protected areas, the sites were previously designated HCVs.

There are no other overlapping HCVs designated in this Element.

Managing and Monitoring HCV attributes

The overall goal of managing HCV in keeping with the FSC criterion 9.3 is

“The management plan shall include specific and implemented measures that ensure the maintenance and or enhancement of the applicable conservation attributes consistent with the precautionary approach.”

Several points from this criterion have guided VFMs approach to managing HCVs:

- The 2020-2030 Forest Management Plan provides the direction for HCV management; the prescriptions are integrated into the plan – 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 that the prescriptions must be shown to be effective.

It is worth repeating that the plan and the planning exercise drive VFMs 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 8 provides an overview of the HCV values that were identified in this study. It also describes the responsibility of MNRF for inventory and monitoring. VFM is responsible for implementation of the detailed management prescription. There is a shared responsibility between MNRF and VFM for evaluating the effectiveness of management prescriptions. These prescriptions must be shown to be effective.

Specific prescriptions that are described here are also mapped in detail on FMP operations maps. **Error! Reference source not found.**

Process for Monitoring

Monitoring for HCV attributes is described in Table 8. Only monitoring for designated HCV attributes are listed in this table. The information provided covers 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 annually as there is a significant body of literature behind many of the prescriptions.

Table 8. Overview of HCV identified on Sudbury, responsibilities for inventory and monitoring, detailed management prescriptions and procedures for evaluating the effectiveness of management prescriptions.

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
<i>Falco peregrinus anatum</i> Peregrine Falcon	Nest sites	MNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Status is determined by COSSARO, and this determines the recovery planning process. MNRF maintains values database (NRVIS).	Up to 1 km Reserve: 250 m Modified Harvest, Renewal and Tending: MMZ-1: 1 km Additional Information Type A nest sites: a 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 that is less than 15m in height. AOC for Type A nest sites is a 1km radius measured from the top and bottom of the vertical cliff face. Type B nest sites: any other natural site on which a peregrine falcon is nesting or has nested at any time during the previous 15 years. AOC for Type B nest sites is a 1km radius measured from the nest location.	Compliance MNRF and Company compliance staff routinely ensure prescription is implemented. VFM contact Ron Luopa, RPF, Operations Forester at VFM rluopa@sudburyforest.com Effectiveness monitoring is the responsibility of MNRF. For specific expertise contact the local biologist: Jean Enneson Management Biologist 705-564-7859 jean.enneson@ontario.ca
<i>Haliaeetus leucocephalus</i> Bald Eagle	Nest sites	As above	AOC BEA 400 m (The appropriate prescription is selected based on whether the nest is primary, alternate or inactive. AOC distances are measured from the nest tree.) Reserve: 100 m Modified Harvest, Renewal and Tending: MMZ-1: 101-200 m MMZ-2: 201-400 m	As above
<i>Riparia riparia</i> Bank Swallow	Nest sites	As above	AOC BSW AOC 50 m; Reserve modified harvest 10-50 m Breeding from May 1 to July 31 - Regular harvest, renewal, and tending operations are permitted within the AOC subject to timing restrictions.	As above
<i>Caprimulgus vociferus</i> Whip-poor-will	Nest sites	As above	AOC WW habitat occupied by a breeding pair within the last 5 years. AOC - 170 m; reserve 20m; Timing Restriction - Critical Breeding period.	As above
<i>Ixobrychus exilis</i> Least Bittern	Nest Sites	As above	The 2020 FMP contains an Area of Concern prescription for Provincially Significant Wetlands that would protect important breeding habitat for this bird (PSW). The 2020 FMP also has a prescription for the protection of wetland bird breeding habitat (WB).	As Above

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
<i>Hirundo rustica</i> Barn Swallow	Nest Sites	As above	The 2020 FMP has an AOC prescription to protect nests (BKS) Total AOC Width: 50 m (measured from peripheral nests). Applied to nests known before or found during operations. MMZ-1: 0 – 10 m up to 50 m	As above
<i>Myotis septentrionalis</i> Northern Long-eared Bat, or Northern Bat Little Brown Myotis Small Footed Bat	Bat hibernacula, foraging or roosting sites	As above	Northern Bat is covered by two prescriptions that address all bats: BH -- Bat hibernacula, foraging or roosting sites known on the forest. 200 m centred on the entrance to the hibernaculum, foraging area, or roosting site Reserve: 100 m; Modified Harvest, Renewal and Tending: MMZ - 1: 200 m; 200 m Hibernation and associated entrance and emergence period: Sept. 1 to May 30. BMR -- Bat roosting sites known on the forest -- Same prescription as above	As above
<i>Emydoidea blandingii</i> Blanding's Turtle	Winter and Summer aquatic habitat	As above	AOC ID Reserve: 30 m from verified suitable aquatic habitat. Modified Harvest, Renewal and Tending: MMZ-1: 150m from verified suitable aquatic habitat. MMZ-2: 250 m from suitable aquatic habitat. For details of prescription see FMP tables.	As above
<i>Glyptemys insculpta</i> Wood Turtle	Winter and Summer aquatic habitat	As above	AOC ID WT Reserve: 30 m from verified suitable aquatic habitat. Modified Harvest, Renewal and Tending: MMZ-1: 150m from verified suitable aquatic habitat. MMZ-2: 250 m from suitable aquatic habitat. For details of prescription see FMP tables.	As above

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
<p><i>Sistrurus catenatus</i> Massasauga Rattlesnake</p>	<p>Massasauga Rattlesnake hibernacula</p>	<p>As above</p>	<p>Massasauga Rattlesnake - AOC EMR 1.2 km radius AOC from individual reliable observation (MNRF Confirmation). Reserve: 50 m from mapped hibernaculum sites 30 m from mapped gestation sites Modified Harvest, Renewal and Tending: MMZ-1: 51-100 m from hibernaculum boundary as well as open/semi open areas within 1.2 km from individual reliable observation (MNRF Confirmed). MMZ-2: Closed Canopy Forest areas within 1.2 km from individual reliable observation (MNRF Confirmed).</p>	<p>As above</p>
<p>Heterodon platirhinos Hog-nosed Snake</p>	<p>Hibernacula Hog-nosed Snake</p>	<p>MNRF is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Status is determined by COSSARO, and this determines the recovery planning process.</p>	<p>AOC – SNH Hibernacula used by eastern hog-nosed snake, eastern ribbonsnake, or milksnake within the past 5 years.</p> <p>30 m radius from the mapped hibernaculum Modified Harvest, Renewal and Tending: MMZ-1: Delineated AOC</p>	<p>For compliance enquiries contact Ron Luopa, RPF, Operations Forester at VFM rluopa@sudburyforest.com</p> <p>Jean Enneson Management Biologist 705-564-7859 jean.enneson@ontario.ca</p>

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Deer Wintering Area	Habitat characteristics of deer wintering areas	As described in the stand	These are managed by CRO (condition on regular operation) identified in 2020-2030 FMP Appendix 6.1 (q), section 3.14.	<p>VFM ensures compliance in practices. For compliance enquiries contact Ron Luopa, RPF, Operations Forester at VFM rluopa@sudburyforest.com</p> <p>Jean Enneson Management Biologist 705-564-7859 jean.enneson@ontario.ca</p>
Self-Sustaining Trout Lakes	Self sustaining population	MNRF identifies and determines the prescription, as well as monitors populations.	There are two AOC prescriptions in the 2020-2030 FMP in FMP Table 11, SST2 & SST3	<p>Compliance with the prescriptions is determined by VFM with oversight from MNRF. For compliance enquiries contact Ron Luopa, RPF, Operations Forester at VFM rluopa@sudburyforest.com</p> <p>Effectiveness Monitoring is the responsibility of MNRF. For additional information: Jean Enneson Management Biologist 705-564-7859 jean.enneson@ontario.ca</p>

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Edge of Range: White elm, Black Cherry, Ironwood, Yellow Birch and Red/Bur Oak (North of Highway 17), Silver Maple, Ash, Basswood	Stands >2 ha	Company tree markers identify individuals. FRI may identify stands >2 ha	The 2020-2030 FMP for the SF includes objectives, corresponding indicators and targets that will be used to maintain or enhance all of the listed species in the forest if they are encountered (FMP 10 Objective #8). Associated strategies identified in 2020-2030 FMP Appendix 6.1 (q), section 3.2: All healthy (AGS) individuals of rare tree species will be retained, except where removal is required to regenerate that species, or where there is a forest health risk (e.g. invasive species) or risk to human safety. Individuals with poor health or major defects (UGS) can also be retained for diversity reasons. Tree markers must also be mindful to maintain species in proportions reflective of the pre-harvest condition. When reproduction of valuable, minor stand component species is desired (red oak, white ash, etc.), several (not individual) good stems will be maintained to ensure adequate pollination.	Compliance with the FMP requirements are supervised by VFM directly. For compliance enquiries contact Ron Luopa, RPF, Operations Forester at VFM Cell: 705-561-3506 rluopa@sudburyforest.com

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
<p>Regulated Conservation Areas:</p> <p>Parks and Conservation Reserves</p> <p>Temagami Land Use Planning area</p>	<p>Provincial Park Boundaries</p> <p>Conservation Reserve Boundaries</p> <p>Temagami Land Use Planning area</p>	<p>Land use designation is the responsibility of MNRF.</p>	<p>The 2020-2030 FMP includes an Area of Concern for park boundaries called “PB” The intention is to protect the integrity of the park boundary itself. Reserve: 0 m Modified Harvest, Renewal and Tending: MMZ-1: 30 m Road Restriction: 200 m</p> <p>See Temagami Land Use Plan (TLUP) for definitive explanation. Following are the Temagami-area Land Use Zones for illustration. The 2020-2030 FMP includes an Area of Concern for recreational values within the Temagami Land Use Are called “TLU”.</p> <p>Protected Areas. In Protected Areas, no commercial timber harvesting, mining or aggregate extraction will be permitted. Land use will focus on low-intensity, non-consumptive recreation and tourism, and on the protection of significant ecological values, with allowable activities such as fishing, hunting, snowmobiling, canoeing, hiking and cross-country skiing.</p> <p>Special Management Areas. In Special Management Areas, access will be carefully planned, and resources will be managed to ensure that significant values are protected. Remote recreation and tourism will continue to be allowed and encouraged. Resource extraction and related development will also be permitted, but will be carefully managed to ensure that the activities are compatible with other significant uses and values in the area. This will be accomplished through access controls and area-of-concern planning done as part of the Forest Management Planning process.</p> <p>Integrated Management Areas - There will be fewer restrictions on public access for recreation and resource management/extraction activities, and both types of activities will be permitted.</p> <p>Developed Areas - mainly privately-owned land, including agricultural land, but also include Crown land. Resource extraction and related development will be permitted on Crown land within Developed Areas, but the activities will be carefully managed to ensure that they are compatible with other significant uses</p>	<p>Compliance with the prescription is determined by VFM For compliance enquiries contact Ron Luopa, RPF, Operations Forester at VFM rluopa@sudburyforest.com</p> <p>Effectiveness Monitoring is the responsibility of MNRF. For additional information: Shelley Straughan Management Forester (Acting) 705-564-7876 shelley.straughan@ontario.ca</p> <p>For further information on TLUP and protected areas contact: District Planner – Julie McFarling 705-564-7876 julie.mcfarling@ontario.ca</p> <p>As a land use decision TLUP is the responsibility of MNRF</p>

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Wolf Lake Old Growth Forest	Forest Reserve	Link to Policy decision	<p>Decision on Policy: The Ontario government decided to retain the Forest Reserve designation for Wolf Lake Old Growth Forest.</p> <p>This is interpreted as a “balanced approach towards economic development and environmental sustainability by ensuring commercial harvesting of old growth red pine remains prohibited on Wolf Lake Forest Reserve while still allowing for exploration and development of existing mining claims and leases.”</p>	<p>For further information contact: District Planner – Julie McFarling 705-564-7876 julie.mcfarling@ontario.ca</p> <p>As a land use decision, this is the responsibility of MNRF</p>
Late Seral Forest	<p>1 Late seral White & Red Pine 2 Late seral Tolerant hardwood north of Hwy 17 3 All Hemlock stands 4 Significant Ecological Areas</p>	The old growth policy and strategy are the responsibility of MNRF.	<p>The 2020-2030 FMP contains three management objectives with respect to old growth on the SF. Objective 2 calls for a “Move towards a more natural abundance of old growth habitat and an increase in the mean size and frequency of old forest patches”. Objective 3 calls for “With consideration to the current landscape pattern and composition, ensure the long-term distribution of old growth development across the Sudbury Forest in proportion to respective cover types. Objective 5 requires the plan to “Provided Red and White Pine forest area not less than 1995 levels, consistent with the <i>Conservation Strategy for Old Growth Red and White Pine Ecosystems in Ontario, 1996</i>”.</p> <p>Included in the old growth strategy is the identification of Significant Ecological Areas on the MNRF values maps (LIO non-sensitive values data). These areas were established due to concentrations of older red and white pine and are identified as ‘no-cut’ deferral areas where they fall outside of Parks or Conservation Reserves.</p>	Effectiveness Monitoring is the responsibility of MNRF. For additional information: Shelley Straughan Management Forester (Acting) 705-564-7876 shelley.straughan@ontario.ca

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Enhanced Management Areas w Access control	Areas with reduced road density	Land use designation is the responsibility of MNRF.	<p>Remote EMAs (EMAs) are typically relatively large areas which provide the public and tourism operators with high-quality remote recreational experiences. Roads for industrial and commercial use are permitted in these areas, however, their standards should be lower than those governing primary access roads.</p> <p>The following is suggested to maintain the remote feature of the area:</p> <ul style="list-style-type: none"> • Roads should be constructed to the lowest standard possible; • Existing access will be used as much as possible ; • Layout should consider aesthetics; • Design and construction should facilitate access controls and closure rehabilitation; • New roads will be restricted from public use and existing authorized access will continue; • Specific road use strategies will be developed for new primary and secondary roads and procedures identified for managing tertiary roads within remote areas 	<p>Land use designations are MNRF responsibility. For more detailed information about planning and monitoring - Julie McFarling 705-564-7876 julie.mcfarling@ontario.ca</p>
Springs and Municipal Water Supply	Source Water protection	<p>MNRF and the Company identify springs and MWS as part of the FMP.</p> <p>Both also ensure the AOC prescription is complied with. Value is identified through Ministry of Environment program of source water protection.</p>	<p>AOC MWS Municipal Water Supply, private wells and known springs as identified by landowners adjacent to planned operations- purpose is to protect the water supply AOC - 90 m Additional Information Landowners adjacent to planned operations will be contacted at the AWS stage prior to operations and asked to identify known wells and springs. Reserve: 45 m Modified Harvest, Renewal and Tending: MMZ-1: 90 m Public springs receive a buffer of 20 m.</p>	<p>VFM staff ensure compliance. For more detailed information about planning and monitoring - - Julie McFarling 705-564-7876 julie.mcfarling@ontario.ca</p>

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Provincially Significant Wetlands	PSW identified through evaluation system by a Biologist trained by MNRF in Wetlands Evaluation	MNRF is responsible for identification and classification of wetlands as provincially significant.	<p>AOC PSW AOC = PSW + 120 m.</p> <p>Modified Management Zone (MMZ1) measured from the edge of the wetland 1-120m</p> <p>Additional Information Harvest, renewal and tending operations are permitted within the AOC without an EIS only if they retain residual forest and will not result in direct damage to vegetation within the PSW or deposition of sediment within the PSW.</p> <p>No machine travel within the inner 3 m of the AOC. - No felling of trees into rivers or streams or the inner 3 m of the AOC. Trees accidentally felled into rivers or streams will be left where they fall. - No excessive removal or damage of sapling-sized trees (<10 cm dbh) and shrubs within the inner 3 m of the AOC MMZ-1: 120 m</p>	<p>Monitoring for compliance occurs if any forestry activities are scheduled near the wetland.</p> <p>Provincially significant wetlands are controlled through the Public Lands Act. Julie McFarling, District Planner 705-564-7876 julie.mcfarling@ontario.ca</p> <p>They are guided by the Provincial Policy Statement on wetlands. Effectiveness Monitoring is the responsibility of MNRF. For more detailed information about planning and monitoring Shelley Straughan Management Forester (Acting) 705-564-7876 shelley.straughan@ontario.ca</p>
Native values	NV1 to NV9 as in FMP	Company and MNRF negotiate values protection with the communities.	Protection is determined based on the value. Normally reserves and buffers applied. There are 9 AOC prescriptions to protect Native Values in the 2020-2030 FMP	MNRF leads consultation with Native communities. Compliance is MNRF and VFM :

HCV	Attribute	Responsibility	Prescription (detailed management – abridged see FMP for detail requirements and Stand and Site Guide)	Current Monitoring for compliance, effects, effectiveness and contact for responsible expert
Major water bodies with cultural and historic significance	Sections of French River Wanapitei River Vermilion River Sturgeon River	1) MNRF responsible for waterway protection.	<ul style="list-style-type: none"> ■ French River (boundaries designated by Resource Stewardship Agreements, RSA 1,2,3 & 5) and 18 mile island (MNRF E168a and W9) ■ Wanapitei River (boundaries designated by RSA 7, 12, 13), Chiniguchi Lake (MNRF E183r), Chiniguchi Proposed Park (P174), Chiniguchi Forest Reserve (F174) and Wolf Lake (MNRF F175) ■ Vermilion River (MNRF E180n) along with associated Forest Reserves Dowling/Fairbank forest reserve and the proposed Vermilion River Delta Conservation Reserve (MNRF F208); Capreol/Hanmer Forest Reserve (MNRF F179); Cow Lake Forest Reserve (MNRF F207); Nelson Delta East (MNRF F216) ■ Sturgeon River following the current MNRF designation P173 (regardless of proposed change in status) ■ Chiniguchi River 	<p>Compliance: already significant protection around rivers. In event of operations, normal compliance monitoring will occur.</p> <p>Effects/Effectiveness: Prescription follows precautionary approach; approach does not need effectiveness monitoring because there does not appear to be a likelihood of a problem.</p> <p>Status: No extraordinary risk to the values is expected due to the reserves.</p>

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Appendix 1. Maps associated with the HCV report. Note confidential values DO NOT appear on publicly available maps.

Map 1 Management Unit Map

MU889_2020_FMP_MAP_Index_00.pdf

Map 2 MNRF Values – Natural Resource Features – Fisheries & Wetlands

MU889_2020_FMP_MAP_ValFish_01.pdf

MU889_2020_FMP_MAP_ValFish_02.pdf

Map 3. Assessment of Roadless Areas on the Sudbury Forest.

MU889_2020_FMP_MAP_LandPat_07.PDF

Map 5 Plan Start and Plan End Old Growth Conditions by Landscape Class and Patch Size.

MU889_2020_FMP_MAP_LandPat_03.PDF

MU889_2020_FMP_MAP_LandPat_04.PDF

MU889_2020_FMP_MAP_LandPat_05.PDF

MU889_2020_FMP_MAP_LandPat_06.PDF

Map 5 MNRF Values Maps – Cultural Heritage Values

MU889_2020_FMP_MAP_ValCult_00.PDF

Appendix 2. Species at Risk on the Sudbury Forest, 2020 Forest management Plan

Endangered species known or suspected to be on the management unit include:

- Butternut
- Spotted Turtle
- Wood Turtle
- Loggerhead Shrike
- Golden Eagle
- Eastern Cougar
- Eastern Small-footed Myotis
- Little Brown Myotis
- Northern Myotis
- Tri-coloured Bat
- Gypsy Cuckoo Bumble Bee
- Riverine Clubtail
- Transverse Lady Beetle
- Shortnose Cisco
- Lake Sturgeon

Threatened species known to be on the management unit include:

- Shortjaw Cisco
- Blanding's Turtle
- Eastern Foxsnake
- Eastern Hog-nosed Snake
- Eastern Massasauga Rattlesnake
- American White Pelican
- Bank Swallow
- Barn Swallow
- Bobolink
- Chimney Swift
- Eastern Meadowlark
- Eastern Whip-poor-will
- Least Bittern
- Algonquin Wolf

Special concern species known to be on the management unit include:

- Monarch Butterfly
- West Virginia White
- Yellow-banded Bumble Bee
- Northern Brook Lamprey
- River Redhorse
- Eastern Musk Turtle
- Eastern Ribbonsnake
- Northern Map Turtle
- Snapping Turtle
- Bald Eagle
- Black Tern
- Canada Warbler
- Common Nighthawk
- Evening Grosbeak
- Golden-winged Warbler
- Olive-sided Flycatcher
- Peregrine Falcon
- Red-headed Woodpecker
- Rusty Blackbird
- Short-eared Owl
- Yellow Rail

Updates since development of the 2020-2030 FMP (October 2021 comments from MNRF Sudbury District)

- Gattinger's False Foxglove (END)
- Grasshopper Sparrow (SC) – Single observation May 2020
- Wood Thrush - (SC)
- Silver Lamprey (SC) - Only in French River Provincial Park

- Red-necked Phalarope (SC) - One observation on private land
- Horned Grebe – One during breeding season, several just outside breeding season (SC)
- Houghton’s Goldenrod (THR) – all on private land
- Black Ash (END) – Assessed by COSARO in 2021 due to threat from Emerald Ash Borer – not yet legally listed
- Red-headed woodpecker (SC) (Assessed by COSARO – not yet legally listed) several observations within the breeding season.