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High Conservation Values in the French Severn Forest

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

Updated August 2016

Version 2.3

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Important information for reading this document

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

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

After using a hyperlink, return to previous page (PDF or WORD) by ALT ← (ALT left arrow)

- The document is provided in either WORD 2007 format or PDF because these are the most widely available and functional formats. Apologies for occasional messages provided by WORD asking about security, but all of the links provided are reliable.
- A few web documents are large (> 20 or 30 megabytes, such as the Forest Management Plan documents and maps). They may take a minute or so to download.
- References are provided in several formats depending on the purpose: Web links are provided for key documents in the text (blue fonts). They have been verified as of the date of this report. A list of references is provided for general scientific papers and other papers of general interest. Additional links are listed under "assessment methodology" within each element.
- This document contains only a few maps and illustrations because the linked documents will provide better and normally more up to date graphical information.
- Common Names in this report are capitalized to improve readability for people unfamiliar with the breadth of species (despite the desires of APA and other style guides).
- Comments are welcome on whether more maps and illustrations would help the readability of the document for the next version.

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

Notes on Version 2.3, August 2016

The primary update is the updating of species at risk following the requirements of the Endangered Species Act (RSO 2007). A number of formatting changes were made to be consistent with HCV reporting internationally.

The next version (3.0) of the report will coincide with the new FSC National Canadian Standard, which is due out in 2017. At that time the values will be revisited, formatting further updated, and a review of the whole report will be conducted by an independent expert.

Acknowledgements

Westwind gratefully acknowledges the financial support of the Ivy Foundation and the Living Legacy Trust. Discussions with many people have aided in the development of this document. We especially note the original work of Bill McMartin in compiling the first report despite the fast changing concepts associated with HCV. Work by Rike Burkhardt on the Nipissing HCV report provided many improvements to the latest version of the FSF report. Other organizations including WWF Canada, and Tembec Inc.have contributed significantly.

Westwind would like to acknowledge the assistance of OMNR in the original report as well as discussions with Lorne Johnson, Tony Iacobelli. Several individuals provided helpful advice: Peter Street, Rachel Holt, Brian Callaghan, Brian O'Donoghue, Marg McLaren, Joe Johnson, Ron Black and in particular Jan McDonnell. Our appreciation goes to the FSF Planning Team in preparing the Forest Management Plan which is acknowledged as the primary basis for this report.

HCV or HCVF?

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

For further information on the HCV concept, The HCV Resource Network document called Common Guidance for the Identification of High Conservation Values provides an up to date explanation. In September of 2014, the companion document entitled "Common Guidance for the Management and Monitoring of High Conservation Values: A good practice guide for the adaptive management of HCVs" was published.

For a video overview of HCVs in international conservation

CLICK HERE

Acronyms

AOC	Area of Concern
COSEWIC	Committee on Endangered Wildlife in Canada
CITES	Convention on International Trade in Endangered Species
EO	Element Occurrence
EMS	Environmental Management System
FSF	French Severn Forest
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
GLSL	Great Lakes St. Lawrence
HCVF	High Conservation Value Forest
HCV	High Conservation Value
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature,
LLF or LLLF	Landscape Level Forest or Large Landscape Level Forest
NHIC	Natural Heritage Information Centre
OMNR	Ontario Ministry of Natural Resources
SAR	Species at Risk
SFL	Sustainable Forest License

Executive Summary

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 categories.

Table 1. National Framework process for assessing the presence of HCV attributes.

		Value assessed for HCV status (and link to discussion in document)	Management Overview	Monitoring Overview	HCV Designation (and link to prescription where required)
Category 1 Concentrations of Biodiversity	**1**	**SF Species at Risk** Peregrine Falcon, Bald Eagle, Bank Swallow, Olive-sided Flycatcher, Whip-poor-will, Massasauga Rattlesnake, Milksnake, Hog-nosed Snake, Five lined Skink, Blanding's Turtle, Spotted Turtle Northern Bat or Northern Long-eared Bat, Little Brown Bat, Small-footed Bat	SAR are listed spp prescriptions developed specifically for each species (2007 Endangered Species Act) through the Forest Management Plan (FMP). MNRF is the lead agency.	Prescriptions in the FMP are monitored for effectiveness by MNRF science program. Expert responsibility for monitoring is in Table 13.	**HCV** Peregrine Falcon Bald Eagle, Bank Swallow, Olive-sided Flycatcher, Whip-poor-will, Massasauga Rattlesnake, Milksnake, Hog-nosed Snake, Five lined Skink, Blanding's Turtle, Spotted Turtle, Northern Bat, Little Brown Myotis, Small footed Bat
		Short-eared Owl, Chimney Swift, Kirtland's Warbler, Common Nighthawk, Loggerhead shrike, Cerulean Warbler, Short-eared Owl, Yellow Rail, Loggerhead shrike, Cougar, Eastern fox Snake, Wood Turtle, Musk Turtle, Northern Map Turtle, Eastern Fox Snake, Broad Beech Fern, Butternut, Common Five-lined Skink, Northern Map Turtle, American Ginseng	May occur in the forest, but no element occurrences are recorded; for some species, prescriptions have been developed in the event the species is identified in the forest.	No effectiveness monitoring required of these prescriptions, as currently there are no occurrences of these species.	**Possible HCV** Prescription developed case by case.
		Henslow's sparrow, Bobolink, Eastern Meadowlark, Barn Swallow, Canada Warbler, Black Tern, Least Bittern, Small-footed Bat, Grey Fox, Snapping Turtle, Lake Sturgeon, American Eel, Channel Darter, Bridle Shiner, Northern Brook Lamprey, Eastern Pondmussel, Snapping Turtle, Hickorynut , other NHIC identified plants see **Error! Reference source not found.**	Occurs, but species is addressed through Normal Operations; or there is no interaction with forestry operations; no special prescription required.	No effectiveness monitoring required, as there are no prescriptions because there is no direct interaction with forestry.	**HCV no special prescription required**

Category 1	**2**	**Endemic Species**			None
	3	**Seasonal Concentration of Wildlife** Heronries; Large Deer Wintering (Loring)	Operators follow prescription in FMP (Stand & Site Guide)	Compliance monitoring by WSF	Managing Herons Managing Deer Yards
	4	**Significant regional & focal species**			NONE
	5	**Edge species or outlier populations**			NONE
	6	**Conservation Areas** Provincial Parks	No logging allowed in protected areas	Compliance monitoring by WSF	Park boundary compliance
HCV 2	**7**	**Large Landscape Level Forest**			None
Cat 3 RTE Ecosystems	**8**	**Rare ecosystems**			None
	9	**Significantly Declined Ecosystem** 1 Late seral White & Red Pine 2 Late seral Tolerant hdwd 3 Mature Hemlock stands	MNRF has a province wide old growth strategy and is responsible for monitoring it.		HCV Managing Declined Ecosystems
	10	**Fragmented landscapes**			None
	11	**Unique Ecosystems**			None
Category 4 Ecosystem Serv.	**12**	**Water Source**			None
	13	**Flood Protection** Provincially Significant Wetland	FMP provides 120 m buffer around PSW.	Compliance MNR and WSF staff ensure	PSW protection
	14	**Soil Erosion /slide Protection**			None
	15	**Fire Barrier**			None
	16	**Other industry**			None
Cat. 5	**17**	**Communities & Livelihoods** Major Water bodies of Cultural or Historic Significance Great Lakes Heritage Coast/ Georgian Bay Biosphere Reserve	French River, Big East River, Magnetewan River buffers Biosphere reserve not near forestry	Compliance MNR and WSF staff ensure Biosphere reserve is not near forestry	Historic Rivers Great Lakes Heritage Coast
Cat 6 Culture	**18**	**Cultural: Native & Non-native** 18a) Native Values -all identified native values are considered HCV	Protection is determined based on the value. Confidential Values	Compliance MNR and WSF compliance staff	First Nation values are confidential

	19	**Overlapping values**			None

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Overview

Westwind Forest Stewardship Inc. manages the French Severn Forest (FSF) under the authority of a Sustainable Forest License (SFL - 360) granted by the Government of Ontario. The FSF is certified by the Forest Stewardship Council (FSC) which requires the managers complete an assessment of High Conservation Values (HCV) using the definition of FSC Principle 9 (**Error! Reference source not found.**). There are six key attributes of an HCV:

- Forest areas containing globally/nationally or regionally significant concentrations of biodiversity values
- Forests containing globally/nationally or regionally significant large landscape level forests
- Forest areas that are in or contain rare, threatened or endangered species or ecosystems
- Forest areas that provide basic services of nature in critical situations
- Forest areas fundamental to meeting basic needs of local communities (subsistence, health)
- Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities)

The first version of this report was the first HCV report written in Canada. It was based on two guidance documents. Early on, WWF Canada (2002) produced a "toolkit" which is a series of questions (this report uses the more modern term "elements") designed to ensure that all of the potential HCV attributes in the Canadian context are considered. In this report we have used the toolkit that is published in the FSC National Boreal Standard (2007, Appendix 4 of that standard), which is the version approved by FSC. . The second useful document was the guidance provided by Proforest for forest managers. This is old now, and has been replaced by the HCV Resource Network document called Common Guidance for the Identification of High Conservation Values provides an up to date explanation. In September of 2014, the companion document entitled "Common Guidance for the Management and Monitoring of High Conservation Values: A good practice guide for the adaptive management of HCVs" was published.

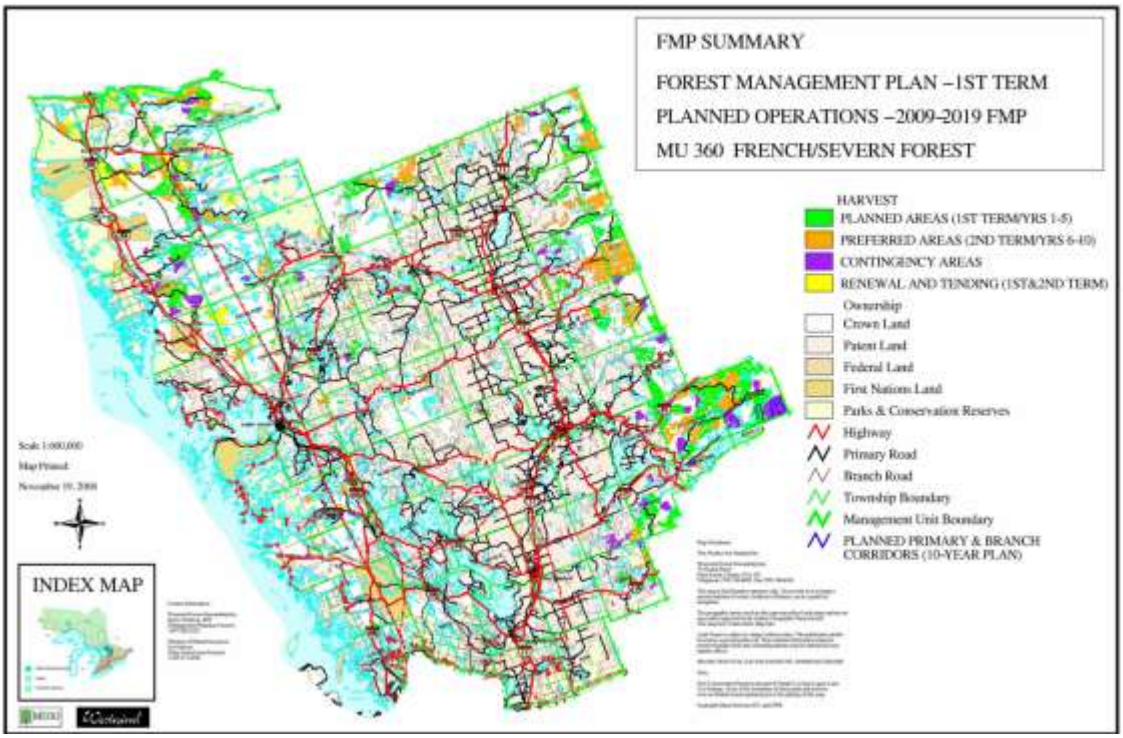
The role of the FSC HCV process in the FSF is to ensure that the regulated provincial planning and forest management system meet a global standard. The current "values lexicon" is quite mature in Ontario and it will be the basis for the language in public consultation. The public consultation process will be based on the use of local terminology rather than the FSC terminology. It is the responsibility of the managers to ensure that the full FSC meaning of HCV is conveyed to the forest management planning (FMP) process. Although this report will be public, it is not likely to receive wide distribution to the public.

Westwind Forest Stewardship Inc. regards all of the FSF forest to have 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 FSF. This forest has been the mainstay of loggers, trappers, tourism establishments, and outfitters, resort owners for over a century. For some of our native communities, this has been so for much longer. In the FSF –law and common sense require ongoing consultation, even though compromise and difference of opinion are routine.

In reality, especially on large public forests, managers do not have the option of treating any part of the forest in a less than optimal way. Financial resources are allocated to optimally address all values; hopefully these meet the management requirements. FSC's HCV approach provides guidance to the FSF managers in identifying the FSC requirements. Each Identified value should be properly managed. For FSC this should be done as part of the requirements for Principles 1-8.

These considerations mean that in assessing the FSF HCVs, the managers have been quite 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. Westwind and the OMNR biologists and planners and foresters responsible for HCV do not claim that the prescriptions and approaches are perfect, but

they have been thoughtfully prepared, and are operationally sound. The managers are always open to reconsidering any of the approaches to managing HCVs.



- **Figure 1. Overview of French Severn Forest with FMP allocations.**

The FSF is a large publicly owned forest and by Canadian standards, intensively used by the forest residents and the large urban populations to the south. The scale of the forest alone pushes the requirements for HCV analysis to a high level as described by the Proforest toolkit (Section 2.1 The issue of scale).

The protected areas network in the FSF is also nearly complete (at approximately 23%) so it is not anticipated that HCVs will be a prime source for future parks, conservation reserves or other protected areas.

The purpose of this report is to comply with Principle 9 of the FSC standard, and to provide an accessible public document describing conservation values in the FSF. The initial work was done by McMartin (2001). McMartin's report was a preliminary assessment of the current state of information about HCV and laid the groundwork for a plan to implement the full requirements of FSC over the next few years. There have been subsequent updates each year since the first certification in 2002.

HCV Toolkit

The toolkit provides a flowchart of the process for assessing HCV as outlined in Appendix 4 of the National Boreal Standard, which is the accredited standard most relevant to the Great Lakes area. There are three phases outlined that follow the FSC P9 requirements:

- Assess presence of HCVs (P&C 9.1) through consultation (9.2);
- Set objectives and strategies to maintain (P&C 9.3);
- Monitor (P&C 9.4).
- The Proforest toolkit has a pre-assessment step for filtering HCVs and determining potential. We have gone directly to the full assessment using the toolkit. This process is depicted in Figure 2 in the toolkit.

Within the first phase a list of questions or elements are provided by the toolkit to determine whether individual attributes are HCVs. The following sections analyse each element to make a conclusion that a species is HCV. The FSF managers, with some expert consultation, have defined thresholds for each value, 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.

Consultation

There are four components to the HCV consultation consisting of:

1) Broad review, based on the FMP process, to determine forest values generally in the FSF which will include as a minimum: individuals; local stakeholder representatives including the Local Citizen's Committee; communities, both native and non-native
2) Consultation with technical experts about species, ecosystems or values that are HCV
3) Focused review by regional and provincial stakeholders of the values and the management approach
4) Open door policy – new HCVs and new management approaches will be considered at any time.

OMNR public consultation is documented in detail as part of the FMP process as part of the public record, in the Appendices to the plan. This will also serve as part of the HCV documentation process.

The other three steps of the consultation process will be documented in this report and in subsequent updates to this report.

The FSF managers conceived the following guidelines in 2001 in preparing the original report. The process is the same today:

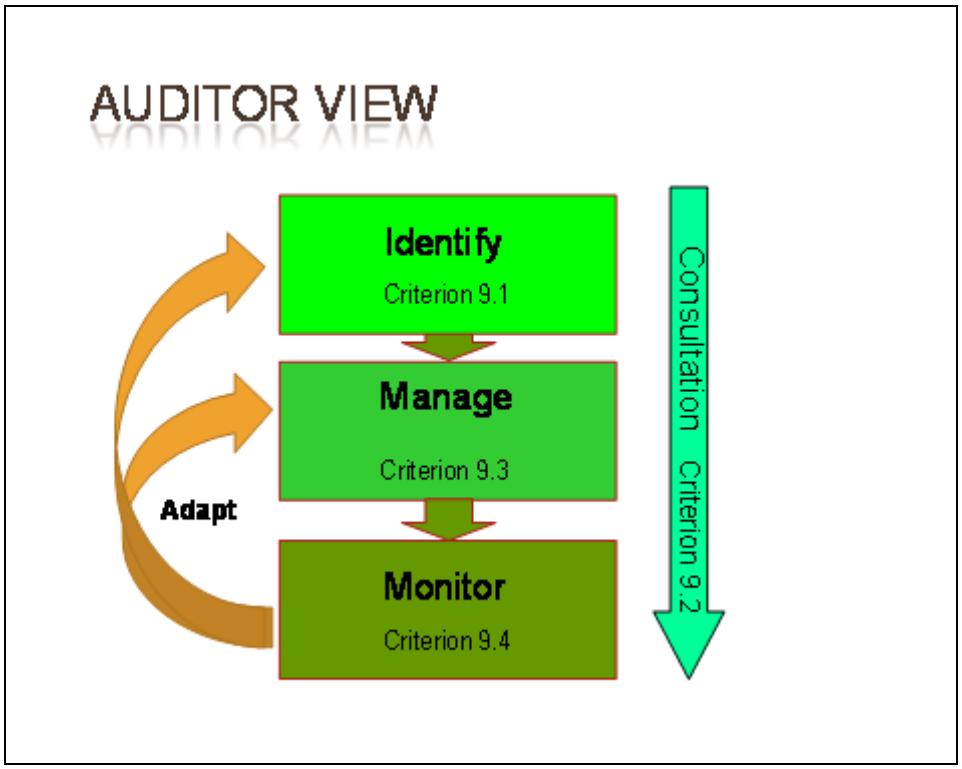
1) Forest Management Plan is the road map; HCV report is a mirror of the FMP highlighting conservation
2) Scale of HCVs range from 10's of m^2 to 100's of km^2
3) Initial HCV Attribute list is long and "threshold" is liberal because on public forest, there is an expectation of caution
4) Consultation process is regulated in the FMP, but extra HCV consultation will be done as required; the FSC HCV lexicon is not used in public discussion.
5) HCV is unlikely to be a source of new protected areas because representation is almost complete (WWF 2003).
6) Westwind is using the national toolkit as the template, available from Appendix 4 of the National Boreal Standard.
7) Use of FSC terminology during discussions with local stakeholders and aboriginal groups is not required, as long as the concepts of HCVs are maintained by the managers.

Thresholds: Categorization as 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. Thresholds for individual values are described more specifically in the Tables in the assessment.

Areas of Concern and Conditions on Regular Operations

"Area of Concern" is the term used to describe the locations of values in the forest that may need special prescriptions to ensure protection. There are many of these AOCs. Some are quite routine, such as shoreline areas. So not all AOCs are HCVs – HCV are regionally significant values. However all HCVs have an AOC boundary of some kind and require an AOC prescription if there is a possible impact from forestry. A "Condition of Regular Operations" is placed on the logging operation where there is routine considerations made for protecting values. For example "wildlife trees" are a feature of the forest. These provide either mast or cavities for a wide range of species, including some Species at Risk. Because this is done everywhere, it is not considered a special prescription.



- **Figure 2. A simplified view of the FSC Principle 9 criteria.**

Assessment: HCV or Not?

Within the first phase, the National Framework provides a list of 19 questions or elements (that assist in determining whether individual attributes are HCVs. For each value the managers, with expert consultation, have defined thresholds for designating a High Conservation Value.

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

- HCV – follow guidance of P9 in which management is guided by the precautionary principle and monitoring demonstrates that specific prescriptions are effective.
- Not HCV – follows guidance of P1 to P8 for management and monitoring
- HCV no special prescription required – means that the value is significant at least at the regional level, but there is no interaction with forestry and consequently no special prescription is required, nor is monitoring. In other words, Normal good forestry practices avoid impact on the value.
- Possible HCV – occurrence is not confirmed, needs further information about distribution and abundance, and or consultation required; follows P9 and precautionary principle.

Our analysis of HCVs relies heavily on legislated forest management planning requirements which is guided by expert advice during plan preparation. See page vii of the forest management plan for a list of planning team advisors.

HCV Designation Decision by the Manager

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

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

Phase 1: Assessment of HCVs

The following assessment of the presence of HCV attributes is based on the toolkit, and suggested avenues for collecting information. The elements are divided into five separate areas related to the definition of HCV above. The elements are numbered sequentially to 18, but are in six groups.

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

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

Assessment Methodology:

- NHIC Species Lists
- IUCN Red List
- COSEWIC -- Committee on the Status of Endangered Wildlife in Canada
- Supplementary Literature Review (FishBase, Environment Canada Species at Risk & other)
- Interviews with local experts (MNRF biologists)

The toolkit requires that managers identify critical habitat for rare threatened or endangered species. Our approach was to review all of the available lists. The primary source is the list of species provided by the Natural

Heritage information Centre (NHIC) of the Ontario government (Appendix 3. Natural Heritage Information Centre list of Species at Risk on the French Severn Forest (Nov 2012). The list is used routinely for providing forest values information to the forest planning system in Ontario.

The NHIC list includes the latest information from COSEWIC (Committee on the Status of Endangered Wildlife In Canada; COSEWIC 2003). A discussion of the assessment of the species is provided in **Error! Reference source not found.**. The information in this table was updated from the NHIC database in 2011. OMNR updated the information to include the developments and species additions required for the Endangered Species Act (RSO 2007).

Table 2. Species listed as "at risk" by COSEWIC or COSSARO or "rare" by NHIC and with records of occurrence as verified by local OMNR biologists.

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

Scientific Name *Common Name* *or Group*	*Info Sources* *MAPs*** *IUCN* *Recovery Plans*	**Rank/** **Status**** **1) COSEWIC** **2) COSSARO** **3) IUCN**	**HCV Assessment & Decision** **1) Status (from COSSARO report) (Rankings defined below**)** **2) Risk assessment** **3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)**
Haliaeetus leucocephalus Bald Eagle	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) Not at Risk 2) SC 3) Least Concern	1) Breeding population in central Ontario are small, but expanding. Several locations. 2) Eagle populations in eastern North America declined as a result of widespread use of organochlorine pesticides such as DDT. Today Bald Eagles remain susceptible to illegal shooting, accidental trapping, poisoning and electrocution. Nests found during the course of forest management operations would be reported to MNRF. 3) Eagle nests occur near the Forest but had not been recorded on the map from MNRF. It is Special Concern and is designated HCV. ***HCV***
Asio flammeus Short-eared Owl	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Least Concern	1) An uncommon to rare and very local (irregular) breeding species in open habitats through Ontario, mostly in the agricultural south and along the Hudson and James Bay coasts. Current trends not known. This owl nests in marshes and grassy areas, and possibly also on clearcuts. No nests found in the last Atlas; there was in first. 2) Risk due to forestry is minimal due to its use of open areas. 3) If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. Listed so requires HCV designation. ***Possible HCV***
Chaetura pelagica Chimney Swift	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	1) Thr 2) Thr 3) Near Threatened	1) An uncommon to common breeding species throughout its Ontario range. Trends not known. 2) Forestry may affect some nest trees, but data is very scarce. Stand and Site Guide (MNRF) contains a prescription in the rare event a nest site is found. 3) As a listed species it is designated HCV and considered possible (Dec 2015). A prescription has been included in the Stand and Site Guide. ***Possible HCV***
Dendroica kirtlandii Kirtland's Warbler	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) End 2) End 3) Near Threatened	1) Not recorded in this Forest. Only one extant EO currently - previously no breeding records since 1985. 2) Potential interaction with forestry due to its dependence on Jack Pine. Control of forest fires has been a cause of decline due to Jack Pine fire dependency for colonization. *3)* Listed as Threatened, so designated HCV. Prescription developed in the event of an occurrence. ***Possible HCV***
Caprimulgus vociferus Whip-poor-will	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) Thr 2) Thr 3) Least Concern	1) An uncommon to rare breeding species throughout much of its Ontario range, although common in some regions such as the Frontenac Axis north of Kingston. Current trends not known. 2) Interaction with forestry possible. Main threat to species is likely habitat loss and degradation with the natural change of open areas and thickets to forests in the north and conversions of agricultural in the south. 3) Listed as Threatened, so designated HCV. ***HCV***

Scientific Name *Common Name* *or Group*	*Info Sources* *MAPs*** *IUCN* *Recovery Plans*	**Rank/** **Status**** **1) COSEWIC** **2) COSSARO** **3) IUCN**	**HCV Assessment & Decision** **1) Status (from COSSARO report) (Rankings defined below**)** **2) Risk assessment** **3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)**
Rallus legans King Rail	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	1) End 2) End 3) Least Concern	1) King Rail is rare breeding species with a restricted range in Ontario. There are only 29 EOs in the province. It was not reported by NHIC on the SF. 2) Unlikely interaction with forestry unless wetlands are impacted. 3) Listed as Threatened, so designated as possible HCV, should it be encountered. It was not reported by NHIC on the SF, so it is not HCV. ***Not HCV***
Lanius ludovicianus Loggerhead Shrike	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) End 2) End 3) Least Concern	1) Loggerhead shrike is endangered in both Ontario and Canada. There are two subspecies in Canada: the eastern subspecies is endangered, it was once common in southern Canada but now its range is only in Southern Ontario and south-eastern Manitoba. The Loggerhead has been restricted to the southern edge of Canadian Shield due to habitat loss in Ontario. The three main breeding areas are Lindsay, Kingston and Ottawa. Breeding pairs were reduced from 52 pairs in 1992 to 18 pairs in 1997. 2) Habitat loss caused by intensive farming practices, natural succession, reforestation and development. 3) Listed species, so designated HCV but not directly at risk from forestry due to habitat difference. ***Possible HCV***
Dolichonyx oryzivorus Bobolink	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) Thr 2) Thr 3)Least Concern	1) Bobolink is threatened both nationally and provincially. There is a widespread range in Ontario, south of the boreal forest. 2) Incidental mortality from agricultural operations, habitat loss and fragmentation, pesticide exposure bird control at wintering roosts are the main threats. 3) Listed species, so designated but not at risk from forestry. ***HCV no special prescription required***
Dendroica cerulean Cerulean Warbler	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) End 2) Thr 3) Vulnerable	1) Cerulean warblers are endangered nationally and threatened in Ontario. In Ontario their habitat has been reduced to the Carolinian Forest zone and southern part of the Great Lakes St. Lawrence Forest zone. Southern Ontario populations may be separated into two bands. One band runs from southern Lake Huron, north of lakes St. Clair and Erie, with an area of concentration lying roughly between the Long Point region and western Lake Ontario. Further north, a second band runs from the Bruce Peninsula and Georgian Bay area to the Ottawa River, with an area of concentration north of the juncture of the St. Lawrence River and eastern Lake Ontario. 2) Cerulean warblers are forest-interior birds requiring large relatively undisturbed mature, semi-open deciduous forest. Habitat loss from forest fragmentation and degradation. Predation from Brown-headed Cowbird is also a threat. Cowbirds benefit from degraded forest habitats. 3) Listed as Threatened, so designated HCV. ***Possible HCV***

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Sturnella magna Eastern Meadowlark	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) Thr 2) Thr 3) Least Concern	1) Eastern Meadowlark is listed as threatened in Ontario and Canada. It inhabits a prairie habitat. 2) The main cause of decline for this species is loss of grassland habitat. 3) Listed species, so designated but not at risk from forestry. ***HCV no special prescription required***
Hirundo rustica Barn Swallow	MNRF Legal Status Recovery Strategy IUCN map	1) Thr 2) Thr 3) Least Concern	1) Barn Swallow is threatened both nationally and provincially. Historical decline is a result from loss of artificial nesting sites, open barns, and agricultural practices. Cause of recent decline is unknown. 2) Associated with infrastructure, including possibly bridges. No forestry related occurrences have been reported. 3) Listed species, so designated HCV but low risk from forestry. ***HCV no special prescription required***
Riparia riparia Bank Swallow	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	1) Thr 2) Thr 3) Least Concern	1) Bank Swallow is threatened both nationally and provincially. It occurs in the French Severn Forest. 2) Bank Swallows nests on banks of rivers and lakes, but also in active sand and gravel pits or old ones where the banks remain suitable. Therefore aggregate pits in forest operations can have an impact. The birds breed in colonies ranging from several to a few thousand pairs, so there is potential for a significant impact. 3) As a threatened species located in the forest, it is designated possible HCV. There were no element occurrences reported **Error! Reference source not found.**, although this is likely a reporting problem. As such it was upgraded to an HCV. ***HCV***
Wilsonia Canadensis Canada Warbler	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Thr 2) SC 3) Least Concern	1) The Canadian Warbler is special concern in Ontario and threatened in Canada. 80% of its known breeding range is in Canada. The breeding range is deciduous and coniferous trees and nests near the ground. It breeds at low densities across its range. In Ontario it is most abundant along the Southern Shield. 2) Habitat loss due to reduced forests with well-developed shrub layer which impacts the breeding range. 3) There is impact from forestry operations. By maintaining natural amounts of deciduous and lowland conifer areas in a mature and old forest condition. Known nests, or those encountered during operations, will be protected using conditions on regular operations. ***HCV no special prescription required***

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Chordeiles minor Common Nighthawk	MNRF Legal Status (no mgmt. plan avail) IUCN map	1)Thr 2) SC 3) Least Concern	1) Common Nighthawk is of special concern in Ontario and threatened in Canada. Its range is extended across Ontario. They use a variety of habitats such as: such as farmland, open woodlands, clearcuts, burns, rock outcrops, bogs, fens, prairies, gravel pits and urban rooftops. It will use tall trees and snags as foraging perches. 2) Cause of population decline is unknown. Suspected causes are pesticide use and suitable habitat loss. 3) Listed as Threatened, so designated HCV. An AOC prescription (GN) is in place for nests. ***Possible HCV***
Contopus cooperi Olive-sided Flycatcher	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Thr 2) SC 3) Near Threatened	1) Olive-sided Flycatcher is threatened in Canada and listed as Special Concern in Ontario. It is found in natural forests edges and openings. In Ontario they commonly nest in White and Black Spruce, Jack Pine and Balsam Fir. The cause of decline over the past 30 years is unclear. It was assessed as Threatened because of a 79% decline from 1968 to 2006, a 29% decline since 1996, and because there is no evidence that the decline has ceased. 2) Threats include habitat loss; another possible cause some evidence suggests is that there is lower nest success rates in managed forests compared to that of natural forests. Also a decline in prey could be a threat. 3) Listed as Threatened, so designated HCV. An AOC prescription is in place for nests. ***HCV***
Coturnicops noveboracensis Yellow Rail	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Least Concern	1) Yellow Rail is listed as special concern in Ontario and Canada. In Ontario they are primarily found in the Hudson Bay Lowlands and localized marshes in southern Ontario. It is estimated there are 10,000 Yellow Rails today. The preferred habitat is shallow wetlands. 2) The main threat to Yellow Rails is the draining of wetlands for urban development. Also, expanding Snow goose populations in the Hudson Bay lowlands destroying habitat. 3) Listed species, so designated HCV but low risk from forestry. ***Possible HCV***
Chlidonias niger Black Tern	MNRF Legal Status Recovery Strategy MNRF map IUCN	1) NAR 2) SC 3) Least Concern	1) Black Tern is of special concern in Ontario and not at risk in Canada. Black Terns were once common in Ontario and the decline has been occurring since the 1980s. They are scattered throughout Ontario, mainly breeding in marshes along the edges of the Great Lakes. 2) Threats of habitat loss occur due to wetland drainage and alteration. 3) Listed species, so designated HCV but low risk from forestry. ***HCV no special prescription required***

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Euphagus carolinus Rusty Blackbird	MNRF Legal Status (not listed) IUCN map	1) SC 2) NAR 3) Vulnerable	1) Rusty Blackbird is listed as special concern in Canada. The Rusty Blackbird habitat included along lake, stream, and river shorelines, wetlands, flooded forests, and beaver ponds. During the breeding season they are primarily associated with wet boreal forest, specifically within conifer forests and muskeg. 2) The leading cause of population declines is associated with loss of wintering habitat. 3) There is interaction with forestry operations. Shoreline AOC prescriptions address general habitat concerns. Not at risk designation suggests it is not an HCV. ***Not HCV***
Mammals ***Glaucomys volans*** Southern Flying Squirrel	MNRF Legal Status (not listed) IUCN map	1) NAR 2) NAR 3) Least Concern	1. The southern flying squirrel was taken off the species at risk in Ontario list in 2006. There are few documented occurrences on SF but it is probably common in suitable habitat. 2. Inhabits mature hardwood forests, using dead hollow trees as den sites. Habitat for the southern flying squirrel is provided following MNRF's coarse-filter framework that involves (a) providing natural amounts of all habitat types and ages on the landscape, and (b) identifying cavity trees during tree marking activities and retaining them during harvesting operations (MNRF 2010). 3. Likely occurs on the SF but is not an HCV because it is not designated. IUCN regards as least concern. ***Not HCV***
Myotis septentrionalis Northern Long-eared Bat, or Northern Bat	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Sensitive 2) End 3) Least concern	1) This bat is considered to be common globally, but is becoming provincially rare. It has a wide range in eastern North America. Recent White nose syndrome has caused it to be listed in Ontario. 2) These bats choose maternity roosts in buildings, under loose bark, and in the cavities of trees. Forest habitat is provided through the retention of cavity trees as required by treemarking guide. 3) Listed as an Endangered species. It is uncommon and as such local occurrences would be protected if located, regardless of designation as HCV. ***HCV***
Myotis lucifugus Little Brown Bat (Myotis)	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) End 2) End 3) Least Concern	1) As with Northern Bat, this species this species is suffering losses from White Nose Syndrome and this is the reason for the COSSARO listing as endangered. Distribution is not clear on WRF. It is listed as least concern by IUCN. 2) A prescription exists in the Stand and Site Guide for Bat Hibernacula. There is no evidence that forestry has contributed to the endangered status for this species. 3) It is a listed species and so designated HCV. It received General Habitat Protection - January 24, 2013 under ESA. ***HCV***

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Myotis leibii **Small-footed Bat**	MNRF Legal Status (no mgmt. plan avail) MNRF map(under repair) IUCN map	1) maybe at risk 2) End 3) Least Concern	1) As with other bats, this species this species is suffering losses from White Nose Syndrome and this is the reason for the COSSARO listing as endangered. Listed as of June 2014. 2) This bat roosts mainly in caves, but possibly also alone or in nursery colonies under peeling bark. Forest habitat is provided through the retention of cavity trees as required by treemarking guide. 3) It is not a listed species but it is rare and likely to decline. In the unlikely event of finding one, local occurrences would be protected, regardless of designation as HCV. An AOC prescription is provided in the FMP for general bat hibernacula. ***HCV***
Canis lupus lycaon **Eastern Wolf**	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) Not listed 2) SC 3) Least Concern	1) Not listed in Ontario, the wolf is classified as special concern in Canada and Ontario. The eastern wolf, sometimes called the Algonquin Park wolf, is a small subspecies of the widely distributed grey wolf (Canis lupus). Its distribution and taxonomy are unclear. 2) The wolf is a habitat generalist, using almost every habitat type and showing little preference. Populations of wolves are dependent on adequate populations of prey. Habitat for this species is maintained by appropriate silviculture that will ensure that all habitat types representative of a natural forest occur in amounts reflective of the natural bounds of variation, and (ii) through the provision of habitat for deer and moose which are the major prey of wolves. 3) No eastern wolves have been confirmed in the forest and no den sites or other outstandingly important habitats have been identified. ***Not HCV***
Puma concolor Cougar	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) DD 2) End 3) Least Concern	1) Cougars are endangered in Ontario however there is a data deficiency to determine their national status. Cougars inhabit large forested areas that are relatively undisturbed by humans. Over the years there have been hundreds are sightings in Ontario. In northern Ontario the cougars present are of unknown origins and cougars in southern Ontario are considered to be escaped pets. 2) The disappearance of cougars is caused by land clearing for settlement and agriculture. 3) Forest management considerations will be evaluated if the presence of cougars is verified. ***Possible HCV***

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Reptiles ***Emydoidea blandingii*** Blanding's Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) Thr 2) Thr 3) End	1. Threatened in Ontario. Widespread in southern and central Ontario but NHIC says populations appear to be rather small. 2. IUCN describes the turtle as highly mobile. They move extensively between wetlands and nest in open grasslands, often well away from water. As such it is susceptible to forest operations. The Stand and Site Guide provides a prescription. MNRF is currently refining the distribution information for the species. 3. Listed species. Prescriptions are in place and these are being monitored and tested for effectiveness by MNRF in central Ontario ***HCV***
Sternotherus odoratus Musk Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) Thr 2) SC 3) Least Concern	1) Musk Turtles are ranked as threatened in Ontario. Inhabits virtually any permanent body of freshwater having a slow current and soft bottom. Eggs are laid up to about 50 m from water. Occur near western edge of the forest. 2) They move extensively between wetlands and nest in open grasslands, often well away from water. As such it is susceptible to forest operations. The Stand and Site Guide provides a prescription. MNRF is currently defining the distribution information for the species. 3) Listed species. It occurs near forest so listed as possible. ***Possible HCV***
Glyptemys insculpta Wood Turtle	MNRF Legal Status Recovery Strategy IUCN map	1) Thr 2) End 3) End	1. Endangered in Ontario and also ranked as endangered by IUCN. This is due to the relatively small range of the species in northeastern temperate NA. It has not been found on the forest but occurs to the south of the forest along the Ottawa River. 2. Habitat for these turtles consists of larger, slow-moving rivers and adjacent shrub and forest communities. Mortality on forest access roads can affect their slow-growing populations and there is some risk from forest harvest operations in some seasons. Where wood turtles occur, characteristics of the river and the immediately adjacent riparian zone may be more important habitat features than attributes of the forest cover. Wood turtles venture to and from upland forested areas to feed. The FMP contains an AOC prescription that protects known habitat used by these turtles. 3. Listed species. MNRF monitors and does surveys but has not located the species on the forest. ***Possible HCV***
Graptemys geographica Northern Map Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Least Concern	1) Northern Map Turtle is listed as special concern for both Ontario and Canada. It is found in southern Ontario, mainly along the shores of Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario, as well as along rivers such as the Thames, Grand and Ottawa. It also has been found just west of the forest. 2) The historic distribution of this species is not well known it is not well studied in Ontario; however it is a largely aquatic species. Declines in south-western Ontario, particularly, may be explained with the increase in shoreline development, decline in habitat quality and increased human disturbance. The introduction of invasive species also results in a loss of prey species for these turtles. 3) Listed species, so designated but not at risk from forestry. ***Possible HCV***

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Clemmys guttata Spotted Turtle	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) End 2) End 3) End	1) The spotted Turtle is endangered provincially and nationally. There are about 75 known locations in Ontario. Although they are widespread in Ontario they are localized to southern Ontario. 2) Spotted Turtles produce small clutches of eggs and they have low hatching success which will hinder the recovery of this species. Females lay eggs in soil and leaf litter in wooded areas close to wetlands. 3) Listed species. It has not been found on the forest and does not seem to be close. ***Not HCV***
Chelydra serpentin Snapping Turtle	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Least Concern	1) Snapping Turtle is listed as special concern in Canada and Ontario. They are a freshwater species who prefer shallow waters. Prefer sandy or gravel areas to lay eggs and will often take advantage of man-made structures. Their range in Ontario is limited to southern Ontario and it is contracting. 2) The main threats to this species are amount of time it takes for them to reach maturity, often cross roads to find nesting sites resulting in mortality and egg predation in urban and agricultural areas. 3) As a SC species it is HCV. No special prescriptions are required as the wetland protection for this species is suitable. ***HCV no special prescription required.***
Elaphe gloydi Eastern Fox Snake	MNRF Legal Status Recovery Strategy IUCN map	1) THR 2) THR 3) Near Threatened	1) The fox snake is threatened in Canada. Its range is the Great Lakes Basin where it inhabits coastal marshes, dunes, beaches, and sometimes adjacent woodlots. This harmless snake rattles its tail against leaves giving the impression of a venomous rattlesnake; therefore, persecution by humans may be one reason why it is now rare. It occurs at least close to the southern edge of the SF according to IUCN maps. 2) There are no specific, mapped sites for the fox snake that could require an AOC prescription. During forestry operations, marshes are protected through a variety of guidelines including the Code of Riparian Practice and are unlikely to be affected by forestry. 3) This has not been found on SF. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. ***Possible HCV***
Sistrurus catenatus Massasauga Rattlesnake	MNRF legal status MNRF map IUCN map	1) TH 2) TH 3) Least Concern	1) The Massasauga is found only in Ontario, primarily along the eastern side of Georgian Bay. It occurs on SF. 2) The most significant threats to the Massasauga are persecution by humans, mortality on roads, and loss of habitats. Forestry is mainly a concern due to roads through habitat. 3) In general this has attributes of an HCV. These animals are difficult to locate and not normally in areas near operations. An AOC prescription is included in the FMP. ***HCV***

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Lampropeltis triangulum Milksnake	MNRF Legal Status (no mgmt. plan avail) MNRF map	1) SC 2) SC 3) Least Concern	1) The milk snake is globally very common and provincially common but is listed as "special concern" in Canada. It occurs on SF. 2) The Stand and Site prescription can be applied for the milk snake because there are no known hibernacula, and it is nocturnal and remains underground much of the time. However, milk snakes could occur in riparian zones (Harding 1997), and these are protected with riparian buffers (see notes under wood turtle). They also use farmlands, meadows, and forest edges (MNRF 2000). 3) In general this has attributes of an HCV. These animals are difficult to locate. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. ***HCV***
Thamnophis sauritus Eastern Ribbon Snake	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Least Concern	1) The Eastern Ribbon snake is listed as special concern both provincially and nationally. Their range includes southern Ontario and locally common in parts of the Bruce Peninsula, Georgian Bay and eastern Ontario. 2) Ontario is the northern limits of the range and historical data is unknown to determine abundance trends. However it is likely that the decline is the result of loss of wetland habitat in Ontario. 3) It was confirmed in 2015 to occur on the SF, although sparsely. An appropriate prescription has been placed in the FMP but there are no occurrences currently near forestry. ***Possible HCV***
Heterodon platirhinos Hog-nosed Snake	MNRF Legal Status Recovery Strategy IUCN map	1) TH 2) TH 3) Least Concern	1) Threatened Provincially and Nationally. The species is widespread south of the Great Lakes and east of the Rockies, but it is not common anywhere. In Ontario, it is found in southern and central Ontario as far north. It is at the northern limits of its range in Ontario 2) Main threat is from human interactions because of the snakes behaviour. Some interaction with forestry. 3) Occurs in SF. Prescription and monitoring has been developed. It is considered HCV, although actual occurrences would be rare. ***HCV***
Plestiodon fasciatus Common Five-lined Skink	MNRF Legal Status Recovery Strategy IUCN map	1) End 2) SC 3) Least Concern	1) The common five-lined Skink is listed as endangered nationally and of special concern in Ontario. It is Ontario's only lizard. There are two populations of this species. The Great Lakes/St. Lawrence populations come close to the SF. 2) The Great Lakes/St. Lawrence populations prefer rocky outcrops in mixed coniferous and deciduous forests with the biggest threat being is land development. 3) In general this has attributes of an HCV. If an occurrence is found the species will be designated as HCV and appropriate prescription and monitoring developed. ***Possible HCV***

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Fish ***Acipenser fulvescens*** Lake Sturgeon	MNRF Legal Status Recovery Strategy IUCN map	1) End, Thr 2) SC 3)Least Concern	1. Known in the area in a number of water bodies (Sturgeon River). Spawning sites have not been identified. General status is sensitive. 2. Although aquatic, this species is slow growing and sensitive to disturbance of its spawning areas, so any operations requiring roads must be careful not to introduce additional risk. 3. Sturgeon is an HCV due to their listing as special concern and their now uncommon occurrence in the area. There is minimal interaction with forest operations. ***HCV no special prescription required***
Percina copelandi Channel Darter	MNRF Legal Status (no mgmt. plan avail) MNRF Map IUCN	1) Thr 2) Thr 3) Not listed	1) Channel Darter is threatened both nationally and provincially. In Ontario they inhabit the tributaries of Lake Ontario, Lake Erie, Lake St. Clair and the Ottawa River. 2) The main threats to the Channel Darter are sedimentation and decline in water quality caused by development and agriculture. 3) It is a listed species and so an HCV. Minimal interaction with forestry means there is no special prescription. ***HCV no special prescription required***
Ichthyomyzon fossor Northern Brook Lamprey	MNRF Legal Status (no mgmt. plan avail) MNRF map IUCN	1) SC 2) SC 3) Not listed	1) Northern Brook Lamprey is of special concern in Ontario and throughout Canada. In Ontario, it is found in rivers draining into Lakes Superior, Huron and Erie, and in the Ottawa and St. Lawrence Rivers. 2) They tend to live in small rivers which may be affected by forestry practices such as road construction. 3) It is a listed species and so an HCV. Minimal interaction with forestry means there is no special prescription. ***HCV no special prescription required***
Ichthyomyzon unicuspis Silver Lamprey	MNRF Legal Status (no mgmt. plan avail) IUCN map	1) SC 2) SC 3) Least Concern	1. The silver lamprey is considered to be special concern in Ontario, and is known to inhabit Lake Nipissing (COSEWIC 2011). However, it remains to be confirmed whether the species inhabits the managed part of the SF. 2. Young silver lampreys live in burrows in soft substrate in streams and transform after several years into seeing, toothed adults. COSEWIC (2011) identifies lampricides used to destroy the sea lamprey in the Great Lakes and its tributaries, barriers that limit movement into streams for spawning, and pollution as threats to the species. Since the species spawns in riffle sections of rivers and streams, it could possibly be affected by forestry operations. ***3.*** Since there is uncertainty about whether the species occupies the managed portion of the NF, it is considered to be a possible (not confirmed) HCV at this time. ***Possible HCV***

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Anguilla rostrata American Eel	MNRF Legal Status Recovery Strategy IUCN map	1) SC 2) End 3) Not listed	1) American Eels are listed as special concern nationally but are endangered provincially. They can be found along the St. Lawrence River, the Ottawa River and Lake Ontario and their tributaries. Eels have been occasionally observed in the Great Lakes upstream of Lake Ontario since the construction of the Welland Canal. They are throughout the SF. 2) Threats to the American Eel occur through inhibiting upstream migration from hydro dams and mortality during downstream migration from hydroelectric turbines. 3) It is a listed species and so an HCV. Minimal interaction with forestry means there is no special prescription. ***HCV no special prescription required***
NHIC listed plants	**Error! Reference source not found.**	For status see **Error! Reference source not found.**	*Callitriche heterophylla* *Cephaloziella rubella var. elegans* *Juncus acuminatus* *Elymus lanceolatus ssp. psammophilus* *Liatris cylindracea* *Lophozia capitata* *Neottia auriculata* *Peltandra virginica* *Potamogeton confervoides* *Sagittaria cristata* *Solidago houghtonii* *Sporobolus heterolepis* *Trichodon cylindricus* **HCV no special prescription required**
Botrychium oneidense Blunt-lobe Grapefern	MNRF Legal Status (not listed)	1)NAR 2)NAR 3)Sensitive	1. The species is considered sensitive in Ontario but globally secure; few known occurrences on the NF. 2. Threats include impacts from suburban development and alteration of the water regime. 3. Plants are tolerant of disturbances including harvesting as long as some trees are left to provide shade – under selective harvesting system, risk from forest operations is low, the species is not at risk in Ontario and therefore it is not considered to be an HCV. ***Not HCV***
Carex novae-angliae New England Sedge	MNRF Legal Status (not listed)	1) NAR 2) NAR 3) Sensitive	1. Has a global rank of G5 and is considered sensitive in Ontario; only 2 reported occurrences on the NF. 2. Logging may be the greatest threat to ***C. novae-angliae*** in Wisconsin and Michigan where extensive forest clearing occurs (e.g. under clearcut system). 3. Species is not common to the NF; area is outside its primary range and few occurrences are known. Given the extent of selection harvest that occurs, risk on the Nipissing Forest is considered low. The species is not considered to be at risk in Ontario. ***Not HCV***

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Schoenoplectus heterochaetus Pale Great Club-rush	MNRF Legal Status (not listed)	1) NAR 2) NAR 3) May be at risk	1) Ranked globally secure (G5) and considered possibly at risk in Ontario; one known occurrence on NF. 4. Threats include wetland development that has resulted in the loss of aquatic species like the slender bulrush. 5. Given the species shoreline habitat location and few known occurrences, there is little overlap with forestry operations and minimal anticipated impact. Riparian reserves will protect shoreline habitat. The species is not considered to be at risk in Ontario. ***Not HCV***
Bulbostylis capillaris Bulbostylis	MNRF Legal Status (not listed)	1) NAR 2) NAR 3) Sensitive	1. Ranked globally secure and sensitive in Ontario; three known occurrences on NF. 2. Little information available but main threat seems to be habitat destruction in southern Ontario. Given its habitat preferences (i.e. rocky openings, sandy shorelines, prairie) direct risk from forest operations would be low. 3. Coarse filter prescriptions for the protection of shoreline/riparian habitats should ensure the maintenance of this species on the Forest. The species is not considered to be at risk in Ontario. ***Not HCV***
Subularia aquatica Water Awlwort	MNRF Legal Status (not listed)	1) NAR 2) NAR 3) Sensitive	1. Ranked globally secure, sensitive in Ontario; one known occurrence on NF. 2. Based on available information, the direct impacts from forest operations would be deemed minimal; awlwort is a submerged aquatic plant. 3. Coarse filter prescriptions for the protection of shoreline/riparian habitats should ensure the maintenance of this species on the Forest. The species is not considered to be at risk in Ontario. ***Not HCV***
Polygonella articulate Coast Jointweed	MNRF Legal Status (not listed)	1) NAR 2) NAR 3) Sensitive	1. Status is globally secure, little information on regional variances is available; five known occurrences on the NF. 2. Information on threats to the species is scarce, with the exception of development and disturbance to dune habitats in the Great Lakes Region through cottage development, high controlled water levels and invasive species. Not found in forested habitats, no direct impacts from forest operations anticipated. 3. Coarse filter prescriptions for the protection of shoreline/riparian habitats should ensure the maintenance of this species on the Forest. The species is not considered to be at risk in Ontario. ***Not HCV***
Juglans cinerea Butternut	MNRF Legal Status (no mgmt. plan avail)	1) End 2) End 3) Not listed	1) Butternut is endangered both provincially and nationally. It is found throughout southwestern Ontario north to the Bruce Peninsula and the edge of the Precambrian shield. Most known trees are found on private land. Some do exist is national and provincial parks. MNRF lists occurrences above and below the NF. It is not currently known from any spots in the forest. 2) These trees are normally found scattered at low density in forests. The historically decline occurred as forests were cleared. 3) It is a listed species but not currently found in the forest and so a possible HCV. There are special prescriptions for this species should an occurrence be found. ***Possible HCV***

Scientific Name *Common Name* *or Group*	*Info Sources* *MAPs*** *IUCN* *Recovery Plans*	**Rank/** **Status**** **1) COSEWIC** **2) COSSARO** **3) IUCN**	**HCV Assessment & Decision** **1) Status (from COSSARO report) (Rankings defined below**)** **2) Risk assessment** **3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)**
Panax quinquefolius American Ginseng	MNRF Legal Status (no mgmt. plan avail) (Map confidential)	1) End 2) End 3) Not listed	1) American Ginseng is an herb which is endangered both nationally and provincially. It can be found in eastern and central Ontario. Ginseng was recorded in 65 sites, however, recent surveys suggest that a quarter of these sites have disappeared. No occurrences reported by NHIC on the SF, but they did regard as a possibility. 2) Ginseng grows in rich, moist, mature deciduous forest. The decline has occurred over the past 150 years from harvesting, timber extraction and clearing of land for development. These threats continue in the present. 3) It is a listed species and so an HCV. There are special prescriptions for this species. ***Possible HCV***
Phegopteris hexagonop-tera Broad Beech Fern	MNRF Legal Status Recovery Strategy MNRF map	1) SC 2) SC 3) Not listed	1) Broad Beech Fern is of special concern nationally and provincially. In Ontario, the species is found in forest remnants in southern Muskoka District, along Lake Erie, and in the St. Lawrence River region. It is close to the forest in some locations. 2) It grows in rich soils in deciduous forest such as Maple-Beech forests. Historical records suggest decline is related to forests being cleared. 3) It is several hundred km south of the forest and so not HCV on NF. ***Not HCV***
Mosses & Lichens ***Leptogium rivulare*** Flooded Jellyskin	MNRF Legal Status MNRF map	1) Thr 2) Thr 3) Not listed	1) Flooded Jellyskin is threatened both in Ontario and Canada. It is present at three sites around Ottawa in eastern Ontario and one east of SF. It is present around ponds. 2) The threats for this species are ponds being threatened by recreational use and housing development. Also the main tree species the lichen lives on is Black Ash which is threatened by the Emerald Ash Borer. 3) It is east and south of the forest and so not HCV on SF. ***Not HCV***
Insects ***Danaus plexippus*** *Monarch Butterfly*	*MNRF Legal Status (no mgmt. plan avail)*	*1) SC* *2) SC* *3) Not listed*	*1) Special concern in Canada.* *2) Herbicides could affect several species of milkweed plants (Asclepais spp.) on which the larva depend, and the nectar-producing flowers that are important to adults. Road construction could provide habitat for monarchs by creating conditions suitable for common milkweed and nectar-producing flowers. Harvesting creates early successional habitat that provides conditions suitable for nectar-producing flowers.* *3) This species is SC for its migratory risk, but not for impact from forest operations. It is widely distributed in Ontario. It is not an HCV in this area.* ***Not HCV***
Amblyscirtes hegon Pepper and Salt Skipper	MNRF Legal Status (not listed)	Sensitive	1. Considered sensitive in Ontario. 2. Possible causes for its decline are undetermined; one sighting on the NF in 1996, well outside what is considered the species former range. Based on available information, direct risk from forest operations is low. 3. With no recent confirmed observations in the NF, this skipper is not considered to be an HCV in the NF at this time. ***Not HCV***

Scientific Name *Common Name* *or Group*	*Info Sources* *MAPs*** *IUCN* *Recovery Plans*	**Rank/** **Status**** **1) COSEWIC** **2) COSSARO** **3) IUCN**	**HCV Assessment & Decision** **1) Status (from COSSARO report) (Rankings defined below**)** **2) Risk assessment** **3) Decision (Not HCV, HCV, possible HCV, HCV no prescription (No risk from forestry)**
Molluscs ***Obovaria olivaria*** Hickorynut	MNRF Legal Status	1) End 2) End 3) Not listed	1) Hickorynut is endangered both provincially and nationally. It inhabits mid-sized to large rivers in southern Ontario. Lake Sturgeon is the one known host for this mussel. 2) The species is affected by degraded water quality in many freshwater systems in southern Ontario and the decline of Lake Sturgeon in some rivers where the mussel can still occur. 3) It is a listed species and so an HCV. Minimal interaction with forestry means there is no special prescription. ***HCV no special prescription required***

Species listed by the Provincial Endangered Species Act that are in the FSF include several species newly listed under the new Act**Error! Bookmark not defined.** This species is not nesting in the FSF currently, but has historical nest records from the FSF. OMNR is monitoring these species provincially and is monitoring habitat in FSF.

COSEWIC species are almost entirely the same as the NHIC list, with the exception of the Monarch Butterfly which COSEWIC lists as a species of special concern (SC), and the Red Wolf. The Monarch range covers the forest, in suitable habitat – primarily fields containing suitable species such as milkweed. The open field requirement of Monarch's precludes overlap with harvest operations and consequently it is not regarded as a HCV. The debate about the Eastern Canadian Wolf or Red Wolf continues, and COSEWIC listed this species as special concern in 2001. The Southern Wolf is not listed. The actual population of either species in the FSF is not studied. Overall the population of wolves is anecdotally reported to be stable in FSF. Access and the effects of hunting are the main concern. The area near Algonquin Park is already accessed by various road networks. There is little mitigation than can occur by forestry at this time.

The toolkit also asks if any of the rare, threatened or endangered species found in the forest is a keystone or focal species. A keystone species is defined by Paine (1966) as a species that plays a disproportionately large role (relative to numerical abundance or biomass) in ecosystem function. 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 species that occur there. Practical definitions of keystone and focal species can be fairly difficult.

Ontario officially uses two related concepts. Featured species (Thomas et al 1979) are species whose habitat and sometimes populations are managed for their importance to society – either as game species or species chosen for the habitat they represent or for other reasons. Regional indicator species are selected for a wide range of attributes that are similar in purpose to the description of focal species. Biologists make selections with input from various experts. No direct habitat or population management occurs for these species but their habitat is monitored to determine the long term regional effect of forest management.

These two lists are surrogates for focal and keystone species. All of the species on the list, regardless of whether they are focal species or keystone species will receive the appropriate conservation measures.

HCV Designation Decision

A number of species are designated HCVs and require a management prescription because they are at risk from forestry: Peregrine Falcon, Bald Eagle, Bank Swallow, Olive-sided Flycatcher, Whip-poor-will, Massasauga Rattlesnake, Milksnake, Hog-nosed Snake, Northern Bat or Northern Long-eared Bat, Little Brown Bat, Small-footed Bat, Blanding's Turtle

Possible HCVs which could be affected by forestry and for which a prescription has been prepared include: Short-eared Owl, Chimney Swift, Kirtland's Warbler, Common Nighthawk, Loggerhead shrike, Cerulean Warbler, Short-eared Owl, Yellow Rail, Loggerhead shrike, Cougar, Eastern fox Snake, Wood Turtle, Musk Turtle, Northern Map Turtle, Eastern Fox Snake, Broad Beech Fern, Butternut, Common Five-lined Skink, Northern Map Turtle, American Ginseng

2) Is the forest within an ecoregion that contains 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

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. Species tend to be spread across large areas. There were no endemic species identified in the FSF. Although there may be some invertebrates in this category, none have been identified. We note that in June 2009 COSEWIC completed a review of native list of land snails for Ontario and Quebec. The report discounts earlier claims that there are endemic species of snails, as reported by WWF and other reports. It pointed out the unlikelihood of endemics in a recently glaciated landscape. The work was carried out by the COSEWIC Molluscs Species Specialist Subcommittee.

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

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 breeding sites, wintering sites, migration sites, fly-ways)?

Assessment Methodology:

- Bird Studies Canada
- Ducks Unlimited Canada
- Natural Resource Values Information System for Ontario (NRVIS)
- FSF Forest Management Plan
- Interviews with local experts
- BirdLife International
- Conservation International

This element focuses on sites in the forest that are of key importance to particular species. This is not about RTE species; all of the critical breeding sites are for species that are already listed and habitat is mapped as much as possible. In particular, seasonal concentrations (winter), and breeding sites for Massassauga rattlesnakes are very important; these are designated in element 1. For practical purposes SAR are designated in element 1. The SAR with concentrations at certain times could also be designated here but the management implication is the same.

IBAs - There was a considerable effort placed on reviewing possible important bird areas. There were none that were focussed enough to have achieved a special designation from the organizations listed. This is probably because the extensive coastline and inland lakes allow a broad distribution rather than certain focussed areas.

The common thread for the main species on this list (**Table 3**) is commercial exploitation, either for hunting or trapping. MNR refers to these species as "featured" (described above). Moose, deer, marten are the most prominent members of this group. Pileated Woodpeckers also fall into the featured species group, but are not exploited.

Large Deer Wintering (Loring) An example is white tailed deer, and their winter areas. The Loring Deer Yard is located partly in the north of the forest. It is not only an important area for sheltering deer during the winter, but the hub of many migratory routes. Other "yarding" areas exist in the forest. Although deer populations are stable, their socio-economic importance to hunters and outfitters puts them in a special category. Deer wintering areas are mapped fairly precisely by MNR. The district has identified more than 600 polygons or blocks that have good winter habitat quality. There is a generic prescription for harvesting in deer wintering areas. It is not logical for all of the yards to be HCV since many of the small ones are ephemeral. The logical division point is to assign HCV status for yards that require specific attention during the FMP, either due to their size, or their social importance (ie juxtaposition to hunt camps). This is determined by MNR.

Moose - Moose aquatic feeding areas also fit into this category as seasonal concentration area. Feeding areas are important in the spring when aquatic roots etc. may be available earlier than upland vegetation. These areas are widespread through the forest, and are typical of a wide range of feeding areas throughout Ontario. This abundance indicated they were not really regionally significant.

Herons - Unlike central Ontario, the American marten is the focus of considerable debate north of the FSF, in the boreal forest region, due to habitat effects of forestry. Marten have a preference for mature conifer. Due to harvest methods in central Ontario, there is an abundance of habitat that is classified as suitable or preferred.

Herons are colonial nesters, especially vulnerable to human disturbance and habitat destruction during the breeding season when large numbers of birds are concentrated in a relatively confined area. There are numerous heronries on the FSF often near beaver ponds. Anecdotally, the FSF may contain higher densities of Herons than surrounding forests, but we could not verify this.

Established heronries, which can consist of hundreds of nesting pairs, may be occupied for decades. Disturbance can lead to relocation of colonies, with consequences that can include fragmentation of breeding populations, total reproductive failure in colonies that have relocated, or reduced numbers of nesting pairs and reduced reproductive output per pair in relocated colonies. Desertion of large colonies that are responsible for the major portion of a population's reproductive output can affect the stability of the entire regional population of herons, even if the desertion is followed by relocation. Recent evaluation of the guide has been completed in the OMNR Stand and Site guide (OMNR 2010).

HCV Designation Decision
Given the considerable effort focussed on deer, as a social and economic force in the SFL, it is recognized as HCV. Herons are also designated on the basis of their sensitive and visible nature, in a forest that is summer home and tourist Mecca to thousands of people.

Table 3 Featured species designated by in FMP as part of forest management objectives.

General Description / Source	**Value**	Summary of HCV attributes: **1) Habitat description; 2) FSF Occurrence; 3) Status info; 4) Risk from forest operations; 5) Current Management**	**HCV threshold /Decision** **1)stable & sustainable** **2) risk 3)quantifiable threshold 4)other**
Featured Species / MNR District	Moose Aquatic Feeding Areas	1) Aquatic feeding areas surrounded by woodlands 2) Very common; good distribution info 3) Moose are hunted; Economically valuable 4) Logging impacts possible if cutting is too heavy adjacent to feeding area 5) Detailed Prescription exists and is being reviewed.	1) Stable, distribution known 2) Appropriate harvest with selection protects value; 3) Moose are an importance game species; benefit of precaution **Not HCV**
Featured Species/ MNR District	White-tailed Deer Wintering Areas	1) High conifer component; He, Ce; (OMNR guide 2000) 2) Very common spp; good distribution info; wintering areas are widely distributed; large ones are uncommon and sensitive 3) Hunted; Economically valuable species; long social cultural involvement with the species 4) Logging impacts if conifer diminished significantly 5) Detailed Prescription; Monitoring for large ones	1) Deer are stable or increasing in area; wintering areas are key. 2) Inappropriate harvest could impair quality of yards 3) Deer are an importance game species; benefit of precaution **HCV**
Featured Species/ MNR District	American Marten Related to Old Conifer	1) Conifer component required>80years 2) Common species throughout FSF; marten “core” habitat mapped and modeled. 3) Trapping an important activity; but population stable throughout its range 4) Logging impacts if conifer diminished significantly 5) Significant impact if widespread conifer reduction. MNR uses marten guidelines, although they are not required. As a featured species, it is a fine filter species.	1) Extensive occurrence; modeled in FMP 2) Risk if long term decline in old conifer component 3) Abundant species, no current conservation issue. **Not HCV**
Featured Species/ MNR District	Pileated Woodpecker Old deciduous forest	1) Focus on component of old deciduous trees in stand 2) Common species throughout FSF 3) Global abundant 4) Logging impacts if cavity trees diminished significantly 5) MNR uses Pileated guide; featured species, tree marking requirements for cavity trees.	1) Extensive occurrence; 2) Risk if long term decline in old hardwood component 3) Abundant species, no current conservation issue. **Not HCV**
Focal Species/ Westwind designation	Great Blue Heron Colonies	1) Often adjacent to beaver dams, or over water with drowned stems 2) Common in FSF 3) Globally abundant 4) Logging impacts if nearby disturbance during breeding season 5) MNR uses guide, special prescription.	1) Extensive occurrence; Highly visible to tourists 2) Risk if long term decline if breeding sites not safeguarded 3) No current conservation issue; however, the visibility and the concentration of nests places it in a special social, biological category. **HCV**

4) Does the forest contain concentrations of regionally significant species (e.g. focal species, declining species)?

Assessment Methodology:
NHIC G3, S1-S3 species and communities
Range and population estimates from national or local authorities and local experts for:

- Species at risk (in existing policy/legislation)
- Results from habitat models
- Species representative of naturally-occurring habitat types or focal species
- Species identified as ecologically significant through consultation
- Northern Ontario Plant Database
- Ontario Herpetofaunal Atlas
- Ontario Tree Atlas Project
- Supplementary Literature Review

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

The element centres on whether the species are rare regionally, rather than at risk. Species in this category would receive a global ranking indicating that it is secure, but it has a state ranking that indicates few occurrences. This is a refinement of element 1, for which we have included all of the species which are rare, as well as threatened or endangered, therefore we refer to that element for most species in this category.

For example the following list represents *some* of the plant species that were rated G5 (globally secure) and S1 to S3 (regionally rare): *Bartonia paniculata* (Branched Bartonia); *Bartonia virginica* (Yellow Screwstem); *Linum striatum* (Ridged Yellow Flax); *Utricularia geminiscapa* (Hidden-fruited Bladderwort); *Chimaphila maculata* (Spotted Wintergreen); *Saururus cernuus* (Lizard's Tail); *Collinsia parviflora* (Small-flowered Blue-eyed Mary); *Sagittaria graminea var. cristata* (Crested Arrowhead); *Carex folliculata* (Long Sedge)

The NHIC position on S3 species is to assign them to the "watch list" unless they are globally secure. For S1 and S2 species more caution is likely warranted, given the possibility of extirpation regionally. For that reason all of the species on the NHIC list are mapped and presented as possible HCVs.

For discussion purposes and completeness we have listed two species (**Table 4**) which are regionally significant because they are interesting and romanticized. They are both species listed by CITES that occur within FSF: Lynx *(Lynx canadensis) and* Grey Wolf (*Canis lupus*). Both populations are designated as not at risk by COSEWIC (COSEWIC 2003). Apparently, the CITES designation is in response to problems in other jurisdictions. We have informally referred to these species as "focal". Neither is particularly sensitive to forestry pressures except access, and subsequent depredation by people. At this time they are not regarded as HCVs.

Table 4 Focal species (Element 4 Regionally significant species).

Species Group/ Source (NHIC or COSEWIC)	**Species**	**Summary of HCV attributes: 1) Habitat description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management**	**HCV threshold /Decision 1)stable & sustainable 2)risk 3)quantifiable threshold 4)other**
Top predator /Committee	Lynx (*Lynx canadensis*)	1) Wide ranging, depending on prey 2) Common FSF; poor distribution info	1) Sparse pop'l; but apparently stable within bounds of natural variation; 2) Possible risk from access;

Species Group/ Source (NHIC or COSEWIC)	Species	Summary of HCV attributes: 1) Habitat description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management	HCV threshold /Decision 1)stable & sustainable 2)risk 3)quantifiable threshold 4)other
International Trade in Endangered Species CITES		3) Population stable in Canada according to COSEWIC. 4) Impacts not well know 5) No Prescription; coarse filter	otherwise pop'l follows prey 3) No immediate conservation issue identified **Not HCV**
Top Predator / Committee on International Trade in Endangered Species CITES	Grey Wolf (*Canis lupus*)	1) Wide ranging, depending on prey 2) Wolves are common in FSF; poor distribution info; genetic background unclear. 3) Population stable in Canada according to COSEWIC 4) Increased road access may increase hunting mortality 5) No Prescription; coarse filter	1) Population stable based on anecdotal information; 2) Possible risk from access; and increased hunting; no direct impact from forestry; 3) No immediate conservation issue identified **Not HCV**

Species that in decline are reviewed in Element 1. Determining whether some of the common species have stable populations, at least regionally is difficult, and more appropriate for an organization with a broader view than just the FSF. For example, some bird species have undergone some recent declines across a wide area, and this alone is a justification for further investigation.

HCV Designation Decision
None of the species addressed in this element warrant HCV or potential HCV status at this time.

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

Assessment Methodology:
Range and population estimates from national or local authorities and local experts for:

- Red listed species
- Focal species
- Major forest tree species
- Species identified as ecologically significant through consultation
- List of selected species for the region identified by the OMNR biologists compared to natural range maps to see if there are concentrations of species at edge of the natural ranges

The Great Lakes St. Lawrence forest transition to boreal forest begins within the FSF. This means that there are many species of plants and animals that are either at the northern or southern limit of their range. This is biologically interesting, but most of these species are secure according to COSEWIC, NHIC. Tree cover reflects this shift in dominant species; it is even reflected in the different natural disturbance patterns of the forests. The net result is that a number of species can be identified that are at the limit of their range. Most species which may be HCVs are already listed in **Error! Reference source not found.** and **Table 3**. These include many of the plants.

Three species of trees that are less common, at the edge of their range, and not in these tables, are of some concern because they are harvested: White Oak, Black Cherry, Hemlock. The distribution of significant patches of these species and more information is in **Table 5**. The

range of black cherry ends within the FSF not far north of Parry Sound while the beech-white ash-hemlock and hard maple-yellow birch-red oak communities end north of Lake Nipissing. The decline of Eastern hemlock from 15.6% occurrence in the late 19th Century to 4.4% in 1990 (Leadbitter 2000) supports the concern about this species that appears to be diminishing towards the north and west within the FSF.

Another group of tree species, including some which have only a few occurrences, are found mainly along the southern edge of the shield, and represent species which are hardy enough to jump over the rather significant change in soils on the limestone plains south of site region 5E (Appendix 6) to the granite dominated hills of the Canadian shield. These are Bitternut Hickory, Butternut, Bur Oak, Red (Slippery) Elm, Rock Elm, Black Maple, Silver Maple. These species when encountered are protected through the tree marking system.

Other species which have not occurred on any lists but may be of concern because of the FSF is the northern or southern extension of their range include: the red headed woodpecker, willow flycatcher, clay-colored sparrow, and possibly some other bird species. These species are sparsely distributed in the FSF. These species are managed as coarse filter species. This means that through landscape management and appropriate forest practices at the site level, habitat for these species are maintained continuously. In the FSF habitat for these species is hard to predict because the occurrences are infrequent. Biologists in FSF do not survey specifically for these species.

Clusters of element occurrences (S ranked species by NHIC) that are also at the northern end of their range only occur on special sites, such as marble outcrops (calcareous rock). There does not seem to be any identified sites on the public part of the forest, although the private lands, such as Wahta First Nation do contain such areas. These are the main reason for the element occurrences that are shown on the FSF map.

HCV Designation Decision

None of the species evaluated here were designated HCV, primarily because, as a large forest covering part of the transition from Great Lakes St. Lawrence to Boreal, it is to be expected that species are at the edge of their range. Some species, such as Hemlock are HCV, but they are not identified as such by their range (i.e. this element), rather for other reasons (see Element 9).

Table 5 HCV listing from element 4 regarding species at the edge of the natural range

General description/ Source	Value	Summary of HCV attributes: 1) Habitat description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management	HCV threshold /Decision 1)stable & sustainable 2) risk 3)quantifiable threshold 4)other
Trees species at northern edge of range/ MNR district	White Oak; Red Oak; Black Cherry	1) Upland Forest 2) Common in FSF; Distribution known 3) Stable, logging occurs 4) Risk in long term decline if improper monitoring and prescriptions 5) Prescriptions applied	1) Presently stable & relatively common 2) Low risk of decline 3) Specific prescriptions via tree marking **Not HCV**
Uncommon tree species / MNR Region	Bitternut Hickory, Butternut, Bur Oak, Red Elm, Rock Elm, Black Maple, Silver Maple.	1) Upland Forest 2) Uncommon in FSF; Distribution known 3) Significant decline late 19th century, logging occurs 4) Risk in long term decline if improper monitoring and prescriptions 5) Prescriptions applied	1) Stable, uncommon 2) Present risk low 3) Protection no harvest/ 4) Presence is interesting but does not warrant HCV status **Not HCV (**Butternut HCV is element 1 as a SAR)
Uncommon tree species / MNR Region	Red Spruce	1) Upland Forest easternmost side FSF 2) No stands, scattered individuals, 3) Healthy and reproducing. No reason to believe there has been a decline. 4) No apparent risk, since little harvest. 5) Tree markers occasionally select according to a very cautious prescription. (Past plan maybe only a dozen declining trees – when there is good regeneration). Some planting of red spruce so putting back in the landscape. Some areas, plant to get established. Normal silviculture effective.	1) Stable, rare 2) Present risk low 3) Some harvest, very tight prescription; stable pop'l 4) Does not warrant HCV status. Adjoining Forest Unit (Nipissing) has one stand designated HCV. **Not HCV**
Uncommon birds /	Red headed woodpecker, Willow flycatcher, Clay-colored sparrow	1) Various habitats 2) Uncommon in FSF; Distribution sparse 3) Globally stable 4) Unknown risk from logging 5) Prescriptions applied	1)uncommon, pop'l dynamics unknown in FSF 2) Present risk unknown 3) No / Long term decline documented 4) Globally stable; these birds are peripherally distributed in FSF **Not HCV**

6) Does the forest lie within or contain a conservation area a) designated by an international authority, b) designated by relevant federal/ provincial legislative body or c) identified in regional land use plans?

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")
- Areas under deferral pending completion of land use planning and/or completion of protected areas system

Part a) normally refers to UNESCO World Heritage Sites, RAMSAR sites, or International Biological Program sites. There are none of these on the forest.

Under part b) there are a number of protected areas in FSF that are either currently regulated, or are officially designated to be regulated as protected areas. This is part of the Living Legacy process (OMNR 1999) and automatically qualifies as HCV. These are mapped as part of the website referred to as the Crown land Atlas . Under Element 17, which addresses social values, two heritage land designations are recognized as HCVs: The Great Lakes Heritage Coast, and the French and Big East Rivers. These are more socially important, as tourism focal points, and so are discussed there. They would probably also fit into this designation, although in reality there is little impact from forest operations. There has also recently been an application for designation of a Georgian Bay Littoral Biosphere Reserve. As a mostly aquatic initiative, there will not likely be any additional requirements above that of the Heritage Coast.

Parks are actually not part of the license area. In the landbase description in the Forest Management Plan parks are listed separately, and are not part of the production forest. The forest managers have no control over the protected areas. The government has responsibility for this part of the designated forest area. There is a semantic issue about whether the protected areas should be part of the designated forest area or not. This is not relevant to this report.

For part c) we have interpreted "regional" land-use plan as a reference to the Bracebridge District Land Use Guidelines (DLUG), and the Parry Sound District Land Use Guidelines (OMNR 1983). These are the original land use plans and are still in effect today, although there is some overlap with the Living Legacy (OMNR 1999).

Many things have changed since the DLUGs were put in place almost 20 years ago, including many boundary changes. To accommodate this, OMNR created the land use atlas to organize the different restrictions for any pieces of crown land. Typical constraints and strategies include access controls, use restrictions such as Kimble lake area logging restriction and special fish management zones. Access restrictions have been incorporated into the Living Legacy as Enhanced Management Areas (EMAs).

Another land use designation are Areas of Natural and Scientific Interest (ANSI). This program has not been actively pursued for some time, but the original designations still apply. Some of these are incorporated into newly designated protected areas but some are not and cannot be. One is a geological ANSI that is a rock cut on a highway, another is on private land (Skeleton Lake meteor crater). There was also a number of "candidate" ANSIs that were not officially designated. Reports on all of these are on file at OMNR district offices. These will be mapped along with the protected areas on the Crown Land Atlas, if they are within the license area.

HCV Designation Decision
There are a number of protected areas in FSF that are currently regulated. In addition, under Element 17, which addresses social values, two heritage land designations are recognized as HCVs: The Great Lakes Heritage Coast, and the French and Big East Rivers. They are more appropriately designated there, because of the economic tourism focus of that element.

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

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

Assessment Methodology
- Review of historical land use pattern, and scale

The forest has been actively harvested since the arrival of people of European ancestry in the 1800's. Although there is continuous forest cover, and the forest appears natural, it could not be claimed to be truly original forest except for some small areas that were bypassed for operational reasons. That said, most of the original species are still extant, despite frequent interaction with humans. This still semi natural environment is a result of their not being large changes in land use, such as occurred in the south. Land use is dominated by activities requiring forest cover. Although much of it is a working forest, there has not been pressure to clear land. It could not be said that this is a result of a conscious choice by the local communities. However the arrival of stronger government regulation and sustainable forestry legislation has strengthened the current land status. This element is answered by saying that current land practices have led to a changed forest, but still a semi natural forest.

HCV Designation Decision
No special HCV designation for landscape values would be meaningful on the scale of this forest, in such close proximity to major populations. The threat to this forest is not forestry, but other land uses: housing, infrastructure, and recreational activities not involving forest cover.

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

8) Does the forest contain naturally rare ecosystem types?

Assessment Methodology:
- NatureServe
- Natural Heritage Information Centre

Discussions with MNR ecologists indicate that at the scale of the current forest inventory, given the recent gap analysis, and ongoing efforts to improve that analysis, should have identified all of the larger size of rare types. It is possible that small areas would not be picked up by these surveys. An example would be the marble outcrops in the south which do occur but are on

private land. Efforts are being made by MNR to identify in the field any possible rare types that may have passed through the gap analysis.

The available NHIC community data is limited to Site Regions 6E and 7E of Ontario, both of which are outside the boundaries of the Forest. A search of the database for North Bay District reveals one vegetation community that is ranked globally imperilled (G2?) and regionally rare to uncommon (S3) in Ontario. Its occurrence on the forest needs to be confirmed, but is listed here for completeness.

Table 6 Ranked vegetation communities identified in Parry Sound District

Community	Description
Atlantic Coastal Plain Shallow Marsh Type Provincial Rank S3 Global Rank G2?	Peatland forests of Larch, Black Spruce and White Cedar dominate organic deposits at the north and south of the lake, with deciduous and mixed early successional forest on higher, sandy soil on the eastern and western shores. The aquatic communities found in shallow water here and on the wide, peaty beaches which emerge in late summer and early fall, support an exceptionally rich assemblage of relict flora. These vascular plant species have strong affinities with the flora of the Atlantic Coastal Plain of North American and several of the species here are disjunct [Brunton 1993].

HCV Designation Decision
There are no currently identified rare ecosystem types confirmed on the forest. Atlantic Coastal Plain community types exist only in provincially designated wetlands and are HCV as part of that designation, which has a broader management prescription. They are designated HCVs with no prescription required (no activities are allowed in Provincially significant wetlands).

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

Assessment Methodology:

- NatureServe
- Natural Heritage Information Centre
- WWF Ecoregion Conservation Assessment
- Conservation International
- FSF 2009 FMP

Pine: This section is based on the FMP 2009, which is informed by the work of Pinto (2008). The public attention to White Pine (*Pinus strobus*) forest type demands a careful accounting of this forest type. Red Pine (*Pinus resinosa*) is often associated, and has undergone the same decline. The forest management planning exercise deals with this unit in depth. A provincial policy statement on old growth has been recently put forward. There is evidence that the extent of the white pine forest type has not declined (2009 FMP) but the historic highgrading of big old pine trees reduced the extent of old stands.

Hemlock (*Tsuga canadensis*) has also declined, from the early part of the 20th century when this species was desired for its strength and resistance to rot.

Declines in other species, such as the mid tolerant tree species, are a result of early 20th century highgrading of individual trees out of a stand. This is discussed in an earlier element. This is not

regarded as an ecosystem decline. In the rare occurrence of tolerant hardwoods that have not been previously cut, stands would be identified and management reviewed.

Tolerant hardwood uncut: Finally, there is a potential for undisturbed old tolerant hardwood stands to exist on the forest. One stand has been identified on the Nipissing Forest, and anecdotally, several exist in Algonquin Park.

Table 7 Forest types that have declined (Element 9).

General description/ Source	Value	Summary of HCV attributes: 1) Habitat description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management	HCV threshold /Decision 1)stable & sustainable 2) risk 3)quantifiable threshold 4)other
Tree species showing historic decline /MNR district	White and Red Pine – older age classes >150 years	1) Dry to fresh uplands; FEC types 11 to 13 (Chambers 1997) 2) Common in FSF; Inventory exists; update underway; Historic decline 3) Stable at this time; logging occurs 4) Risk in long term decline if improper monitoring and prescriptions 5) Prescriptions applied	1) Presently stable & relatively common 2) Low risk of decline; Specific prescriptions via tree marking 3) historic decline HCV
Tree species showing historic decline /MNR district	Hemlock – all age classes	1) Dry to fresh uplands; FEC 28 (Chambers 1997) 2) Common in FSF; Larger stands mapped 3) Significant decline late 19th century, logging still occurs 4) Risk in long term decline if improper monitoring and management 5) Prescriptions applied by tree markers	1) Evidence of long term decline; relatively common 2) Present risk low; prescriptions 3) Historic decline documented HCV
Tree species showing historic decline /MNR district	Tolerant hardwood– undisturbed old age classes	1) Dry to fresh uplands; FEC 23 to 30 (Chambers 1997) 2) Undisturbed stands have been identified on adjacent forests (Nipissing and Algonquin) none known in FSF 3) Significant decline late 19th and early 20th century due to high grading. 4) Unlikely that any stands are still in undisturbed condition. 5) Identification by tree markers of undisturbed stands is the safeguard.	1) undisturbed forests are possible but none identified at this time 2) Would be valuable if they were found. Tree markers would be able to identify in the field. 3) Historic elimination Possible HCV
Wildlife Plots and Growth and Yield Plots / MNR region	Wildlife Plots and Growth and Yield Plots	1) Permanent survey plots required for monitoring of various forest attributes 2) Common in FSF; all mapped 3) Most are fairly recently established 4) Required for long term monitoring of different ecosystem types 5) Reserves applied	1) Evidence of long term decline; relatively common 2) Present risk low; prescriptions 3) Historic decline documented not HCV

HCV Designation Decision

Both Hemlock and White and Red Pine are high profile species, that have undergone a decline in the abundance of older age classes. Mangers are already cautious in managing this species. Designation of both as HCV confirms the importance of a precautionary approach. Undisturbed tolerant hardwoods are also a potential HCV, and if any are identified consistent with Criterion 6.3 of the standard, they would be managed as HCVs.

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

Assessment Methodology:

- WWF Ecoregional assessment
- Global Forest Watch Intactness mapping
- Roads layer for Nipissing Forest
- OMNR Lands for Life assessment

Fragmentation is mainly by some utility corridors, and roads in the part of the forest that is public land. Overall however the long-lived impacts of humans on the landscape are still visible, in what is referred to as a semi-natural forest. The World Resource Institute map of intact forest shows two large areas in the north of the FSF. These fall approximately in the enhanced management areas outlined in the Living Legacy document (OMNR 1999). EMA numbers: E119r (172,000 ha); E 104a (72,000 ha). These sites are managed as part of the living Legacy land use plan. Restrictions do apply to forest operations particularly road building. These are dealt with as a part of normal forest management planning and operations. The enhanced management area was not designated as HCV on its own merits, although there is HCV attributes within these areas (**Table 8**).

The private land, including the communities within the forest, are more fragmented and continually impacted. There are many examples of private forest that is poorly managed, benign neglect being typical, although some very well managed areas do exist in this part of the forest.

Fire is not a dominant disturbance in this part of the province. Being in the lee of the Great Lakes means there is usually ample moisture. Some fires do occur, and perhaps more significantly, wind blow down. These would be regarded as natural disturbances. Human disturbance is primarily roads and utilities.

Table 8 HCV listing from element 11 related to fragmentation

General description/ Source	**Value**	**Summary of HCV attributes: 1) Value description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management**	**HCV threshold /Decision 1)stable & sustainable 2) risk 3)quantifiable threshold 4)other**
Enhanced Manage-ment Area /MNR Living Legacy Land Use Plan	Enhanced Manage-ment Areas Low density roads, semi wild area E119r = 172,000 ha; E 104a = 72,000 ha	1) An area of low road access 2) See map in FSF (E119r = 172,000 ha; E 104a = 72,000 ha); primarily in the north. 3) Road density not increasing; logging occurs 4) Increased access has a number of implications to other values; no implications from logging other than access. Values other than roadlessness are protected by other means. 5) Land use plan direction followed by FMP; road restrictions in effect.	1) Designated in the Living Legacy doc. 2) No risk of change in designation; Specific restrictions in the FMP 3) Threshold is the protection of roadlessness. **not HCV**

HCV Designation Decision

No HCVs were designated as a result of this analysis, primarily based on the strength of the land use strategy in place, and recently revisited through OLL.

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

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

In our assessment all of the rare or diverse ecosystems in the forest have been represented in protected areas, either prior to, or during the Ontario Living Legacy program. Life Science ANSIs: Provincially significant Life Science ANSIs are encompassed by OLL Land Use Strategy new protected areas designations therefore they are designated not HCV**.**

Both White pine and Hemlock forest types are nationally or regionally significant depending on the perspective of the stakeholder group. There is no doubt these forests are characteristic of central Ontario. These are discussed and designated in Element 9.

In the original toolkit there was a element (formerly 12) that asked: Does the forest constitute or form part of a forest landscape that is significantly more natural in terms of species composition, stand structure and habitat composition than what is usual in the area or region? Rather than disregard that element, we have included the response from the original report. We note that this appears to be covered by the current element 12.

Relative to the three measures, this semi natural forest can be briefly characterized as:

- species composition -- contains all of the species that occurred there one hundred years ago,
- stand structure – attempts are made to emulate natural forest structure
- habitat composition is similar to natural forest, but types are in different proportions.

Overall, forest harvesting and human impact throughout the forests of central Ontario has uniformly altered these three criteria. The direct answer to this element is that this forest is not distinctly different from the surrounding forest licenses to warrant a special HCV designation. It is distinctly less fragmented than all of the forest to the south, and still is covered by semi-natural forest vegetation. The forested nature of this part of Ontario is the attraction to the large population to the south. It is of high conservation value to those members of the public, but this is dealt with as a social value.

In response to reviewers request for more background information on the natural forest condition, we cite the Westwind Forest Stewardship Inc Forest Management Plan (2009).

HCV Designation Decision
There were no HCVs identified in this category.

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

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

Assessment Methodology

- Muskoka Watershed Council
- Municipal Websites (Bracebridge, Huntsville, Parry Sound)
- Known usage of water by local communities
- OBM base maps showing topography
- Local terrain mapping
- Provincially Significant Wetlands

Due to the size of the forest, it is natural that to some degree many basic services are provided by the forest: stream flow regulation; quality and quantity of water supply, flood and drought prevention. In **Table 9** is a basic description of the rationale for the assessment.

The absence of large communities (Huntsville at population ~18000) is the largest, and given the abundant supply of clean fresh water, there have not been issues with supply of water. The FSF borders on, for hundreds of kilometres, the Great Lakes, the world's largest source of fresh water. Major lakes (Muskoka Lakes) are also within its boundaries.

HCV Designation Decision

Between the size of the source, and the low population density, and the strict regulations about working near water, there is no requirement to designate water supply as an HCV.

Table 9 Basic Services of Nature assessment for the FSF (Category 4).

General description/ Source	Value	Summary of HCV attributes: 1) Description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management	HCV threshold /Decision 1)stable & sustainable 2) risk 3)quantifiable threshold 4)other
Water / Dept of Fisheries and Oceans	Water supplies for human use, including quality, flow, flood and drought prevention	1) This area is famous for its water quality; considerable interest in this issue in society in general. Westwind Gen'l Manager sits on the Muskoka Watershed Council 2) Water crossings are critical; 3) No major quality issues; flow and flooding can occur. Dept of Fisheries and Oceans has jurisdiction in navigable waterways. 4) Logging impact appears minimal due to selection and shelterwood system; Input during FMP occasional 5) MNR water crossing guide closely followed	1) Quality is normally good, and abundant quantity. No long term issues. 2) Flood protection an issue, but not related to forest harvest. 3) Community satisfaction is the threshold; not often raised as a concern during FMP **Not HCV**
Terrain impacts of forestry operations /MNR district	Erosion, landslide, fire protection; adjacent agriculture	1) Erosion can be a local concern; otherwise the rolling terrain and continuous forest cover of the FSF preclude other concerns. 2) Fire return interval is approximately 1000 years; landslides do not occur; there is little agriculture, 3) Erosion issues are regulated by the Dept. of Fisheries and Oceans. 4) Erosion discussed above under water supply quality 5) Erosion discussed above under	1) Issue is mainly erosion and water impacts, discussed above. 2) Risk low due to landscape conditions. 3) Indirect issues with forest management only **Not HCV**

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

Assessment Methodology:

- Government policy, monitoring & response programs (Ontario Low Water Response, Surface Water Monitoring Centre)
- Provincially Significant Wetlands
- Literature Review – Effects of forest disturbance on water yield

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

There are also a number of wetlands on 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. Recent evaluations in the forest have established a number of new "provincially significant" wetlands (**Table 10**).

Table 10 Known provincially significant wetlands in the FSF.

Wetland	Area (ha)	Township	%Crown	Sig?
Axe Lake	1570	Monteith, Stisted, McMurrich, Cardwell	60	Y
Bear Lake	994	Monteith, Spence	80	Y
Begsboro Creek	260	McMurrich	9	N
Big East River	189	Stisted	15	Y
Boyne River	193	Sinclair, Franklin	1	Y
Bruce Lake	58	Medora	0	Y
Cooper's Pond	104	Watt	80	N
Distress River	456	Chapman	4	Y
Dwight Bog	106	Franklin	0	N
Fawn Lake	197	Macaulay	0	Y
Haines Creek	42	Foley	0	N
Jevins Lake	53	Muskoka, Morrison	10	Y
Lassetter Lake	39	Sinclair, Franklin	0	N
Lewisham	465	Ryde	90	Y
Loon Lake	179	Muskoka, Morrison	80	Y
Louck Lake	345	Laurier	50	Y
Morrison Lake	151	Morrison	40	Y
Naiscoot River	125	Wallbridge, Harrison	100	Y
Novar Bog	330	Perry, Chaffey	10	Y
Partridge Bay	180	Carling	50	Y
Potato Island	89	Baxter	93	Y
Pell Lake	66	Sinclair	10	N
Pioneer Village	6	Chaffey	0	N
Quarry Island	47	Baxter	92	Y
Sandy Island	128	Cowper	54	Y
Shack Creek Wetland	473	Oakley, McLean	40	Y
Shebeshekong	109	Carling	59	Y
Scotia	301	Perry	0	N
Siding Lake	142	Stisted, Stephenson	3	Y
South River	261	Joly, Strong	0	N
Sparrow Lake	224	Morrison, Matchedash, Orillia	86	
Tobies Bay	194	Baxter	65	

HCV Designation Decision
In keeping with a general concern about significant wetlands throughout central Ontario, the managers have reversed an earlier decision not to include provincially significance wetlands as designated HCVs.

14) Are there forests critical to erosion control?

Assessment Methodology:
- Review of OBM base maps showing topography
- Review of local terrain mapping

There is little extremely steep topography or highly unstable terrain that would indicate obvious candidates for designating HCV under this element on the forest. 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. Operational guidelines are laid out in the MNRF Stand and Site Guide and other silvicultural guides that direct how operations on sensitive sites should occur.

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

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

This element is deemed not relevant to forest ecosystems in Canada (see Appendix 4 in FSC Canada National Boreal Standard, Version 3.0). We note there is a possible role for wetlands in this capacity. See Table 10 Known provincially significant wetlands in the FSF.

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

Assessment Methodology:
- Review Literature
- Ontario Ministry of Agriculture and Food
- Review 2009 FMP AOC Prescriptions
- Discussions with local MNR fisheries managers

There are no agricultural operations on the forest of a significant size. The local topography in the Parry Sound District is influenced by surface or slightly underlying Precambrian bedrock of the Canadian Shield, making much of the area unsuitable for intensive agricultural activity.

There are no commercial fisheries on the forest except for Lake Huron, which lies beyond the area influenced by forestry and outside the SFL.

HCV Designation Decision
There is no current HCV associated with agriculture or fisheries on the FSF.

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

17) Are there local communities? (This should include both people living inside the forest area and those living adjacent to it as well as any group which regularly visits the forest). Is there anyone within the community making use of the forest for basic needs/ livelihoods. If it is not possible to assume that is is NOT important then assume that it is.

Assessment Methodology:

- NRVIS data
- Socio-economic Description in 2009 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

This element is paraphrased with the following: 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, income. If it is not possible to say that it is NOT fundamentally important, then assume that it is.)

In Table 11 is a summary of the information from various consultations. Westwind has also recently commissioned a socio economic review (ASIF Project Management Consulting, 2004) of the forest covering a wide range of activities:

- Cottage Industry
- Trapping Industry
- Hunting (Moose, Deer, Bear)
- Fishing
- Resource-Based Tourism & Tourist Establishments
- Remote and Semi-Remote Tourism
- Snowmobiling Industry
- Mining Industry
- Aggregates Industry
- Bait Fishing Industry
- Other Non-Forest Products (Wild Rice, Cranberry Production)
- ATV Industry
- Hiking, Cross-Country Skiing, Canoeing, Birding, Scenic Touring & Crown Land Camping
- Marina Industry

These activities have a varying degree of interaction with forestry. In **Table 11** are the most high profile considerations, along with a basic analysis.

Table 11 Economic and cultural considerations for HCV analysis.

Value	**Summary of HCV attributes:** **1) Description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management**	**HCV threshold /Decision** **1)stable & sustainable** **2) risk 3)quantifiable threshold 4)other**
Bear mgmt areas	1) Hunting areas assigned by OMNR; to outfitters and lodges catering to hunters 2) Cover FSF; actively used 3) Viable business opportunity; values by forest based outfitters 4) Bears are opportunistic; and harvest has little; some requirement to fall mast crops 5) Prescriptions applied by tree markers	1) Stable viable forest business 2) Impact present risk low; 3) Indirect issues with forest management only Not HCV
Areas adjacent to Cottage Lakes	1) The Cottage Lakes of Muskoka and Parry Sound are the most widely known characteristic of this area. Most cottagers are not from southern Ontario. . 2) Cottages are all private land; adjacency occurs with FSF logged areas frequently 3) Tourism is the largest economic value of the area. Cottagers are fairly vocal participants in the FMP process; mainly over adjacency 4) Aesthetic concerns primarily 5) Prescriptions applied by tree markers according to FMP. Viewscapes are potential HCV but no prominent ones in the area of forest management.	1) Primarily aesthetic value, stability means long term satisfaction of cottage users 2) Selection & shelterwood systems mitigate impact; Cottagers proactive in bringing concerns 3) Threshold indistinct; cottagers generally accept logging; some locations may warrant HCV status; not identified Possible HCV
Heritage, tourism and recreation trails	1) Trails are part of the tourism infrastructure of the FSF. A wide range of trails exist, but predominantly snowmobile, trans Canada trail. Local trails for other activities 2) Trails cross all of FSF; adjacency occurs with FSF logged areas frequently 3) Tourism is the largest economic value of the area. Trail users are vocal in the FMP process; mainly over adjacency of logging. 4) Aesthetics can be effected by improper logging. 5) Prescriptions applied by tree markers according to FMP. Viewscapes are potential HCV but no prominent ones in the FSF area of forest management.	1) As an aesthetic value, sustainability refers to long term dissatisfaction of trail users; incl tourism business 2) Selection & shelterwood systems mitigate impact; Cottagers proactive in bringing concerns 3) Threshold indistinct; complaints do occur in FMPs; some locations may warrant HCV status; not identified at this time. Not HCV
Traplines Economic cultural activity	1) Traplines are a source of income; part of the rural culture; long history of fur trapping 2) Designated trap areas cover FSF; 3) Trapping active and viable 4) Logging impact appears minimal due to selection and shelterwood	1) Presently a viable activity 2) No evidence of decline; but fur markets cyclical 3) trappers appear content with current process, and forest management

	system; Input during FMP occasional only from trappers 5) No special prescriptions (except rarely around some beaver lakes)	**Not HCV**
Great Lakes Heritage Coast Georgian Bay Biosphere Reserve	1) The Great Lakes shoreline of Muskoka and Parry Sound is a world famous attraction for tourism, boating, kayaking etc.. Mostly fragile forest sites, shallow sites, rock. 2) All along the GL shoreline within 1 km of shore. 3) Tourism is the largest economic value of the area. Vocal participants in FMP planning. 4) Aesthetic concerns primarily; area designated no harvest; marginal timber values 5) Reserve designation within the 1 km of the coast; beyond the 1 km zone, as far as Hwy 69, some management is allowed. See also the Georgian Bay Biosphere Reserve website.	1) Primarily an aesthetic value, stability refers to long term satisfaction of tourism establishments. 2) Selection & shelterwood systems mitigate impact; but potential aesthetic concerns 3) A prominent world class attraction **HCV**
Major Water bodies of Cultural or Historic Significance French River, Big East River	1) Rivers used historically to develop the area, or as major travel routes historically 2) In FSF several significant rivers traverse from east to west. 3) Tourism is the largest economic value of the area. Vocal participants in FMP planning. 4) Aesthetic concerns primarily; area designated no harvest; marginal timber values 5) Reserve designation.	1) Primarily an aesthetic value, stability refers to long term satisfaction of tourism establishments. 2) Selection & shelterwood systems mitigate impact; but potential aesthetic concerns 3) National significance historically; Provincially important attractions. **HCV**

HCV Designation Decision
Based on several reports (ASIF, 2004; Ontario, undated; Great Lakes Heritage Coast Project 2001) and consultations, at this time two HCVs are designated:
1) The Great Lakes Heritage Coast and also known as the Georgian Bay Biosphere reserve
2) Heritage rivers in the forest: French River and Big East.

Other values have merit, but are typically addressed through the FMP process, and the forest practices guides which regulate activities near them. We have identified two possible HCVs: areas adjacent to cottage lakes, and heritage, tourism and recreation trails.

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

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

Assessment Methodology:
- Westwind liaison with the communities
- Discussion with MNR native liaison officer
- NRVIS data on cultural values
- Heritage River Parks on the Forest
- Canadian Heritage River Program
- Background Native Information Report
- 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

This element can only be addressed in co-operation with local communities. In the case of non-native communities, most sites of cultural significance are on private land, for historic reasons. It is possible there are sites that could be impacted on the FSF. These would be identified as possible HCVs, however the actual characterization of these is vague at this time, since no examples were brought forward. One such example could be an old mill site, or graveyard now abandoned. However, these would have to be associated with active communities, to meet the criterion above. Cultural values are safeguarded through normal planning procedures.

From the aboriginal view, there is a particular focus on First Nations communities, since there are as yet no self identified Métis Communities in the FSF. Background information is provided in Appendix 2 Excerpts OMNR First Nation Consultation and Background Information.

Some important cultural sites are distributed through the FSF. This requires the forest manager to consult with local communities. Possible indicators for cultural importance include: names for landscape features; stories about the forest; sacred or religious sites; historical associations; amenity or aesthetic value.

There are a total of six, individual, First Nations (FN) that have communities and reservation lands within the French/Severn Forest (FSF) and another two FN that have a traditional interest in the FSF. All are in Treaty with the Government of Canada and most are involved in Land Claims.

Historically, the eight FN are extremely diverse and remain distinct in their present capacities and/or interest in forest management. To date, Dokis and the Algonquins of Golden Lake have had the greatest involvement and capacity to participate in the Forest Sector. Several communities are

involved in a Tribal Association, the Waabnoong Bemjiwang Association of First Nations (WBAFN), and are currently doing some brush saw and herbicide application work. Other FN communities are involved to a lesser degree and may be focused on tourism as a means of economic development. In general, there is an interest among area FN to develop their capacity and employ more of their membership in forestry related activities.

There are many non native communities, the four largest being Huntsville, Bracebridge, Parry Sound and Gravenhurst.

In Appendix 5 is an excerpt of the OMNR report on the native values that is a central part of the FMP process. This describes the status of the values maps, and the willingness of the First Nations to participate. In total the Parry Sound District will have six NBR and /or values maps out of a possible seven. The only community not wishing to participate at this time are the Wahta Mohawks although they too have shown some interest in the past.

The FSF remains rich in Aboriginal culture. Traditional names are prevalent throughout the landscape many of which have been adopted into modern main stream society. Reference to names like Muskoka and Algonquin are common place in our world today. Massassauga, Waubamik, Noganosh, Wahwashesk and Manitouwabing are further examples of place names of Aboriginal significance.

Exact locations of values and places of importance to the First Nations are not available as a map for this HCV report, but, as described in the overview, will depend on the FMP process to ensure that native values are safeguarded. In the following section on managing HCVs, any special management arrangements will be described.

Table 12 Generic descriptions of First Nation and aboriginal values.

General description/ Source	**Value**	**Summary of HCV attributes: 1) Description; 2) FSF Occurrence; 3) status info; 4) Risk from forest operations; 5) Current Management**	**HCV threshold /Decision 1)stable & sustainable 2) risk 3)quantifiable threshold 4)other**
First Nations cultural and social values /MNR	Trails	1) Trails – trading routes, village to village, river and lake systems, trail markers, cairns, pictographs and traplines (generic description) 2) FSF information not publicly available 3) unknown 4) Risk as per non native trail systems 5) Trail systems prescription requirements defined during FMP	1) unknown 2) normally risk to trails systems would be impairment of aesthetics or access. Unknown. 3) unknown **Possible HCV**
First Nations cultural and social values /MNR	Habitation	1) Habitation - Village and seasonal camp sites, stockades, caves, caches, trapper's cabins, lookouts, guardposts, gathering places and places of sanctuary (generic description) 2) FSF town sites are on reserves, not under the management of Westwind. Other sites are identified as part of the FMP process 3) Good information about permanent structures. Other info unknown. 4) No risk to permanent structures. 5) Prescriptions as for other infrastructure on crown lands.	1) all townsites are not part of the planning area; other infrastructure on crown lands are under permit; 2) minimal risk to permanent infrastructure 3) sites which are identified as of significance to FN's would receive special consideration Possible HCV
First Nations cultural and social values /MNR	Spiritual Sites	1) Spiritual sites – ceremonial, sweats, fasts, childbirth, vision quests, burial, petroglyphs (sp), pictographs, worship and meeting places (generic description). 2) Not available	1) Some information is known but not available 2) No evidence of impact 3) Sites which are identified as of significance to FN's

		3) Unknown status 4) Unknown risk 5) Prescriptions would be provided as needed.	would receive special consideration Possible HCV
First Nations cultural and social values /MNR district	Sustenance gathering sites	1) These harvesting sites – medicines, fish, game, culturally modified trees (CMT's), plants, building materials, stone, berries, crafts and camps for drying berries/fish/meat (generic description) 2) Not available 3) Unknown Status 4) Unknown risk 5) Prescriptions would be provided as needed.	1) Presently information is known but not available 2) No evidence of decline 3) Sites which are identified as of significance to FN's would receive special consideration Possible HCV

HCV Determination Decision
All First Nations Values are possible HCVs. Treatment as HCVs is dependent only on identification, and specific management prescriptions, and monitoring.

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

Assessment Method

- Review of previous values

There were no apparent agglomerations of values that would lead to new HCVs. Most values either make HCV on their own merits, or are not particularly associated with other values, that would bring them over a threshold. It is difficult to determine a threshold for accumulations of values. In review, it was clear that the prime thresholds were sensitivity to forest operations, and visibility to forest users. In most cases the values have already required the managers to address them with specific practices to mitigate impacts. No HCV is identified with this element.

Phase 2: Managing and Monitoring HCVs in the French Severn Forest

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

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

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

- The predominance of "the management plan" -- there is no separate list of prescriptions based on separate 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; which is very difficult.

It is worth repeating that the plan and the planning exercise drive the Westwind approach to HCVs. The planning process contains a significant amount of public consultation, which has also been verified to meet FSC standards. The Proforest anticipated process for determining management requirements (Jennings 2002, section 3.1 "Guidance For Managers")

Monitoring for HCV attributes are described in **Table 13 Management prescriptions and monitoring for the selected HCV on the French Severn 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.

Table 13 Management prescriptions and monitoring for the selected HCV on the French Severn Forest.

Summary only – for actual prescriptions go to the OMNR website http://www.appeFMP.mnr.gov.on.ca/eFMP/home.do?language=en and select the FSF. This link goes to the latest version of the FMP, which contains any plan amendments. Note this Table draws heavily from the Guides listed in **Error! Reference source not found.** Some prescriptions use the Stand and Site Guide (OMNR 2010) . This document contains much of the following direction for management. It also references the Background information which is the scientific support for the effectiveness of the prescriptions.

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
Falco peregrinus anatum Peregrine Falcon	Nest sites	MNR is responsible for the inventory and monitoring of wildlife, and for updating their values database (NRVIS). Status is determined by COSSARO, and this determines the recovery planning process. MNR maintains values database (NRVIS).	Up to 1 km Reserve: 250 m Modified Harvest, Renewal and Tending: MMZ-1: 1 km Additional Information Type A nest sites: a natural cliff face on which a peregrine falcon is nesting or has nested at any time during the previous 15 years, excluding any part of the cliff face that is less than 15m in height. AOC for Type A nest sites is a 1km radius measured from the top and bottom of the vertical cliff face. Type B nest sites: any other natural site on which a peregrine falcon is nesting or has nested at any time during the previous 15 years. AOC for Type B nest sites is a 1km radius measured from the nest location.	Compliance MNR and Company compliance staff routinely ensure prescription is implemented. WFS contact Steve Munro at stevemunro@westwindforest.ca (705) 746-6832 Effectiveness monitoring is the responsibility of MNR. For specific expertise contact the local biologist: Jeremy Rouse at jeremy.rouse@ontario.ca 705-773-4205
Haliaeetus leucocephalus Bald Eagle	Nest sites	As above	AOC BEA 400 m (The appropriate prescription is selected based on whether the nest is primary, alternate or inactive. AOC distances are measured from the nest tree.) Reserve: 100 m Modified Harvest, Renewal and Tending: MMZ-1: 101-200 m MMZ-2: 201-400 m	As above
Riparia riparia Bank Swallow	Nest sites	As above	AOC BSW AOC 50 m; Reserve modified harvest 10-50 m Breeding from May 1 to July 31 - Regular harvest, renewal, and tending operations are permitted within the AOC subject to timing restrictions. As above	As above
Contopus cooperi Olive-sided	Nest sites	MNR is responsible for the inventory and monitoring of wildlife, and for updating	AOC Operational Prescription: 10 ha patch of suitable non-forested wetland habitat (or the entire wetland polygon	As above

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
Flycatcher		their values database (NRVIS). Status is determined by COSSARO, and this determines the recovery planning process. MNR maintains values database (NRVIS).	if <5/10/15/20 ha) associated with individual Element of Occurrence observation points or other reliable sightings associated with breeding activity, or o as otherwise defined by an ESA habitat description or habitat regulation. (Direction applies to suitable breeding habitat delineated by MNR prior to, or found during, operations).	
Whip-poor-will (Code WHIP)	Nest habitat	OMNR-- Wildlife biologists will identify stands where the species are known to occur and the extent of potential critical habitats within those stands. OMNR responsible for monitoring effectiveness.	Nesting Territories known or suspected to be occupied by the Whip-poor-will at least once within the past 5 years as defined by either: - suitable habitat occupied by skinks as delineated through field survey, - a 5 ha patch of suitable habitat associated with individual Element Occurrence* observation points or other reliable sightings, or - as otherwise defined by an ESA habitat description or habitat regulation. (Direction applies to all suitable breeding habitat delineated by MNR, and is applicable to sites known before, or found during, operations.) *Element Occurrence data with Quality Ranks of A to E, and an Accuracy Code of 0 to 2.	As above
Massassauga Rattlesnake	1)Potential overwintering habitat 2) Basking and brooding sites for females	OMNR-- Wildlife biologists will identify stands where rattlesnakes are known to occur and the extent of potential critical habitats (overwintering areas and basking and brooding sites) within those stands. OMNR responsible for monitoring effectiveness.	Description: Normal harvest operations in all working groups. No mechanical or chemical site preparation or chemical tending in areas identified as overwintering habitat or basking and brooding sites. In brief: Mechanical site preparation in the remainder of the stand must not occur between October 1 and May 31. Tertiary roads and landings not permitted in locations identified as critical habitat for Massasauga rattlesnakes Chemical site preparation and/or chemical tending will be considered on a case by case basis where application techniques can be employed to ensure that identified potential habitats are not treated. Prior authorization by District Manager is required.	As above Effects Effectiveness: Ontario Parks Staff at Killbear Provincial Park provide local expertise. Status: appears stable
Snakes: Milksnake Eastern Hog-	Gestation/ Oviposition	OMNR-- Wildlife biologists will identify stands where the species are known to occur	Gestation/Oviposition: Suitable known oviposition sites used by the eastern foxsnake, eastern hog-nosed snake, or milksnake at least once within the past 5 years and habitat within a 30 m radius or as otherwise defined by an ESA habitat description or habitat regulation.	As above

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
nosed Snake,	Hibernacula	and the extent of potential critical habitats within those stands. OMNR responsible for monitoring effectiveness.	Suitable known gestation sites used by the massasauga at least once within the past 20 years and habitat within a 30 m radius or as otherwise defined by an ESA habitat description or habitat regulation Foxsnake and Massassauga Hibernacula: Suitable known hibernacula used by the eastern foxsnake or massasauga at least once within the past 20 years and habitat within a 100 m radius or as otherwise defined by an ESA habitat description or habitat regulation.	
Five lined Skink	Gestation/ Oviposition Hibernacula	OMNR-- Wildlife biologists will identify stands where the species are known to occur and the extent of potential critical habitats within those stands. OMNR responsible for monitoring effectiveness.	Suitable habitat associated with an Element Occurrence* of Five-lined Skink at least once within the past 5 years as defined by suitable habitat occupied by skinks as delineated through field survey. (Direction applies to suitable habitat delineated by MNR prior to, or during, operations.) *Element Occurrence data with Quality Ranks of A to E, and an Accuracy Code of 0 to 2.	As above
Emydoidea blandingii Blanding's Turtle and/or	Blanding's Turtle Turtle Habitat as defined by ESA habitat defininton	OMNR-- Wildlife biologists will identify stands where the species are known to occur and the extent of potential critical habitats within those stands. OMNR responsible for monitoring effectiveness.	As defined by Stand and Site Guide. Recent changes to this guide require verification for this species. Suitable aquatic and associated habitats occupied by the Blanding's turtle or spotted turtle within the past 20 years defined by either: - suitable aquatic habitats known to be occupied by a local population of turtles, as delineated through field survey, and terrestrial habitats within 300 m of these aquatic habitats - suitable aquatic habitats with a high likelihood of being occupied by a local population of turtles based on proximity (≤1000 m for Blanding's turtle, ≤500 m for spotted turtle) to individual Element Occurrence* observation points or other reliable sightings, and terrestrial habitats within 300 m of these aquatic habitats, or - as otherwise defined by an ESA habitat description or habitat regulation. Suitable aquatic habitat is defined as aquatic features that have a high potential to be used either during the active season (active season habitat) or during hibernation (hibernation habitat), as identified by MNR based on field surveys or other reliable methods.	As above
Spotted Turtle	Spotted Turtle	As above	As defined by Stand and Site Guide. Recent changes to this guide require verification for this species.	As above
Bats:	Bat hibernacula,	As above	Northern Bat is covered by two prescriptions that address all	As above

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
Northern Long-eared Bat, or Northern Bat, Little Brown Myotis Small footed Bat	foraging or roosting sites		bats: BH -- Bat hibernacula, foraging or roosting sites known on the forest. 200 m centred on the entrance to the hibernaculum, foraging area, or roosting site Reserve: 100 m; Modified Harvest, Renewal and Tending: MMZ - 1: 200 m; 200 m Hibernation and associated entrance and emergence period: Sept. 1 to May 30. BR -- Bat roosting sites known on the forest -- Same prescription as above	
Great Blue Heron Colonies	Colonies with >25 nests	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. OMNR has responsibility for monitoring effectiveness of prescription, and protection measures.	See AOC ID GBH 10. Great Blue Heron Colonies. In brief: **Reserve:** • 150 m reserve measured from the outside edge of the colony • where the edge of the colony is more than 150 m from the treed edge, the reserve is measured from the edge of the colony to 30 m beyond the treed edge of the waterbody **Modified:** modified area is dependent on the size of reserve and the distance the colony is from the shoreline. It extends beyond the reserve to the total AOC dimension of 300 m.	Compliance MNR and Westwind compliance staff routinely ensure prescription applies appropriately Effects, Effectiveness: The prescription is being reviewed currently and monitoring is occurring directed by MNR region Contact Brian Naylor Phone: 705-475-5564 Email: brian.naylor@ontario.ca Biologist, Forest Management Guide - Site - GUIDES UNIT
Large Deer Wintering Areas (Loring)	Featured game species of social, cultural and economic significance; wintering areas are a critical life requirement; Large yards provide: (1) Coniferous	OMNR responsible for inventory and assessment of good winter habitat OMNR responsible for monitoring effectiveness of prescriptions 1) Deer are stable or increasing in area; wintering areas are key. 2) Inappropriate harvest could impair quality of yards	See AOC ID FMP 17 DWH 2. Deer Winter Habitat In brief (from FMP 17): **thermal cover:** conifer stands especially those dominated by hemlock (ES 30), or cedar (ES 21, 22, 33 and 34), stands dominated by white pine, white spruce or balsam (e.g. ES 11, 14, 18 and 20) if conifer canopy closure is high enough, or tolerant hardwood stands with a strong component of hemlock (ES 28); all pockets of conifer at least 0.04 ha (400 sq. m) in size, at least 10 m tall and with	Monitoring occurs periodically for large ones, though not annually. Depending on operations. Effects Effectiveness: Significant yard in the north of the district called Loring; other large yards exist; recent warm winters have driven up deer populations. This may increase pressure on yards during cold winters. Yarding areas appear stable. Contact

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
	Shelter - general (2) Coniferous Shelter - migration/travel routes (3) Browse Supply (4) Mast Production Areas	3) Deer are an importance game species; benefit of precaution	at least 60 % conifer canopy closure PART of prescription only. See FMP supplementary documentation for parts ii to vi.	Brian Naylor Phone: 705-475-5564 Email: brian.naylor@ontario.ca Biologist, Forest Management Guide - Site - GUIDES UNIT Status: Mapping is difficult to keep up to date; need more frequent monitoring for use by deer Potential trade off between the quality of deer wintering areas and white pine management.
Provincial Parks	Parks and Candidate protected areas from Living Legacy process	OMNR has responsibility for this land use designation.	These areas are protected from forest management. A buffer is required adjacent to every park boundary.	Monitoring is the responsibility of Ontario Parks. Buffers are part of normal compliance by WSF . There is no resource extraction; natural forces are expected to dominate.
Declined ecosystems 1 Late seral White & Red Pine 2 Late seral Tolerant hdwd (N of Hwy 17) 3 Mature Hemlock stands	Age Class >150 yrs in GLSL ecosite 11 to 14. These are primarily White Pine dominated. In addition to Pw in protected areas, riparian and other buffers, managers need to ensure that old white pine stands exists on	Inventory and effectiveness of prescriptions responsibility of Westwind. Inventory of old stands is a problem because of high variability within stands, and chronic lack of information. Current updating of pine inventory is underway by Westwind as part of an enhanced cruising program that will include increment boring for actual age.	Old pine stands on the FSF are almost non-existent because of historical cutting practices. Over the last three Forest Management Plans, and with the recent old growth policy for the province, Westwind has initiated a recovery program. The following text is the guide for the small amount of old pine that now occurs, and will guide the onset of old growth pine. The prescription for pine stands that are less than the defined ages for old growth in the draft Old Growth Definitions (OMNR 2001) are stipulated by the FMP. For pine in the >150 age class, the approach follows the direction of the draft Old Growth policy (OMNR 2003) and the draft Old Growth Definitions (OMNR 2001) In brief stands designated in the >150 yr category that are in the production forest, and not in a reserve, are included in the SFMM land base for possible harvest. In reality there will no old pine harvested in the foreseeable future. The draft Old Growth Policy requires: "Where special objectives for old growth are required, age class constraints are used to maintain a natural age range of forest	Monitoring for the presence of old pine is being undertaken during the cruising program now underway. Effects Effectiveness: Current monitoring is occurring for effectiveness of past silviculture approach. CONTACT: Joe Johnson OMNR forester Parry Sound, Silvicultural Effectiveness Monitoring Status: A significant portion of the old pine stands are in protected areas. Stands on the production forest are being inventoried as

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
	the landscape in keeping with the stated objective of the FMP and OMNR (2003) draft provincial policy requirements.	Ecosite 28 to 30 have significant representation from tolerant hardwood species such as maple and yellow birch.	structure and composition at all scales of ecosystem management to ensure the continued presence of old growth". Therefore the managers must ensure that a continuous presence of old (>150 yrs) ES 11 to 14 are present on the landscape. The proportion of the age class distribution represented by these stands is based upon past distribution, current distribution. The new FMP addresses this requirement. **Hemlock**: Prescription is in the 2009 FMP. There was little cutting in the last FMP . Although there is some harvesting in the Hemlock forest unit there were not many Hemlock trees cut; usually maple or other spp. within the stand designated as ES 28 to 30. **Tolerant Hardwood**: Very rarely occurs on the forest. In the event it was located, special consideration would be given. Identification would occur pre-harvest inspection or at tree marking stage.	part of the new plan, as cruising occurs. Old growth characteristics on the production forest will be an important part of future monitoring plans, as part of the HCV designation.
Great Lakes Heritage Coast/ Georgian Bay Biosphere Reserve	Economic cultural activity /MNR district (OMNR 2001. Charting the course)	1) Planning responsibility for the Great Lakes of shoreline of Muskoka/ Parry Sound are responsibility of OMNR main office 2) All along the GL shoreline within 1 km of shore. 3) Tourism is the largest economic value of the area. Vocal participants in FMP planning. 4) Aesthetic concerns primarily; area designated no harvest; marginal timber values 5) Reserve designation.	The Great Lakes Heritage Coast is s policy for special planning for the protection and enjoyment of the significant values along the coast. The government is leading this project. Based on AOC ID SGB #23 Shoreline of Georgian Bay • 120m reserve or skyline, whichever is **greater**.	Compliance: After application of any management prescriptions, if they occur, there will be compliance monitoring following normal procedures. Status: Based on a wide range of opinion, there is no significant risk to this highly visible and important value. Contact: Dorothy Shaver, Phone: 705-773-4231 Email: dorothy.shaver@ontario.ca District Planner - PARRY SOUND DISTRICT
Provincially Significant Wetlands	Forest lands adjacent to or within Provincially Significant Wetlands	1) OMNR responsible for wetlands mapping and evaluation based on the northern Ontario Wetlands evaluation system. 2) Several throughout FSF.	AOC ID PSW# 32 On CD file:32 FMP17 PSW. Normally wetlands receive a reserve around the edge based on high water mark and slope. In the case of provincially significant wetlands that are evaluated, the	Compliance: Compliance monitoring will ensure that the boundary reserves are followed, and align with the independent evaluators determination of the boundary.

HCV	Attribute	Responsibility -- Inventory and Monitoring	Prescription (detailed management)	Current Monitoring for compliance, effects, effectiveness
		3) Biological significance; water retention. 4) Marginal timber primarily lowland mixedwood 5) Reserve designation.	boundary will be determined by the wetland map from the independent evaluation. Most sites are located in lowland mixedwoods with low AAC	Contact: Dorothy Shaver, Phone: 705-773-4231 Email: dorothy.shaver@ontario.ca District Planner - PARRY SOUND DISTRICT Status: No extraordinary risk to the values is expected.
Major Water bodies of Cultural or Historic Significance	French River, Big East River, Magnetewan River	1) OMNR responsible for waterway protection. 2) Cross FSF. Maybe other significant waterway systems . 3) Biological significance; aesthetic importance. 4) Marginal timber impact since normally excluded from operations. 5) Reserve designation.	Prescription follows normal waterway (AOC Shoreline Slope (%) Reserve Modified 0-15 30m 90m 16-30 50m 70m 31-45 70m 50m 45+ 90m 30m See FMP for further information on details of prescription. Also special prescription for Magnetwan River: AOC ID WILD#35 The Parry Sound Wildlands is an area identified in the Parry Sound District Land Use Guidelines (OMNR, 1983) and comprises parts of Brown and Wilson Townships and along the Magnetawan River from Wah Wash Kesh Lake to Harris Lake. The intent of this area is to provide opportunities for wilderness-like recreation and tourism as well as opportunities for resource development and use and to protect significant natural features. **Slope (%) Reserve Modified** 0-30 60m 60m 31-45 70m 50m 45+ 90m 30m	Compliance: already significant protection around the Big East River; and French River. In event of operations, normal compliance monitoring will occur. Magnetewan River has more activity, and a special prescription is applied. Monitoring is by Westwind staff and Government staff. As a social HCV, effectiveness is determined by stakeholder satisfaction. This occurs during the five year review of the FMP. Contact: Dorothy Shaver, Phone: 705-773-4231 Email: dorothy.shaver@ontario.ca District Planner - PARRY SOUND DISTRICT Status: No extraordinary risk to the values is expected. Maybe other significant waterways designated.

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Appendix 1 HCV Consultation report

Original consultation for the 2003 version of the report is as follows:

- Broad review, based on the FMP process, to determine forest values generally in the FSF:
    - Individuals – See letters and other correspondence in the Supplementary Documentation of the FMP
    - Local Citizen's Committee minutes of meetings: in the Supplementary Documentation of the FMP
    - Communities -- via Westwind Community Board Members

- Consultation with technical experts about species, ecosystems or values that are HCV
    - Jeremy Rouse – Species at Risk
    - Jan McDonnell – biodiversity
    - Ron Black – Rattlesnakes
    - Fred Pinto – old growth; monitoring
    - Peter Street – SFL responsibility; Adjacent response of Nipissing to HCV
    - Brian O'Donahue – Great Lakes Heritage Coast
    - Margaret McLaren – Wildlife assessment Units; Wildlife monitoring
    - Joe Johnson – AOC prescriptions
    - Gail Jackson – Parks Canada

- Focused review by regional and provincial stakeholders of the values and the management approach
    - Muskoka Conservancy
    - Wildlands League – Chris Henschel
    - Federation of Ontario Naturalists – Riki Burkhardt
    - World Wildlife Fund – Tony Iacobelli; Lorne Johnson
    -

- Open door policy – new HCVs and new management approaches will be considered at any time, if they meet the requirements of FSC P1—8, and OMNR regulations

Appendix 2 Excerpts OMNR First Nation Consultation and Background Information

Only publicly available information is included here.

Background:

Planning for the 2009-2019 French/Severn Forest Management Plan began in the fall of 2006. The Ministry of Natural Resources contacted the following First Nation communities which are located within or adjacent to the French/Severn Forest Management Unit:

- Dokis
- Henvey Inlet
- Magnetawan
- Shawanaga
- Wasauksing
- Moose Deer Point
- Wahta Mohawks
- Algonquin communities

Various letters and messages were sent outlining the procedure and providing the option to establish a formal "Consultation Approach". Follow-up contact was also made, and community representatives were invited to the planning meetings. Additional meetings were held to discuss and clarify First Nation involvement in the planning process. The Forest Management Planning process was discussed including the option for separate Aboriginal consultation, Aboriginal values collection, and preparation of the Aboriginal Background Information Report and the protection of identified Aboriginal values. A community representative from two communities (Shawanaga and Magnetawan) actively participated on the 2009-2019 French/Severn Forest Management Plan.

Dokis First Nation: A NBR and Values Map was produced by a consultant (John Pollock) in 1998. This First Nation is not within the District boundaries but since its traditional area flows into the north end of the District, Parry Sound MNR has consulted with them on various issues resulting in the NBR and Values Map.

Henvey Inlet First Nation: John Pollock assisted Henvey Inlet in producing a NBR and Traditional Area map in 1999. The report and map are to be enhanced upon further background information gathering.

Magnetawan First Nation: This community produced their own NBR and Values Map with the assistance of MNR' GIS staff. Like Henvey Inlet this report and map are to be enhanced as information is gathered.

Shawanaga First Nation: A consultant from Thunder Bay (Paul Driben) worked with Shawanaga to produce a Land Use Atlas which outlines where Shawanaga's traditional use areas are. More values detail is being sought through continued discussions/consultations.

OMNRF Contact for information on status of aboriginal relations

Joynt, Leslie
Phone: 705-773-4256 Email:
Resource Liaison Specialist - PARRY SOUND DISTRICT

Dokis First Nation

Summary of Past Use of the Timber Resource

Dokis First Nation is located approximately 16 kilometers southeast of Lake Nipissing, on the French River. It has a land area of approximately 157.5 square kilometres and 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 that connects with highway 64, approximately 30 kilometers to the northwest.

Dokis has been involved in both the on, and off reserve logging since the late 1800's. Many of their members found employment with companies such as J.R. Booth, Fraser logging Co., J.B. Smith, and Hardy Lumber Co. A trespass and illegal harvest by the Hardy Lumber Co. in 1908 eventually netted the band over $1 million from the sale of the virgin timber. In 1956, Dokis formed their own logging company to pursue their own logging initiatives.

By the late 60's, early 70's Dokis, had an established interest in forestry, and was subsequently presented with their own crown allocation. It was located in Hardy Township and is known today as Dokis Block #103 and represents 1.8% of the Nipissing Forest. Dokis Logging Co. has now grown to 6 logging gangs, which employ between 15 and 25 community members over the course of the season. Dokis' forestry operations supply the area mills of Tembec, Lajambe, Chartrand, and Overont. Members from the Dokis First Nation have been and continue to be quite active in forest
harvesting operations and silvicultural contracts in the MNR Districts of Parry Sound, North Bay and Sudbury.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Dokis made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III.

Henvey Inlet First Nation

Summary of Past Use of the Timber Resource

Historically, Henvey Inlet has not had a strong presence in the local forestry industry with most of their activities centering on fuelwood extraction and some softwood harvests for community developments. This traditional harvest has continued today with this First Nation community being the first in the French/Severn Forest to express interest in exercising their Aboriginal right to harvest in accordance with the *Gray / Sappier* decision.

Some community members have been employed with local mills and harvesting contractors. In recent years there has been increased interest in silvicultural projects on Crown lands, and some community members have retained contracts in this regard.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Henvey Inlet made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III.

Henvey continues to exhibit interest in a variety of resource sectors including fisheries management in the Pickerel and French Rivers; renewable energy opportunities; and Crown lands for traditional activities including hunting, gathering and spiritual / cultural practices.

Magnetawan First Nation

Summary of Past Use of the Timber Resource

Forestry has not played a major role in this community in the past with only a small number of their community members being employed with local mills and harvesting companies.

Most of their activities have been centered on fuelwood extraction for community use. There has been some interest expressed in the past on becoming active in the log home market, but this has not materialized to date.
Magnetawan is keenly interested in the Forest Management Planning process and has a community member who is an active participant on the Planning Team. This individual is also sitting on the Local Citizens Committee providing a valuable Aboriginal perspective to that group.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Magnetawan has made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III.

Magnetawan continues to exhibit interest in a variety of resources including potential renewable energy opportunities (both water and wind power); and use of surrounding Crown lands and resources for traditional activities including fishing, hunting, gathering and spiritual / cultural practices.

Shawanaga First Nation

Summary of Past Use of the Timber Resource

In the past, Shawanaga has had some involvement in forest harvesting but more recently their activities have centered on fuelwood extraction. There have been some discussions regarding specialty products but there has been no business plan developed to date. Recently, the Economic Development Officer for the community has expressed interest in possibly developing a chipping facility on the First Nation that could potentially supply a nearby biofuel plant, which is currently in the development stages. In recent years a number of community members have received forest certification training, and there has been interest expressed in a possible allocation in close proximity
to the First Nation.

Although Shawanaga is not active in the forestry industry they have always taken a keen interest in the Forest Management Planning process and how it may affect their traditional activities, Aboriginal values, and traditional lands. Shawanaga has an Aboriginal Representative actively participating on the 2009-2019 FMP planning team.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Shawanaga has made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III.

Shawanaga has a large Healing Centre in the community and a strong interest in traditional ceremonies and cultural heritage values both on reserve land and in their traditional areas. Community members include successful quill box artisans.

Shawanaga continues to exhibit interest in a variety of other resources including potential renewable energy opportunities (wind power); and use of surrounding Crown lands and resources for traditional activities including fishing, hunting, gathering and spiritual / cultural practices.

The Ministry of Natural Resources and Shawanaga First Nation continue to discuss identifying and protecting values of cultural significance to the community on surrounding Crown lands and islands in Georgian Bay. Furthermore, many members of the community have expressed interest in trap lines surrounding the First Nation – the management and administration of these lines continues to be a topic of ongoing discussion between MNR and the First Nation leadership.

Wasauksing First Nation

Summary of Past Use of the Timber Resource

There has been strong interest from this community in carrying out harvesting activities on their reserve lands. They also manage a successful maple sugar operation. There is continued interest by community leadership in developing a Forest Management Plan for the reserve lands. Some community members have been involved with harvesting operations off-reserve and involved in the log home industry.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Wasauksing has made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III. Wasauksing continues to exhibit interest in a variety of other resources including potential renewable energy opportunities (wind power); and use of surrounding Crown lands and resources for traditional activities including fishing, hunting, gathering and spiritual / cultural practices.

Through the on-going Aboriginal Youth Work Exchange Program, MNR and the First Nation hope to expand on capacity development in the areas of natural resource management and work together to actively protect those values of importance to the community.

Wasauksing also has a community representative sitting on the Eastern Georgian Bay Stewardship Council. This group has taken an active partnership approach to resource management projects on Georgian Bay focusing on Crown land stewardship and fisheries management – both areas which Wasauksing shares common concerns. It is hoped this individual will provide a valuable Aboriginal perspective for the Council's on-going initiatives.

Moose Deer Point First Nation

Summary of Past Use of the Timber Resource

There is not a strong presence in the forest industry from Moose Deer Point but they have always had a keen interest in the surrounding environment and how any forestry activities may affect this environment. Ontario's Order in Council of December 26, 1917 provides some insight into the past
involvement in the forest industry and use of the timber resource by the community members, namely "…it is stated that the Indian men find employment as guides and caretakers during the summer and go to the lumbering woods in the winter, that it is desired to establish a school and enable them to grow garden stuff and provide fuel for their dwellings."

Some community members were involved in the harvesting of Canada Yew a couple of years ago when the market was strong for this resource.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Since settling in the area in the mid-1840's, members of Moose Deer Point have made use of the above noted other resources to varying degrees. The community provided MNR with a map of areas where they have practised hunting, fishing, trapping and gathering activities. This map is kept on file at the MNR office in Parry Sound.

Wahta Mohawks

Summary of Past Use of the Timber Resource

During the late 1800's and early 1900's members from this community were quite active in the forest industry in the Muskoka area. There have been harvesting operations done on their reserve lands in the past by community members. A Wahta community member, who was actively involved in harvesting forest products both on and off reserve, recently sold his shares with Westwind Forest Stewardship. There has been interest shown in the past from this community to establish a dry kiln but this has not materialized to date and presently does not affect timber allocations.

Maple syrup has long been part of the Mohawk diet as far back as the early 1700's. Cutting the trees, gathering the sap in bark containers and boiling it until it turned to syrup. It was described as very healing and almost always has a burnt taste. Wahta's Maple ceremony in March is devoted to giving thanks to the Creator for this sweet healthy treat. The one-day ceremony begins with the Ohenton Kariwatchkwen and tobacco burning. The Maple sap is passed around, and then the dancing begins. Drinking the sap of the maple tree during the ceremony is believed to have a cleansing effect on the body. Unfortunately, the current maple bush has been hit by a large infestation of caterpillars
and will require some time for recovery. In 2007 Wahta retained a Forestry Consultant to prepare a Forest Management Plan for their Reserve lands. MNR staff discussed the possibility of partnering with the community to expand the scope of this study to include values collection on adjacent Crown lands of interest to the community. While this offer was not accepted, it is hoped this discussion

can continue in the future.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

Since settling in the area in 1881, members of Wahta have made use of the above noted other resources to varying degrees.

See also A History of the Wahta Mohawk Community. This document provides extensive background on the historic use of resources by the Wahta community in their own words.

Algonquins

Summary of Past Use of the Timber Resource

Although members from these communities have not been involved in harvesting operations within the French / Severn Forest, they are quite active within Algonquin Park and have shown interest in the past in areas associated with their land claim in the north and east section of the Parry Sound District.

Summary of Past Uses of other Resources (i.e. hunting, fishing, trapping & gathering)

The Algonquin communities made use of the above noted other resources to varying degrees. More detail on the general practices of Aboriginal peoples within the geographic area now known as the Parry Sound MNR District can be found in Appendix III.

Appendix 3. Natural Heritage Information Centre list of Species at Risk on the French Severn Forest (Nov 2012).

Eos	Taxonomic Group	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Canada General Status
3	Mammals	*Mustela nivalis*	Least Weasel	G5	SU			Secure
1	Mammals	*Myotis leibii*	Small-footed Bat	G3	S2S3			May be at risk
3	Mammals	*Myotis septentrionalis*	Northern Long-eared Bat	G4	S3			Sensitive
2	Birds	*Ixobrychus exilis*	Least Bittern	G5	S4B	THR	THR	At risk
1	Birds	*Haliaeetus leucocephalus*	Bald Eagle	G5	S2N, S4B	NAR	SC	Secure
13	Birds	*Falco peregrinus*	Peregrine Falcon	G4	S3B	SC	THR	Sensitive
130	Birds	*Dendroica discolor*	Prairie Warbler	G5	S3B	NAR	NAR	Sensitive
1	Birds	*Dendroica cerulea*	Cerulean Warbler	G4	S3B	END	SC	Sensitive
1	Birds	*Ammodramus henslowii*	Henslow's Sparrow	G4	SHB	END	END	At risk
21	Reptiles and Turtles	*Emydoidea blandingii*	Blanding's Turtle	G4	S3	THR	THR	May be at risk
5	Reptiles and Turtles	*Graptemys geographica*	Northern Map Turtle	G5	S3	SC	SC	Sensitive
19	Reptiles and Turtles	*Sternotherus odoratus*	Eastern Musk Turtle	G5	S3	THR	THR	At risk
68	Reptiles and Turtles	*Plestiodon fasciatus pop. 2*	Common Five-lined Skink (Southern Shield population)	G5T4	S3	SC	SC	
32	Reptiles and Turtles	*Lampropeltis triangulum*	Milksnake	G5	S3	SC	SC	Sensitive
28	Reptiles and Turtles	*Thamnophis sauritus*	Eastern Ribbonsnake	G5	S3	SC	SC	Sensitive
15	Reptiles and Turtles	*Sistrurus catenatus*	Massasauga	G3G4	S3	THR	THR	At risk
1	Fish	*Acipenser fulvescens pop. 3*	Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)	G3G4 TNR	S2	THR	THR	
2	Fish	*Esox americanus vermiculatus*	Grass Pickerel	G5T5	S3	SC	SC	
1	Fish	*Ichthyomyzon fossor*	Northern Brook Lamprey	G4	S3	SC	SC	Sensitive
3	Fish	*Noturus insignis*	Margined Madtom	G5	SU	DD	DD	Undetermined

Eos	Taxonomic Group	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Canada General Status
1	Dragonflies and Damselflies	*Lestes eurinus*	Amber-winged Spreadwing	G4	S3			
3	Dragonflies and Damselflies	*Enallagma aspersum*	Azure Bluet	G5	S3			
7	Dragonflies and Damselflies	*Aeshna clepsydra*	Mottled Darner	G4	S3			
1	Dragonflies and Damselflies	*Aeshna verticalis*	Green-striped Darner	G5	S3			
1	Dragonflies and Damselflies	*Gomphaeschna furcillata*	Harlequin Darner	G5	S3			
7	Dragonflies and Damselflies	*Nasiaeschna pentacantha*	Cyrano Darner	G5	S3			
3	Dragonflies and Damselflies	*Arigomphus furcifer*	Lilypad Clubtail	G5	S3			
1	Dragonflies and Damselflies	*Gomphus borealis*	Beaverpond Clubtail	G4	S3			
1	Dragonflies and Damselflies	*Gomphus descriptus*	Harpoon Clubtail	G4	S3			
1	Dragonflies and Damselflies	*Ophiogomphus anomalus*	Extra-striped Snaketail	G4	S3			
1	Dragonflies and Damselflies	*Cordulegaster obliqua*	Arrowhead Spiketail	G4	S2			
3	Dragonflies and Damselflies	*Helocordulia uhleri*	Uhler's Sundragon	G5	S3			
2	Dragonflies and Damselflies	*Somatochlora elongata*	Ski-tailed Emerald	G5	S3?			
1	Dragonflies and Damselflies	*Somatochlora tenebrosa*	Clamp-tipped Emerald	G5	S2S3			
2	Butterflies and Skippers	*Erora laeta*	Early Hairstreak	GU	S2			
1	Butterflies and Skippers	*Oeneis macounii*	Macoun's Arctic	G5	S3			
1	Dicot.	*Amelanchier amabilis*	Beautiful Serviceberry	G4?Q	S2S3			

Eos	Taxonomic Group	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Canada General Status
10	Dicot.	*Bartonia paniculata*	Branched Bartonia	G5	S2	THR	THR	
5	Dicot.	*Bartonia virginica*	Yellow Bartonia	G5	S2			
1	Dicot.	*Bidens trichosperma*	Crowned Beggarticks	G5	S2			
2	Ferns and Fern Allies	*Botrychium lanceolatum*	Triangle Moonwort	G5	S3?			
4	Ferns and Fern Allies	*Botrychium rugulosum*	Rugulose Grapefern	G3	S2			
1	Monocot.	*Carex conoidea*	Field Sedge	G5	S3			
7	Monocot.	*Carex folliculata*	Northern Long Sedge	G4G5	S3			
2	Dicot.	*Ceratophyllum echinatum*	Prickly Hornwort	G4?	S3?			
1	Dicot.	*Chimaphila maculata*	Spotted Wintergreen	G5	S1	END	END	
1	Monocot.	*Cyperus houghtonii*	Houghton's Flatsedge	G4?	S3			
12	Monocot.	*Dichanthelium acuminatum ssp. spretum*	Sand Panic Grass	G5	S2			
1	Dicot.	*Galium brevipes*	Limestone Swamp Bedstraw	G4?	S2S3			
2	Dicot.	*Gentianella quinquefolia*	Stiff Gentian	G5	S2			
1	Ferns and Fern Allies	*Isoetes engelmannii*	Engelmann's Quillwort	G4	S1	END	END	
2	Ferns and Fern Allies	*Isoetes tuckermanii*	Tuckerman's Quillwort	G4?	S1			
3	Dicot.	*Juglans cinerea*	Butternut	G4	S3?	END	END	
3	Monocot.	*Juncus acuminatus*	Sharp-fruited Rush	G5	S3			
1	Monocot.	*Juncus greenei*	Greene's Rush	G5	S3			
2	Monocot.	*Juncus secundus*	One-sided Rush	G5?	S3			

Eos	Taxonomic Group	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Canada General Status
2	Dicot.	*Linum medium var. medium*	Stiff Yellow Flax	G5T3T4	S3?			
2	Dicot.	*Linum striatum*	Ridged Yellow Flax	G5	S1			
1	Monocot.	*Listera auriculata*	Auricled Twayblade	G3G4	S3			
4	Monocot.	*Listera australis*	Southern Twayblade	G4	S1			
1	Dicot.	*Monarda didyma*	Scarlet Beebalm	G5	S3			
3	Monocot.	*Najas gracillima*	Thread-like Naiad	G5?	S2			
9	Monocot.	*Panicum rigidulum*	Redtop Panic Grass	G5	S3			
1	Ferns and Fern Allies	*Pellaea atropurpurea*	Purple-stemmed Cliff-brake	G5	S3			
1	Monocot.	*Peltandra virginica*	Green Arrow-arum	G5	S2			
4	Dicot.	*Persicaria arifolia*	Halberd-leaved Tearthumb	G5	S3			
3	Ferns and Fern Allies	*Phegopteris hexagonoptera*	Broad Beech Fern	G5	S3	SC	SC	
1	Monocot.	*Platanthera flava var. herbiola*	Tubercled Orchid	G4?T4Q	S3			
7	Monocot.	*Platanthera macrophylla*	Large Round-leaved Orchid	G4	S2			
1	Monocot.	*Poa saltuensis ssp. languida*	Weak Blue Grass	G5T3T4Q	S3			
15	Monocot.	*Potamogeton bicupulatus*	Snailseed Pondweed	G4	S3			
5	Monocot.	*Potamogeton confervoides*	Alga Pondweed	G4	S2			
2	Dicot.	*Rorippa aquatica*	Lakecress	G4?	S3?			
7	Monocot.	*Sagittaria cristata*	Crested Arrowhead	G4?	S3			
1	Dicot.	*Saururus cernuus*	Lizard's Tail	G5	S3			
2	Monocot.	*Schoenoplectus heterochaetus*	Slender Bulrush	G5	S3			

Eos	Taxonomic Group	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Canada General Status
1	Monocot.	*Schoenoplectus purshianus*	Weak-stalk Bulrush	G4G5	S1?			
5	Monocot.	*Schoenoplectus smithii*	Smith's Bulrush	G5?	S3			
1	Monocot.	*Scleria verticillata*	Low Nutrush	G5	S3			
3	Monocot.	*Sporobolus heterolepis*	Prairie Dropseed	G5	S3			
3	Dicot.	*Subularia aquatica*	Water Awlwort	G5	S3			
1	Monocot.	*Tradescantia ohiensis*	Ohio Spiderwort	G5	S2			
1	Monocot.	*Trichophorum clintonii*	Clinton's Clubrush	G4	S2S3			
5	Dicot.	*Utricularia geminiscapa*	Twin-stemmed Bladderwort	G4G5	S3?			
1	Mosses, Liverworts & Hornworts	*Bryum violaceum*	A Moss	G5?	S1			
1	Mosses, Liverworts & Hornworts	*Dichelyma uncinatum*	A Moss	G3G5	S1			
1	Mosses, Liverworts & Hornworts	*Diplophyllum taxifolium*	A Liverwort	G5	S1S2			
2	Mosses, Liverworts & Hornworts	*Grimmia hermannii*	A Moss	G3G5	S1			
1	Mosses, Liverworts & Hornworts	*Lophozia capitata*	A Liverwort	G4	S2?			
1	Mosses, Liverworts & Hornworts	*Marsupella sparsifolia*	A Liverwort	G3G4	S1S2			
1	Mosses, Liverworts & Hornworts	*Sphagnum lescurii*	A Moss	G5	S1			
1	Mosses, Liverworts & Hornworts	*Tortula norvegica*	A Moss	G5	S1			