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# High Conservation Values in the Sudbury Forest

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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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This version of the report has been updated from the 2007 version of the report by Tom Clark and Kandyd Szuba

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## Executive Summary

This report is an assessment of 'High Conservation Value Forest' undertaken on behalf of The Vermilion Forest Management Company Inc. for the Sudbury Forest, in accordance with Principle 9 of the FSC Principles and Criteria. It resulted in the following HCV designations:

**Table 1. Identified High Conservation Values on the Sudbury Forest.**

<i>Category 1</i>		"...significant concentrations of biodiversity values."
1.	<b>HCV:</b>	Bald Eagle nest sites Peregrine Falcon nest sites Wood Turtle and Blanding's Turtle habitat Eastern Massassaga & Eastern Fox Snake hibernacula and Gestation sites Eastern Milk Snake Gestation Sites Least Bittern and Black Tern habitat Nest sites for: Chimney Swift, Whip-poor-will, Canada Warbler, Common Nighthawk, Hooded Warbler, Olive Sided Flycatcher Monarch Butterfly nest sites
	<b>Possible HCV:</b>	Short-eared Owl; Deepwater Sculpin, Lake Sturgeon, Golden Eagle, Red Headed Woodpecker, Golden Winged Warbler, Eastern Ribbon Snake, Eastern Hognosed Snake, Spotted Turtle
2.	<b>None.</b>	
3.	<b>HCV:</b>	White-tailed deer wintering areas (deer yards); Moose Aquatic Feeding Heronries and Mineral Licks; Remote Self Sustaining Lake Trout Lakes
4.	<b>HCV:</b>	Elk habitat
5.	<b>HCV:</b>	White elm, black cherry, ironwood as well as mid-tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak).
6.	<b>HCV:</b>	Provincially Significant Wetlands (five) Wolf Lake Old Growth Forest (F175, possible mining claim) Sturgeon River (P173; possible mining claim) Capreol-Hanmer Delta Forest Reserve (F179; possible mining claim) Vermilion River delta (Dowling/Fairbank; possible mining claim)
	<b>Possible HCV:</b>	Candidate protected areas from Room to Grow process
<i>Category 2</i>		"...large landscape level forests..."
7.	<b>Possible HCV:</b>	Unaccessed patch in the NW portion of the SF.
<i>Category 3</i>		"...rare threatened or endangered ecosystems."
8.	<b>Possible HCV:</b>	White Cedar-Yellow Birch Forest Type
9.	<b>HCV:</b>	Late seral stage red and white pine untreated by shelterwood systems Unharvested late seral stage tolerant hardwood forest Late seral stage Hemlock
10.	<b>None.</b>	
11.	<b>Possible HCV:</b>	Woodwardia Bog and West Bay Wild Rice Bed
<i>Category 4</i>		"...basic services... watershed protection"
12.	<b>HCV:</b>	Wahnipitae River water quality
13.	<b>None.</b>	
14.	<b>None.</b>	
15.	<b>None.</b>	
16.	<b>None.</b>	
<i>Category 5</i>		"...meeting basic needs of local communities."
17.	<b>None.</b>	
<i>Category 6</i>		"...communities' local cultural identity..."
18.	<b>HCV:</b>	French, Vermilion, Wanapitei, and Sturgeon Rivers; First Nation Values
19.	<b>None.</b>	

An overview of the HCVF assessment process, results and information regarding management for identified values comprise the following report.

**Acronyms**

AOC	Area of Concern
EO	Element Occurrence
FMP	Forest Management Plan
EMS	Environmental Management System
ENGO	Environmental Non-government Organizations
FMP	Forest Management Plan
GLSL	Great Lakes St. Lawrence
HCVF	High Conservation Value Forest
HCV	High Conservation Value
LLF	Landscape Level Forest
NHIC	Natural Heritage Information Centre
OMNR	Ontario Ministry of Natural Resources
SAR	Species at Risk
SF	Sudbury Forest
VFM	The Vermilion Forest Management Company Inc.
VOIT	Values, objectives, indicators & targets (Canadian Standards Association system)

**Reading this document** – An HCVF assessment is primarily a communications document. It brings together all of the values information in one location to allow for a fair assessment of what is a true High Conservation Value (HCV). To accomplish this, there is a very heavy reliance on many other documents. Most of these are accessible on the Internet, and URLs for most 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: To access URLs in footnotes, double click on the footnote number.** If you wish to see the document, click on the URL. After reading the footnote, **to return to your place in the text, double click on the footnote number that precedes the footnote text.**
- **To view weblinks, and links to other locations in the document, use your cursor.**
- The document is provided in either WORD 2007 format or PDF because these are the most widely available and functional format.
- Some web documents are large (> 20 or 30 megabytes, such as the Forest Management Plan documents and maps). They may take a minute or so to download over a 1 meg / second connection.
- References are provided in several formats: URLs are provided for key documents in 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, some documents are listed under “assessment methodology” within each element. Some redundancy has been allowed to make this document as communicative as possible.
- This document contains only a few maps and illustrations because the linked documents will provide better and possibly more up to date graphical information.
- Comments are welcome on whether more maps and illustrations would help the readability of the document for the next version.

## Overview of HCVF Assessment on the Sudbury Forest

The Vermilion Forest Management Company Inc. (VFM) manages the Sudbury Forest (SF) under the authority of a Sustainable Forest License (SFL) granted by the Government of Ontario. The SF was certified on May 16<sup>th</sup> 2006. Part of the certification process is a requirement for the managers to complete an assessment of High Conservation Value Forest (HCVF) using the definition of the Forest Stewardship Council's Principle 9. According to the definition, High Conservation Value Forests are those that possess one or more of the following attributes:

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

The Sudbury Forest is certified under the DRAFT Great Lakes St. Lawrence Standard, which has been adapted for use by the Certifier to conform to their accredited generic standard. Under that modified standard, the assessment of HCV on the Sudbury Forest is guided by the "High Conservation Value Forest National Framework", which is Appendix 5 of the FSC Canadian National Boreal Standard<sup>1</sup>. For further information contact VFM. The FSC Boreal standard notes (P 9.1.1) that it is not an absolute requirement of the standard that this framework must be used.

Understanding HCVF 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 HCVF analysis to a high level as described by the HCV National Framework (Section 4 - The issue of scale).

Current OMNR provincial forest policy addresses a wide range of values using policy documents, or resource guides for special values<sup>2</sup>. The role of the FSC HCVF 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 HCVF 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, and resort owners for a long time. For some native communities it has been home for much longer.

<sup>1</sup> Forest Stewardship Council Canada Working Group. 2004. Canadian National Boreal Standard, Version 3.0. URL: [http://www.fscCanada.org/pdf\\_document/BorealStandard\\_Aug04.pdf](http://www.fscCanada.org/pdf_document/BorealStandard_Aug04.pdf)

<sup>2</sup> <http://www.mnr.gov.on.ca/en/Business/Forests>

The FSC standard and the HCV Toolkit, focused at the international level, state that consultation is required. In the SF, law and common sense require extensive ongoing consultation, although compromise and difference of opinion are routine. To this end, the Proforest<sup>3</sup> HCVF Toolkit makes an important point on the often difficult process of distinguishing between HCVs and non-HCVs:

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

In assessing HCVs for the 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 OMNR 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.

### **2010 Update**

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.

In the near future the accreditation of the Great Lakes St. Lawrence FSC standard may occur. Although there is a review of the HCVF methodology occurring at the same time, that is not yet public information.

The 2010 FMP for SF (available at [www.ontario.ca/forestplans](http://www.ontario.ca/forestplans) ) has been approved and new AOC prescriptions have been developed. Some of these are HCVs. These will be included in our discussion of management along with a description of the timeframe for implementation. 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.

In 2007 the SF HCVF report was part of a regional evaluation (Clark and Hayes 2007) conducted by WWF-Canada. Some HCV designations have changed as a result of this review (Notably protected areas), although these do not have any management implications.

## **Purpose**

This report is provided to meet the requirements for the FSC certification assessment of the Sudbury Forest. In order to provide HCVF management prescriptions, FMC has collected part of the resource information that will be required for HCVF planning. The plan included in this report is the first attempt 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.

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<sup>3</sup> Proforest. 2004. HCVF Toolkit: Part 2, Defining High Conservation Values at a national level: a practical guide. URL: [http://www.proforest.net/publication/HCVF\\_pub.htm](http://www.proforest.net/publication/HCVF_pub.htm)

## Methodology

### ***HCVF National Framework (Canada)***

The framework provided in Appendix 5 of the August 6 2005 version of the National Boreal Standard provides a basic approach and guidance for assessing HCVF. There are three criteria in Principle 9 relevant to forest managers. In short, these require: assessment of values, management prescriptions for values, and monitoring to ensure the prescriptions are effective. Management activities in HCVFs must “maintain and enhance the attributes which define such forests”. The four P9 criteria are:

- 9.1 requires an assessment to determine the presence of attributes consistent with HCVFs (as presented in the definition above).
- 9.2 is guidance to certifiers on the consultative portion of the certification process (does not normally require further interpretation, indicators or verifiers).
- 9.3 requires a precautionary level of management and activities that ensure the maintenance or enhancement of High Conservation Values
- 9.4 requires monitoring the effectiveness of the management and activities implemented.

### ***Assessment for HCVF Attributes***

Within the first phase, 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 Proforest toolkit suggests that 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; HCVF assessment follows the precautionary principle. In some instances, the process is more art than science.

During assessment, values are designated as HCV, not HCV, or *possible* HCV as follows:

- HCV – follow guidance of P9 in which management is guided by the precautionary principle and monitoring demonstrates that specific prescriptions are effective.
- Not HCV – follows guidance of P1 to P8 for management and monitoring
- Possible HCV – occurrence is not confirmed, needs further information about distribution and abundance, and or consultation required; follows P9 and precautionary principle.

### ***Consultation***

There are four components to the HCVF consultation consisting of:

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

OMNR’s requirements for public consultation in bullet point 1, are documented in detail as part of the FMP process, and as part of the public record in the Appendices to the plan. This will also serve as part of the HCVF documentation process. The other three steps of the consultation process will be documented in this report and in subsequent updates to this report.

After the initial circulation of Version 1 (consultation with regional stakeholder, bullet 3), there were comments provided by World Wildlife Fund (Vermilion response in Appendix 2). A number of

modifications occurred based on the WWF comments. Other groups have been invited to comment and new comments will be considered at any time. In this version of the report, there have not been significant changes from the original.

There was an opportunity to obtain reviews from environmental stakeholders (bullet three) in 2007. The SF HCVF report was part of a regional review for Ontario conducted by WWF Canada (Clark, T. and A. Hayes 2007). The results of this were presented to a workshop sponsored by The Nature Conservancy (U.S.) in Toronto, which brought together a number of ENGOs to review the progress and problems with HCVF reporting in Ontario. In addition to TNC and WWF, participants included Forest Ethics, Nature Conservancy of Canada, and Ontario Nature. Specific comments related to SF were not received from the latter groups. As well, individual consultation is done with interested ENGOs who respond when copies of the report are sent to them (Ducks Unlimited, Wildlands League).

***HCVF Designation Decision: HCV, not HCV or Possible HCV***

The concept of threshold for HCV is important. In practice, during preparation of this report there were certain factors that became critical in deciding whether a value required HCV designation. Ultimately, the forest manager must decide, based on the HCVF definition and consultation, what is designated HCV.

In Ontario, the province is a co-manager of the public forest estate, with responsibilities designated in the Crown Forest Sustainability Act, which are further described in several regulated manuals. The responsibility for non-timber values rests clearly with the provincial government, which has a range of experts including biologists, archaeologists, and First Nations or native liaison officials. In P9, the standard refers specifically to the responsibility of “the applicant” towards HCVF. Technically, in the FMP process it is the government that brings forward the important non-timber values for specific conservation measures. In the case of FSC, VFM is responsible. To carry out this responsibility, the manager (VFM) 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. This report is the responsibility of VFM, and meets the requirement of 9.1 in the assessment. OMNR expert opinion carries a significant weight in these decisions.

***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 that system up to date is part of the FMP system.

Reporting on HCVs is a necessary and important part of the FSC process. The contents of this HCVF 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. Annual maintenance audits by the certifier will ensure that this is fulfilled.

## **Forest Description**

A detailed map is available at: **Map 1** Management Unit Map. The Sudbury Forest is a Forest of approximately 1.1 million ha located near the city of Sudbury, Ontario. 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-5, 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 sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), basswood (*Tilia americana*), white pine, (*Pinus strobus*) red pine (*Pinus resinosa*), hemlock (*Tsuga canadensis*) and mid-tolerant hardwoods such as yellow birch (*Betula alleghaniensis*), black cherry (*Prunus serotina*) 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*). A general picture of ecosystem types can be viewed in Map 2 **Ecosites of Sudbury Forest**. Because the Sudbury Forest is transitional, many species are at the northern or southern limits of their ranges. The disturbance regime, which is a critical part of forest planning in Ontario is portrayed in Map 3 **Natural Disturbance Pattern Emulation Analysis - Plan Start**

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**

Five first nations are located within or near the Sudbury Forest management unit. These include Dokis First Nation, Henvey Inlet First Nation, 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 some traditional land use areas in the Sudbury Forest.

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.

The 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.

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.

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.

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.

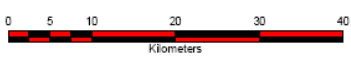
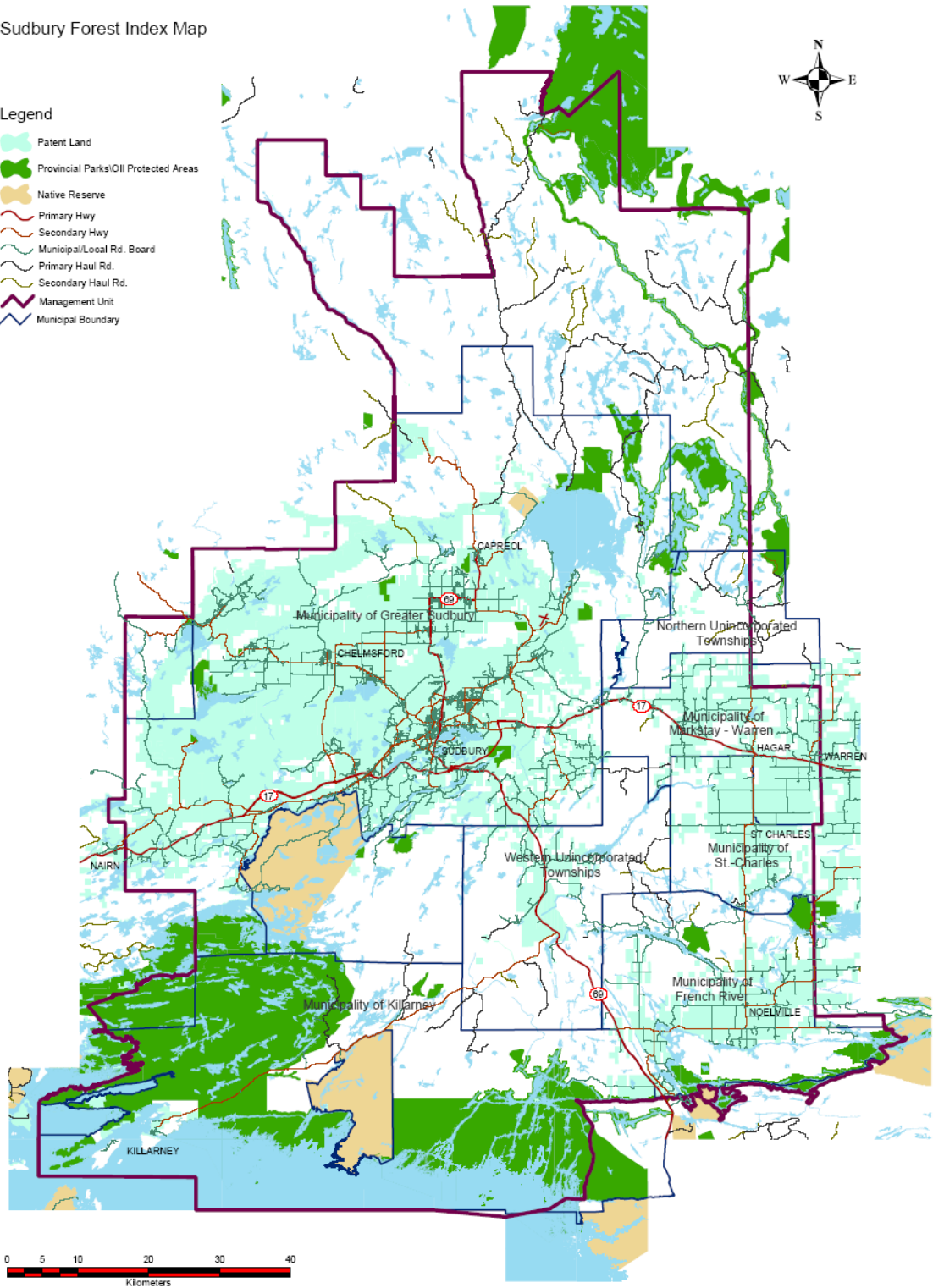
Located on Manitoulin Island, 160 kilometers (km) southwest of Sudbury and 35 km southeast of Little Current, Wikwemikong Unceded Indian Reserve #26 is home to the People of the Three Fires –Odawa (Traders), Ojibway (Faith Keepers) and Pottawotami (Fire Keepers). The largest of six First Nations' communities 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.

Figure 1. Sudbury Forest Index Map

Sudbury Forest Index Map

Legend

-  Patent Land
-  Provincial Parks/Oil Protected Areas
-  Native Reserve
-  Primary Hwy
-  Secondary Hwy
-  Municipal/Local Rd. Board
-  Primary Haul Rd.
-  Secondary Haul Rd.
-  Management Unit
-  Municipal Boundary



## 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 the National HCVF framework, and suggested avenues for collecting information. In this version of the report the “questions” are referred to as “elements”, the current terminology. These elements are divided into six separate categories related to the definition of HCVF above. The Elements are numbered sequentially to 18, but are in six groups (Table 2).

**Table 2. National Framework process for assessing the presence of HCV attributes.**

---

Category 1: “...significant concentrations of biodiversity values.”

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

Category 2. “...large landscape level forests...”

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

Category 3 “...rare threatened or endangered ecosystems.”

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

Category 4 “...basic services... watershed protection”

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

Category 5 “...meeting basic needs of local communities.”

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

Category 6 “...communities’ local cultural identity...”

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

The National Boreal HCVF Framework further provides what are described as ‘definitive’ or ‘guidance’, as well as suggested sources of information on the different values.

Assessment for each element, and rationale for HCV designations in the six categories follow in the next sections.

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

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

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#### **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:**

- NHIC Conservation Data Centre ([http://nhic.mnr.gov.on.ca/nhic\\_cfm](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 2005-2010 Management Plan
- Sudbury Forest 2010-2020 Management Plan

Ontario has recently replaced the old Endangered Species Act with a new Act (The Endangered Species Act RSO 2007). This came into effect in 2008. This has and will in future change species habitat that is regarded as HCV. There have been some recent changes to listings in the province and these are described in the tables below.

In developing the SAR list for the FMP, MNR biologists reviewed local records, COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and MNR’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. As well, the Ontario Breeding Bird Atlas, the Ontario Herptile Atlas, and the Forest Management Plan were the primary sources of information.

#### **Assessment Results:**

Table 3 below describes all of the 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. This is described in the FMP in Figure 2.2.4.2: Summary of approaches used in the FMP to provide habitat in the Sudbury Forest 2010-2020 FMP. Basically this means: provide natural amounts of each forest type and selected age classes (mature and older) 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.

**Table 3. 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).**

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<b>Birds</b>			
<i>Falco peregrinus</i> <i>anatum</i>	Peregrine Falcon Habitat	NHIC confidential location  OBBA  FMP	<p>1) Considered endangered in Ontario and threatened 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. The Ontario Breeding Bird Atlas (OBBA) shows nests confirmed in 5 squares (10 km by 10 km) within the boundaries of the SF (some locations possibly on private land), and a probable nesting location in another square</p> <p>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 OMNR. Sudbury 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, and through a separate course on identification of birds of prey and stick nests. If a nest is found within 3 km of proposed forestry operations, an appropriate nest site management plan would be applied (OMNR 1987).</p> <p>3) Because of its status as threatened and its occurrence within the SF, the peregrine falcon habitat is designated HCV. Previously unknown nesting areas found by the forest industry are reported to OMNR and the AOC prescription is applied. Monitoring is undertaken by OMNR.</p> <p><b>HCV</b></p>
<i>Ixobrychus exilis</i>	Least Bittern Habitat	NHIC  FMP	<p>1) Considered to be threatened in Ontario and Canada. There were no records for current OBBA squares within the SF. However, the NHIC database shows the species has been observed in the SF, possibly in Killarney Provincial Park.</p> <p>2) The main cause of decline in Ontario is loss of habitat due to the drainage of wetlands in southern Ontario. Human disturbance in riparian habitat (e.g. boats) during the nesting period may be a second important limiting factor.</p> <p>3) The FMP contains Area of Concern prescriptions for wetlands that would protect important breeding habitat for this bird. No prescription required.</p> <p><b>HCV</b></p>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<i>Buteo lineatus</i>	Red-shouldered Hawk Nest sites	NHIC Nature Serve  OBBA  FMP	Global Status: 1) Previously considered Special concern in Canada and Ontario. One historical sighting in the NHIC database. Locations in the OBBA in the central and southern portions of the SF. G5 Secure 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. An effective AOC prescription has been developed and tested and forms the basis of the prescription in the FMP for the Sudbury Forest. 3) It is no longer a listed species. It has been removed from the HCV list and will be managed under general habitat management guidelines. <b>Not HCV</b>
<i>Haliaeetus leucocephalus</i>	Bald Eagle Nest Sites	NHIC  OBBA  FMP	G5 S1S2N,S4B COSSARO Special Concern 3) 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. OMNR has developed an effective AOC prescription for known eagle nesting sites which forms the basis of the AOC prescription in the FMP for the SF. OMNR undertakes periodic surveys to find new nests and to update the status of old nests. Nests found during the course of forest management operations would be reported to OMNR. 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. OMNR has developed an effective AOC prescription for known eagle nesting sites which forms the basis of the AOC prescription in the FMP for the SF. OMNR undertakes periodic surveys to find new nests and to update the status of old nests. Nests found during the course of forest management operations would be reported to OMNR. 3) Eagle nests in the SF and vicinity are still relatively rare, and results of the OBBA suggest there are more nests that may be discovered. This species is considered Special Concern in northern Ontario. For that reason it is still considered an HCV. <b>HCV</b>
<i>Aquila chrysaetos</i>	Golden Eagle	NHIC	Endangered 1) Very rare; no current locations. Prescription developed as required. <b>Possible HCV</b>
<i>Melanerpes erythrocephalus</i>	Red Headed Woodpecker		Threatened 1) Very rare; no current locations. Prescription developed as required. <b>Possible HCV</b>
<i>Vermivora chrysoptera</i>	Golden Winged Warbler	NHIC	Special Concern 1) Very rare; no current locations. Prescription developed as required. <b>Possible HCV</b>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<i>Chlidonias niger</i>	Black Tern	NHIC	Special Concern 1) A wetland species, this bird has declined in recent years. Although it is at risk from human activity, forestry is not a particular threat due to the habitat location in large wetlands. No prescription is developed for this species in the Management section. Management occurs through wetland protection. <b>HCV</b>
<i>Chaetura pelagica</i>	Chimney Swift	NHIC	Threatened 1) Roost sites and nest sites occur frequently in developed areas. Natural sites also occur although they are very difficult to identify. 2) These sites would be automatic HCVs if located. A prescription has been developed in the Stand and Site Guide 2010). <b>HCV</b>
<i>Caprimulgus vociferus</i>	Whip-poor-will	NHIC	Threatened 1) Has declined significantly across its range. Nest sites occur in open hills and can be at risk from forestry. 2) A management plan is being prepared for this species (under the ESA). At this time the species is managed through general habitat management. There is no special prescription for this species. It is HCV. <b>HCV</b>
<i>Wilsonia canadensis</i>	Canada Warbler	NHIC	Special Concern 1) Some decline across its range. Canada Warbler breeds in a range of deciduous and coniferous, usually wet forest types, all with a well developed dense shrub layer. 2) A reduction in forests with a well-developed shrub-layer has likely impacted Canada Warblers throughout their breeding range. Canada Warblers likely face extensive pressure on their wintering grounds in South America, where deforestation is a widespread problem. 3) A management plan is being prepared for this species (under the ESA). At this time the species is managed through general habitat management. There is no special prescription for this species. It is HCV. <a href="http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/276679.pdf">http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/276679.pdf</a> <b>HCV</b>
<i>Chordeiles minor</i>	Common Nighthawk	NHIC	Special Concern 1) Has declined across its range. Nest sites occur in open hills and can be at risk from forestry. 2) A management plan is being prepared for this species (under the ESA). At this time the species is managed through general habitat management. There is no special prescription for this species. <b>HCV</b>
<i>Wilsonia canadensis</i>	Hooded Warbler	NHIC	Special Concern 1) Has declined significantly across its range. Nest sites occur in open hills and can be at risk from forestry. <a href="http://www.rom.on.ca/ontario/risk.php?doc_type=fact&amp;id=129&amp;lang=en">http://www.rom.on.ca/ontario/risk.php?doc_type=fact&amp;id=129&amp;lang=en</a> <b>Possible HCV</b>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<i>Contopus cooperi</i>	Olive-sided Flycatcher	NHIC	Special Concern
			1) Nest habitat is coniferous woods. It has declined in recent years. 2) A management plan is being prepared for this species (under the ESA). At this time the species is managed through general habitat management. There is no special prescription for this species.
<b>HCV</b>			
<i>Asio flammeus</i>	Short-eared Owl	NHIC  OBBA  FMP	G5, S3S4B Special Concern
			1) Special concern in Canada and Ontario. 2) This owl nests in marshes and grassy areas, and possibly also on clearcuts. No nests have been found within the SF but the OBBA identified four 10 km by 10 km squares as areas where nesting is probable (1 square), or possible (3 squares). These appear to be on private land. 3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed.
<b>Possible HCV</b>			
<b>Mammals</b>			
<i>Myotis septentrionalis</i>	Northern Long-eared Bat, or Northern Bat	NHIC	G4 S3? G4 - Apparently Secure Not at risk
			1) This bat is considered to be common globally, but possibly provincially rare. It has a wide range in eastern North America (Menzel et al. 2003; Eder 2002). The NHIC database shows one historical occurrence in the SF; it is probably on private land. 2) This bat roosts alone or in nursery colonies under the peeling bark of snags or in natural cavities near water (Eder 2002) and hunts over water or under a tree canopy (Menzel et al. 2003). Habitat for this bat is protected in riparian zones (see details under the short-eared owl above), and is provided through the retention of cavity trees as required by the pileated woodpecker guidelines (Naylor et al. 1996), the Natural Disturbance Pattern Emulation Guide (OMNR 2002), and in cavity trees and core areas as required by the marten guidelines (Watt et al. 1996; see section 2.2.2.4.7 in the FMP). 3) Little is known about this bat in the SF and there are no recent observations. It is a coarse filter species, addressed through the stand level conservation of snags and residual structure. There is no special ranking by NHIC, COSSEWIC or COSSARO.
<b>Not HCV</b>			
<i>Puma concolor</i>	Eastern Cougar	NHIC	Endangered
			1) It has not been confirmed in SF, although there are reports. It would be considered HCV once confirmed.
<b>Not HCV</b>			

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<i>Canis lupus lycaon</i> Eastern Wolf	CITES COSSARO COSEWIC  literature	not listed Special concern  COSEWIC special concern  CITES Append II	<p>2) 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>). The SF is within its expected range, but no dens or individual animals have been confirmed here. This wolf is included in the list under Element 1 because of its CITES listing under Appendix II (species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled.)</p> <p>3) 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. Thus, habitat for this species is maintained in the SF through (i) 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>4) No eastern wolves have been confirmed in the SF and no den sites or other outstandingly important habitats have been identified.</p> <p><b>Not HCV</b></p>

Reptiles			
<i>Glyptemys insculpta</i>	Wood Turtle	NHIC FMP	G4, S2 Endangered
			<p>1) Endangered in Ontario. The FMP notes that wood turtles are known to occur within the SF.</p> <p>2) Habitat for these turtles consists of larger, slow-moving rivers and associated shrub and forest communities. The major threat is collection for the pet trade, and nest loss due to predators. Mortality on forest access roads can also affect their slow-growing populations.</p> <p>3) 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.</p> <p>4) The FMP contains an AOC prescription that protects known habitat used by these turtles in the SF. Riparian habitat is also protected through guidelines applied to protect other values such as eagle, osprey, and heron nests, moose aquatic feeding areas, and fish habitat. Because wood turtles are terrestrial and are known to travel from riparian to upland forest areas, they may be at risk from forest operations.</p> <p>5) Listed species. Prescriptions are in place and these are being monitored and tested for effectiveness by MNR in central Ontario</p> <p><b>HCV</b></p>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<b><i>Clemmys guttata</i></b>	Spotted Turtle NHIC Nature Serve	Endangered	1) Nature Serve does not list this species as occurring in the SF. There is one record from a suburban area in the last five years. 2) Due to the extremely rare status in SF it is considered as a Possible HCV. <b>Possible HCV</b>
<b><i>Emydoidea blandingii</i></b>	Blanding's Turtle  Nesting Areas and Hibernacula	NHIC  Threatened	1) Threatened in Ontario. NHIC shows several observations of this turtle in the SF. 2) It takes 25 years for these turtles to reach reproductive maturity, so the removal of even a few adults from the population can have significant impacts. 3) Under Ontario's <i>Endangered Species Act</i> 2007, the Blanding's Turtle is protected from any actions that may cause further harm to the species. It is also protected under the Fish and Wildlife Conservation Act. The Provincial Policy Statement under the Planning Act provides protection to significant habitat of threatened species. Several populations of this species occur within provincial or national parks. 4) A recovery strategy for all Ontario turtle species at risk is currently being developed. A prescription has been implemented in the 2010 FMP <b>HCV</b>
<b><i>Chelydra serpentina</i></b>	Snapping Turtle  Nesting Areas	NHIC Nature Serve Special Concern	1) A large mostly aquatic turtle. It has low reproductive success due to extensive predation on their eggs. 2) Not considered HCV due to its still fairly wide distribution and abundance (G5) <b>Not HCV</b>
<b><i>Thamnophis sauritus</i></b>	Eastern Ribbonsnake	NHIC Special Concern	3) Very Rare. No known locations currently. Found close to water, especially in marshes. 4) General wetland prescription applies. Joint prescription for Fox Snake, Milk Snake and Rattlesnake. <b>Possible HCV</b>
<b><i>Heterodon platirhinos</i></b>	Eastern Hognosed Snake	NHIC Threatened	1) Very Rare. Edge of range. If there is a known occurrence a prescription will be developed, and it will become an HCV. <b>Possible HCV</b>
<b><i>Sistrurus catenatus</i></b>	Eastern Massasauga  Gestation and Hibernacula	NHIC S3, G4 Threatened	1) Threatened (S3) in Ontario. NHIC contains several observations of this snake within the boundaries of the SF, particularly on the rocky shorelands of Georgian Bay. Generally considered to be outside of its common range in this area. 2) Hibernation sites of this snake on Georgian Bay are often conifer or shrub swamps and swales, areas of poor fen, or depressions in bedrock where water has caused development of sparse trees and shrubs with sphagnum or sedge hummock ground cover. 3) General persecution by humans who fear of snakes that has most likely caused the decline of this species. 4) Joint prescription for Foxsnake, Milk Snake and Rattlesnake. <b>HCV</b>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<b><i>Elaphe gloydi</i></b>	Eastern Fox Snake  Gestation and Hibernacula	NHIC  G3 S3 Threatened	<ol style="list-style-type: none"> <li>1) The fox snake is threatened in Canada. Its range is the Great Lakes Basin where it inhabits coastal marshes, dunes, beaches, and sometimes adjacent woodlots.</li> <li>2) Persecution by humans may be one reason why it is now rare in areas where it was formerly abundant.</li> <li>3) NHIC shows one record, probably on private land, within the city limits of Sudbury, an unusual location for this species. Because the fox snake closely resembles the more common milk snake which is more likely to occur away from the Georgian Bay coastline, the fox snake record may be false.</li> <li>4) During forestry operations, marshes are protected through a variety of guidelines. A prescription for Fox Snake is provided.</li> </ol> <p><b>HCV</b></p>
<b><i>Lampropeltis triangulum</i></b>	Eastern Milk Snake  Gestation	NHIC  G5S4 Special Concern	<ol style="list-style-type: none"> <li>1) The milk snake is globally very common and provincially common but is listed as “special concern” in Canada. This snake has been observed near Espanola, Elliot Lake, Algoma Mills, and North Bay and is therefore very likely to occur in the SF although there are no specific records of its occurrence in the forest.</li> <li>2) An AOC prescription is provided for the milk snake gestation sites. There are no known hibernacula, because it is nocturnal and remains underground much of the time.</li> </ol> <p><b>HCV</b></p>
<b>Fish</b>			

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<b><i>Myoxocephalus thompsoni</i></b>	Deepwater Sculpin	NHIC S4 G5 Threatened	<ol style="list-style-type: none"> <li>1) This fish is threatened in Canada. NHIC shows one occurrence within the SF, but this may be on private land.</li> <li>2) Aquatic habitat and sparse distribution means little impact of forestry. Aquatic habitat is protected under the federal Fisheries Act and provincial forest management guidelines for the protection of water quality.</li> <li>3) This species is designated, and could be considered HCV. There are no special management prescriptions that can apply at this time. If there is a demonstrated action that forest managers could take to manage this species needs, it would be addressed.</li> </ol> <p><b>Possible HCV</b></p>
<i>Coregonus Zenithicus</i>	Shortjaw Cisco	NHIC Threatened	<ol style="list-style-type: none"> <li>1) These species occur in deep waters of Georgian Bay, and not directly in the area of the SFL.</li> <li>2) These are not listed as HCV because they do not occur on the forest. They are discussed here, because they may occur on some SAR species lists.</li> </ol>
<i>Coregonus reighardi</i>	Shortnose Cisco	Endangered	<b>Not HCV</b>
<i>Acipenser fulvescens</i>	Lake Sturgeon	NHIC G3G4 Threatened	<ol style="list-style-type: none"> <li>1) Known in the area in a number of water bodies (large rivers like Sturgeon River).</li> <li>2) This species is slow growing and sensitive to disturbance of its spawning areas, so any operations requiring roads must be careful not to introduce additional risk.</li> <li>3) No prescriptions are provided since the only disturbance possible would be to spawning habitat which occur in major rivers. This species would be subject to environmental assessment due to the size of the bridges that would be required to cross its habitat. The HCV "Major water bodies with cultural and historic significance" also addresses this value.</li> </ol> <p><b>HCV</b></p>
<b>Vascular Plants</b>			
<b><i>Bulbostylis capillaris</i></b>	Bulbostylis	NHIC S3?G5 None	<ol style="list-style-type: none"> <li>1) Ranked as globally secure and sensitive in Ontario. Its preferred habitat is rocky openings, sandy shorelines, and prairie. There are several known occurrences on the SF.</li> <li>2) The main threat seems to be habitat destruction in southern Ontario. Given its habitat preferences, direct risk from forest operations would be low.</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>
<b><i>Polygonella articulata</i></b>	Coast Jointweed	NHIC 1) S3 G5	<ol style="list-style-type: none"> <li>1) This plant is globally very common but is provincially rare to uncommon. Three occurrences were recorded in the SF.</li> <li>2) It grows on sandy beaches of rivers and lakeshores, sand dunes, and sandy openings in jack pine forests. It is an aggressive spreader also found along roadsides (Argus et al. 1987).</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>
<b>Insects</b>			

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<i>Lycaena helloides</i>	Purplish Copper Butterfly	NHIC G5S3 Not at risk	<ol style="list-style-type: none"> <li>1) Globally very common, but provincially rare to uncommon. The NHIC database shows 4 current and 1 historical location where this butterfly was observed within the SF. Holmes et al. (1991) depict a broad distribution for this butterfly extending as far north as Lake Abitibi.</li> <li>2) These butterflies inhabit boggy situations (Glassberg 1999) and open dry areas where their larvae eat dock and knotweed plants (Holmes et al. 1991). Bogs are not harvested in the SF, and the access roads and cutovers produced during forest management are likely to provide habitat for the food plants of this butterfly.</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>
<i>Amblyscirtes hegon</i>	Pepper and Salt Skipper	NHIC S3?G5 not at risk	<ol style="list-style-type: none"> <li>1) There is one historical location for this butterfly within the boundaries of the SF, but this may be on private land.</li> <li>2) Holmes et al. (1991) said that roadsides and trails, especially in forests, provide habitat for this rare butterfly whose larvae eat grasses.</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>
<i>Nehalennia gracilis</i>	Sphagnum Sprite	NHIC S3 G5 not at risk	<ol style="list-style-type: none"> <li>1) There was one record of this rare damselfly within the boundaries of the SF. The larvae are usually found in the vegetation of the still waters of marshes, fens and sphagnum bogs.</li> <li>2) Low risk from forestry due to its aquatic and riparian habitat preferences. These areas are fully protected during forest management through application of a variety of guidelines (for more detail, see the dragonfly below).</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>
<i>Stylurus scudderi</i>	Zebra Clubtail Dragonfly	NHIC S3G4 not at risk	<ol style="list-style-type: none"> <li>1) There were two locations where this dragonfly was observed in the SF. It is listed as common globally, and rare to uncommon in Ontario.</li> <li>2) This dragonfly inhabits clean, cool, fast, streams and small rivers with riffles, with a sandy or muck bottom (Dunkle 2000, and Smith et al. 2003). In the SF, streams are protected during forest management with riparian buffers, and water quality is maintained through application of the "Environmental Guidelines for Access Roads and Water Crossings". The Fisheries Act also protects water quality.</li> <li>3) There is no special ranking by NHIC, COSSEWIC or COSSARO.</li> </ol> <p><b>Not HCV</b></p>

Scientific Name / Common Name	Information Source	Rank/ Status 1) NHIC G & S 2) COSSARO	HCV DECISION Status, Risk and Decision
<b><i>Danaus plexippus</i></b>	Monarch Butterfly	COSEWIC G4 COSSARO Special Concern	<ol style="list-style-type: none"> <li>1) Special concern in Canada. The range of this butterfly has expanded over the last 50 years (Schappert 1996).</li> <li>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. The main causes of decline are logging and disturbance of the overwintering sites in Mexico, and the widespread use of pesticides and herbicides in Ontario.</li> <li>3) There is no special prescription for this species because it generally does not occur in areas that are managed forest. It is designated HCV on the basis of its status.</li> </ol> <p><b>HCV</b></p>

**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 follows:

- HCV:**
- Bald Eagle nest sites
  - Peregrine Falcon nest sites
  - Wood Turtle and Blanding's Turtle habitat
  - Eastern Massassaga & Eastern Fox Snake hibernacula and Gestation sites
  - Eastern Milk Snake Gestation Sites
  - Least Bittern and Black Tern habitat
  - Nest sites for: Chimney Swift, Whip-poor-will, Canada Warbler, Common Nighthawk, Hooded Warbler, Olive Sided Flycatcher
  - Monarch Butterfly nest sites
- Possible HCV:** Short-eared Owl; Deepwater Sculpin, Lake Sturgeon, Golden Eagle, Red Headed Woodpecker, Golden Winged Warbler, Eastern Ribbon Snake, Eastern Hognosed Snake, Spotted Turtle

Although important, habitat for the rest of the species in Table 3 is not considered to be of "outstanding significance" for another reason, and is therefore not designated as HCV. A full rationale for the HCV designations can be found in Table 3. Several species have been designated "possible" HCV: Blandings Turtle; Least Bittern; Short-eared Owl; Deep water Sculpin, Lake Sturgeon.

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

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**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 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 Ecosystems 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. In February 2004 COSEWIC put out a call for bids to develop a prioritized list of land snails for Ontario and Quebec. This list will be used in future for the development of the Molluscs Candidate List as part of the work carried out by the COSEWIC Molluscs Species Specialist Subcommittee<sup>4</sup>. As of May 31, 2005 this project had not been completed.

The range maps in Clarke (1981) suggest that all native freshwater molluscs are either broadly distributed in Ontario, or that those with isolated occurrences are found well outside the SF. Ricketts et al. suggest that, except for possibly the endemic snails, there are no other endemic plant or animal species in this area. Table 4 provides a summary of richness and endemism for the area containing the Sudbury Forest.

**Table 4. Summary of richness and endemism on Sudbury Forest (Ricketts et al. 1999)**

Eastern Forest / Boreal Transition - #8	Richness	Endemism
Birds	204-228	0
Mammals	55-65	0
Butterfly	114-139	0
Reptiles	114-139	0
Amphibians	20-26	0
Snails	53-78	1-22
Tiger Beetle	11-13	0
Vascular Plants	1088-1412	0
Trees	39-58	0
Conifer	11-12	0
<b>TOTAL</b>	<b>1601-2011</b>	<b>1-25</b>

#### HCVF Designation Decision:

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

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**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)?**

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#### 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)
- 2005-2025 Forest Management Plan for the Sudbury forest

#### Assessment Results:

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

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

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<sup>4</sup> COSEWIC Secretariat, Canadian Wildlife Service, Environment Canada

### **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 OMNR'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 FMP contains an AOC prescription designed to maintain conifer cover while increasing the local availability of browse.

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 Aquatic Feeding Areas and Mineral Licks**

Moose use aquatic feeding areas surrounded by woodlands. These are very common but high quality ones (Class 3 and 4) are less so. There is good distribution info. A hunted species Moose are economically valuable, and require consideration on that basis. Logging impacts are possible if cutting is too heavy adjacent to feeding area. A detailed prescription exists and is being reviewed and monitored. This value is designated as HCV. Prescriptions are described in the 2010 FMP and are based on Page 24 in Chapter 3.8, Habitat Management Considerations by Brian J. Naylor in *Silvicultural Guidelines for the Tolerant Hardwoods*, A. Corlett, eds. A detailed map is available at this link [Map 7 Total Aquatic Carrying Capacity for Moose Plan Start](#).

### **Critical Fish Spawning Areas**

OMNR identifies fish spawning areas during the course of their values collection efforts. The FMP for the SF includes an AOC prescription to protect these sites. In addition, the proposed locations where forest access roads will cross streams are reviewed carefully by MNR and Vermilion Forest Management Inc. 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 "*Timber Management Guidelines for the Protection of Fish Habitat*" (OMNR 1988), the "*Code of Practice for Timber Management Operations in Riparian Areas*" (OMNR 1991), and the "*Environmental Guidelines for Access Roads and Water Crossings*" (OMNR 1995). 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. VFM takes a very conservative approach to fisheries protection; if MNR does not have water or fisheries data available for a particular area, the more restrictive prescription is applied ( i.e., the coldwater fishery AOC).

In general fish spawning areas have not been identified as HCVs because spawning areas are abundant in the SF and all adjacent forests, 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 OMNR has an effective survey protocol to find them. Heronries are protected from disturbance during forest management activities through application of an effective AOC prescription. This prescription was tested extensively for effectiveness in a study of about 150 colonies by Agro and Naylor (1994), and 150 more colonies

by Naylor et al. (2003). The effectiveness monitoring work showed that the prescription provides effective long term protection for colonies in all types of harvest cuts in both the Great Lakes-St. Lawrence and Boreal Forest Regions. Individual heron colonies are considered to be HCVs. A prescription is written for Herons in both Great Lakes and Boreal conditions.

### **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.

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

MNR's "Regulatory Guidelines for Managing the Lake Trout Recreational Fishery in Ontario" (OMNR 2007; [http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@letsfish/documents/document/stel02\\_178929.pdf](http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@letsfish/documents/document/stel02_178929.pdf)) explain 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 MNR developed AOC prescriptions restricting new access into these lakes. These AOC prescriptions include a harvest reserve and restrictions on road construction, and are illustrated in **Map 15** Access Restrictions to High-Value, Remote and Semi-Remote Self-Sustaining Lake Trout Lakes. 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.

### **HCV Designation Decision:**

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

- Deer Wintering Areas (deer yards)
- Moose Aquatic Feeding Areas and Mineral Licks
- Heronries (3 or more nests)
- High-value, and Remote Self-sustaining Lake Trout Lakes

Possible HCV

- Sturgeon Spawning areas

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### ***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)?***

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#### **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 (Appendix 5 of the FSC Boreal Standard) 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). Red-shouldered hawk nests are used by other hawks and also by owls (see Szuba and Naylor 1998). Of these three species, only the red-shouldered hawk is a species at risk, and thus only the red-shouldered hawk fulfills the HCVF toolkit definition of HCV under this category.

***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 (special concern in Canada and Ontario) 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. Individual species on the list of “regionally selected species” represent a variety of life history strategies, a variety of preferences for habitat types and development stages, and have habitat needs that are reasonably well known and amenable to modeling with the tools available to forest managers. Literature relevant to this topic includes the background paper by McLaren et al. (1998), and the habitat matrices developed by Holloway et al. (2004). FMPs must model the current and future long term habitat supply available for these “regionally selected species”. The habitat supply available for these species is used as a test of the ecological sustainability of the forest management direction outlined in the FMP over the long term

The habitat supply available for 29 different habitat conditions for wildlife in the SF was modeled in the 2010-2020 FMP (see the list below).

- Barred Owl
- Black-backed Woodpecker
- Black Bear (summer & autumn)
- Blackburnian Warbler
- Boreal Chickadee
- Broad-winged Hawk
- Lynx (breeding & foraging)
- Least Flycatcher
- Marten
- Moose (foraging & winter)
- Northern Flying Squirrel
- Pileated Woodpecker
- Eastern Redback Salamander
- Ruby-crowned Kinglet
- Red Breasted Nuthatch
- Red-headed Woodpecker
- Red-shouldered Hawk
- Ruffed Grouse
- Snowshoe Hare
- Spruce Grouse
- Elk (early winter, summer, & late winter)
- White-tailed Deer (foraging & winter)
- White-throated Sparrow

Of the species in the above list, most are fairly common and addressed through good conservation practices. 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.

#### **HCV Designation Decision:**

Three species qualify as HCVs under this category:

- Bald Eagle
- Wood Turtle
- Elk

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

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**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
- 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.

Black cherry, hemlock, ironwood, red oak, and bur oak are at the northern limits of their ranges within the SF. The Forest Resource Inventory does not show any stands whose tree species composition is less than 10% for red spruce, cherry, elm, or oak. However, 12 stands contained at least 10% white ash or ironwood; none of these was allocated in the current FMP. The 2010-2020 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. Associated strategies in summary are: “*Train tree markers to identify occurrences of locally rare/unique tree species such as white elm, black cherry, ironwood as well as tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak). When these species are encountered, use marking prescriptions to retain these trees and promote natural regeneration.*”

#### **HCV Designation Decision:**

VFM has developed and implemented an active program for maintaining and increasing the relative abundance of White elm, black cherry, ironwood as well as tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak).in the Forest. All of these species are relatively common throughout the Great Lakes-St. Lawrence forest region and throughout the northern edge of their ranges. These are designated as an HCV under this Element. Hemlock is discussed separately under Element 9.

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#### ***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.***

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#### **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:**

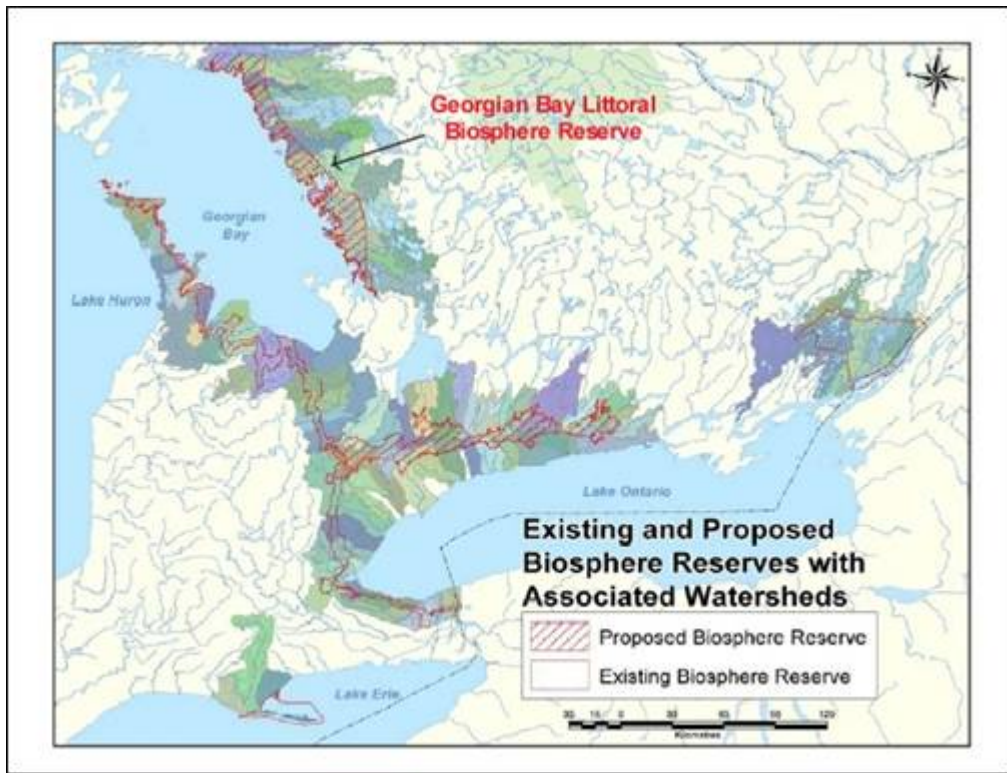
- UNESCO World Heritage sites

- RAMSAR sites
- International Biological Program sites
- Canadian Conservation Areas Database
- WWF/MNR 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***

There are no protected or candidate UNESCO World Heritage Sites, or RAMSAR Wetland Sites in the Sudbury Forest. The recently designated Georgian Bay Littoral Biosphere Reserve occurs south of the SF (see Figure 2) and some proposed areas reach into the protected part of the forest. If designation occurs VFM will review.

**Figure 2. Georgian Bay Littoral Biosphere Reserve, designated by UNESCO in 2004 (map from Francis et al. 2004).**



**Provincial Designations**

The province of Ontario has a variety of classifications for special areas, and permits different degrees of industrial and other activity within them. Table 5 below lists the types of sites found within the Sudbury Forest, and **Table 5** lists them by name and type.

**Table 5. Special sites found within the Sudbury Forest. The descriptions are from the NHIC web site, and the SF FMP.**

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

Classification	Description
	values.
<b>Forest Reserve</b>	An area of public land identified by the OMNR 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.
<b>Life Science Site</b>	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.
<b>Provincial Park</b>	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) .
<b>Wetlands - Provincially Significant</b>	Any wetland that has been evaluated by the OMNR using the Ontario Wetland Evaluation System (OWES), and recognized as having special ecological significance.

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:

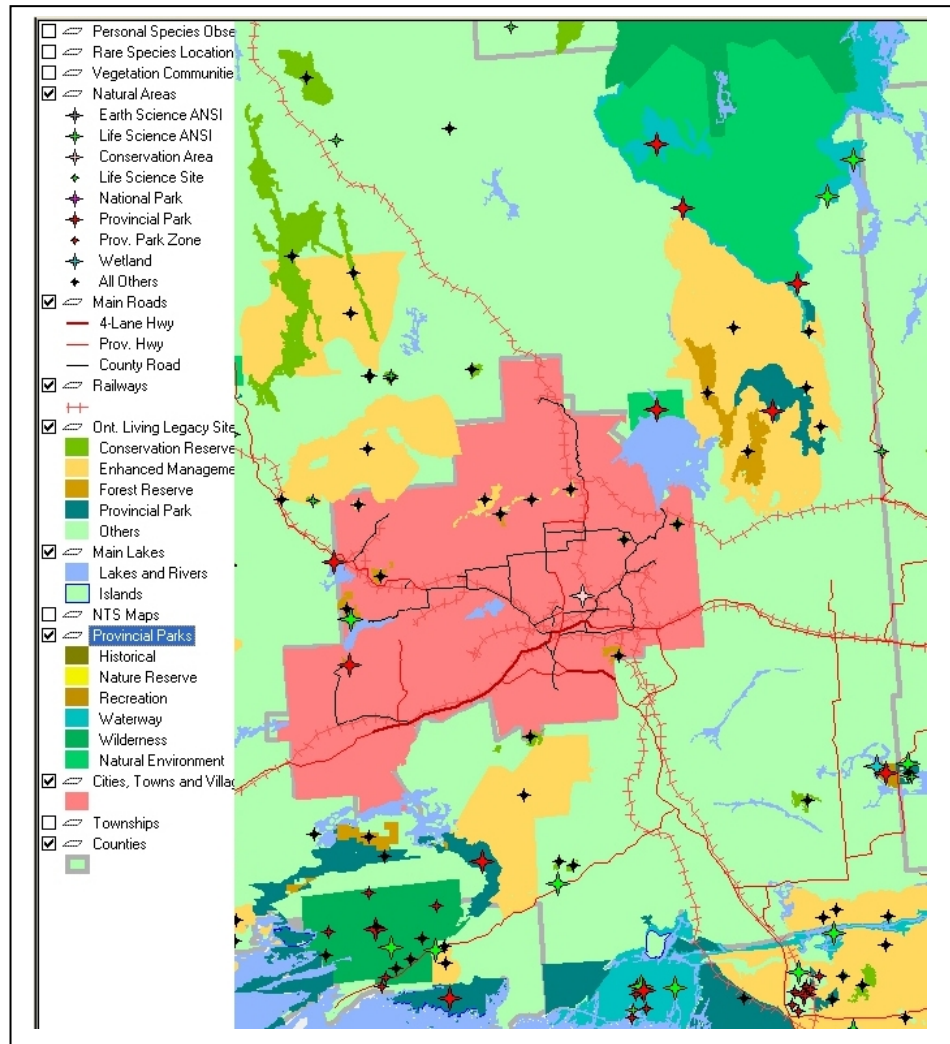
- 144,571 hectares of regulated provincial parks (134,304 ha) and Conservation Reserves (10,266 ha)
- 10,266 hectares of conservation reserves
- 133,242 hectares of enhanced management areas of which 73,588 of which are access related, 52,144 of which are recreation oriented, and 4,966 are natural heritage.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

**Table 6. Parks, forest reserves, conservation reserves, and enhanced management areas wholly, partly within the Sudbury Forest or immediately adjacent to SF (data from OMNR).**

Category	Protected Area Name
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 Grundy Lake Provincial Park
Conservation Reserves	Attlee Attlee Central Forest Brace Creek Outwash Plain Cherriman Township Eden Township Forest Friday and Scotia Lakes Garson Forest Green Lake Old Pine Kitchener Township Morton Lake MacLennan Esker Forest Meteor Lake Outwash Fans Onaping Lake Tilton Forest Pinetorch Lake North Yorston
Forest Reserves	Capreol/Hanmer Delta FR Chiniguchi FR Cow Lake FR Dowling/Fairbank Daisy Lake Uplands FR Killarney Lakelands and Headwaters FR Killarney Park Additions FR Kukagami Lake FR MacLennan Esker Forest (portion with FR classification) Nelson Delta East FR Sturgeon River Additions FR Wolf Lake Old Growth Forest 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 Seal Lake Moraine and Delta Complex EMA Sturgeon River Sand Dunes EMA Vermilion River EMA Vermilion Lake 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 FMP includes an Area of Concern for park boundaries 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.

On May 10, 2005 MNR 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). If approved, this would mean that some sites would lose their status as protected areas. 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

- F179 – Capreol/Hanmer Delta
- F208 – Vermilion River Delta (Dowling/Fairbank)

### ***Provincially Significant Wetlands***

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. Two of these are located within the former Burwash correctional facility, two others (Sucker Creek and Muskrat Creek) are in Haddo township, and the final is the section of the Vermilion River between Onwatin Lake and Vermilion Lake (including the delta at Vermilion Lake). An area of concern (AOC) prescription in the FMP excludes forestry operations from within a 120 metre buffer around the wetland. Any planned operations within 120 m of a provincially significant wetland are only permitted subject to submission and approval of an Environmental Impact Statement (EIS). If new provincially significant wetlands are identified, amendments will be made to the FMP to ensure consistency with Ontario's Wetlands Policy Statement. See also the discussion on wetlands under Element 13 below.

**The 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. An AOC prescription has been included in the FMP for this purpose. Many wetlands 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 4 MNR Values – Natural Resource Features – Fisheries & Wetlands**

MU889\_2010\_FMP\_P1\_MAP\_ValFish\_00.

### ***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 landbase 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 policy<sup>5</sup>. In 2003, the OMNR 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.

### **HCV Designation Decision:**

There are no protected or candidate UNESCO World Heritage Sites, Biosphere Reserves or RAMSAR Wetland Sites on the Sudbury Forest – not HCV.

Provincially significant wetlands within the boundaries of the SF on Crown land are considered to be HCVs.

All protected areas are HCVs although they do not fall within the boundary of the SFL (by land use designation)

OLL-designated provincial parks and conservation reserves are HCV.

Any candidate protected areas that may be identified through the Room to Grow 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.**

<sup>5</sup> Room to Grow. Final Report of the Ontario Forest Accord Advisory Board on Implementation of the Accord.  
<http://ontarioslivinglegacy.com/spectrasites/internet/oll/media/documents/ofaab/room2grow.pdf>

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**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?**

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**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 OMNR, 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 forest fires to the extent possible, as directed by the Crown Forest Sustainability Act.

**Assessment Methodology:**

- OMNR Lands for Life Assessment
- Ontario Living Legacy Land Use Strategy
- Landscape Ecology Analysis Program results for 2004-2024 Sudbury FMP
- Global Forest Watch
- 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 km<sup>2</sup>. 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.

The following are the areas which WWF considers to contain the remaining “intact” habitat in the Ontario portion of the Eastern Forest-Boreal Transition zone<sup>6</sup>:

- The Algoma Highlands (Sault Ste. Marie District)
- Algonquin Provincial Park (highly roaded - southern Ontario)
- Bark Lake, E53a (Remote Access EMA - Bancroft, Pembroke Districts)
- The Missassagi Uplands (Sault Ste. Marie District)
- Quirke-Whiskey Lakes, E232a (Remote Access EMA – Sault Ste. Marie, Sudbury Districts)
- South Ranger Lake (Sault Ste. Marie, Wawa Districts)

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<sup>6</sup> WWF Terrestrial Ecoregions of North America: a conservation assessment.

None of these is within the Sudbury Forest.

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. Below is the relevant portion of the GFW map. According to GFW mapping, the SF contains a small part of only one “intact” (unaccessed) area to the northeast of Sudbury and west of New Liskeard. Most of this is already included in Lady Evelyn Smoothwater Provincial Park.

VFM undertook an analysis of the SF using the buffering criteria of GFW to identify possible unaccessed patches with greater precision than GFW was capable of. As a result, three large patches were identified: (i) Killarney Provincial Park (already withdrawn from the SF), (ii) the north side of the Sturgeon River (approximately half is in the Yorston Conservation Reserve, and half is in an area where access is controlled under the Temagami Land Use Plan), and (iii) the “Domtar addition” in the NW portion of the SF. Access to remote trout lakes and tourism lakes have been restricted in this area through the application of unique AOC prescriptions and signage under the Public Lands Act. This is designated as HCV in element 3 Critical habitat.

In the 2010 FMP two maps were generated related to intactness. Assessment of Roadless Areas on the Sudbury Forest Map 5; and Map 6 Assessment of Road Density Analysis on the Sudbury Forest Assessment of Road Density Analysis on the Sudbury Forest.

#### **HCV Designation Decision:**

Based on a review of available data and conservation assessments for the SF, there is only one area which may qualify as an unaccessed patch of forest of at least 50,000 hectares which has not already been largely encompassed by an area with access controls. (See also the discussion under Category 3, Element 10.) This area is designated a possible HCVF.

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

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### ***8) Does the forest contain naturally rare ecosystem types?***

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#### **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.

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 forest community type that could occur in the SF, and meets the criteria for rareness defined above – 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).

The Box below contains NatureServe’s description of this community type.

**White Pine-Red Maple Swamp type** - This white pine - red maple swamp forest type is found in the southern Great Lakes region of the United States and Canada. Stands occur on sites with at least a thin layer of organic material on the surface. Glacially deposited sand usually lies beneath the organic layer. The overstory is dominated by *Pinus strobus* and may contain *Acer rubrum*, *Betula alleghaniensis*, *Tsuga canadensis*, and *Ulmus americana*. Shrubs can be sparse, but include *Alnus incana* and *Ilex verticillata*. Understory species include *Carex* spp., *Osmunda cinnamomea*, *Osmunda regalis*, and *Symplocarpus foetidus*. *Sphagnum* spp. may occur as a ground cover. In Wisconsin, common species include *Carex folliculata* and *Thelypteris simulata*, which are more common in the eastern United States

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). VFM does not consider this to be of “outstanding significance” as described by the FSC standard, and therefore does not consider this stand to be HCV.

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 in the box 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 lowland soils, occasionally bordering on wet, organic soils. The soil is typically moderately acidic, sandy clay with a thin litter layer. 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 OMNR’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 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 7.

**Table 7. Possible occurrences of the *Thuja occidentalis*-*Betula alleghaniensis* Forest type in the Sudbury forest.**

## Crown Managed Forest Containing Yellow Birch &amp; 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.

**HCV Designation Decision:**

One rare community type has been designated possible HCV in the Sudbury Forest pending further assessment to determine its presence in the forest and the special management actions needed (if any) to maintain it:

**Possible HCV**

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

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


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**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 2005-2025 FMP (Historic Forest Condition and Trends)

**Assessment Results:***Forest Composition*

The 2005-2025 FMP for the SF discusses changes in forest composition since 1880. Ontario Land Survey (OLS) data<sup>7</sup> were analyzed by OMNR 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 8).

<sup>7</sup> Leadbitter, 2000; Leadbitter, Naylor and Euler, 2002; Pinto unpublished, 2003; and Jackson et al, 2000.

**Table 8. 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) <sup>T</sup>	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) <sup>T</sup>	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) <sup>T</sup>	29.94**	13.37	decreased
Spruce (total) <sup>T</sup>	5.35**	9.65	increased

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

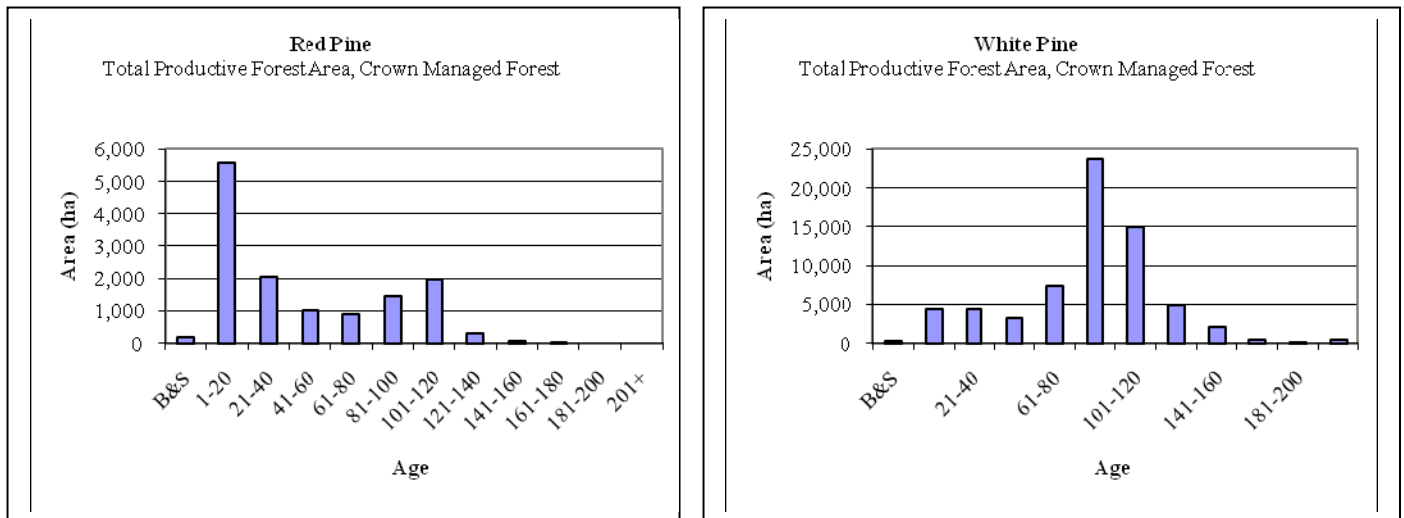
\*\* significant difference between OLS and FRI data at the 99% confidence interval.

<sup>l</sup> 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.

<sup>T</sup> 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, there is still a very large area of white pine (91,369 hectares) and red pine (15,419 hectares) in the SF (see Table 10a below), and most of this is in the managed portion of the forest. The area and age class distribution of pine forest types is shown in Figure 4 below.

**Figure 4. Area and age class distribution of pine working groups (forest types) in the SF in 2005. (From Table FMP-2 in the 2005-2025 FMP).**



**Late Seral Stage Forests**

The tables below show the current total area of the SF and the area of old growth in each major forest type (forest unit; Crown land only) for even-aged stands (Table 10) and uneven-aged stands (Table 11). These data were taken directly from the Old Growth Strategy in the 2010-2020 FMP. OMNR's old growth policy definitions were used in development of the strategy (MNR 2003). It is notable that the old growth onset ages of the policy are much older than what is considered to be the age of onset for "mature" forest in MNR's wildlife habitat matrices (approximately 70-80 years, depending on forest type; see Holloway et al. 2004). Old growth is also discussed under Element 18.

The SF has had a long management history and is located in a densely populated portion of northern Ontario. For these reasons, it is not surprising that only about 7.3% of the Crown Forest is currently in an old growth condition. In most cases, the managed forest contains the majority of the old growth; for all forest units combined, about 84% of the old growth is in the managed portion of the forest. Implementation of the FMP's "Old Growth Strategy" will result in an improved inventory of old growth (see table 9), and through various management actions, an increase in the total area of old growth by almost 5 times by the year 2075 (including the area in parks and AOC reserves). Because of the need for restoration, this forest type and age class is designated HCV.

**Table 9. Projection of over mature forest area in the 2010 Management Strategy**

Forest Unit	Area (Ha) of		
	Available	Reserved	All Forest
T1	31,441	9,436	40,876
T2	40,799	22,731	63,531
T3	54,298	45,705	100,003
T4	73,725	73,995	147,720
T5	85,581	99,151	184,732
T6	85,883	107,791	193,674
T7	80,649	106,030	186,678
T8	76,258	102,268	178,526
T9	69,804	100,088	169,892
T10	67,490	100,935	168,425

As noted in the 2010 FMP's Old Growth Strategy, little to no old growth red pine has been identified in the forest (see Table 10). This may reflect the fact that red pine is classified as part of the pine shelterwood forest unit (PWUS) which can be a mix of red and white pine and has not been identified separately. VFM plans to conduct an inventory of red pine to determine its true status in the forest according to age and origin (natural or plantation).

In many objectives, the 2010 FMP also separates old growth has been identified among stands managed under the uniform shelterwood and selection silvicultural systems (see Table 10), it may be desirable from an ecological perspective to differentiate those that have never been operated in from those that have already received partial harvests. Although in many cases difficult to prove in the vast forest inventory, the occurrence of untreated old growth on the management unit is likely in small quantities. Objectives in the Plan related to this subject matter have been designed around the data that is available to the company today.

Another notable decision favouring the maintenance of current old growth conditions on the Forest was the 2010 planning team's agreement to exclude areas greater than 140 years in age, as documented in the planning inventory, from the stands eligible for harvest in the 2010-2020 FMP. Excluded stands also were to have no evidence of prior forest management (partial cutting systems).

Improved spatial measurements of late seral stage condition on the forest were incorporated into the 2010 FMP in the following objectives: **Management Objective #2, Increase the frequency of old growth area occurring in larger patch sizes; Management Objective #3, with consideration given to the current landscape, ensure that a distribution across the forest of old growth stands, and old aged stands is allowed to occur.**

Objectives 2 and 3 highlight the importance of maintaining the potential for larger patches of this current condition on the management unit, dispersed throughout the entire management unit. Spatial objectives designed to discourage harvest operations in or adjacent to large and medium sized patches of Old Growth were achieved in this 10 year term. The results provide planning teams in the future with the opportunity to build on these areas with new area reaching onset in adjacent stands. Increases in larger patches of old growth are illustrated in 10 year projections across the management unit.

The 2010 FMP continues with this direction for re-establishing a more natural distribution of old growth white and red pine:

**"Management Objective #5: Provide Red and White Pine forest area not less than 1995 levels, consistent with the Conservation Strategy for Old Growth Red and White Pine Forests Ecosystems in Ontario, 1996.** Desired Level(s): Desired Level is guided by the Conservation Strategy for Old Growth Red and White Pine Forests Ecosystems in Ontario, 1996, and is to maintain or increase the 1995 levels of

red and white pine on the landscape into the future. The source for the Sudbury Forest Management Plan 2010-2020 3-181 desired level and target (97,697 ha) was the Sudbury 1994 FMP, tables 4.8.1, 4.8.5 and 4.8.7, a summary of the PW and PR working groups. This was the closest, most accurate information the team could use to relate back to the intent of the Old Growth Strategy. Comparisons to this value will be by PW and PR dominated forest unit from the 2010 Plan, as working group is not a modelled condition in the SFMM. This value will provide an indication to the planning team of how much white and red pine based forest unit should be on the Forest today, and how the projection of this forest condition should progress through time.”

**Table 10a. Area and % of old growth by forest unit on the Sudbury Forest. Data are from 6.1.25 Old Growth Strategy for the 2010 Sudbury FMP. Old Growth onset ages follow OMNR’s Old Growth Policy and Definitions (MNR 2003).**

Forest Unit	Area (Ha) of			Percentage Of All		
	Available	Reserved	All Forest	Available	Reserved	All Forest
BW	1,495	597	2,092	3%	3%	3%
CE	1,084	317	1,401	36%	28%	34%
HDUS	285	98	382	4%	1%	2%
HE	162	443	605	8%	5%	5%
LWMX	137	164	301	9%	18%	13%
SBLC	1,815	248	2,063	23%	20%	23%
MW1	2,131	502	2,633	5%	5%	5%
MW2	3,612	847	4,459	10%	8%	9%
PJ	851	217	1,068	3%	3%	3%
PJSB	3,863	691	4,553	8%	4%	6%
PO	2,378	794	3,172	8%	10%	8%
PR	29	179	208	0%	22%	3%
PWST	3,236	1,229	4,465	14%	13%	14%
PWUS	5,530	1,901	7,431	8%	6%	7%
SF	4,835	1,209	6,044	11%	11%	11%
	31,441	9,436	40,876			

\*All even-aged forest includes all forest except that in the hardwood selection forest unit, which is about 11,627 ha for all Crown forests. For Available Managed Forests and All Crown Forests, Area in the old growth ages in the shelterwood forest units includes areas that have been partially harvested. Reserves refer to to areas on the managed forest in which no forest operations occur; this includes riparian reserves, AOC reserves, bypass, Natural Disturbance Pattern Emulation Guide residuals and protection forest.

**Table 11. Area and % of old growth in uneven-aged hardwood stands by forest type (forest unit) in the Sudbury Forest (from the Old Growth Strategy in the 2010-2020 FMP)**

Category	Parks	Managed	Total
Hardwood Selection (all)	6,433	5,191	10,624
Hardwood Selection (Old)	67	210	277
Hardwood Selection (Old Aged)	54	65	119

Old growth hemlock is also limited in the forest. The old growth strategy explains that this may reflect incorrect ages in the FRI. There is currently an infestation of the hemlock looper in the forest which could reduce the current abundance of hemlock even more. In 2007 there are reports that this has subsided, and vegetation management in Killarney Provincial Park may be instigated to accelerate the recovery of this species.

Over the long term, hemlock is expected to increase in abundance if the strategies included in the FMP are implemented. However, considering its current short supply and potential reduction due to the hemlock looper, hemlock should be designated as an HCV. The 2010 plan projects an increase in “overmature” Hemlock from less than 500 ha in 2010 to 8500 ha in 60 years under the proposed management.

The hemlock (HE) forest unit has a total of 11,410 ha (2% 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; it is comprised primarily of ecosites 28 and 30. The average species composition of HE is 50% hemlock combined with other hardwood, hard maple, white pine and white spruce each at 10%.

**Table 12. Hemlock Strategy Summary.**

Forest Unit / Species	Forest Management Strategy
<b>Hemlock HE Forest Unit</b>	<ul style="list-style-type: none"> <li>- Obtain an estimate of post hemlock looper infestation, stand mortality from federal and provincial agency surveys.</li> <li>- Given that much of the hemlock in the Sudbury Forest is within Killarney Provincial Park, the MNR should work with park staff and VFM to update the hemlock inventory; potentially seek funding opportunities with Lakehead University for research on hemlock mortality and regeneration of these stands.</li> <li>- Maintain current existing stands in the hemlock forest unit (those that have survived the hemlock looper infestation).</li> <li>- Manage the tolerant hardwood/hemlock stand interface to promote natural regeneration of hemlock.</li> </ul>
<b>Hemlock trees in other forest units</b>	<ul style="list-style-type: none"> <li>- In clearcut forest units where individual hemlock trees occur, leave a minimum of ten hemlock stems/ha where available. In clearcut forest units where pockets of hemlock occur, the pockets will be harvested using the shelterwood silviculture system. In shelterwood forest units, hemlock will be left in an equal or greater proportion as they occurred in the stand before harvest.</li> <li>- Conduct harvesting in the hardwood selection forest unit to favour the retention of hemlock.</li> </ul>

For a more detailed map of the old growth on the SF, see Map 9 **Projected Old Growth Conditions in 10 Years by Forest Unit.**

Map 9 **Projected Old Growth Conditions in 10 Years by Forest Unit.** Also relevant is Map 10 Current Seral Communities.

#### **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 2010 FMP for the SF contains strategies to increase the abundance of pine on the landscape. For these reasons, the general Pine forest type is not designated as HCV.

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 red pine is also an HCV; it is believed to exist in the forest but an improved inventory is needed to identify it. Old growth hemlock is in very short supply in the forest and is also considered to be an HCV.

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

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#### **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
- OMNR 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. These areas have been depicted by GFW according to the following criteria:

- At least 500 or 1,000 metres from anthropogenic features such as roads, settlements, clearcuts, pipelines, power lines, mines, etc.
- At least 5,000 hectares in size
- Visible on Landsat satellite imagery

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. Some 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 OMNR for this purpose. VFM therefore believes that the entire managed forest is ecologically "intact".

**HCV Designation Decision:**

No HCV designation under Element 10.

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


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**Rationale:**

Vulnerability; species diversity; significant ecological processes.

**Assessment Methodology:**

- NHIC Natural Areas
- NatureServe Communities
- Ontario Areas of Natural and Scientific Interest
- WWF/MNR 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 possible HCVs.

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

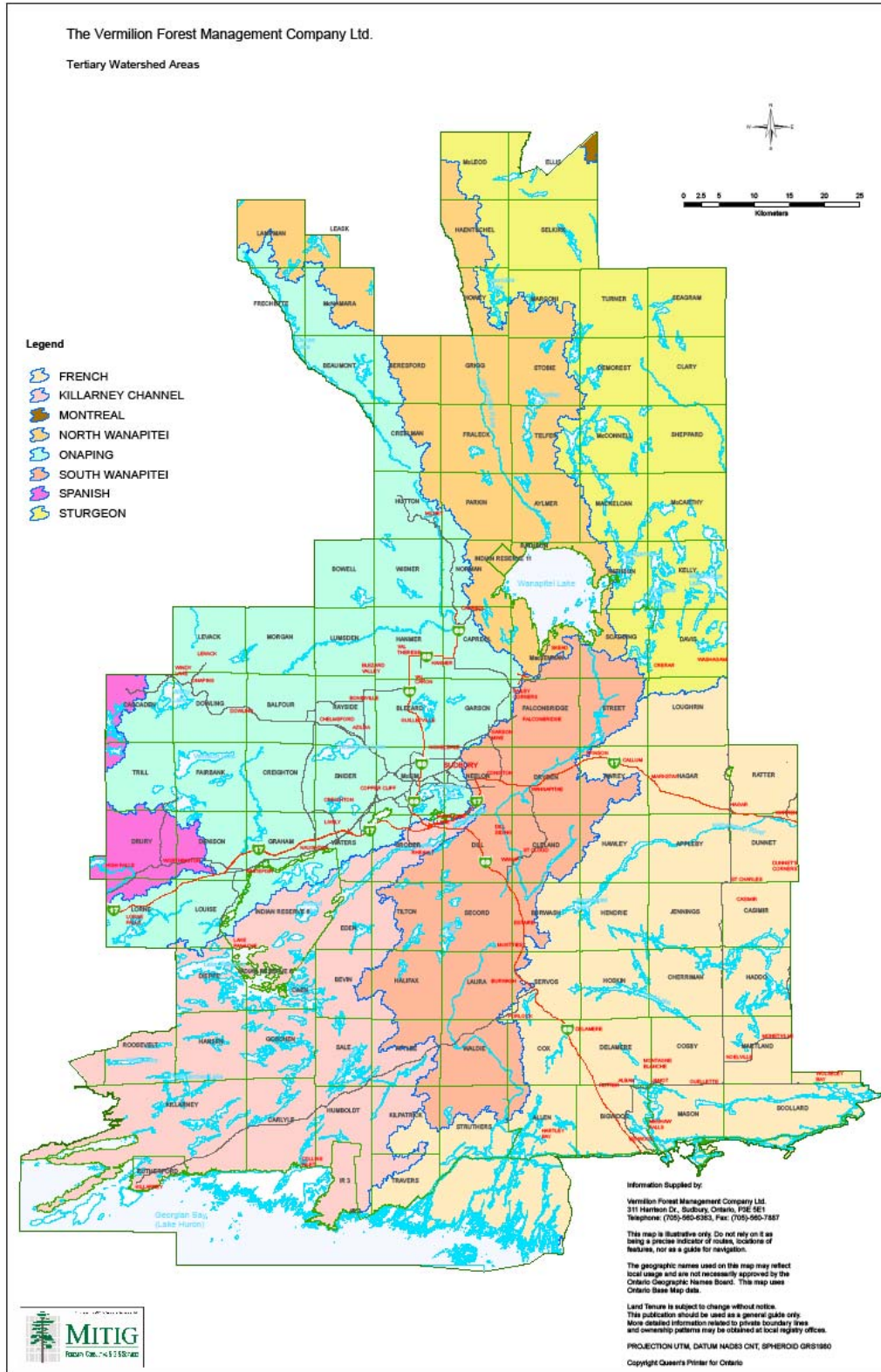
Much of the Sudbury Forest is encompassed by the Vermilion, Wanapitei, and Whitefish River watersheds (Figure 5 and Map 14 **Nickel District Conservation Authority map**

Map 14 **Nickel District Conservation Authority map**). 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)<sup>8</sup> 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.

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<sup>8</sup> Public Works and Government Services Canada. <http://www.pwgsc.gc.ca/ontario>

Figure 5. 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. 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<sup>9</sup> 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. MNR 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.

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

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### **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<sup>10</sup>
- Municipal Websites (Sudbury)
- Known usage of water by local communities
- 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 Authority reviewed the recent FMP and did not identify any issues. 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

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<sup>9</sup> Nickel District Conservation Authority. URL: <http://www.nickeldistrict.ca>. 200 Brady Street, First Floor, Tom Davies Square Sudbury, ON Canada P3E 5K3 (705)674-5249

<sup>10</sup> Nickel District Conservation Authority. URL: <http://www.nickeldistrict.ca>. 200 Brady Street, First Floor, Tom Davies Square Sudbury, ON Canada P3E 5K3 (705)674-5249

to the protection of safe drinking water quality for local communities. Other factors (e.g. hydro dams) also affect water flow, regulation and quality in the watershed area.

The Forest Management Planning process has a number of provisions for the protection of water quality. In accordance with provincial regulations, forest managers must 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 2010 FMP for the Sudbury Forest has an Area of Concern prescriptions for Municipal Water Supply (MWS). We have designated Wahnipitae River, although the exact prescription is dependent on the Nickel District Conservation Authority. There are no immediate risks.

There are guidelines that control the construction of water crossings and forest companies can face fines if damage, including fuel spills, siltation, or erosion, occur during construction. The following are some of the policies and guidelines that regulate the protection of water quality during access development and harvesting operations:

- Environmental Guidelines for Access Roads and Water Crossings
- Code of Practice for Timber Management Operations in Riparian Areas
- Timber Management Guidelines for the Protection of Fish Habitat
- Manual of Implementation Guidelines for the Wetlands Policy Statement

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 minimum level of forest cover is maintained on the managed forest landscape at all times. This helps to reduce potential impacts of harvesting on water flow regulation and quality.

#### **HCV Designation Decision:**

We have designated Wahnipitae River, although the exact prescription is dependent on the Nickel District Conservation Authority. There are no immediate risks.

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

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#### **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, potentially compounded by the province's steadily increasing demands for water<sup>11</sup>.

Research shows that forest cover changes must meet or exceed a 20–25% threshold to detect a measurable response in flow (i.e. annual runoff) to forest disturbance (Bosch and Hewlett 1982<sup>12</sup>; Hornbeck et al. 1993)<sup>13</sup>. Paterson et al. (1998) further suggest that hydrological changes induced by climatic variations in the boreal forest may override those due to forest disturbance such as harvesting or fire for small basins. However, this should be examined in future work at larger spatial scales.

In the 2005-2025 FMP, water yield is used as an indicator for the forest sustainability criteria of Soil and Water Conservation<sup>14</sup>. 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, only 3.2% of the area within the second order stream watersheds has been disturbed by clearcut or fire<sup>15</sup> within the last ten years. An increase of 0.5% is noted from the previous FMP figure of 2.7%. This figure was calculated by dividing the net disturbed area originating within the past 10 years into the total area within the boundaries of the second order watersheds regardless of ownership type.

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

These wetlands also provide critical habitat for many bird, amphibian, reptile and mammal species, including many of the furbearers. Wetland areas of various sizes and types are scattered throughout the 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 14; and AOC Supplementary Documentation, 2010-2020 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. Five of these have been classified as provincially significant: two are located within the former Burwash Correctional facility property, two others - Sucker Creek and Muskrat Creek - are in Haddo township, and the final is the section of the Vermilion River between Onwatin Lake and Vermilion Lake (including the delta at Vermilion Lake).

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 metres of Provincially Significant Wetlands.

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<sup>11</sup> OMNR, Lands and Waters. Low Water Response. URL: <http://www.mnr.gov.on.ca/MNR/water/p774.html>

<sup>12</sup> Bosch, J. N. & Hewlett, J. D. 1982. A review of catchment experiments to determine the effect of vegetation changes on water yield and evapotranspiration. *J. Hydrol.* **55**, 3–23.

<sup>13</sup> Hornbeck, J. W., M. B. Adams, et al. 1993. Longterm impacts of forest treatments on water yield: a summary for northeastern USA. *J. Hydrol.* **150**: 323-344.

<sup>14</sup> Section 2.2.3.5 - Landscape Processes. 2005-2025 Forest Management Plan. Sudbury Forest.

<sup>15</sup> This figure was calculated by dividing the net disturbed area originating within the past 10 years into the total area within the boundaries of the second order watersheds regardless of ownership type. An increase of 0.7% is noted from the previous FMP figure of 2.8%.

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:**

Because of the relatively limited nature of the local or landscape effects of forest management on water flow regulation and flooding on the Sudbury Forest, and existing prescriptions to protect significant wetlands, no HCV is designated in this category. Five 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.

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#### **14) Are there forests critical to erosion control?**

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##### **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 FMP (sections 6.1.28) and Operational guidelines<sup>16</sup> direct how operations on sensitive sites should occur. A map of the general slope across the SF is available at Map 12 Slope Index Overview.

##### **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.

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

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

<sup>16</sup> OMNR. 1997. Forest Management Guidelines for the Protection of the Physical Environment.

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

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**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 MNR 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 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 cold water fisheries, and a more restrictive prescription is used in light of the known sensitivity of coldwater fish habitat.

Fisheries classifications will be adjusted as new fisheries inventory information is acquired. For waters where new information confirms the classification, the values information will be updated and the appropriate fisheries areas of concern prescription will be applied.

Forest management activities in riparian areas on the SF are implemented in a way to minimize harmful alteration or disruption of fish habitat. On the Sudbury Forest as in many areas of the province, collection of fisheries data

by MNR is limited. A 2001 Independent Forest Audit Report recommends that the MNR undertake fish surveys in support of improved forest management.

While the current lack of fisheries data for the Sudbury Forest limits the identification of critical production areas, an ongoing research project titled “The Forest Fish: Linking Topographic Models of Forested Sub-watersheds to the Conservation of Brook Trout”<sup>17</sup> funded by the Ontario Living Legacy Fund may in future assist managers in identifying ecologically sensitive areas and developing appropriate site-specific prescriptions.

#### **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. 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).**

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***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).***

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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 2010-2020 FMP
- Discussions and correspondence with First Nations during forest management planning consultation sessions
- Discussions and correspondence with non-native communities and stakeholders during forest management planning consultation process

#### ***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.

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<sup>17</sup> Trent University Watershed Science Centre, Centre for Northern Forest Ecosystem Research.

**Timber Values<sup>18</sup>**

In 2002/03 seventeen mills were identified as having received wood from the Sudbury Forest, however, only nine of those mills received over 1% of the wood. Crown wood fibre from the Sudbury Forest went to mills in seven different communities, as defined by the 2001 census subdivisions. These include the following communities and MNR Districts:

- North Bay District: Englehart Sturgeon Falls,
- Timmins District: Gogama
- Sudbury District: Alban, French River, Naim

A demographic profile cited in the FMP showed the extent to which these communities depend on the forest industry. Espanola has 25.4% of local labour working in the forest industry. In Sturgeon Falls this figure is 6.4% and in the French River area it is 10.4%. (The FMP reports that these figures may be conservative and should be viewed as low).

There are a number of important cottage lakes in the forest and seven AOC prescriptions were developed for their protection (Sudbury Forest 2010 2020 FMP, Table 14). 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.

**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.

## **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).**

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

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**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

<sup>18</sup> Section 2.0, Management Unit Description. 2005-2025 Sudbury Forest Management Plan.

- 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 HCVF report, native values will be discussed in a generic way and no specific location information will be given.

Five first nations are located within or near the Sudbury forest management unit. These include Dokis First Nation, Henvey Inlet First Nation, 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 some traditional land use areas in the Sudbury Forest.

Dokis First Nation is located approximately 16 km southeast of Lake Nipissing, on the French River. It has a land area of approximately 12262.2 hectares. The main settlement is found on Okikendawt Island. There are approximately 951 members with 161 people living on the reserved lands and 372 living off the reserve.

The 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.

Temagami First Nation is located 88.5 kilometers (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.

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.

Whitefish Lake First Nation is located approximately 15 kilometers (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.

Located on Manitoulin Island, 160 kilometers (km) southwest of Sudbury and 35 km southeast of Little Current, Wikwemikong Unceded Indian Reserve #26 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.

VFM uses a predictive tool, supplied by MNR, 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 is available at Map 11 **MNR 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 2010-2020 SF AOC prescriptions FMP Table 14**

<b>AOC Code</b>	<b>Description of Value</b>
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 3, 4, 5, 6, 7, 8).

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 (MNR 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). There are several forest reserves along this dramatic oxbow river (Dowling/Fairbank forest reserve; Capreol/Hanmer Forest Reserve (MNR F179); Cow Lake Forest Reserve (MNR F207); Nelson Delta East (MNR F216)). The Vermilion River Delta Wetlands are part of the Dowling Faribanks area, and there is some ambiguity in the records. For HCV designation we use the Crown Land Atlas view, which is consistent with the FMP (MNR designation Forest Reserve F208).

The following text is from the Crown Land Atlas description of the area (CD contents Landuse Files E180n; and MNR 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 glacioclastic 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 (MNR 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 (MNR 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 (OMNR 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 are 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
<a href="#">Eighteen Mile Island</a>	E168A	10,718
<a href="#">Donald Lake</a>	E176A	11,921
<a href="#">Onaping/Friday/Scotia Lakes</a>	E190A	1,631
<a href="#">Kitchener Township</a>	E196A	20,005
<a href="#">Killarney East Area</a>	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, RSA 3, 4, 5, 6, 7, and 8) and 18 mile island (MNR E168a and W9)
- Wanapitei River (boundaries designated by RSA 11, 12, 13), Chiniguchi Lake (MNR E183r), Chiniguchi Proposed Park (P174), Chiniguchi Forest Reserve (F174) and Wolf Lake (MNR F175)
- Vermilion River (MNR E180n) along with associated Forest Reserves Dowling/Fairbank forest reserve and the proposed Vermilion River Delta Conservation Reserve (MNR F208); Capreol/Hammer Forest Reserve (MNR F179); Cow Lake Forest Reserve (MNR F207); Nelson Delta East (MNR F216)
- Sturgeon River following the current MNR designation P173 (regardless of proposed change in status)

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

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#### **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 HCVF. 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.

## Phase 2 and 3: Managing and Monitoring HCVF attributes

The overall goal of managing HCVF 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 2010 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 a demonstration that no impact is occurring.

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 13 provides an overview of the HCV values that were identified in Phase 1 of this study. It also describes the responsibility of MNR for inventory and monitoring. VFM is responsible for implementation of the detailed management prescription. There is a shared responsibility between MNR and VFM for evaluating the effectiveness of management prescriptions. These prescriptions must be shown to be effective.

Some of the prescriptions that are described here are also available in detail at Map 8 **Area of Concern Overview**.

### ***Process for Monitoring***

Monitoring for HCV attributes are described in (see preceding section, Management Prescriptions and Monitoring for the selected HCV on the Sudbury Forest).

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

**Table 13. 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 -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Bald Eagle	Nesting Sites	<p>OMNR biologists are required to determine the presence of nests and whether inactive or active. Tree markers, other technical staff, and loggers report observed nest sites.</p> <p>OMNR has responsibility for monitoring effectiveness of the prescription, and protection measures.</p>	<p><b>Maximum 800 m AOC</b>  <b>Reserve Width:</b> - 100 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>):  - MMA1 - 100 m (from reserve edge)  - MMA2 - 200 m minimum up to 600 m (from MMA1 edge) based on line of site. MMA2 will extend a minimum of 400 m from the nest and up to 800 m from the nest if topography and vegetation permit a direct line of sight from the nest to the potential activities at that distance.  The configuration of this zone may therefore be variable.  - protect nests not used in the last 5 years with 100 m reserve and 0 m modified area  <b>Timing Restriction Zone:</b> 400 - 800 m.</p>	<p>Compliance: MNR and VFM compliance staff routinely ensure the prescription is applied appropriately. May also be checked by auditors during the independent forest audits that occur every 5 years.</p> <p>Effects &amp; Effectiveness: MNR Science and Information Unit, North Bay. MNR reviewed guidelines for Bald Eagles applied throughout North America and concluded that Ontario's prescription is in line with those used elsewhere and is likely effective.</p> <p>Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Peregrine Falcon	Nesting Sites	OMNR is responsible, conducts special surveys, and responds to reported sightings. Observers for the Ontario Breeding Bird Atlas are likely to find nests and report them to MNR. VFM and operators report to OMNR the new values that are discovered during forestry operations.	MNR prepares a nest site management plan following approved guidelines, on a case-by-case basis.  An AOC extending 3 km from the nest is applied. Within that zone, MNR determines acceptable levels of disturbance, including timing and the amount and proximity of forest management activities. MNR will prepare a nest site management plan on a case-by-case basis documenting acceptable levels of human disturbance including timing, amounts and proximity of forest management activities (refer to Stand and Site Guide for the Peregrine Falcon).	Compliance: MNR and VFM compliance staff would routinely ensure the prescription is applied appropriately. May also be checked by auditors during the independent forest audits that occur every 5 years.  Effects & Effectiveness: Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]
Chimney Swift	Nest trees	OMNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Ongoing ESA research for management	Reserve Width: - 20 m Modified Width ( <i>measured from outer edge of reserve, unless stated otherwise</i> ): - 30 m applied to nesting trees (known or encountered) Timing Restriction Zone: 50 m	Compliance monitoring: occurs as part of the routine monitoring undertaken by VFM and MNR.  Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]
Whip-poor-will	Nest areas	OMNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Ongoing ESA research for management.	30 m AOC Reserve Width: - 5 m Modified Width ( <i>measured from outer edge of reserve, unless stated otherwise</i> ): - 30 m applies to ground nests (known or encountered)  Timing Restriction Zone: 30 m	Compliance monitoring: occurs as part of the routine monitoring undertaken by VFM and MNR.  Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Eastern Milk Snake And Eastern Fox Snake And Massassauga Rattlesnake	Known gestation sites (basking areas)  And  Known hibernation (over-wintering habitat) sites (not Milk Snake)	OMNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Ongoing ESA research for management.	<p><b>Known gestation sites (basking areas)</b>  <b>AOC EMR_G</b>  <b>30 m AOC applied to suitable, known gestations sites.</b>  <b>Reserve Width:</b> - 30 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): - 0 m  - Gestation sites are found in areas of low canopy cover such as forest openings, areas of bedrock outcropping and in and along the shoreline of open wetlands. They are characterized by the presence of large (typically 1 x 1.5 m), flat (usually no more than 0.30 m thick) rocks, often called table rocks (because of their shape), and are usually surrounded on several sides by grass or low-lying shrubs.</p> <p><b>Timing Restriction Zone:</b> 30 m</p> <p><b>Known hibernation (over-wintering habitat) sites</b>  <b>100 m AOC applied to suitable, known hibernacula (NOT for Milk Snake)</b>  <b>Reserve Width:</b> - 50 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): - 50 m  - Hibernation sites (hibernacula) are most often found in conifer or shrub swamps and swales, areas of poor fen, or depressions in the bedrock terrain where water saturated soils have supported the development of vegetation communities characterized by sparse trees or shrubs with sphagnum moss and sedge hummock ground cover.</p> <p><b>Timing Restriction Zone:</b> 100 m</p>	<p>Compliance monitoring: occurs as part of the routine monitoring undertaken by VFM and MNR.</p> <p>Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]</p>
Blanding's Turtle	Nesting Areas and Hibernacula	OMNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Ongoing ESA research for management.	<p><b>AOC Description BT</b>  <b>300 m AOC Reserve Width:</b> - 30 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): MMA1 - 120 m, MMA2 - 150 m (measured from outer edge of MMA1)  The District SAR Biologist made an assessment of habitat features within proximity to elements of occurrence (sightings) and provided spatial information where AOC protection is to be applied.  Active Season: May 1 - September 30 (Blanding's turtle); April 1 - October 31 (Spotted turtle)  Nesting Season: June 1 - July 15 (both species)  <b>Timing Restriction Zone:</b> as mapped by MNR</p>	<p>Compliance monitoring: occurs as part of the routine monitoring undertaken by VFM and MNR.</p> <p>Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Wood Turtle	Nesting Areas and Hibernacula	OMNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). There are no standard surveys for these turtles and important areas are found only through special efforts by the area biologists.	<p><b>AOC Description WT as mapped by District SAR Biologist</b>  <b>Reserve Width:</b> - 30 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): as mapped by MNR  Habitat is regulated for wood turtle and is defined as the area 500 m inland on either side of a river and 6000 m upstream and downstream of an occurrence, where habitat is suitable, plus any area within 300 m of a nesting site not covered by the 500 m zone.</p> <p><b>Timing Restriction Zone:</b> as mapped by MNR  Additional: When turtles are encountered on site, the following strategy will be followed:  1 - stop operations in the immediate vicinity,  2 - contact District MNR for direction, which may allow for a relocation of the turtle(s) to suitable habitat out of harm's way.</p>	<p>Compliance monitoring: occurs as part of the routine monitoring undertaken by VFM and MNR.</p> <p>Effectiveness monitoring by MNR. Contact SF Eric Cobb, Species at Risk Biologist, NATURAL RESOURCES, Sudbury 705-564-7863 eric.cobb@ontario.ca]</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Moose Aquatic Feeding Areas and Mineral Licks	Class 3 or 4 MAFAs Moose aquatic feeding areas are used by moose in the late spring and early summer (late May until late July) as important feeding areas. Maintaining reserves around these areas provides hiding cover for moose calves which their cows are feeding and bedding sites with good thermal cover (particularly in dense conifer thickets) for adult moose.	<p>OMNR responsible for inventory.</p> <p>Three year survey's of moose population trends by MNROMNR responsible for monitoring effectiveness</p> <p>Methodology outlined in the Selected Wildlife and Habitat Features: Inventory Manual. Only Class 3 and 4 moose aquatic feeding areas are shown as values</p>	<p><b>FMP-14 Operational Prescriptions 2010 FMP MAF</b></p> <p><b>120 m AOC Reserve Width:</b> - 30 m (measured from treed edge, and applied when within 120 m of the value)</p> <p><b>Modified Width</b> (measured from outer edge of reserve, unless stated otherwise): - 120 m (measured from the water's edge)</p> <p><b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b></p> <p>No activities permitted in reserve, unless approved by MNR.</p> <ul style="list-style-type: none"> <li>- retain the stocking levels (basal area targets for selection, or crown closure for uniform shelterwood) prescribed in the forest operations prescription, or 12 m<sup>2</sup>/ha basal area (stems greater than 10cm in diameter), whichever is greater, with the exception of previously harvested PWUS stands, where the first removal cut will not reduce basal area below 6m<sup>2</sup>/ha.</li> <li>- Sb, Sw, Ce, He, Ms, Ab are not to be harvested</li> <li>- if the Sb, Sw, Ce, He, Ms, Ab species make up more than 80% of the species inside the AOC, then the entire MAFA is a reserve</li> <li>- skid perpendicular to the reserve</li> <li>- normal renewal and tending operations</li> </ul> <p>When the MAF AOC overlaps a WWF AOC and where the slope is &lt; 8 degrees and is adjacent to a clearcut:</p> <ul style="list-style-type: none"> <li>- strips may be clearcut in the modified portion of the AOC</li> <li>- strips are not to exceed 50 m in width and residual strips are not to be less than 50 m in width</li> <li>- the average basal area within the modified area must be at least 12 m<sup>2</sup>/ha of stems &gt; 10 cm DBH</li> <li>- Sb, Sw, Ce, He, Ms, and Ab are not to be harvested</li> </ul> <p><b>Conditions on Forest Access Roads (reference Table FMP-23)</b></p> <p>No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below.</p> <ul style="list-style-type: none"> <li>- no road construction or aggregate extraction in the modified area without written approval from the MNR.</li> </ul>	<p>Compliance staff routinely ensure prescription applies appropriately</p> <p>Effects, Effectiveness: MNR Contact Mike Hall Phone: 705-564-7862 Email: mike.hall@ontario.ca</p> <p>Status: Based on expert opinion (MNR) , and recent studies, this value appears stable</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
<p>White-tailed Deer Wintering Areas</p>	<p>Featured game species of social, cultural and economic significance; wintering areas are a critical life requirement;</p> <p>Large yards provide:                      (1) Coniferous Shelter - general                      (2) Coniferous Shelter - migration/travel routes                      (3) Browse Supply                      (4) Mast Production Areas</p>	<p>OMNR is responsible for inventory and assessment of good winter habitat</p> <p>OMNR is responsible for monitoring the effectiveness of prescriptions.</p> <p>1) Deer are stable or increasing in the area; wintering areas are of key importance to deer populations.                      2) Inappropriate harvest could impair the quality of yards.                      3) Deer are an importance game species.</p>	<p><b>AOC is designed to maintain conifer cover (2010 FMP Table 14)</b></p> <p><b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b>                      No activities permitted in reserve, unless approved by MNR.                      - maintain conifer component                      - use shelterwood, group selection and small clearcuts to create 0.5 to 2.0 hectare openings within 30m of conifer shelter                      - larger cuts are acceptable as long as all portions of the cut are within 30m of conifer shelter                      - harvest operations preferred during the winter months                      - preferably plant red spruce, white spruce, black spruce, red pine, and/or white pine in appropriate areas or allow natural regeneration of coniferous trees                      - normal tending operations                      - conifer canopy closure must be maintained at 60% where possible unless canopy removal is required to maintain or release conifer understorey to assist in the development of future deer wintering area                      - retain adequate mast-producing trees in the deer wintering area (e.g. red oak, beech, ironwood)                      - skid trails should avoid conifer patches whenever possible</p> <p><b>Conditions on Forest Access Roads (reference Table FMP-23)</b>                      No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below.                      - avoid road construction in conifer shelter patches</p>	<p>Monitoring: Is conducted periodically by MNR for large wintering areas, though not annually (depending on forest operations). Regular compliance checking by MNR and VFM ensures prescriptions are applied. May also be checked by auditors during the independent forest audits that occur every 5 years</p> <p>Effects &amp; Effectiveness:                      MNR Contact Mike Hall                      Phone: 705-564-7862                      Email: <a href="mailto:mike.hall@ontario.ca">mike.hall@ontario.ca</a></p> <p>MNR is responsible for revising the guidelines to reflect the most up-to-date science.</p> <p>Status: Yarding areas appear stable.                      Contact: MNR</p>
<p>Hérons &gt;3 nests within 150 m of one another</p> <p>Focal Species/</p>	<p><b>Great Blue Heron Colonies</b></p>	<p>OMNR responsible for inventory OMNR biologists are required to determine presence of nests and whether inactive or active.                      Tree markers, other technical staff, and loggers report observed nest sites.</p> <p>OMNR has responsibility for monitoring effectiveness of</p>	<p>2010 FMP AOC Table 14</p> <p>In brief: For Boreal Forest nests:  <b>AOC Description</b>  <b>1000 m AOC Reserve Width:</b> - 300 m from outer most nest  <b>Modified Width</b> (measured from outer edge of reserve, unless stated otherwise): - 700 m</p> <p>For Great Lakes Forest: <b>300 m AOC Reserve Width:</b>- 150 m from outer most nest  <b>Modified Width</b> (measured from outer edge of reserve, unless stated otherwise): - 150 m                      Maintain a minimum 30 m reserve along the allocated treed edge, where the colony is &gt;150 m and &lt; 300 m from the treed edge.  <b>Timing Restriction Zone:</b> 300 m</p>	<p>Compliance MNR and Company compliance staff routinely ensure prescription applies appropriately</p> <p>Effects, Effectiveness:                      Contact Mike Hall                      Phone: 705-564-7862                      Email: <a href="mailto:mike.hall@ontario.ca">mike.hall@ontario.ca</a></p> <p>The current approach in FSF is regarded as an exception by MNR, and as such requires monitoring.</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
		prescription, and protection measures.		
High-value, and Remote Self-sustaining Lake Trout Lakes	A unique population and habitat condition; Lake trout are also a species of social, cultural and economic significance;	<p>OMNR is responsible for inventory and assessment of good winter habitat</p> <p>OMNR is responsible for monitoring the effectiveness of prescriptions.</p>	<p><b>AOC Description SST3</b>  <b>1000 m AOC Reserve Width:</b> - 120 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): - MMA1 - 280 m,                      - MMA2 - 600 m (measured from edge of MMA1) MMA2 is applicable only within primary and branch road corridors</p> <p><b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b>                      No activities permitted in reserve, unless approved by MNR. Normal harvesting, renewal &amp; tending, and hauling operations permitted, unless directed otherwise by District MNR. Refer to Additional Information section for more details on Exceptional Circumstances.</p> <p><b>Conditions on Forest Access Roads (reference Table FMP-23)</b>                      No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below.</p> <ul style="list-style-type: none"> <li>- within MMA1:                              - no road construction (of any class) within AOC, unless no other alternatives exist, and only with MNR approval in the AWS, on a case-by-case basis.</li> <li>- within MMA2:                              - no primary or branch road construction within AOC, except under Exceptional Circumstances (refer to Additional Information section for more details).</li> <li>-operational roads are permitted, but must be built to the lowest standard possible, and must be rehabilitated or destroyed once all forest management activities are completed. This work may include any combination of (but is not limited to), water crossing removals, road scarification, piling of slash on roads, ditching, and berming). Harvesting and road decommissioning will occur in a timely manner once harvesting has started. This will be documented in the FMP and/or AWS.</li> <li>- aggregate extraction may be permitted (on a case-by-case basis), only with MNR approval.</li> </ul>	<p>Compliance MNR and Company compliance staff routinely ensure prescription applies appropriately</p> <p>MNR is responsible for monitoring population levels, and ensuring effectiveness of prescription.</p> <p>Contact Mike Hall                      Phone: 705-564-7862                      Email: <a href="mailto:mike.hall@ontario.ca">mike.hall@ontario.ca</a></p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Elk	A species of social, cultural and economic significance; wintering areas are a critical life requirement.	OMNR is responsible for monitoring  This herd of Elk was established prior to the current restoration efforts and can be considered stable and naturalized.	Application of the moose guide is generally considered beneficial to Elk in this area. Any forest operations require case-by-case evaluation by biologists. No generic prescription has been written. Monitoring occurs regularly for the entire Sudbury Forest population.	This will be established as needed, if operations are scheduled near the herd.
Provincially Significant Wetlands	5 Locations:  Two at Burwash correctional facility, Two in Haddo twshp --Sucker Creek and Muskrat Creek, and the Vermilion River between Onwatin Lake and Vermilion Lake (including the delta at Vermilion Lake).	OMNR is responsible for identification and classification as provincially significant.	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 metres of Provincially Significant Wetlands  A Buffer of 120m is applied.  <b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b> No activities permitted in reserve, unless approved by MNR. - no new landings within the AOC <b>Conditions on Forest Access Roads (reference Table FMP-23)</b> No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below. - no new roads or landings within the AOC	No operations are currently scheduled near these wetlands.  On approval of an EIS, MNR would be responsible for ensuring the conditions are met. if for example a crossing needed to be installed.  Monitoring for compliance occurs if any activities are scheduled in the wetland. This would be normal FOIP approach with MNR oversight.  Provincially significant wetlands are controlled through the Public Lands Act, or the Planning Act. They are guided by the Provincial Policy Statement on wetlands. Development is controlled through that legislation. Monitoring is therefore an issue for government.

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Provincial Parks, Protected areas (Ontario Living Legacy areas included)	Boundary areas adjacent to SLF	MNR is responsible for marking and monitoring the provincial parks which they designate. VFMC is responsible to ensure boundaries are properly located before operations are conducted near Parks and Protected Areas	<p><b>2010 FMP Table 14 Park Boundary PB AOC Description 200 m AOC</b>  <b>Reserve Width:</b> 0 m  <b>Modified Width</b> (measured from outer edge of reserve, unless stated otherwise): - 30 m (measured from outer edge of protected area)  Road Restriction: 200 m</p> <p>Some Special rules (see FMP for complete description)  -no harvesting to occur during the night  - avoid felling trees into park. If tree falls into park, remove immediately.  - skid perpendicular to park boundary where feasible.  - no clearcutting on shallow soils (prone to windthrow).  - no aerial application of herbicide for site preparation or tending.</p>	<p>The park area is not considered part of the SFL, however parks are HCVs and in this case there is a risk from forestry (trespass). MNR is responsible for monitoring areas adjacent to parks.</p> <p>MNR monitors through regular compliance audits.</p>
Late Seral Stage Red Pine	Age Class >140 yrs for Red Pine	<p>Inventory and effectiveness of prescriptions is the responsibility of VFM.</p> <p>MNR has the responsibility to ensure the plan is followed.</p> <p>Old natural stands should be differentiated from plantations in the inventory.</p>	<p>As part of the 2005 FMP, VFM prepared a strategy for addressing old growth values in the forest. The report presents the old growth definitions, and landscape and stand-level strategies for increasing old growth over the long term. It forecasts that old growth forest (all species combined) will increase by almost 5 times its current amount by the year 2075.</p> <p>No old growth red pine has been identified in the forest, but this may reflect the fact that red pine is classified as part of the pine shelterwood forest unit (PWUS) and has not been identified separately. The PWUS forest unit contains some pockets of red pine. VFM plans to conduct surveys to determine the true status of red pine in the forest according to age and origin (natural or plantation) and to update the inventory. Pockets of red pine at least 2 hectares in size will be mapped. This information will be used to set targets for the next FMP.</p> <p>The old growth strategy also outlines specific Forest Operations Prescriptions that will be followed if old growth is discovered during the course of operations.</p>	<p>If a stand has been harvested, compliance monitoring occurs as part of routine silvicultural monitoring.</p> <p>Effects &amp; Effectiveness: Currently, monitoring is occurring to determine the effectiveness of past silvicultural approaches.</p> <p>Status: To be determined during the survey for old growth red pine. Old growth stands discovered during operations will be identified and treated according to the measures outlined in the Forest Operations Prescriptions.</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Untreated Late Seral Stage Tolerant Hardwood Forest	<p>Old growth tolerant hardwoods that have not yet received a selection or uniform shelterwood cut.</p> <p>Old growth age of onset varies by species and ranges from about 120 to 160 years of age.</p>	Inventory and effectiveness of prescriptions is the responsibility of VFM.	<p>As part of the 2005 plan, VFM prepared a strategy for addressing old growth values in the forest. This continued with the 2010 plan, with some adjustment of areas. The original report presents the old growth definitions, and landscape and stand-level strategies for increasing old growth over the long term. It forecasts that old growth forest (all species combined) will increase by almost 5 times its current amount by the year 2075.</p> <p>The 2010 plan sets an overall Objective for all old growth forest types. "Management Objective #7: Move towards a more natural age class distribution for each forest unit over the entire forest in mature and old-aged condition, similar to that of a natural forest dynamic."</p> <p>Presently there are about 1,000 hectares of old growth tolerant hardwoods within the boundaries of the forest (2005 FMP). The FMP proposes to differentiate stands that have not received a harvest cut "for several decades" from those that have been cut in an effort to identify true old growth. If they meet specific criteria those stands will not be harvested.</p> <p>The old growth strategy also outlines specific Forest Operations Prescriptions that will be followed if old growth is discovered during the course of operations.</p>	<p>If a stand has been harvested, compliance monitoring occurs as part of routine silvicultural monitoring.</p> <p>Effects &amp; Effectiveness: Currently, monitoring is occurring to determine the effectiveness of past silvicultural approaches.</p> <p>Status: Assessment is required. Old growth stands discovered during operations will be identified and treated according to the measures outlined in the Forest Operations Prescriptions.</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
<p>Untreated Late Seral Stage Pine Shelterwood Forest Unit</p>	<p>Old Growth Onset Age approx. 150 years</p> <p>Managed under the Uniform Shelterwood silvicultural system, but have not yet received a harvest cut.</p>	<p>Inventory and effectiveness of prescriptions is the responsibility of VFM.</p>	<p>The 2010 plan continues development of the commitment in the 2005 plan. The 2010 plan sets an overall Objective for all old growth forest types. "Management Objective #7: Move towards a more natural age class distribution for each forest unit over the entire forest in mature and old-aged condition, similar to that of a natural forest dynamic."</p> <p>Old growth and old-age stands were measured at plan start and the compared to plan end (the stands were aged by 10 years). The preferred allocations were netted out of the plan end scenario, to provide a conservative measure of old condition on the landscape. Large patches are defined as 51-500 hectares, 500 to 1000 hectares and greater than 1000 hectares. Increases in mean size and frequency in all size classes were achieved as illustrated in the figures below. This objective achieved the desired level.</p> <p>The planning team utilized the 1995 level as a target guided by the conservation strategy document. The source for the 1995 level was the 1995 FMP – tables 4.8.1., 4.8.5., 4.8.7 providing a summary of the PW and PR working groups. As comparisons through time have been made using different units (Working Group vs Forest Unit), the degree of increase should not be considered in the analysis, but it can be safely assumed that the total area has increased in the management strategy.</p>	<p>If a stand has been harvested, compliance monitoring occurs as part of routine silvicultural monitoring.</p> <p>Effects &amp; Effectiveness: Current monitoring is occurring for effectiveness of past silvicultural approaches.</p> <p>Status: Assessment is required. Old growth stands discovered during operations will be identified and treated according to the measures outlined in the Forest Operations Prescriptions.</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Hemlock	Old Growth Age ≥ 180 years	<p>Inventory and effectiveness of prescriptions is the responsibility of VFM.</p> <p>MNR, VFM and the Federal Forest Insect and Disease Survey unit are monitoring the impact of the hemlock looper outbreak.</p>	<p>The 2010 plan sets an overall Objective for all old growth forest types. "Management Objective #7: Move towards a more natural age class distribution for each forest unit over the entire forest in mature and old-aged condition, similar to that of a natural forest dynamic." Operational selection of stands reflects this objective.</p> <p>In the 2005 plan there were 11,000 ha of the hemlock forest unit is identified within the boundaries of the SF, but only 1,990 is in the managed portion. The FRI suggests that only about 1% of the FU is in old growth condition. However, this may reflect inaccurate ages in the FRI.</p> <p>A current outbreak of the hemlock looper may reduce the area of old hemlock even further. The status of the hemlock in the managed forest will be monitored, and targets for old growth developed from this information for the next FMP</p> <p>The FMP contains an objective to manage the reduction of hemlock to ≤ a 5% decrease; this means only 29 hectares of the entire FU will be cut per year.</p> <p>Old growth hemlock is expected to increase significantly in abundance in the forest by the year 2075, and to follow closely the trajectory for the forest expected under a natural disturbance regime.</p>	<p>Compliance is the responsibility of MNR and VFM.</p> <p>Effectiveness: will be confirmed during normal silvicultural assessment.</p> <p>Status: The FMP, and maturation of a significant amount of hemlock in parks and protected areas, will cause recovery to significantly higher levels over the long term. Managers will confirm status during normal FMP implementation, with additional information from the Forest Insect and Disease Survey unit of the CFS.</p>
Locally rare/unique tree species	white elm, black cherry, ironwood as well as tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak).	OMNR responsible for inventory of trees.	Train tree markers to identify occurrences of locally rare/unique tree species such as such as white elm, black cherry, ironwood as well as tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak). When these species are encountered, use marking prescriptions to retain these trees and promote natural regeneration.	<p>Monitoring occurs as part of normal Silvicultural Effectiveness Monitoring.</p> <p>These trees are stable in number and distribution.</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Major water bodies with cultural and historic significance	1) French River (boundaries RSA 3, 4, 5, 6, 7, and 8) and 18 mile island (MNR E168a and W9) 3) Chiniguchi Lake (MNR E183r), Park (P174), Forest Reserve (F174) and Wolf Lake (MNR F175) 4) Vermilion River (MNR E180n) and Forest Reserves Dowling/Fairbank (MNR F208); Capreol/Hanmer (MNR F179); Cow Lake (MNR F207); Nelson Delta East (MNR F216) 5) Sturgeon River current MNR designation P173 (regardless of proposed change in status)	1) OMNR responsible for waterway protection, and cultural historic values assessment at the site level, although this can be supported by VFM in some circumstances. Oversight of AOCs occurs through regular compliance  2) VFM is responsible for assessing the values during operations, and ensuring prescriptions are followed.	1) French River: AOC description from FMP Table 17 for AOCs: FR_Lks_FL, FR_Prtg FR_Rds, FR_RT FR_SB, FR_Spray, FR_WS  In brief these AOCs protect shorelines and viewsapes along the river, and maintain aesthetics through partial cutting or by leaving strategic patches in clear cut forest units. Modified harvest in some areas means 200 m minimum, wider in steeper terrain up to maximum of 1 kilometer (from treed edge) (see RSA Map) See FMP for further information on details and locations of prescription. Also from Land-use policy (E168a): New roads must be planned through comprehensive long-term access planning that considers the values of the area. Some guidelines are: * roads should be constructed to the lowest standard possible; * new roads/trails should be directed to existing corridors where possible; * layout should consider aesthetics; and, * design and construction should facilitate access controls and closure/rehabilitation No additional water crossings will be permitted over the French River	Compliance: In event of forest operations, normal compliance monitoring will occur. Tourist outfitters will be consulted to check boundaries and tree marking within the modified zone.  Effects/Effectiveness: Prescription follows precautionary approach; approach does not need effectiveness monitoring because there does not appear to be a likelihood of a problem.  Status: No extraordinary risk to the values is expected due to the extensive reserves.

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
	2) Wanapitei River (boundaries RSA 11, 12, 13), Chiniguchi Lake (MNR E183r), Park (P174), Forest Reserve (F174) and Wolf Lake (MNR F175)	As above	<p>2) Wanapitei R AOC description from FMP Table 17 for AOCs: Wp_CR; Wp_FLk.R Same general principle as the description following French R. above.</p> <p>Chiniguchi area values are safeguarded through the Land use Atlas policy which (E183r) states: "Forestry access will be limited to existing roads where new roads are required specific management techniques will be developed to protect the remote recreational values of the area. When timber access roads are constructed in the vicinity of the brook trout waters, every effort will be made to avoid water-crossings. Water-crossings over designated canoe routes will be kept to a minimum and wherever possible, temporary in nature. Once forest operations are completed, all secondary and tertiary roads will be closed in areas that are known to contain natural resource values (e.g. fish and wildlife populations that are sensitive to access pressures).</p>	As above
	3) Vermilion River (MNR E180n) and Forest Reserves Dowling/Fairbank (MNR F208); Capreol/Hanmer (MNR F179); Cow Lake (MNR F207); Nelson Delta East (MNR F216)	As above	<p>3) Vermilion River -- In general there is no new commercial operations will be permitted in the parcel of land to the immediate west of Onwatin Lake and in the area south of the Vermilion River in the remaining two parcels in Hanmer Township.</p> <p>Each of the forest reserves has more restrictive requirements: Existing roads can continue to be maintained. New roads for resource extraction will not be permitted, with the exception of necessary access for mineral exploration and development, which will be permitted with appropriate consideration for the protection of forest reserve values.</p> <p>Mineral exploration and mining operations are beyond the area of influence of MNR, and VFM</p>	As above

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status																		
	4) Sturgeon River current MNR designation P173 (regardless of proposed change in status)	As above	<p>4) Sturgeon R. As a minimum, for water quality: Prescription follows normal waterway:</p> <table border="0" data-bbox="856 315 1297 493"> <tr> <td colspan="3">Shoreline</td> </tr> <tr> <td>Slope (%)</td> <td>Reserve</td> <td>Modified</td> </tr> <tr> <td>0-15</td> <td>30m</td> <td>90m</td> </tr> <tr> <td>16-30</td> <td>50m</td> <td>70m</td> </tr> <tr> <td>31-45</td> <td>70m</td> <td>50m</td> </tr> <tr> <td>45+</td> <td>90m</td> <td>30m</td> </tr> </table> <p>Other landuse direction is pending the outcome of current discussion. HCV protection will be the same as Chiniguchi (2) above: "Forestry access will be limited to existing roads where new roads are required specific management techniques will be developed to protect the remote recreational values of the area. When timber access roads are constructed in the vicinity of the brook trout waters, every effort will be made to avoid water-crossings. Water-crossings over designated canoe routes will be kept to a minimum and wherever possible, temporary in nature.</p> <p>Once forest operations are completed, all secondary and tertiary roads will be closed in areas that are known to contain natural resource values (e.g. fish and wildlife populations that are sensitive to access pressures).</p>	Shoreline			Slope (%)	Reserve	Modified	0-15	30m	90m	16-30	50m	70m	31-45	70m	50m	45+	90m	30m	As above
Shoreline																						
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HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Water Quality Wahnipitae River	Wahnipitae River supply of water to Sudbury. Also French R and Sturgeon R. if circumstances require	Nickel District Conservation Authority	<p><b>AOC Description 90 m AOC</b>  <b>Reserve Width:</b> - 45 m  <b>Modified Width</b> (<i>measured from outer edge of reserve, unless stated otherwise</i>): - 45 m</p> <p><b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b>            No activities permitted in reserve, unless approved by MNR.            - harvest operations not to reduce stocking below 12 m<sup>2</sup>/ha basal area of stems greater than 10cm in diameter (DBH)            - no chemical or mechanical site preparation            - no chemical tending            - no new landings within AOC unless the locations are approved, in writing, by the MNR</p> <p><b>Conditions on Forest Access Roads (reference Table FMP-23)</b>            No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below.            - re-route roads where possible to avoid AOC            - stream crossings shall adhere to the MNR environmental guidelines for access roads and water crossings            - no new landings within AOC unless the locations are approved, in writing, by the MNR</p>	Compliance: In event of forest operations, normal compliance monitoring will occur. Tourist outfitters will be consulted to check boundaries and tree marking within the modified zone.

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Native Values	<p>NV1 : Cemeteries, Old Villages and Spiritual Sites, Pictographs, Archaeological Sites, Fur Trading Post, Traditional Gathering Sites of Medicinal Plants and Berries</p> <p>NV2: Traditional Habitation Sites, Hunting Camps, Old Mines, Logging Camps and Sawmills</p> <p>NV3: Winter Trails, Old Wagon Roads and Winter Horse Trails</p> <p>NV4: reserve Boundaries</p> <p>NV6: Portages</p> <p>NV7: Native Value (Traditional Fishing Area )</p>	<p>MNR will be informed of any agreements re: this AOC between the First Nation and SFL.</p> <p>- any proposed deviation of this prescription will require documented approval by the affected First Nation, and approval by the MNR.</p>	<p>General approaches to Native Values management are listed below, but these all have the provision of contacting the FN involved.</p> <p><b>Conditions (Abridged see 2010 FMP for prescription)</b></p> <ul style="list-style-type: none"> <li>- First Nation will provide the SFL with the appropriate contact person to discuss forestry related issues</li> <li>- MNR will be informed of any agreements re: this AOC between the First Nation and SFL</li> <li>- any proposed deviation of this prescription will require documented approval by the affected First Nation, and approval by the MNR.</li> </ul> <p>Forest operations:</p> <ul style="list-style-type: none"> <li>- no harvest, renewal or tending operations without documented approval by the affected First Nation.</li> <li>- degree of harvest, renewal or tending operations within the modified area will range from none to normal operations, depending on consultation with above agencies.</li> </ul> <p><b>Some situations:</b></p> <ul style="list-style-type: none"> <li>- no clearcutting in the modified</li> <li>- for selection and shelterwood operations (prep., seeding, and first removal cuts), harvest operations are not to reduce stocking below 12 m<sup>2</sup>/ha basal area of stems greater than 10cm (DBH)</li> <li>- for shelterwood operations (final removal cuts), harvest operations are not to reduce stocking below 6 m<sup>2</sup>/ha basal area of stems greater than 10 cm in diameter (DBH).</li> <li>- no new landings within the AOC without documented approval by the affected First Nation Skid Trails:</li> <li>- skid trails must cross trails at a right angle and will be situated so as to reduce aesthetic impacts</li> <li>- trails will be cleared immediately after forestry operations.</li> <li>- no new landings within the AOC without documented approval by the affected First Nation.</li> <li>- Existing road reconstruction for safety reasons must receive documented approval by First Nation before work commences.</li> </ul>	<p>MNR will be informed of any agreements re: this AOC between the First Nation and SFL.</p> <p>- any proposed deviation of this prescription will require documented approval by the affected First Nation, and approval by the MNR.</p> <p>MNR Native liaison will provide contact information for each FN.</p> <p><b>Contact:</b> Reynen, Rick Phone: 705-564-7847 Email: rick.reynen@ontario.ca</p>

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness, status
Native Values	<p>Added in 2010 FMP</p> <p>NV9: Temagami Trails (Nastawgan winter trails and portages)</p>	<p>MNR will be informed of any agreements re: this AOC between the First Nation and SFL.</p> <p>- any proposed deviation of this prescription will require documented approval by the affected First Nation, and approval by the MNR.</p> <p>VFM will invite local First Nations and a representative from the local canoeing community to have input in refining values information and assisting in the locating of trails on the ground.</p>	<p><b>Conditions on Harvesting, Renewal and Tending Operations within AOC</b></p> <p>No activities permitted in reserve, unless approved by MNR.</p> <ul style="list-style-type: none"> <li>- no harvesting or renewal &amp; tending activities allowed in the reserve.</li> <li>- no harvesting within the AOC without documented approval by the affected First Nation.</li> <li>- for selection, shelterwood (prep., seeding, and first removal cuts) and commercial thinning, harvest operations are not to reduce stocking below 12 m<sup>2</sup>/ha basal area of stems greater than 10cm in diameter (DBH)</li> <li>- for shelterwood operations (final removal cuts), harvest operations are not to reduce stocking below 6 m<sup>2</sup>/ha basal area of stems greater than 10 cm in diameter (DBH)</li> <li>- in c.c. areas:                             <ul style="list-style-type: none"> <li>- no clearcutting within 0 - 30 m of winter trails.</li> <li>- within 30 - 60 m of portages, strip cutting is permitted - not to exceed 50 % of modified area, clearcut strips will not be greater than 30 m wide and the residual strips will not be less than 30 m wide</li> <li>- maintain aesthetics by reducing visibility of slash</li> <li>- no new landings within the AOC without documented approval by the affected First Nation</li> <li>- normal renewal and tending.</li> </ul> </li> </ul> <p>Skid Trails:</p> <ul style="list-style-type: none"> <li>- skid trails must cross trails at a right angle and will be situated so as to reduce aesthetic impacts</li> <li>- trails will be cleared immediately after forestry operations.</li> <li>- no skidding on or across the portage without the written approval of the MNR.</li> </ul> <p><b>Conditions on Forest Access Roads (reference Table FMP-23)</b></p> <p>No activities permitted in reserve, unless approved by MNR (i.e. AOC crossing), or as otherwise described below.</p> <ul style="list-style-type: none"> <li>- no new roads or landings within the AOC without documented approval by the affected First Nation.</li> <li>- operational roads must cross trails at right angles, and be situated so as to minimize aesthetic impacts.</li> </ul>	<p>MNR will be informed of any agreements re: this AOC between the First Nation and SFL.</p> <p>- any proposed deviation of this prescription will require documented approval by the affected First Nation, and approval by the MNR.</p> <p>MNR Native liaison will provide contact information for each FN.</p> <p><b>Contact:</b> Reynen, Rick Phone: 705-564-7847 Email: rick.reynen@ontario.ca</p>

## Conclusion

Just as the commitment to the FSC principles and criteria is long term, understanding and fulfilling the requirements of assessing, managing and monitoring High Conservation Value Forest is an ongoing effort. This report is regularly updated to address this challenge.

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**Appendix 1. Internet Map locations for the HCVF report (weblinks appear with cursor)**

Map 1 Management Unit Map

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_MU\\_00.pdf](#)

**Map 2** Ecosites of Sudbury Forest

[Ecosites.pdf](#)

**Map 3** Natural Disturbance Pattern Emulation Analysis - Plan Start

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_01.pdf](#)

[Historical\\_fires.pdf](#) (1921-2006)

**Map 4** MNR Values – Natural Resource Features – Fisheries & Wetlands

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_ValFish\\_00.pdf](#)

**Map 5** Assessment of Roadless Areas on the Sudbury Forest.

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_10.pdf](#)

**Map 6** Assessment of Road Density Analysis on the Sudbury Forest.

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_11.pdf](#)

**Map 7 Total Aquatic Carrying Capacity for Moose Plan Start**

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_15.pdf](#)

**Map 8** Area of Concern Overview.

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_AOC\\_00.pdf](#)

**Map 9** Projected Old Growth Conditions in 10 Years by Forest Unit.

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_06.pdf](#)

**Map 10 Current Seral Communities.**

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_LandPat\\_08.pdf](#)

**Map 11** MNR Values Maps – Cultural Heritage Values

[MU889\\_2010\\_FMP\\_P1\\_MAP\\_ValCult\\_00.pdf](#)

Map 12 Slope Index Overview

[slope\\_Index.pdf](#)

**Map 13** Unique trees on the Sudbury Forest

[Unique\\_trees.pdf](#)

**Map 14** Nickel District Conservation Authority map

[Nickel District CA Map](#)

**Map 15** Access Restrictions to High-Value, Remote and Semi-Remote Self-Sustaining Lake Trout Lakes

[sst\\_aoc\\_protection.pdf](#)

**Appendix 2. Comments provided by World Wildlife Fund with Vermilion response.**

September 5, 2006

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RE: Response to comments for Sudbury Forest

Dear Tony

Thanks for your comments on the report on High Conservation Values in the Sudbury Forest (version 1.0 – final draft -- review comments submitted by World Wildlife Fund and the Nature Conservancy, November 2005). I have prepared these responses on behalf of Peter Street at Vermilion Forest Management.

Below are the responses to your detailed comments. I have reprinted your comments first and then follow with explanations. I have noted areas where we have changed our report.

First I would like to respond in detail to the comment that we "...use ... existing management prescriptions and potential threat (or lack of threat) from forest practices to identify (or dismiss) HCVs". We have modified our text (Table 3 in the HCV report) to clarify that "risk" from forest management is not a criterion for HCV designation.

I am sure there is a perception that this is true. I would like to disentangle the history of forestry and conservation in Ontario, but in fact that is very difficult. The HCV terminology is certainly new, but the underlying concepts have been evolving for a long time. As you know, managers have been broadening their approach to forestry since the early 1980s when moose loomed large and ENGOs demanded they be considered (unfortunately, earlier conservation guides about birds had almost no real effect). HCVs have forced us to rethink the approach to some conservation activities; you will see in the report that there are some changes that have occurred because of HCVs. It would be dishonest to everyone to say that we threw out 25 years of input from biologists, environmental groups and the public, and started from scratch. I believe that is what you are seeing in the report. There has been a great deal of expertise directed at these prescriptions, notably by Ontario Nature, and later on by Forests For Tomorrow (which WWF was a lead member). For us to dismiss this body of expertise would in not meet the spirit of 9.1.2 "...involve qualified specialists" and 9.1.3 "ensures that a credible outside review". My point is that HCVs have existed for a long time, but not under the name HCVs. That said, there are new elements and a more international framework for HCVs under the FSC banner. Frequent review is beneficial.

As we have discussed several times, one of the strengths of the HCV concept is that it allows for communication with a much broader audience about what is going on in Ontario, using terminology that is international and auditable. It is however extremely complex language, In fact "loaded", even for professionals. It is not appropriate to try and explain this terminology to lay people heavily involved in FMPs as members of LCCs. Rather, the means of implementation is through the HCVF report and appropriate HCV designations within that report. It is the responsibility of the certificate holder to make sure that appropriate prescriptions are implemented through the FMP and that they are consistent with the HCVF report. This will also ensure that the regulatory requirements of FMPs are not confused with FSC certification requirements.

The use of the fine filter coarse filter concept in Ontario, as referenced in a number of guides, also lends itself to HCVF designation. I hope that you will see the merits of this approach, and not be too concerned that the FF/CF approach (Nature Conservancy U.S. in origin I believe) predates the HCV concept. If you have direct concerns about a particular prescription, that is most useful. Risk to the species should be the guide as to whether there is the need for management action. As you know, a species may be an HCV and not require any active management.

I look forward to discussing these points further when the opportunity arises.

Sincerely

Tom Clark  
CMC Consulting  
Bracebridge

Following are specific comments from WWF (question refers to the Toolkit questions [Elements] and comments made on Vermilion approach to those questions):

Question 1 – We will include Blanding's turtle as "possible" HCV consistent with principle of identifying conservation value rather than level of risk on managed forest. We will make the same application to other species including Short-eared Owl and Least Bittern. This should clarify that the forest management requirements are not part of the designation. We note that this does not substantively change management approach at this time. The species can be designated if more detailed info becomes available. Also in this same comment the reviewers wanted to know if there is merit to a collective HCV designation due to overlapping habitat (e.g. least bittern, short-eared owl). Our assessment is that these species are too rare and too widely dispersed to meet the Question 19 threshold. There are just not many of them. Although they do focus on wetlands, it would be a stretch to call this significant overlap of values. Since they are part of the wetland protection, we have kept the designation simple. There is no operational difference from a forestry perspective.

We have added a new classification of "possible HCV" based on the comments. For species designated by COSSARO or COSEWIC, which could be considered HCV on that basis, but is not under the purview of forestry activities, we will call them possible HCV. There are no special management prescriptions that can apply at this time. Examples are Monarch and deepwater sculpin. It is designated "possible" on the basis that if there is a demonstrated action that forest managers could take to address this species needs, it would be addressed. Note the full designation applies to species for which there is a clear a present activity and prescription that can be monitored. These are species that are addressed by coarse filter considerations. Designating these as HCV would cause an unwarranted cluttering of the concept. Only species which there is some action, and consequent monitoring taking place will be considered HCV. This is a concession to the reviewers, and may be reversed in the future if this already complex HCV concept becomes too obscure. The essential need to communicate with the public prevents us from throwing everything into the HCV designation regardless of whether any possible action can be taken. We are open to discuss this further.

Question 3 – We have added Moose Aquatic Feeding area, Heronries and Mineral Licks as HCVs. This should address this comment.

Question 4 –Regular monitoring for elk on SF (as per Table 13 of HCVF report): A number of Elk have been radio collared to track their movement and use of the forest. Mike Hall Sudbury District Bio is in charge of this program

Question 5 –Known "edge of range" tree species to list of HCVs as identified in HCVF report have been added -- White elm, black cherry, ironwood as well as tolerant hardwoods north of Highway 17 (e.g. yellow birch and red/bur oak).

Question 6 – MNR & Ontario Parks are currently doing a "gap analysis" on the Sudbury Forest – we can identify that additional HCVF may be identified as a result of this analysis and subsequent discussion on the results

Question 7 – Include Killarney and York on CR as HCVs. To be a Shareholder on the Sudbury Forest you have to have harvesting rights – Domtar's pulp mill in Espanola and sawmill in Nairn Centre rely heavily on wood coming from the Sudbury Forest. The additional area brought in from the Spanish Forest gave Domtar harvesting rights and replaced lost volumes from the Yorktown CR being placed into regulation.

Question 8 – We have added a map of the occurrences of Cedar-Yellow Birch forest that were identified in the report.

Question 9 – Pine forest type has reached 50% decline threshold for inclusion as HCV. Include in HCV list & map. OK I can do

Question 10 – Appears the same as QUESTION 6.

Question 11 – We have checked to see if there are additional ANSIs that were not included in the OLL decision.

Question 12 – We have designated critical sources of drinking water HCV e.g. Ramsey Lake & map. OK – but there is no Crown Land around Ramsey Lake, consequently this is not in the defined forest area. However we include the Wanipitae River which is also a source of drinking water for Sudbury. The Sudbury Conservation Authority is currently preparing a point source drinking water plan and if required VFM will incorporate their results into the next FMP. We defer to this Authority for direction and there is no specific prescription at this time. The Wanipitae River and lake are protected through the application of the Canoe Route AOC and the Developed Cottage Lake AOC. Both of which already show up on our HCVF Map that we are preparing

Question 13 – Provincially Significant Wetlands already a HCVF and shown on our map. Spatial Analysis comment is not clear. The study being conducted by the Conservation Authority will address that.

Question 14 - No further action necessary.

Question 16 – No further action necessary.

Question 17 – The comments did not provide any rationale as to why cottage lakes are “fundamental” to meeting the needs of local communities. We have not designated these as Cvs because this does not fit the HCVF definition as we read it. We are open to further discussion. We note there is significant protection in place already.

Question 18 – No further action required.

Question 19 – We have considered concentrations of values on SF through our FMP process. We have a map already of all of the AOCs on the Sudbury Forest – when we prepared the FMP we buffered all the values information and mapped the most restrictive AOC prescription. We did not see any areas that warranted additional protection because of the concentration of values.