

# **High Conservation Values in the Algoma Forest**

**An assessment of forest values and their conservation in the Algoma Sustainable Forestry Licence from a global, regional and local perspective based on the Forest Stewardship Council's Principle 9**

**Version 4**

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# Acknowledgements

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Jim Miller and Tim Reese of Clergue Forest Management were instrumental in providing background information and helping contact the people who had the knowledge to include in the report. Tim Reese prepared the maps and helped guide the way through a series of complex computer records and data. As Forest Management Plan Author, Tim Reese was also the source of much of the detailed information in this report. Jim Miller guided the process and provided valuable advice.

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## First Nations Background Information Report and Values Map

Three Aboriginal Background Information Reports were prepared for the 2005-2025 Algoma Forest Management Plan. These maps were digitized by the Ministry of Natural Resources and are available to Clergue Forest Management and Ministry Staff. However, each First Nation has requested that these reports and maps not be made available to the general public nor shared with the other First Nations without the written permission of the Chief and Council of the individual First Nations.

These reports include:

- 1) The Aboriginal Background Information Report-Michipicoten First Nation was prepared with the contributions of the Michipicoten First Nation Elders and community members.
- 2) The Mississauga First Nation Background Information Report was prepared by the Mississauga First Nation Elders in conjunctions with Mississauga First Nation Natural Resources Program.
- 3) The Thessalon First Nation First Nation Background Information Report was provided in co-operation with the Thessalon First Nation and the Northshore Forest.

These reports provide information regarding the First Nations' past use of timber resources, and other forest resources on the Algoma Forest, as well as forest management related issues, successes and failures, and valuable background information. Value information shared by communities has been digitized and is stored electronically in the Ontario Ministry of Natural Resources (OMNR) Sault Ste. Mare District's geographic information system.

In respect of First Nations authors and communities, none of the specific information in these reports is included in this HCV report. However, the information is available to managers as needed and is incorporated in the management program.

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# Introduction

The Forest Steward Council (FSC) introduced the concept of High Conservation Value Forests (HCVFs) in 1999 as part of its plan to develop a certification system that identifies well-managed forests. HCV Forests are described in Principle 9 of the 10 Principles that form the basis of the FSC approach to forest certification. The concept focuses on the environmental, social and /or cultural values that make a particular forest area of outstanding significance. The intent of Principle 9 is to manage those forests in order to maintain or enhance the identified High Conservation Values. By focusing on maintaining or enhancing the environmental or social values that make the forest significant, it is possible to make management decisions consistent with the protection of such values.

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The FSC provides the following definition of HCVFs:

High Conservation Value Forests are those forests that possess one or more of the following attributes:

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

Principle 9 requires that management activities in HCVFs maintain and enhance the attributes, which defined such forests. Principle 9 contains four criteria:

9.1 requires an assessment to determine the presence of attributes consistent with HCVFs (as presented in the definition above).

9.2 is guidance to certifiers on the consultative portion of the certification process (does not normally require further interpretation, indicators or verifiers).

9.3 requires a precautionary level of management and activities that ensure the maintenance or enhancement of High Conservation Values.

9.4 requires monitoring the effectiveness of the management and activities implemented.

## Purpose and Scope

The purpose of this report is to fulfill the requirements for an FSC audit, concerning Principle 9, for the Algoma Forest, and provides an assessment for the presence of High Conservation Value attributes on the Algoma Forest. The Algoma Forest is located in the central part of Ontario and is managed by Clergue Forest Management Inc. See Figure 1 on page 7.

### ***The Algoma Forest Management Plan and HCF Values***

Clergue Forest managers regard the entire Algoma Forest as important habitat for wildlife and as a resource for people to use. The forest is highly diverse because it is located at the junction of the Boreal Forest to the North and the Great Lakes St. Lawrence Forest to the south. These two Forest Regions meet along the shores of the Great Lakes, Huron and Superior, and support a wide diversity of both plant and animal life within its boundaries. The picturesque scenery and abundant wildlife also serve as a magnet for thousands of visitors to enjoy canoeing, camping, hunting and hiking in the area. Therefore, both from a conservation of diversity point of view and maintaining forest products for the future, this Forest is both complex and valuable.

Clergue Forest Management Inc. has 6 Shareholders which own mills through out Northeastern Ontario. There are 2 paper mills, (Domtar at Espanola and St. Marys Paper in Sault Ste. Marie), 1 Orientated Strand Board plant, (Weyerhaeuser near Wawa), 2 sawmills, (Midway Lumber near Thessalon, and Boniferro Mill Works in Sault Ste. Marie) and 1 veneer aspen plant (Columbia Forest Products in Hearst) that depend on this Forest for a portion of their wood supply. Wood is also delivered from the Forest to a variety of other mills in the region. Several thousand jobs, both directly and indirectly, are supported by these processing plants and the wood from the Algoma Forest.

The Algoma forest is managed within the programs and policies of the Ontario Ministry of Natural Resources following a planning process governed by the “Forest Management Planning Manual for Ontario’s Crown Forests (1996 version or the new 2004 version). As well, the “Forest Operations and Silviculture Manual 1995”, provides extensive guidance to managers concerning the appropriate harvest techniques and related silviculture activity.

Within this planning process, a number of guidelines are used to protect important values in the forest. These guidelines provide direction for insuring that habitat for wildlife is provided, that the physical environment is not degraded by forest harvesting and that the harvesting pattern on the landscape is modeled after the pattern created by fire. A complete list of these guidelines is on the Ministry of Natural Resource’s Webb site at <http://ontariosforests.mnr.gov.on.ca>. The purpose of these guidelines is to insure that forest managers are aware of the values that are in the forest and that management actions take these values into account.

The values identified during the FSC certification process, as outlined in Principle 9 and in Appendix E of the FSC Great Lakes–St. Lawrence Standard may be the same values identified in the forest management plan. The scope of this report is to record all the values identified in the process outlined by the Great Lakes–St. Lawrence Standard and illustrate how the Algoma Forest Management Plan takes these values into account.

## Methods

The approach in this paper is to use the questions from the Great Lakes-St. Lawrence Standard developed by FSC Canada for the structure of the report. These questions are organized into 6 categories and 17 questions taken from Appendix E of the Great Lakes-St. Lawrence Standard (Field Tested Draft April 2007) and are listed as Appendix II of this report. These questions pertain to criteria 9.1 and 9.2 of Principle 9. Criteria 9.3 and 9.4, which cover management and monitoring, are discussed as separate items. Previous versions of the report were based on questions from Appendix 5 of the Boreal Standard for Canada. The questions posed in the two standards are essentially identical with the following exceptions: 1) the Boreal Standards for Canada includes two additional questions; and 2) the order of questions is structured slightly differently.

This paper presents an assessment of the presence of HCVF values and outlines the objectives and strategies that Clergue Forest Management uses to maintain these values as well as the monitoring program that is followed to insure that the values are maintained.

### ***Criteria 9.1- requires an assessment to determine the presence of attributes consistent with HCVFs***

Based on the current Forest Management Plan, sources listed in Appendix I of this report, and discussions with Clergue Forest Managers and local people, a number of species and ecosystems are considered for the possibility of having High Conservation Value. After reviewing the questions in Appendix E of the Great Lakes-St. Lawrence Standard, and the associated data, a decision must be made to place a species or ecosystem in one of three categories: HCV (High Conservation Value), Not HCV (Not High Conservation Value) or Possible HCV (Possible High Conservation Value). Clearly this decision is not a purely objective one, and must be made with a measure of subjective judgment. The basic process, however, is open and can be reviewed and changed as necessary. As well, it must be remembered that the natural world changes often, and values that are considered HCV today, may not be HCV in the future, or new values may need to be labeled HCV as species or ecosystems change.

### ***Criteria 9.2 – the consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.***

Clergue has provided, as part of this work, an opportunity through an open consultative process to input into the identification of High Conservation Value Forests and into the development of management objectives that protect those identified values. The management plan includes and implements specific measures that ensure the maintenance and / or enhancement of the conservation attributes consistent with the precautionary approach. This report and the associated documents are available to everyone as part of the background to the management plan.



***Criteria 9.3- requires a precautionary level of management and activities that ensure the maintenance or enhancement of High Conservation Values.***

There are numerous interpretations of a precautionary approach. In general, they all describe an approach where a manager should demonstrate a low risk of negative impact from management activities when outcomes are not clearly understood. As HCVs are values that are deemed to be the “most important” and thus require the highest “duty of care”, the application of a precautionary approach is one way of helping to ensure that we maintain these values.

FSC Principle 9 Advisory Panel defined a precautionary approach in the context of Principle 9 as “ Planning, management activities and monitoring of the attributes that make a forest management unit a HCVF should be designed, based on existing scientific and indigenous/traditional knowledge, to ensure that these attributes do not come under threat of significant reduction or loss of the attribute and that any threat of reduction or loss is detected long before the reduction becomes irreversible. Where a threat has been identified, early preventive acting, including halting any potentially detrimental action, should be taken to avoid or minimize such a threat despite lack of full scientific certainty as to causes and effects of the threat “

***Criteria 9.4- requires monitoring the effectiveness of the management and activities implemented by the forest manager.***

This criteria requires that either the Forest Management Company (in this case the Sustainable Forest License holder) or the responsible government agency, (in this case, the Ontario Ministry of Natural Resources) establish a monitoring program that measures the status of the High Conservation Values on the Forest Area. The monitoring program must be capable of alerting the managers to changes in the status of a conservation attribute, and determining if the conservation measures are effective in maintaining or restoring the conservation attribute. If the monitoring indicates an increasing risk to specific conservation attribute, measures are taken to maintain or enhance that attribute, and adjust the management measures to reverse the trend.

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## Results- Criteria 9.1

In this section, the specific questions taken from Appendix E of the Great Lakes-St. Lawrence Standards for Canada are used to guide the process of identifying HCVF areas on the Algoma Forest.

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

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#### **Question 1) Does the forest contain concentrations of species at risk as listed by international, national or provincial authorities?**

##### **Assessment Methodology:**

This question is intended to identify critical habitat for rare, threatened or endangered species. The purpose is to ensure that these rare elements of biodiversity are maintained in the forest area and that forest management is able to protect the values they represent.

The approach used for the Algoma Forest assessment was to review all of the available lists including:

- Natural Heritage Information Centre (NHIC) Species Lists
- IUCN Red List
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- Species at Risk Ontario (SARO) list
- Ministry of Natural Resources Values Information System database (NRVIS)
- Northern Ontario Flora plant data base (NOF)

The Natural Heritage Information Centre (NHIC) species list includes the latest information from COSEWIC (Committee on the Status of Endangered Wildlife in Canada). The NHIC classifies species in terms of global and regional/provincial rarity and significance.

The presence of G1 (globally extremely rare) and G2 (globally very rare) occurrences can be used to measure the presence of this attribute at a global level. Based on the NHIC data the only G1 or G2 occurrence on the Algoma Forest is False Northwestern Moonwort *Botrychium pseudopinnatum* which is coded as being extremely rare globally (G1) and extremely rare regionally (S1) with one reported finding on the forest. **False Northwestern Moonwort is designated as an HCV on the Algoma Forest.**

At a regional/national scale, the NHIC species list, COSEWIC, the Ministry of Natural Resources Values Information System database (NRVIS) and the plant data base at [www.northernontarioflora.ca](http://www.northernontarioflora.ca) (NOF), which summarizes information about plant distribution, including rare plants, throughout northern Ontario, can also be used to determine the presence of species at risk or potential habitat for species at risk on the forest.

Based on COSEWIC and SARO, Wood Turtle is only one species on the Algoma Forest that is listed as being endangered (see Table 1). Wood Turtles have declined in large part because of collectors who removed them from the wild, and from extensive loss of habitat, particularly from urban development in much of their range. Wood Turtle populations are particularly susceptible to death and injury along forest access roads, to damage and destruction of their nesting sites through predation or forestry activities and to poaching. **As a result, Wood Turtle nest sites, hibernacula and areas adjacent to these sites are designated as HCV.**

One additional endangered species that requires consideration is King Rail which has been confirmed on private land at Echo Bay on the shoreline of the St. Marys River. Although there have been no sightings on King Rail on Crown Land it is **considered to be a Possible HCV where it exists.**

Table 1 Endangered species at risk in the Algoma Forest, regulated under Ontario's Endangered Species Act (ESA)

Species	Background for HCV decision
<p>Wood Turtle <i>Glyptemys insulpta</i></p>	<p>The Algoma Forest contains significant populations of wood turtles in association with the many streams that flow into the Great Lakes system. Wood turtles are active on land from May 1 to September 30 when they return to their stream habitat. Wood turtle populations are particularly susceptible to death and injury along forest access roads, to damage and destruction of their nesting sites through predation or forestry activities and to poaching. The specific location of wood turtle populations on the Algoma Forest is confidential information in order to minimize human contact. Clergue works closely with the Ministry of Natural Resources to develop and implement forest management practices that minimizes the effect of forest operations on turtle populations. Clergue has an active educational program to inform forest workers of the importance of avoiding wood turtles and other wildlife on forest access roads, on avoiding potential nesting sites and not removing turtles from their native habitat.</p> <p>Operational prescriptions to direct forestry activities within the vicinity of wood turtle habitat are being developed cooperatively between the Ministry of Natural Resources and Clergue Forest Management Inc. Area of Concern (AOC) prescriptions are being developed to protect habitat and populations. The AOC prescription contains the following elements:</p> <ul style="list-style-type: none"> <li>○ No forestry activities may take place within 500 metres of known nesting sites.</li> <li>○ No water crossings within 200 metres of known hibernacula sites.</li> <li>○ For watercourses that are classified as high potential to support wood turtle populations, there is a 6000 metre zone where forestry activities are generally not permitted from May 1 to September 30 without approval from the Ministry of Natural Resources. Normal grading of existing roads may occur but no major road resurfacing, brushing or other upgrades may take place. On existing roads within the 6000 metre zone, traffic is permitted but actions such as reduced speed signs and forest worker awareness training must be under taken to minimize adverse effects.</li> </ul> <p>This turtle over-winters in hibernacula and, unusual for turtles, the females may nest in communal nest sites, where several females from a considerable distance may lay their eggs. Preferred habitat is lowland hardwood forests and open wet meadows associated with moderate to fast current streams and rivers with sand or gravel substrates. (Smith 2002). <b>Nest sites, hibernacula and areas adjacent to these sites are designated HCV.</b></p>
<p>King Rail <i>Rallus elegans</i></p>	<p>The King Rail is an endangered bird with just 25 to 50 known pairs remaining in Canada. This bird, the largest species of North American rail, is dependent throughout its life cycle on marshes and shrubby swamps. The decline of the population is attributed largely to loss and degradation of essential wetland habitat.</p> <p><b>King Rail is considered to be a Possible HCV.</b></p>

According to the COSEWIC and SARO lists there are currently 6 species classified as threatened on the Algoma Forest: Peregrine Falcon, Woodland Caribou, Deep Water Sculpin, Blanding's Turtle, Flooded Jellyskin, Lake Sturgeon and Least Bittern and (see Table 2).

Peregrine Falcon, which are recovering from decades of pesticide use, are increasing in population as a result of recent efforts to reintroduce this species. The nest sites for Peregrine Falcon have been designated as HCVF on the Algoma Forest and specific operational prescriptions have been developed to protect known or newly discovered nesting sites. The most notable species is woodland caribou has declined in Canada for reasons that are not fully understood, but involve hunting, habitat loss, and forest operations. **The nest sites of Peregrine Falcon are designated as HCV.**

At this time no Woodland Caribou regularly inhabit the Algoma Forest, although adjacent populations in areas just west of the forest in Pukasaw National Park could come into the Algoma Forest area. The last known sighting of Woodland Caribou occurred in the mid 1990's. The habitat for these animals is usually considered older forests with lichens and associated plants used for food. When these animals occupy an area they are often considered representative of the older forest habitat type, and are seen as sensitive to forestry operations. **Potential habitat for Woodland Caribou is designated to be HCV.** Figure 2 illustrates the general area that Woodland Caribou may occupy if they return were to the Algoma Forest.

## **Map of potential caribou habitat goes on this page**

Figure 2.

Deep Water Sculpin are also classified as threatened. These fish, however, occur in the deep waters of Lake Superior and therefore there is no threat to this species from forestry activities. **As a result, Deep Water Sculpin are not considered to be an HCV.**

Blanding's Turtle is classified as threatened. One occurrence of Blanding Turtle has been reported on the Algoma Forest. **Blanding's Turtle nest sites, hibernacula and areas adjacent to these sites are designated as a Possible HCV where it occurs.**

Flooded Jellyskin is classified as threatened. Historically, this species was found in the Wawa area. The species currently resides in only 3 sites in Ottawa area. **Due to its past occurrence, Flooded Jellyskin is designated as a Possible HCV where it occurs.**

Lake Sturgeon is ranked as threatened on COSEWIC and SARO. This species occurs in larger water bodies in which forest operations have no influence. Application of appropriate fisheries reserves and adherence to crossing guidelines ensures the protection of critical fish habitat. Given the stability of this species and the low risk to spawning sites, the species **is not considered to be an HCV on the Algoma Forest.**

Least Bittern is classified as threatened. There is some evidence that breeding habitat is possible on the Algoma Forest. **As a result, Least Bittern is designated as a Possible HCV where it occurs.**

Table 2 --Species classified as threatened on the Algoma Forest

Species	Background for HCV decision
Peregrine Falcon <i>Falco peregrinus anatum</i>  COSEWIC (SC) SARO (TH)	Peregrine falcon populations in Ontario are increasing following reduction in pesticide use and national programs to reintroduce birds to their historic range. (McCracken and Heagy 2004) These falcons nest in the Algoma Forest, at 3 sites in 2003, in classic nesting sites, i.e. high cliffs near water. (Ratcliff 2003) The sites are identified by both Clergue staff and the Ministry of Natural Resources. Table FMP 17 in the Forest Management Plan provides operational prescriptions for forestry on or near these areas. The nest sites are monitored by the Ministry of Natural Resources, and populations are monitored by several organizations including Bird Studies Canada. (McCracken and Heagy 2004)  <b>The nest sites are designated HCV.</b> These nest sites are not on a map because it is necessary to keep the actual sites confidential to avoid harassment of the birds.
Woodland Caribou <i>Rangifer tarandrus</i>	There are no populations of woodland caribou on the Algoma forest at this time; however, populations of these animals are extant just west and north of the Forest. They may occupy western and northern portions of the Algoma Forest in future. Because these animals are often considered representative of the older boreal forest type, they are considered representative of that forest type. (Schaefer and William O. Pruitt Jr. 1991).  <b>Potential habitat for these animals is considered HCV.</b> See Map 2, Figure 2
Deep Water Sculpin <i>Myoxocephalus thompsoni</i>	Although these fish are considered threatened, they occur in the deep waters of Lake Superior, and because there is no threat from forestry. <b>Deep Water Sculpin are not considered to be HCV.</b>
Blanding's Turtle <i>Emydoidea blandingii</i>	The Great Lakes/St. Lawrence population of the Blanding's Turtle is located throughout southern and south-central Ontario as far northwest as the Chippewa River in Algoma.  <b>The nest sites, hibernacula and areas adjacent to these sites are designated as Possible HCV.</b>
Flooded Jellyskin <i>Leptogium rivulare</i>	The fate of the populations at the historic sites (i.e., the sites at Wawa and Lake Temagami) from which the old specimens were gathered is unknown. The species currently resides at only 3 sites in southern Ontario (near Ottawa). <b>Flooded Jellyskin is considered to be a Possible HCV.</b>
Lake Sturgeon <i>Acipenser fulvescens</i>	Long lived fish, inhabits water bodies throughout the area. The species occurs in large water bodies which are protected by fisheries & water quality AOCs.  <b>Lake Sturgeon is not considered to be HCV.</b>
Least Bittern <i>Leptogium rivulare</i>	There is some unconfirmed evidence that Least Bittern has breeding habitat on the Algoma Forest.  <b>Least Bittern is considered to be a Possible HCV.</b>

There are also a number of species that occur on the Algoma Forest that are categorized in COSEWIC and/or SARO as Special Concern (SC). As shown in Table 3, these species are Red-shouldered Hawk, Bald Eagle, Black Tern, Northern Brook Lamprey, Golden Winged Warbler, Monarch Butterfly and West Virginia White. These species are listed as SC at a

national/regional scale as they have been impacted by a wide variety of factors involving loss of habitat, migration mortality and other factors not always understood.

Red-shouldered Hawk has been reclassified as Not at Risk in both COSEWIC and SARO (under the new Act). In spite of this change in status and the increasing population of Red-shouldered hawk in Northern Ontario the nest sites and zones around nests as identified in forest management planning, **the nest sites for red-shouldered hawk are still designated as HCV** as this species is at the northern limit of its range.

Bald Eagle has been reclassified as Not at Risk (NAR) in COSEWIC and is recognized as a special concern (SC) species in SARO for the area north of the French River and Mattawa River. Declines noticed in the past, have been reversed and the population in Ontario is now increasing. The nest sites and zones around nests as identified in forest management planning **are designated as HCV**.

Black Tern and Yellow Rail, which are listed as special concern on both the COSWEIC and SARO lists, have been sighted on the Algoma Forest. These two birds inhabit extensive wetland areas (non-productive/muskeg forest). There is a known nesting area for Black Tern on St. Joseph's Island. As a result, the habitat of the two species **is designated as HCV**.

Northern Brook Lamprey is identified as a special concern species on both the COSWEIC and SARO lists. This fish, however, is found in Lake Superior and therefore there is no threat to this species from forestry activities. As a result, this species **is not considered to be an HCV**.

Golden Winged Warbler has been identified as a special concern species on the SARO list and threatened on the COSEWIC list. This species is found in early successional, shrubby habitat. The main problem with this species is genetic swamping (hybridization) by blue-winged warblers. This species **is not considered to be an HCV**.

Monarch Butterfly has also been identified as a special concern species on both the COSWEIC and SARO lists. This species is found in open areas where patches of milkweed occur. This species **is not considered to be an HCV**.

West Virginia White Monarch Butterfly has also been identified as a special concern species on the SARO list. This species is found in moist deciduous woodlands where the toothwart plant is found. This species **is considered to be a Possible HCV**.

Appendix IV contains a map of all known of HCVs on the forest including some endangered species where the location is considered free from possible harassment or collection of eggs or animals.

Table 3 Species of Special Concern on the Algoma Forest (AF).

Species / Status	Summary of HCV Attributes	HCV Threshold / Decision
	<ol style="list-style-type: none"> <li>1) Habitat Description</li> <li>2) AF Occurrence</li> <li>3) Status info</li> <li>4) Risk from Operation</li> <li>5) Current Management</li> </ol>	<ol style="list-style-type: none"> <li>1) Stable &amp; sustainable</li> <li>2) Risk</li> <li>3) Quantifiable threshold</li> </ol>
Red-shouldered Hawk <i>Buteo lineatus</i>  COSEWIC (NAR) SARO (NAR)	<ol style="list-style-type: none"> <li>1) Upland species with particular site characteristics. Nests in hardwood forests, often in the upper crotch of a white or yellow birch tree.(DeGraaf 1987; DeGraaf 1992)</li> <li>2) Occurs in the more southern parts of the AF</li> <li>3) Have declined throughout their range, however, the most recent evidence shows the population in Ontario is increasing (McCracken and Heagy 2004).</li> <li>4) Directly impacted by operations.</li> <li>5) Prescription requires large reserve as per OMNR hawk guide</li> </ol>	<ol style="list-style-type: none"> <li>1) Appears stable in AF</li> <li>2) Risk to nest sites</li> <li>3) The Atlas of Breeding Birds of Ontario shows a few nests in the southern parts of the forest.</li> </ol> <p><b>The nest sites are designated as HCV.</b></p>
Bald Eagle <i>Haliaeetus leucocephalus</i>	<ol style="list-style-type: none"> <li>1) Mature forested areas with scattered super canopy trees around lake and river shorelines (Szuba and Naylor 1998).</li> </ol>	<ol style="list-style-type: none"> <li>1) Common &amp; Appears stable in AF</li> <li>2) Risk to nest sites minimal</li> <li>3) 12-14 known sites on AF</li> </ol>

COSEWIC (NAR) SARO (SC)	<p>2) There are 12 to 14 known bald eagle nests on the Algoma Forest. Nests on cliffs.</p> <p>3) Numerous in some parts of Ontario, and their status has been revised to Special Concern in Ontario and Not at Risk under COSEWIC. While there is a concern about the global populations, the population in Ontario is increasing (McCracken and Heagy 2004).</p> <p>4) Nests on cliffs and is at low risk from forest management.</p> <p>5) Operational prescriptions for forestry on or near these areas. The nest sites are monitored by the Ministry of Natural Resources, and populations are monitored by several organizations including Bird Studies Canada.</p>	<b>The nest sites are designated as HCV.</b>
Black tern <i>Chlidonias niger</i> , Yellow Rail <i>Coturnicops noveboracensis</i>  COSEWIC (SC) SARO (SC)	<p>1) Black tern nest and forage in marshes and yellow rails occupy a variety of bogs and marsh habitats.</p> <p>2) There is 1 known nesting site of Black Tern on St. Joseph's Island</p> <p>3) Occurs in the more southern part of the AF</p> <p>4) Not directly impacted by operations.</p> <p>5) No forestry prescriptions are needed.</p>	<p>1) Low occurrence - Both of these bird species inhabit wetland areas that are not managed as forests.</p> <p>2) No direct risk from forestry</p> <p>3) One known site on AF</p> <p>Neither of these birds are at risk from forest operations and although <b>their habitat is considered HCV.</b></p>
Northern Brook Lamprey <i>Ichthyomyzon fossor</i>  COSEWIC (SC) SARO (SC)	<p>1) Aquatic (lake Superior)</p> <p>2) Uncommon in AF</p> <p>3) Species are stable</p> <p>4) Not directly impacted by operations</p> <p>5) Prescriptions based on fish guide</p>	<p>1) Appears stable in AF</p> <p>2) No direct risk from forestry</p> <p>3) Found in Lake Superior. With only one record for this fish in the area of the Algoma Forest, there is no risk from forestry and therefore this species is <b>not considered HCV.</b></p>
Golden Winged Warbler <i>Vermivore chrysoptera</i>  COSEWIC (SC) SARO (SC)	<p>1) Disturbed areas – early successional forests</p> <p>2) Uncommon in AF</p> <p>3) Decrease in early successional habitat, hybridization with Blue-winged Warbler and nest are factors that cause it to be considered a species of Special Concern</p> <p>4) Not impacted by forest operations</p> <p>5) N/A</p>	<p>1) Appears stable in AF</p> <p>2) No risk</p> <p>3) Found in disturbed areas</p> <p><b>This species is not considered HCV.</b></p>
Monarch Butterfly <i>Danaus plexippus</i>  COSEWIC (SC) SARO (SC)	<p>1) Disturbed areas – patches of milkweed</p> <p>2) Open areas where milkweed is a common species</p> <p>3) Complex ecology and large range for this species mean that the factors that cause it to be considered a species of Special Concern</p> <p>4) Not impacted by forest operations</p> <p>5) N/A</p>	<p>1) Appears stable in AF</p> <p>2) No risk</p> <p>3) Found in disturbed areas</p> <p><b>This species is not considered HCV.</b></p>
West Virginia White <i>Pieris virginensis</i>  COSEWIC (Not Listed) SARO (SC)	<p>1) Moist deciduous wooded areas where toothwart is found</p> <p>2) Location to be determined – St. Joseph Island</p> <p>3) Unknown</p> <p>4) Impacted by forest fragmentation, garlic mustard, and deer.</p> <p>5) N/A</p>	<p>1) Occurs on St. Joseph's Island</p> <p><b>This species is considered as a Possible HCV.</b></p>

Table 4 below summarizes species listed in the NHIC data base that have been observed on the Algoma Forest and are considered to be regionally extremely rare (S1), regionally very rare (S2) or regionally rare to uncommon (S3) but secure (G5) or apparently secure (G4) or vulnerable (G3) globally. The HCV status for these species was determined using its relative rarity based its global and regional rankings under NHIC, its preferred habitat, potential impacts from forestry operations and number of confirmed sightings based NHIC and the plant data base at [www.northernontarioflora.ca](http://www.northernontarioflora.ca) (NOF). See Appendix IV.

Table 4 NHIC listing of species ranked G3 or greater.

Common Name <i>Scientific Name</i>	Habitat	Grank	Srank	Number of Reports In Algoma		HCV Rationale & Designation
<b>Lichens, Liverworts &amp; Mosses</b>				NHIC		
A Lichen <i>Anaptychia setifera</i>	No literature.	G3G5	S3	5		Given the G5/S3 rating and the number of reports on the AF this species is designated as a <b>Possible HCV</b> where it occurs.
A Liverwort <i>Dipolphyllum taxifolium</i>	No literature.	G5	S1S2	85		Given the G5 rating and the number of reports on the AF this species is designated as a <b>Possible HCV</b> where it occurs.
A Moss <i>Tetraploin mnioides</i>	No literature.	G4	S2	34		Given the G4 rating and the number of reports on the AF this species is designated as a <b>Possible HCV</b> where it occurs.
<b>Plants</b>				NHIC	NOF	
American Beachgrass <i>Ammophila breviligulata</i>	Sandy areas near water	G5	S3	3	3	Given the G5/S3 rating and the number of reports on the AF this species is designated as a <b>Possible HCV</b> where it occurs.
Blue Bilberry <i>Vaccinium ovalifolium</i>	Moist, well-drained soil, within forested areas near Lake Superior	G5	S2	3	3	Given the G5/S2 rating and the number of reports on the AF this species is designated as an <b>HCV</b> where it occurs.
Blue Wild-rye <i>Elymus glaucus</i>	More abundant west of Ontario perennial grass, adapted to a wide range of soil and moisture	G5	S1	7	0	Given the G5/S1 rating and the number of reports on the AF this species is designated as an <b>HCV</b> where it occurs.
Boreal Bedstraw <i>Galium kamtschaticum</i>	Endangered species in some U.S. states	G5	S2	70	1	Given the G5/S2 rating and the number of reports on the AF this species is designated as an <b>HCV</b> where it occurs.
Braun's Holly Fern <i>Polystichum braunii</i>	Perennial fern, grows in rocky areas	G5	S3	362	4	Given the G5/S2 rating and the number of reports on the AF this species is designated as an <b>HCV</b> where it occurs.
Flat-stemmed Danthonia <i>Danthonia compressa</i>	Perennial grass, grows in forest openings, open woods	G5	S3	0	2	Given the 2 recent sightings under NOF this is designated as an <b>HCV</b> where it occurs.
Giant Pinedrops <i>Pterospora andromedea</i>	Perennial forb, grows in rocky woods, endangered in some U.S. States	G5	S2	1	0	Given its rating and low number of reports this species is designated as <b>not HCV</b> .
Greene's Rush <i>Juncus greenei</i>	Often grows on sand barrens, endangered in some States	G5	S3	99	0	Given its rating and the geographical isolation of reported occurrences this species is designated as <b>not HCV</b> .
Haircap <i>Pogonatum dentatum</i>	Disturbed soil.	G3G5	S1	52	0	Given its rating and number of reports this species is designated as a <b>Possible HCV</b> where it occurs
Large-leafed Sandwort <i>Moehringia macrophylla</i>	Moist, shady forests.	G4	S2	117	0	Given its rating and number of reports this species is designated as a <b>Possible HCV</b> where it occurs
Laurentian Bladder Fern <i>Cystopteris laurentiana</i>	Grows in rich moist woods	G3	S2S3	1	0	Given its rating and low number of reports this species is designated as <b>not HCV</b> .
Pale Moonwort <i>Botrychium pallidum</i>	Small and inconspicuous, not well known	G3	S1	1	0	Given the low number of reports and lack of knowledge regarding this species is designated as <b>not HCV</b> .
Rattlesnake Hawkweed <i>Hieracium venosum</i>	Dry woods and thickets	G5	S2	1	1	Given the G5/S2 rating and number of reports this is designated as an <b>HCV</b> where it occurs.
Roundleaf Groundsel <i>Packera obovata</i>	No Literature.	G5	S3	158	1	Given the G5/S3 rating and recent sightings under NOF this is designated as a <b>Possible HCV</b> where it occurs.
Sand Reed Grass <i>Calamoviifa longifolia var.</i>	Grows in sandy areas	G5T3T5	S3	1	0	Given the indeterminate status globally and low number of reports is designated as <b>not HCV</b> .
Sand-heather <i>Hudsonia tomentosa</i>	Open sand beaches	G5	S2S3	0	1	Given the low number of sightings under NOF this is designated as a <b>not HCV</b> .



Common Name <i>Scientific Name</i>	Habitat	Grank	Srank	Number of Reports In Algoma	HCV Rationale & Designation	Common Name <i>Scientific Name</i>
Western Moonwort <i>Botrychium hesperium</i>	Early successional habitats, sand dunes, in some jack pine forests	G3	S1	172	0	Given the G3/S1 rating and the number of reports on the AF this species is designated as a <b>HCV</b> where it occurs.
Wiegand's Sedge <i>Carex wiegandii</i>	Alder thickets	G3	S1	2	0	Given the G3/S1 rating and the number of reports on the AF this species is designated as a <b>HCV</b> where it occurs.
<b>Insects</b>						
Beach-dune Tiger Beetle <i>Cicindela hirticollis</i>	Beetle family, dune areas near water	G5	S2?	2		This species occurs in dune (beach) areas near water and therefore is designated as <b>not HCV</b> .
Brush-tipped Emerald <i>Somatochlora walshii</i>	Small, clear, very slow streams running through bogs and fens	G5	S3	1		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Delta-spotted Spiketail <i>Cordulegaster diastatops</i>	Sunny seepages and small streams, usually springs runs	G5	S3	178		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Horned Clubtail <i>Arigomphus cornutus</i>	Dragonfly that occurs along larger streams or larger lakes	G4	S3	17		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Kennedy's Emerald <i>Somatochlora kennedyi</i>	Slow open streams in bogs or marshes	G5	S3	1		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Zebra Clubtail <i>Stylogomphus scudderi</i>	Dragonfly that occurs along larger streams or larger lakes	G4	S3	1		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Least Clubtail <i>Stylogomphus albistylus</i>	Dragonfly that occurs along larger streams or larger lakes	G5	S3	88		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Moustached Clubtail <i>Gomphus adelphus</i>	Dragonfly that occurs along larger streams or larger lakes	G4	S3	5		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Ocellated Darner <i>Boyeria grafiana</i>	A large dragonfly occurs near smaller ponds and swamps	G5	S3	3		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Ocellated Emerald <i>Somatochlora minor</i>	Clear, quietly flowing, partly sunny forest streams without vegetation	G5	S3	3		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Riffle Snaketail <i>Ophiogomphus carolus</i>	Fast, warm, clear streams with a mix of sandy and rocky bottoms	G5	S2	2		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Ski-tailed Emerald <i>Somatochlora elongata</i>	Slow to moderately slow flowing streams in forest areas	G5	S2S3	2		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .
Williamson's Emerald <i>Somatochlora williamsoni</i>	Slow streams and lakes, usually with clear water	G5	S3	1		The species occurs near water which is protected by fisheries & water quality AOCs and therefore is <b>not HCV</b> .

#### Mammals

Small-footed Bat <i>Myotis leibii</i>	Small slow bat, open areas near forested areas	G3	S2S3	2		Given its Global/Regional ranking & number of sightings this species is designated as a <b>Possible HCV</b> where it occurs.
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Thinly forested areas around buildings	G4	S3?	27		Given its G4 rating, Indeterminate Regional ranking & number of sightings this species is designated as a <b>Possible HCV</b> where it occurs.
Eastern Pipistrelle <i>Pipistrellus subflavus</i>	Small, slow moving bat, some migrate some stay north in hibernaculum's	G5	S3?	1		Given the indeterminate status and low number of sightings this species is designated as <b>not HCV</b> .

## **Question 2) Does the forest contain a concentration of species having a restricted geographical range?**

### **Assessment Methodology:**

The following information was reviewed in order to determine if the Algoma Forest contains a globally, nationally or regionally significant concentration of endemic species.

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

Conservation International does not show any biodiversity “hotspots” in Ontario and Birdlife International does not identify any Endemic Bird Areas in Canada.

Ricketts et al. (1999) in their publication *Terrestrial Ecoregions of North America: a conservation assessment*, Island Press, Washington, D.C., indicate that the Algoma Forest is in the Eastern Forest/Boreal Transition ecoregion and points out that this is a region of low endemic species. The entire ecoregion covers several million square kilometers and has a center of biodiversity and endemism in the Appalachian mountains of the United States. The only endemic species that may occur in Algoma are some snails, although this is not known with certainty. The northern part of the Eastern Forest /Boreal Transition (Region 8) suggests there may be 1-22 species of snails that could be endemic to this area. These small, slow moving animals sometimes are restricted to very local areas and some endemism has developed as a result. Early in 2004 COSEWIC released a request for proposals to develop a list of land snails that may require protection in Canada. This work may develop and provide some evidence for land snail conservation; however, as there is no evidence of endemic snails in the Algoma Forest, **they are not considered either HCV or possibly HCV at this time.**

## **Question 3) Does the forest include regionally significant seasonal concentrations of species?**

This question focuses on sites in the forest that are of key importance to particular species. The purpose is to identify areas that have specific value to selected species of wildlife for some portion of the year. Wildlife often use specific breeding sites or areas to spend a specific harsh season such as winter. Other times areas that are used for feeding or reproduction can be important to the overall health of the population or ecosystem.

### **Assessment Methodology:**

The following data sets were examined to answer this question:

- Bird Studies Canada
- Ducks Unlimited Canada
- Ministry of Natural Resources Values Information System database (NRVIS)
- 2005-2025 AF Forest Management Plan
- Birdlife International
- Conservation International

Table 5 summarizes those feature species that have critical habitat on the Algoma Forest including Moose, White-Tailed Deer, American Marten and common raptors. MNR refers to moose, deer and marten as featured species.

Moose are an abundant species on the Algoma forest. The primary mortality factor is hunting while habitat, in general, is excellent for these animals. Moose aquatic feeding areas are specific locations on the forest that are important to moose in spring when aquatic roots, etc. may be available earlier than upland vegetation. They are identified by MNR and FMP Area of Concern prescriptions are used to maintain the integrity of these habitat elements. **Moose aquatic feeding areas are designated HCV areas.**

White-tailed are a common mammal on the Algoma Forest, especially on the southern portions of the forest. Wintering areas are critical to survival of this species, although virtually all of the deer wintering areas are on private land. Deer wintering areas are mapped fairly precisely by MNR. **These wintering areas are designated as HCV**, but Clergue does not have responsibility for managing these areas on the Algoma Forest. In the few isolated areas that are Crown land, and Clergue does forest management, the FMP contains operational guidelines for managing these areas.

American marten have a preference for mature conifer areas which are designated in the Forest Management Plan and the Ministry is required to maintain older conifer on the Algoma Forest. Forest managers may harvest these areas, as long as other areas are available for these mammals to occupy. **Marten core areas are not designated HCV.**

Several raptors nest on the Algoma Forest including barred owl, great horned owl, goshawk, sharp shinned hawk, red-tailed hawk, broad winged hawk and turkey vulture. All of these species are healthy and their habitat is not under threat, (McCracken and Heagy 2004). Due to their sensitivity with respect to noise and interaction with humans, goshawk and sharp shinned hawk **nest sites are designated HCV.**

Table 5 Critical wildlife habitat areas for featured species (see Figure 3 and Appendix IV)

Value / General Description / Source	Summary of HCV Attributes	HCV Threshold / Decision
	<ol style="list-style-type: none"> <li>1) Habitat Description</li> <li>2) Occurrence</li> <li>3) Status info</li> <li>4) Risk from Operation</li> <li>5) Current Management</li> </ol>	<ol style="list-style-type: none"> <li>1) Stable &amp; sustainable</li> <li>2) Risk</li> <li>3) Quantifiable threshold</li> </ol>
Moose Aquatic Feeding Areas  <i>Featured Species / MNR District</i>	<ol style="list-style-type: none"> <li>1) Aquatic feeding areas surrounded by woodlands</li> <li>2) Very common, good distribution info</li> <li>3) Moose are hunted; Economically valuable</li> <li>4) Logging impacts possible if cutting too heavy to feeding area</li> <li>5) Detailed prescription exists</li> </ol>	<ol style="list-style-type: none"> <li>1) Stable &amp; distribution known</li> <li>2) Appropriate harvest with selection protects value</li> <li>3) Moose are an important game species; benefit of precaution</li> </ol> <p><b>Designated as HCV</b></p>
White-Tailed Deer Wintering Areas  <i>Featured Species / MNR District</i>	<ol style="list-style-type: none"> <li>1) High conifer component (He, Ce)</li> <li>2) Very common, good distribution info</li> <li>3) Deer are hunted; Economically valuable</li> <li>4) Logging impacts possible if conifer diminished</li> <li>5) Detailed prescription exists, monitoring for large ones</li> </ol>	<ol style="list-style-type: none"> <li>1) Stable or increasing, wintering areas are key</li> <li>2) Inappropriate harvesting could impair wintering areas</li> <li>3) Deer are an important game species; benefit of precaution</li> </ol> <p><b>Designated as HCV</b></p>
American Marten  <i>Featured Species / MNR District</i>	<ol style="list-style-type: none"> <li>1) Conifer component required &gt;80 years</li> <li>2) Common species on AF, marten core habitat areas mapped and modeled</li> <li>3) Trapping important activity, but population stable throughout its range</li> <li>4) Logging impacts f conifer diminished significantly</li> <li>5) Significant impact if widespread conifer reduction. MNR uses Marten Guidelines, featured species, fine filter species.</li> </ol>	<ol style="list-style-type: none"> <li>1) Extensive occurrence; modeled in FMP</li> <li>2) Risk if long term decline in old conifer component</li> <li>3) Abundant species, no current conservation issues.</li> </ol> <p><b>Not HCV</b></p>

**Question 4) Does the forest support regionally significant species (e.g. species declining regionally, culturally important species)?**

**Assessment Methodology:**

Species of concern that are listed nationally or provincially have already been assessed and discussed under Question 1. This assessment considers both provincially featured species and potential regional focal species. Both of these elements were assessed on current literature and local knowledge in order to identify any that may be experiencing regional or local declines.

Species that are in decline were reviewed in Question 1. Determining whether some of those species have stable populations, at least regionally is difficult, and more appropriate for an organization with a broader view than just the Algoma Forest.

Wildlife species (Table 6, Figure 3) that are representative of habitat types naturally occurring in the Algoma Forest include: moose, white-tailed deer, black bear, American marten, snowshoe hare, northern flying squirrel, deer mouse, broad-winged hawk, barred owl, ruffed grouse, pileated woodpecker, least flycatcher, ruby-crowned kinglet, white-throated sparrow, red-backed salamander, and blue-spotted salamander. Habitat for these species is tracked in the forest management plan. None of these species are in decline and the habitat for them is abundant. **Therefore habitat for these species is not considered HCV.**

Table 6 Habitat for regionally significant species.

Species	
Moose	Moose populations are healthy on the Algoma Forest and habitat for these animals is widely available.
White-tailed deer	The Algoma Forest represents the northern limit of white-tailed deer and these mammals are abundant in the southern portions of the area. They are abundant, the habitat for deer is abundant and the animals are not declining.
Black bear	Black bears are common on the forest and their habitat is excellent.
American marten	American marten habitat is abundant and the population of these animals is healthy.
Northern flying squirrel	This squirrel is abundant and common on the Algoma Forest.
Broad-winged hawk	Broad-winged hawk habitat is widely available and this raptor is abundant on the Forest.
Pileated woodpecker	This provincially featured species is common on the forest and habitat is available to support these populations.
Blue-spotted salamander	Habitat for this species is widely available on the Algoma Forest.

This table is based on information from the Ministry of Natural Resources records and from the Ontario Breeding bird atlas.

Figure 3 Critical wildlife areas map goes here

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

### Assessment Methodology:

The following data sets were examined to answer this question:

- 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 the edge of the natural ranges

The purpose of this question is to identify species that are at the edge of their range, and thus may be vulnerable to depletions because the environmental conditions are marginal and some risk may be present that would reduce the over all range, and thus the population. As well outlier populations may be important to the species because they may maintain a reservoir of genetic material that is important as a buffer against future changes in environmental conditions.

The Great Lakes St. Lawrence forest transition to boreal forest occurs within the Algoma Forest. This means that many of species of plants and animals are either at the northern or southern limit of their range. Most of these species are secure according to COSEWIC, NHIC. The Algoma forest does not contain any species that are vulnerable because they are at the edge of their range. All of the tree species, except hemlock, that occur here are near the edge of their natural range have healthy populations. Hemlock has decreased in the Algoma Forest because of over-exploration earlier this century, and is designated HCV (Table 7 & Figure 4). The bird species listed are all healthy, and no evidence of serious decline is present (McCracken and Heagy).

Table 7 A listing of species at the edge of their natural range in the Algoma Forest

Category	Species	General population Status	HCV status
Trees	Ash, white <i>Fraxinus Americana</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest,
	Basswood <i>Tilia Americana</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest, (personal communication).
	Beech, American <i>Fagus Grandifolia</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Hemlock <i>Tsuga Canadensis</i>	Much reduced populations in AF	<b>Designated as HCV</b> because it has declined substantially in AF, and is a rare ecosystem type
	Ironwood <i>Ostrya Virginiana</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Oak, bur <i>Quercus macrocarpa</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Oak, red <i>Quercus rubra</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest

Birds	Cuckoo, yellow-billed <i>Coccyzus americanus</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Heron, green-backed <i>Butorides striatus</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Meadowlark, Eastern <i>Sturnella magna</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Upland sandpiper <i>Bartramia longicauda</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Warbler, Connecticut <i>Oporornis agilis</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest
	Woodpecker, three-toed <i>Picoides tridactylus</i>	Healthy	Not HCV, occurs in southern part of the Algoma Forest



Figure 4: Range of Eastern Hemlock, designated HCV in the Algoma Forest

**Question 6) Does the forest lie within, adjacent to, or contain a conservation area: A) designated by an international authority, B) legally designated or proposed by relevant federal/provincial/territorial legislative body or C) identified in regional land use plans or conservation plans.**

**Assessment Methodology:**

The following data sets were examined to answer this question:

- UNESCO World Heritage Sites
- RAMSAR sites
- International Biological Program sites
- Canadian Conservation Areas Database
- Areas under deferral pending completion of land use planning and/or completion of protected areas system
- Ontario Crown Land Atlas (MNR)

Part a) of this question refers to UNESCO World Heritage Sites, RAMSAR sites, or International Biological Program sites. There are none of these on the Algoma Forest. As a result, this attribute **is not considered to be an HCV.**

Under Part b) there are a number of protected areas in the Algoma Forest that are either regulated, or are officially designated to be regulated as protected areas. This is part of the Living Legacy process (OMNR 1999). All of the parks and other protected areas in the Algoma Forest are enshrined in legislation. No timber harvest is permitted in these areas and thus there is no risk from forestry. Each protected area in Table 8 is a high conservation value forest, and for the purpose of this paper are **identified as HCV**. All responsibility for management and monitoring of these areas lies with the Ontario Ministry of Natural Resources.

Part c) is examined to ensure that regionally significant forests are evaluated for consistency with the conservation intent. The completion of conservation plans implies high conservation value for the associated land. Any core, corridor or linkage zones identified in a conservation plan should be evaluated for HCV designation. Examination of the regional and district land use planning documents did not revealed any known conservation areas of this nature. Based on this assessment, it has been concluded that this **HCV attribute does not exist** on the AF.

Table 8 A listing of Provincial Parks, Conservation Reserves, Forest Reserves and Enhanced Management Areas in the Algoma Forest. Appendix IV

Conservation Reserves	Management Strategy
C1517 South Michipicoten River Superior Shoreline 2,923 ha	Mixed forest links two provincial parks. A statement of conservation interest governs management.
C1519 Lake Superior Highlands CR 46,734 ha	Critical habitat for caribou, follows a waterline to Lake Superior, facilitates gene flow. A statement of conservation interest governs management.
C1520 Magpie River Terraces CR	Distinct terraces represent dropping lake levels in the Superior basin from 9,500 years before present.
C1526 North Montreal R. Moraine 361 ha	Ground moraine deposits which support forests of poplar, yellow birch and white pine.
C1535 Windermere Goldie Lake 17,864 ha	Remote recreation area, older mixed forest with poplar and jack pine on exposed bedrock.
C245 Jollineau 780 ha	An uncommon combination of vegetation and landforms, containing old growth white pine and maple, plus other stands of cedar, white spruce and yellow birch.
C246 Echo River Hardwoods CR 10,541 ha	Best example in site district 4E-3 of extensive sugar maple dominated forests, headwaters of several tributaries of the Echo River
C248 La Verendrye/Ogidaki 791 ha	Old deciduous forest growing on top of hilly moraine deposits, yellow birch, sugar and red maple and white and black spruce.
C258 Thessalon River Delta/Rock Lake Red Oak CR 240 ha	River delta with open bog and fen habitats; includes rare plants and combinations of landforms and vegetation and landforms unique in site district 5E-1.
C260 Rose Lake Dune Peatland Complex CR 202 ha	Dune habitat, poorly drained, supporting stands of black spruce surrounded by lichens, and classic bog habitat, one of few examples in site region 5E-1.
C262 Stuart Lake Wetland CR 635 ha	Best example of sugar maple, balsam fir, white birch, yellow birch and cedar growing on steep hills of glacial till and bedrock in site district 5E-1.
C263 Garden Lake Forest 291 ha	Old growth white pine and a four km stretch of riparian vegetation along the river that is also significant.
C281 Tilley Creek West 598 ha	Old sugar maple forests growing on hilly ground moraine deposits of sand and gravel.
C284 Wabos North 900 ha	Steep hill of moraine deposits mixed with flat pickets of sediments, red maple and ash forest over the valley bottoms, while uplands have sugar maple, yellow birch, white spruce.
C286 Wabos South 559 ha	Flat lacustrine deposits covered by red maple sugar maple and yellow birch.
C289 Searchmont South Forest CR 580 ha	Rugged bedrock landscape dominated by poplar.
C291 Goulais River Beach Ridges CR 1,008 ha	Ancient beach ridges and a modern river environment of exceptional quality, includes rich sedge meadows, cedar "savannah" bogs with black and white spruce, tamarack and ridge-fringe upland forests.
C294 O'Connor 891 ha	Old growth white pine, sugar maple and spruce on lacustrine deposits.
C298 Harmony Forest 1,008 ha	Lacustrine landform with hardwood forests that include old stands of sugar maple, yellow birch and red maple.
C307 Ile Parisienne CR 933 ha	Island habitat for several species of wildlife, Jacobsville Sandstone bedrock, small vegetative dunes, and postglacial beaches.
C1914 Ranger North 7008 ha	Largest identified area of old-growth white and red pine forest in north-eastern Ontario. This is also one of the oldest pine forests in Ontario with some pines older than 350 years.
C1763 Tikamaganda Lake 2957 ha	Stands of scattered old growth white pine with some trees older than 350 years.



Provincial Parks	
P273 Algoma Headwaters PP (Natural Environment Class)	Seven major forest types, pine is the dominate species, but cedar, maple spruce and fir are also present, some tourism activity in the Park.
P278 Pancake Bay PP (Recreation Class)	Part of Natural Heritage Coastal area, high outlooks over Lake Superior
P282 Batchawana River PP (Waterway Class)	Wide variety of features, including stream and river ecosystems, terraces from glacial lakes and rivers and shoreline wetlands.
P253 Goulais River PP (Waterway Class)	Sloping glacial outwash landforms support forest of balsam fir, white birch, black and white spruce and sugar maple and includes a prehistoric delta created at the outlet of a massive channel of glacial melt water.
P277 Aubinagong-Nushatogani Rivers PP (Waterway Class)	An 85 kilometre network of rivers, lakes connect to the Algoma Headwaters Provincial Park.
P292e Lake Superior Provincial Park, 160,810 ha	Natural environment park, contains rounded hills which are remnants of ancient mountain ranges, steep valleys and extensive vista plus a wide variety of Boreal wildlife.
P292 Lake Superior Additions	Contains "artic coastal" disjunct species along with more typical forest areas.
P1511 University river Complex	Several river complexes occur here as well as University River Terraces, habitat for woodland caribou.
Forest Reserves	
F1716 Lake Superior Highlands- 14,354 ha	Contains moderately broken bedrock with cut and burn mixed conifer forests, mixed deciduous forest and sparse forest, the area provides critical habitat for Caribou. HCV.
Enhanced Management Areas	
E280n Batchawana Bay-Carp Lake Raised Delta 869 ha	Forest management must be consistent with protection of earth science natural heritage values. HCV.
E283n Achigan Lake Area 2,524 ha	This Enhanced Management area was developed to protect old growth white pine and yellow birch, water quality, recreation and remote road access values. Old growth harvest has been deferred until 2023. HVC.
E290n Bellevue hanging Delta 158 ha	Forest management must be consistent with protection of earth science natural heritage values. HCV.



Assessment Methodology:

- Review of historic land use pattern, and scale

This question examines forest condition from the perspective of species composition in comparison to the original forest. The FSC Boreal Standard defines large, intact forest landscapes as unfragmented by permanent infrastructure and of a size to maintain viable populations of most species? If these landscapes are greater than 500,000 ha, they are globally significant, if greater than 200,000 ha. but less than 500,000 ha, they are nationally significant, and if greater than 50,000 ha but less than 200,000 ha they are regionally significant. The World Wildlife Fund, as part of Ricketts (1999) defines these large landscape forests as intact areas that represents relatively undisturbed areas with little logging or human settlement, where usually less than 10% of the area has been disturbed. Algoma Forest is located within the Eastern Forest/Boreal Transition zone, which, based on Ricketts (1999) has had a variety of disturbances that affect over 90% of the area within the last 100 years. Figure 6 illustrates the road network within the forest, and shows that all of the area is available by road networks.

While the Algoma Forest does not contain any forests that fall in this category, the ecosystems in the Algoma Forest are functioning such that most species that have occurred naturally will continue to persist for the foreseeable future. **This attribute is not designated as HCV.**

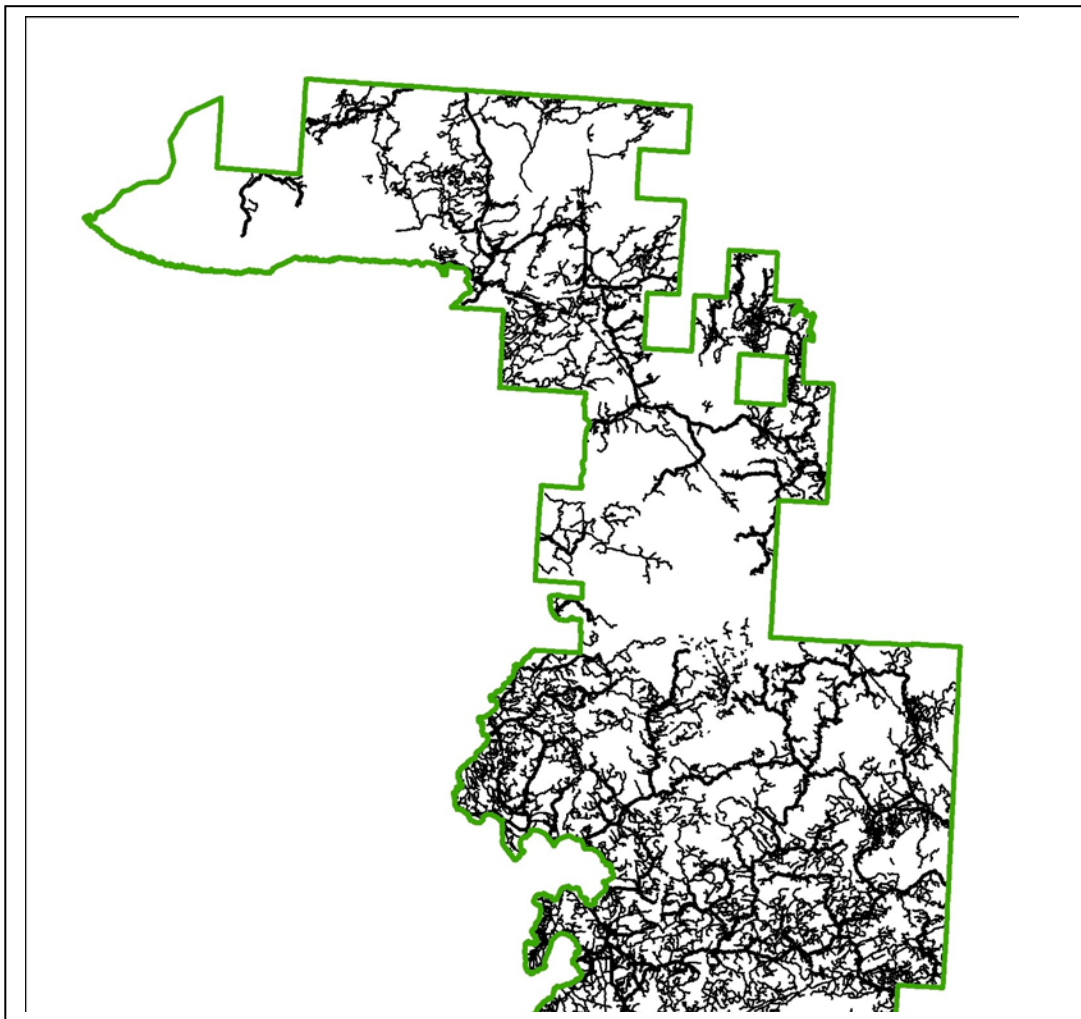


Figure 6 The Algoma Forest showing the road network through the area.

## **Question 8) Are large landscape level forests, (i.e. large unfragmented forests) rare or absent in the forest or ecoregion?**

### **Assessment Methodology:**

- WWF Eco-regional assessment
- Global Forest Watch Intactness Mapping
- Roads Layer for Algoma Forest
- Nature Serve
- Conservation International
- Ontario Living Legacy

Table FMP-4 of the Forest Management Plan for the Algoma Forest assesses forest fragmentation. Landscape pattern indices and forest diversity indices are calculated for the Forest at the beginning of the plan in order to establish a baseline for comparison. The degree of landscape “intactness” or remoteness was used as a major criterion in the identification and designation of parks, conservation reserves and enhanced management areas during the Ontario Living Legacy land use planning exercise.

Fragmentation is mainly 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. Virtually all of the Algoma forest has been harvested at least once since the early 1900s. In order to harvest that wood, roads have been built throughout the forest, and as a result there are no “intact” forests left in the area. The largest area left have been captured in Conservation Reserves such as the Ranger North Conservation Reserve where over 7,000 ha are protected.

WWF Global 200 Ecoregions at [www.panda.org](http://www.panda.org), Conservation International at [www.birdlife.net](http://www.birdlife.net) and NatureServe at [www.natureserve.org](http://www.natureserve.org) do not show any large landscape level forests in this forest area or in northern Ontario.

**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.

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

## **Question 9) Does the forest contain naturally rare ecosystem types?**

### **Assessment Methodology:**

- Nature Serve
- Natural Heritage Information Centre

Conservation International does not identify any biodiversity hotspots within Canada. The Nature Serve Ecological Associations database reveals a total of 91 rare communities or “associations” in Ontario. However only three naturally rare ecosystems occur on the Algoma forest, and are listed by the NHIC. Two of the communities listed in Table 9 are located near the waters of the Great Lakes, either on sandy dunes near the water, or rocky areas that are habitat for Arctic disjunct plants whose main populations are in the Arctic. The tamarack Organic Swamp community is not available for harvest and remains stable on the forest. These

communities are not at risk from forestry because forest operations cannot occur in the Great Lakes Heritage Coast, or in the tamarack swamp, however because they represent high conservation values, **they are designated HCV.**

In addition, a Picetum, located at 47°00' N and 84°25' W is part of an array of experimental spruce plantations established on a complete range of major climatic zones in which spruce occurs. A technical report is available in the Clergue office. This is an experimental site, where no forest harvest will occur, and is the responsibility of the Ontario Ministry of Natural Resources. **It is an HCV area.**

Table 9 A listing of rare plant communities on the Algoma Forest. Figure 7 and Appendix IV

Name of Community	Rank of Rareness	Designation
Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type	S3	<b>HCV</b>
American Dune Grass Beach Pea Sand Cherry Dune Grassland type	S2, G3	<b>HCV</b>
Tamarack Coniferous Organic Swamp Type	S2	<b>HCV</b>

### **Question 10) Are there ecosystem types within the forest or ecoregion that have significantly declined?**

#### **Assessment Methodology:**

- Nature Serve
- Natural Heritage Information Centre
- FRI Historic Forest Conditions and Trends

This question aims to detect ecosystem types that may have been reduced in area to such an extent that they are vulnerable, and the populations they contain may not be sustainable due to isolation or other factors. This includes forest ecosystem types that may be rare due to human factors or natural factors.

Through historical records kept at the Clergue Office, e.g. the 1953 Forest Resources Inventory prepared for the Ontario Department of Lands and Forests, it is clear that the following ecosystems have declined substantially on the Algoma Forest over the last 100 years. As a result, Clergue managers have identified these ecosystems in the Forest Management Plan, and have developed special prescriptions to insure they are maintained and regenerated wherever possible.

Hemlock has declined from the early part of the 20<sup>th</sup> century due to high-grading when the species was desired for its strength and resistance to rot. There is a risk to hemlock dominated sites if improper monitoring and management occurs. Hemlock dominated sites are not harvested commercially on the Algoma Forest **are considered to be HCV.**

Table 10 Rare ecosystem types that have declined on the Algoma Forest- Figure 7

Ecosystem type	Cause of the decline	HCV Designation
White pine and red pine	Long term harvests, reduction in regenerating fires	<b>Not Designated HCVF</b>
Spruce dominated mixed wood	Long term harvests, reduction in regenerating fires	<b>Not Designated HCVF</b>
Red oak dominated ecosystem	Long term harvests,	<b>Not Designated HCVF</b>
Hemlock dominated	Long term harvests, Little regeneration	<b>Designated HCVF</b>

**Figure 7 goes on this page**

## **Question 11) Are there sites with unique or exceptional ecological circumstances?**

### **Assessment Methodology:**

- NHIC Natural Areas
- Nature Serve Communities
- Ontario Areas of Natural and Scientific Interest
- WWF/MNR Lands for Life Assessment (protected areas “gap” analysis)
- WWF Ecoregion Conservation Assessment

The purpose of Conservation Reserves is to capture all of the rare, threatened or endangered ecosystems in the Forest, and the list of Parks and Conservation Reserves in question 6 includes the known rare, threatened and endangered ecosystems.

In this assessment all of the sites with unique or exceptional ecological circumstances in the forest have been represented in protected areas, either prior to, or during the Ontario Living Legacy program. Life Science ANSIs (Provincially Significant ANSIs) are encompassed by OLL Land Use Strategy new protected areas and therefore **are not designated as HCV.**

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

The Algoma Forest falls entirely within the Great Lakes Watershed. It is a well-traveled area transacted by the Trans Canada Highway. The four questions that fall into Category 4 focus on the role of forests in maintaining the quality of the environment, in the sense of providing services to people. Forest managers must not compromise the forests' natural processes that provide drinking water, fish and agricultural products, and that create a stable environment free from flood and fires. The Algoma forest surrounds two major cities, Sault Ste. Marie and Wawa and a host of smaller rural communities and individual homes. Many of these people depend on the forest for forest products and a clean environment including clean water and flood protection.

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

##### **Assessment Methodology:**

- Known usage of water by local communities
- OBM base maps showing topography
- Provincially Significant Wetlands

Due to the size and extent of the forest it is natural that to some degree many of the basic services are provided by the forest in terms of stream flow regulation, quality and quantity of water supply, flood and drought prevention.

Given the absence of large communities (other than Sault Ste. Marie) and the abundant supply of clean fresh water, there have been no issues with the supply of water. The Algoma Forest borders on the Great Lakes, the worlds largest supply of fresh water. Major lakes and rivers are also in the boundaries of the forest.

Although the FMP for the Algoma Forest does not identify a specific Area of Concern for a Municipal Water Supply, the FMP process has a number of provisions for the protection of water quality, for any purpose. Forest managers must establish reserves, whose width corresponds with the slope of the land to prevent erosion into the water body. Prescriptions for reserves vary according to the ecology of a given body of water. Coldwater trout streams and lakes, critical fish habitat, and headwaters have more significant and continuous tree reserves than a warm water lake or stream would have. Construction of stream crossings is subject to the provisions and prohibitions of the federal Fisheries Act, and is conducted according to the standards and guidelines of the "Environmental Guidelines for Access Roads and Water Crossings" (OMNR, 1995). As well the following guides regulate the protection of water quality during forest operations:

- Code of Practice for Timber Management Operations in Riparian Areas
- Timber Management Guidelines for Protection of Fish Habitat
- Manual of Implementation Guidelines for the Wetlands Policy Statement.

Due the size of the source, low population density, and the strict regulations about working near water, **there is no evidence that supports the designation of water supply as an HCV.**



### **Question 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 and response programs
- Provincially Significant Wetlands

In general, all forests help mediate flooding and drought, control stream flow and improve water quality. Figure 8 provincially significant wetlands have been identified on the Algoma Forest, which can play a role in mediating flooding and in improving water quality. These wetlands provide functions such as water recharge and discharge, flood damage reduction, shoreline stabilization, sediment trapping and nutrient retention and removal. Wetlands also provide important habitat for several species of wildlife, including beaver, waterfowl and many species of birds, amphibians, reptiles and mammals. There are many types of small wetlands throughout the Forest which serve important ecological functions. These wetlands are protected in the Forest Management plan through the applications of Area of Concern (AOC) prescriptions that follow the recommendations in various guidelines. Where harvesting occurs adjacent to other wetlands not identified as Areas of Concern, the “Code of Practice for Timber Management Operations in Riparian Areas” and the “Forest Management Guidelines for the Protection of the Physical Environment” are applied to minimize site disturbance.

For this paper, **provincially significant wetlands have been indicated in Figure 8 as possible HCV areas.** Wetlands adjacent to Lake Superior and the North Channel of Lake Huron are almost all provincially significant because of the role they play in the ecology of the Great Lakes and adjacent watersheds. These wetlands are generally on private land. Forestry operations on Crown land within 2 kilometres of the coasts may occur. The implementation of these operations will take into account the wetlands and recreational values of the coastal area.

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

#### **Assessment Methodology:**

- OBM base maps showing topography
- Review local terrain mapping

Erosion control can be a local concern, depending of the slope of the potential forest operation. Forest operations adjacent to streams and lakes are governed by MNR guidelines and the Federal Fisheries Act, which protects fish habitat. In addition, on slopes not near streams or lakes, local guidelines mandate use of erosion limited structures that will minimize the loss of soil under those conditions.

Forest management guidelines “Management Guidelines for the Protection of the Physical Environment” direct how operations on sensitive sites should occur. The general rule provided is to harvest no more than 50 percent of the watershed in a single operation or over several operations, where the previously cut areas have not yet reached free-to-grow. In general forest cover changes must meet or exceed a 20-25% threshold to detect a measurable response in water flow as a result of forest disturbance (Borsch and Hewlett 1982 Hornbeck et al. 1993). **There are no areas on the Algoma Forest that are designated HCV because of erosion concerns.**

**Map of Significant Wetlands goes on this page**

**Figure 8**

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

**Question 15) Are there local communities? Is anyone within the community making use of the forest for basic needs/ livelihoods?**

**Assessment Methodology:**

- NRVIS data
- Socio-economic Description in 2005-2025 FMP and 2010-2020 FMP
- Discussions and correspondence with First Nations and Stakeholders during forest management planning consultation

Table 12 summarizes information from various consultations and sources. These activities have a varying degree of interaction with forestry. Two possible HCVs have been identified: heritage, tourism and recreations trails and historic artifacts.

Table 12- Making use of the forest for basic needs/livelihoods

General description	Value	Summary	HCV designation
Economic and cultural activity	Traplines	Traplines are a source of income, part of rural culture, designated trap lines cover the forest, trapping is active and viable, ongoing dialogue with trappers to minimize impact because traplines are abundant and cover all areas of the forest each trapline is not considered a HCV	Not HCV
Economic and cultural activity	Bear management areas	Bear management areas are assigned to local people to use to guide bear hunters, local income to tourist operators, MNR and Clergue develop management prescriptions, BMAs cover much of the land area of the forest and cannot have a specific designation as HCV	Not HCV
Economic and cultural activity	Areas adjacent to cottage lakes	Area around cottage lakes is attractive and an important recreation area, viewsapes are protected and Clergue prepares specific management prescriptions when operating in areas around cottage lakes.	Not HCV
Economic and cultural activity	Heritage, tourism and recreations trails	Trails are an important part of the tourism infrastructure, a wide range of trails exist including snowmobiles, ATV and walking trails, tourism is a major activity in the area and trails are a major aspect of the industry, forest manages apply major efforts to maintain trails and the trail environment	Possible HCV
Economic and cultural activity	Historic artifacts e.g. old settlements and cemeteries, old trading sites	These areas are identified by the forest manager, local people and MNR personal	Possible HCV

**The Trail System on the Algoma Forest**

The Voyageur hiking trail crosses the southern portion of the Forest from Gros Cap easterly to an area north of Bruce Mines. The trail also extends north towards Batchewana Bay. The longer term intent is to lay out the trail through to Lake Superior Provincial Park and join it up

with segments along the north shore of Lake Superior. This trail system is part of the Trans Canada Trail Network. This trail is particularly significant to local communities and does generate economic activity through tourism. The location of this trail system is provided in this report.

A portion of the cross country ski trails maintained by the Stokely Creek Lodge and Cross Skiing Touring Center is located within the Algoma Forest. This trail system has a world class reputation. The Forest Manager has worked closely with the staff at the lodge to ensure that forest operations and skiing activities are complementary. The location of this trail system is provided in this report.

The Sault Trail Blazers Snowmobile Club maintains a series of trails north of Sault Ste. Marie. These trails are part of a larger system that accesses much of northeastern Ontario. The trail system is particularly attractive to American tourists which support the tourism sector. The location of this trail system is provided in this report.

The Algoma Forest has a variety of canoe routes that pass through. The more popular ones are included in Provincial Waterway Parks and include the Batchewana River, the Goulais River, and the West Aubinadong River/Gong Lake/Ranger Lake route.

The Forest Manager works closely with local tourist operators to develop harvest and renewal plans that do not negatively impact the quality of experience provided to tourism clients.

The Ministry administers trapping, bait fishing and bear hunting through zones which are assigned to specific individuals. Sustainable levels of extraction are established and the harvesters must maintain an acceptable use to maintain their licenses. The Forest Manager works with these resource users in a cooperative manner.

A map of these trails is available as a companion document to this report and is available from Clergue Forest Management Inc.

### ***Category 6) Forest areas fundamental to meeting basic needs of local communities) e.g. subsistence, health).***

#### **Question 16) Is the traditional cultural identity of the local community particularly tied to a specific forest area?**

The question can only be answered in co-operation with local communities. Non-native cultural heritage values are protected through normal planning processes.

There are three individual First Nations communities within the Algoma Forest. Some important cultural sites are distributed though the forest including trading routes, gathering places, sacred or religious sites, and seasonal camp sites. Exact locations of values and places of importance to the First Nations are not available as a map for this report but are described in Table 13 below which provides a general description of First Nation and aboriginal values that are found on the forest. Where encountered, these native values will be maintained or protected during the FMP process.

These generic values identified in Table 13 **have been considered in this assessment as being possible HVCs** on the Algoma Forest.

Table 13 Traditional cultural identity of the local communities.

General description	Value	Summary	HCV designation
First nations cultural and social values	Trails	Trading routes, village to village routes, historical trading trails, trail prescriptions, when known, are built into the forest management plan. Based on the wishes of the First Nation Communities, these areas are not mapped.	Possible HCV
First nations cultural and social values	Habitation	Village and seasonal camp sites, stockades, caves caches, trapper's cabins, lookouts, guard posts, gathering places and places of sanctuary, when sites are known, management plan protects them. Based on the wishes of the First Nation Communities, these areas are not mapped.	Possible HCV

**Question 17) Is there a significant overlap of values (ecological and/or cultural that individually did not meet HCV thresholds but collectively constitute HCVs)?**

**Assessment Methodology:**

- Review of previous values (Questions 1 to 18)

There are no apparent overlaps 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 collectively bring them over a threshold. No HCV is identified with this question.

## **Results Criteria 9.3 - Consultation**

The first component of the consultation process was a broad review, based on the Forest Management Plan, of the potential values on the forest. This included discussion with local people, staff of Clergue, Inc. and the Local Citizens Committee. A second component was to review all the scientific evidence available from all sources that indicates there may be high conservation values on the forest. Appendix I lists the scientific sources consulted for this work. The third component was a focused review by stakeholders of the values and the management approach used on the Algoma Forest. A meeting with the Sault Ste Marie Ministry of Natural Resources staff was held on August 24, 2004, a presentation to the Local Citizens Committee for the forest was made and a workshop was held on September 14, 2004 for Ministry staff, federal government staff and staff from local industry. Drafts of the paper were reviewed by staff at the local Ministry of Natural Resources office, by staff from the Great Lakes Forestry Research Centre and staff at the World Wildlife Fund, Toronto.

## **Results Criteria 9.4 - requires a precautionary level of management and activities that ensure the maintenance or enhancement of High Conservation Values.**

### **Guidance for Contractors**

As part of their operating procedures, Clergue has developed guidance for their contractors to take precautionary steps to avoid damaging the long-term sustainability of the forest. A manual has been developed called the CFMI Standard Operational Field Procedures that gives detailed instructions to everyone that operates equipment and harvests timber of the Algoma Forest. This manual was developed following an Independent Forest Audit carried out as required by the Crown Forest Sustainability Act. An outline of the subjects in this manual conveys the basic ideas provided to people who work on the forest:

- Site Disturbance- detailed instructions to avoid damage to soil
- Access roads and water crossings- detailed instructions to prevent damage
- Five year operating plan- meetings to discuss logging practices and avoid damage
- Standard Operational Field Procedures- cover basic instructions to minimize damage
- Residual Trees- rules for leaving individual trees
- Pileated Woodpecker habitat- guidance for following habitat guidance
- Marten Habitat- guidance for following habitat guidance

### **Maintaining Values in the Forest**

An "Area of Concern" is a defined geographic area which has a value to users which may be affected by forest management operations. A detailed prescription is developed for the Area of Concern in order to prevent, minimize or mitigate adverse effects of forest management operations on values. A prescription may be prepared for an individual Area of Concern or a group of Areas of Concern with common values. The location and description of values is found in the Natural Resources Values Information System (NRVIS) maintained by the OMNR. Prescriptions are generally developed from direction found in the various guidelines and manuals which direct the development of the forest management plan.

## Generic AOC Prescriptions

Generic prescriptions for Areas of Concern within the blocks selected for operations during the five-year operating plan period are presented in Tables FMP 14 (2010-2020 FMP) (See Appendix V). Specific sites that contain several values on the same land base (e.g. moose habitat, cold water fishery) will have one Area of Concern prescription that offers protection for all of the values identified.

The following provides information on generic prescriptions within Areas of Concern. Where generic prescriptions are not applicable, Area of Concern planning has been customized to address the protection of identified values and documented on a specific Table FMP-14.

Generic prescriptions have been developed for the following values:

Caribou (CAR)	Hydro Transmission Lines (HYDRO)
High Potential Cultural Heritage Areas (CHhpa)	Land Use Permits and Residential Structures (LUP_RS)
Cultural Heritage Values (CHv)	Moose Aquatic Feedins Areas (MAFA)
Cottages (COT)	Moose Calving Sites (Mcs)
Recreational Canoe Routes (CR)	Moose Mineral Licks (ML)
Deer Yards (DY)	Lake/Brook Trout Lake Access (NR200 & NR400)
Eagle Nesting Sites (EAG)	OFSC Snowmobile Trails (OFSC)
Falcon Nesting Sites (FALC)	Osprey Nesting Sites (OSP)
Cold Water Fishery (Fc)	Provincial Parks (PARK)
Warm Water Fishery(Fw)	Private Property (PP)
Heronries (HER)	Recreation Trails (TRAIL)
Highways (HWY)	Non-Remote Tourism Values (TVnr)
Goshawk Nesting Sites (HKgos)	Remote Tourism Values (TVr)
Large Stick Nests (HKlarge)	Wood Turtle Hibernacula (WT)
Red Shouldered Hawk Nest Sites (HKrs)	
Small Stick Nests (HKsmall)	

Prescriptions to address the width of various fisheries buffers are based on the determination of ground slope within the Area of Concern. Depending on the accuracy of the OBM maps, slope determination may not be exactly the same as that found in the field. Actual slope measurements will be confirmed at the time reserves are established in the field and adjusted accordingly. In instances where slope estimation is found to be inaccurate, Area of Concern widths will be adjusted and incorporated into this Plan. Information to designate waters as cold water fisheries versus warm water fisheries is limited. As such, where no data is available, waters have been classified as cold water fisheries and the more restrictive cold water fishery prescription has been used. If information becomes available to reclassify an unknown stream to warm or cold water, it will be adjusted in the FMP, and the proper prescription will then be applied.

Fisheries AOC widths as identified on Areas of Operations Maps are measured beginning at the high water mark of the water body. Normal high water mark can be determined by locating the point on the shore of the water body where the presence and action of water is so common and usual, as to mark the soil in a distinct pattern from that of the abutting upland. It may be determined even using slight ground contour changes or differences in vegetation ground cover.

The high water mark, as prescribed in the current fisheries guidelines, can be difficult to determine in the field, especially when the slope is gradual. In situations where this occurs, the high water mark will be identified by using the horizontal location from the water's edge to where more than 25% of tree height including brush/alder is greater than two metres. Ericaceous plants such as sweet gale and leatherleaf of the purpose of identifying the high water mark grow within the wetted perimeter."

Warm water fish species such as smallmouth bass are less sensitive to the affects of forest management activities than are cold-water species. Warm water fish are more tolerant of higher water temperatures; have less stringent requirements for dissolved oxygen; and due to their spawning habits, are less subject to the affects of sedimentation or fluctuation of water flows. Accordingly, where erosion is minimized, banks are protected, and debris kept from watercourses, harvesting operations may be permitted without having an impact on warm water fish habitat.

The warm water lakes designated in supplementary documentation are based on fish species present in the water body. In order to use the warm water fisheries prescription, information on the critical fish habitat and shoreline slope is also needed. If this information is lacking for any given water body then the more restrictive coldwater fisheries AOC prescriptions will be used.

Lakes with populations of lake trout and brook trout are subject to intense fishing pressure on the Algoma Forest. Efforts to control this fishing pressure include the requirement for road decommissioning upon the completion of silviculture activities to ensure that access is not improved as a result of forestry operations. Lakes have been classified based on their current level of access within 200 metres and 400 metres of the lake. All other AOC prescriptions apply to these lakes as the NR200 and NR400 are access control related.

Clergue Forest Management is committed to the pro-active management of the small Caribou herd located in Pukaskwa National Park. An application of a Caribou AOC prescription and the identification of a management zone west of Wawa has been identified for implementation in the plan. Clergue sees the application of this AOC as an interim process for habitat management in the absence of an OMNR recovery strategy for Caribou. When the recovery strategy is completed and implemented, Clergue is prepared to amend the 2010 FMP to address forest management options in this strategy.

As of 2009, there are four active peregrine falcon nesting sites confirmed on the Algoma Forest. Forest operations for the 2010 to 2020 period have been identified within the three kilometre zone from the nest sites. A nest site management plan is being prepared by the OMNR for those nests applicable. The OMNR (1988) Peregrine Falcon Habitat Management guidelines will be followed in the preparation of the plan. The prescription identified in the nest management plan will be incorporated into the FMP by an administrative amendment to the forest management plan when it is completed.

Tourism lakes on the Algoma Forest are listed in the Sault Ste. Marie and Wawa District Land Use Guidelines (DLUG). The Sault Ste. Marie DLUG was identified to have outdated information and interim direction was developed by CFMI and approved by OMNR to address these changes in the FMP. When changes to the DLUG or Crown Land Atlas are made, an administrative amendment to the FMP will be completed to reflect the actual changes to the tourism values when they are different from the plan.

Popular canoe routes on the Algoma Forest have mostly been protected through the Ontario's Living Legacy land use strategy. For designated canoe routes identified in NRVIS and not currently protected, an area of concern prescription has been developed.

The identification of High Potential Cultural Heritage Areas, CHhpa AOC Prescription, are areas identified by OMNR as having high cultural heritage potential. They are Areas of Concern and are identified using a predictive model. This tool uses various landbase features, such as lakes, rivers, topography, and soils information, to predict areas where in the past there is a fair to good likelihood for individuals or groups to stop or settle for periods. At these locations, there may be evidence of their use of the area.



## **Specific AOC Prescriptions**

Specific Area of Concern prescriptions have been developed for only one area on the Algoma Forest. The value this prescription was developed for is for the protection of Carpenter Lake Cabins located on the southeast side of Carpenter Lake. The following describes the prescription for this area of concern.

### **Protection of tourism values on Carpenter Lake**

Clergue has developed a specific area of concern prescription to address tourism values on Carpenter Lake. Carpenter Lake Cabins and Campgrounds is a road based tourism facility at the north end of Carpenter Lake. A 120 metre no cut reserve has been established around the lake to address aesthetic values. No new roads will be constructed within 140 metres of Carpenter Lake. The tertiary road to Lucille Lake will be decommissioned once harvesting operations are completed. This will take place through the removal of a culvert. The road will be returned to a condition that will not permit ½ ton use. Four wheelers will continue to use the road. The Carpenter Lake Road will be realigned so it does not pass immediately behind the Carpenter Lake campsites. The road will be moved away from the lake and the road next to the lake will be ditched.

### **Bass Lake Road Based Tourism/Cottage Lake.**

Bass Lake has a cottage subdivision and a road based tourist operator located on the south shore of the lake. The lake is subjected to significant amounts of eutrophication during the year. The source of this pollution is uncertain. The cottage owners and the tourist operator have expressed a concern about the negative aesthetic impacts of logging activities and the potential movement of nutrients into the lake after harvesting. The generic cottaging lake area of concern prescription will be applied to this lake. The shoreline is very steep along the north side of the lake so a 90 metre reserve will be established along with a 30 metre modified zone where no roads, main skid trails or landings can be established. Selection harvesting will be carried out within the view shed of Bass Lake. There is a portage from Bass Lake to McMahan Lake. The western boundary of the harvest block north of Bass Lake is 50 metres away from the portage.

### **Black Trout and Cat Fish Lakes**

The cottage private land directly adjacent to these two lakes in the Wawa District have been identified in the Crown Land Use Policy Atlas as requiring a specific prescription to minimize the aesthetic impacts on the cottages as a result of forestry activities. This specific prescription is identified in table FMP-17 and the supplementary documentation.

## **Sensitive Values Protection and Update Protocol**

The need to have a separate protocol to ensure protection of sensitive values was identified during the implementation of the 2000 forest management plans. As this data comes from a number of different sources, and not all of it is part of the Natural Resources Values Information System, it is necessary to implement a protocol to ensure protection of all values occurs. Currently the following data sets not housed in NRVIS are as follows:

1. Natural Heritage Information Centre (NHIC) Values
2. Cultural Heritage Values
3. Aboriginal Community Values (five datasets for the Algoma Forest)

OMNR has been identified as the data custodian of all identified sensitive data for forest management purposes. As the data custodian, OMNR is not responsible for the maintenance of the values data that originated from external data sources to themselves. Values

management of these data sets (aboriginal and cultural heritage values) lies with the aboriginal community or non-OMNR government agency.

### **Results: Criteria 9.4 - Monitoring of High Conservation Value Forests (HCVF) on the Algoma Forest**

Both Clergue Forest Management and the Ontario Ministry of Natural Resources have responsibility for monitoring the values in the areas designed as High Conservation Value Forests.

An intent of monitoring is to assess the impact that actions may have on HCVFs as a result of forest management activities. This information will be used as the basis for adaptive management actions to improve forest management practices. Compliance activities are a component of monitoring and are implemented to ensure that forest management plans are properly adhered to.

**Table 14 - Summary of Monitoring Activities of High Conservation Values in the Algoma Forests (with linkages to current Algoma FMP)**

HCV	Attribute	Responsibility-inventory and Monitoring	Prescription	Current Monitoring for compliance effects, effectiveness, status
Peregrine Falcon	Nesting sites	OMNR biologists are required to monitor nest, and develop prescriptions for forest management in the vicinity  AOC Prescription: FMP-14 FALC	An Area of Concern of 3000 m will be established around any known nest or newly established nest. Nest management plan to be prepared by OMNR as soon as nest is confirmed. Operations/Renewal & Tending Prescriptions as per nest management plan.  Timing restriction March 15 <sup>th</sup> to August 31 <sup>st</sup> . Generally no skid trails or landings to be constructed within AOC, unless approved by MNR.	MNR monitors the site.  Compliance staff routinely monitor status of the site.  Effects Effectiveness: MNR staff at District Office to prove local expertise  Status: Only 4 active nests on Algoma Forest
Red-shouldered hawk	Nesting sites	OMNR biologists and Clergue Tree markers are required to determine presence of nests, whether they are active or inactive. OMNR has responsibility for monitoring effectiveness of prescription and protection measures.  AOC Prescription: FMP-14 HKrs	150 m reserve and 150 m modified (or 21 ha) area. Boundary of AOC measured from the most recently used nest. Selection harvesting that retains at least 70% canopy closure is permitted in the modified area. No harvesting permitted from March 1 to July 31.  Inactive (Satellite) Nest – AOC consists of 20 m. Status to be confirmed before harvesting.	MNR compliance staff monitors adherence to prescription.  MNR develops and implements effectiveness monitoring program.  Status: appear stable
Goshawk / Sharp Shinned Hawk	Nest sites	OMNR has responsibility for monitoring effectiveness of prescription and protection measures.  AOC Prescription: FMP-14 HKgos (Goshawk)  AOC Prescription: FMP-14 HKsmall (sharp shinned)	<u>Goshawk:</u> <i>Clearcut</i> – No harvesting, renewal or tending operations permitted within 200 m reserve. Normal forestry operations permitted in 100m modified at any time w/o aerial spraying.  <i>Selection/Shelterwood</i> - No harvesting, renewal or tending operations permitted within 50 m reserve. Normal forestry operations permitted in 100m modified during nesting season March 1 to July 31.  <u>Sharp-shinned Hawk:</u> <i>Active:</i> 150 modified – no harvesting, road building, site preparation pr tending in AOC between March 1 to	MNR compliance staff monitors adherence to prescription.  MNR develops and implements effectiveness monitoring program.  Status: appear stable

			July 31.  <i>Inactive:</i> One tree length left around the nest.	
Moose Aquatic Feeding Areas mineral licks and Calving sites	Feeding areas and areas for reproduction	MNR responsibility for inventory, annual surveys of moose populations, moose aquatic feeding areas are mapped using methods outlined in the manual " Selected Wildlife and Habitat Features: Inventory Manual.  AOC Prescriptions: FMP-14 Mafa, FMP-14 Mcs, FMP-14 ML	Mafa & Mcs: A 120 m reserve is required for clear cut forest units. 20m reserve and 100 m modified that allows for some harvesting to occur in the reserve for Selection & Shelterwood forest units.  A 120 m reserve is required for ML (all forest units).  See FMP 17 Summaries for details and Supplementary Documentation in FMP for more detail.	Both MNR and Clergue staff routinely monitor compliance to ensure prescription applies appropriately.  MNR develops and implements effectiveness monitoring program.  Status: This value appears to be stable
White-Tailed Deer Wintering Area	Wintering areas	MNR keeps inventory of deer yards, and monitors the use of these areas by deer.  AOC Prescriptions: FMP-14 DY	Area of Concern is established, prescriptions are developed for each area. AOC consist of modified harvest only (no reserve).	MNR compliance staff monitors adherence to prescription. MNR develops effectiveness monitoring program. Status: mapping difficult to keep up to date.
Woodland caribou	Possible habitat	Because caribou are not currently on the forest there is not active monitoring program.  AOC Prescriptions: FMP-14 CAR	If caribou return, areas of concern will be established. Normal harvest operations outside of caribou habitat zone.  Caribou habitat zone - modified operations 13 km area north of Lake Superior from Pukaskwa National Park to Ontario Hydro Transmission Line and Michipicoten First Nations Reserve (as per map attached to FMP-17 CAR).  Partial harvesting to reduce sucking or promote lichen growth if possible.	Both MNR and Clergue staff to report any sightings.  Status: current not on forest
Wood turtle Hibernacula	Sites where these turtles over winter	Hibernacula are identified by MNR staff and Clergue forest management staff.  AOC Prescriptions: FMP-14 WT	500 m measured from treed edge. 300 m around identified nesting areas. 6000 m timing and road construction restriction applied to the watercourse that has high potential to support wood turtles.  An AOC is established, no harvest renewal or maintenance activities are permitted in AOC from May 1 to September 30 without OMNR approval.	MNR compliance staff monitors adherence to prescription.  MNR develops effectiveness monitoring program.
Hemlock dominated	Unique ecosystems that have declined on the Algoma Forest	These areas are identified in the Forest Management Plan. Hemlock is generally not harvested. Objectives for promoting hemlock are included in the FMP.	In most cases the prescription is no harvest of hemlock. Efforts are employed to regenerate hemlock.	Compliance and monitoring occurs in the forest planning process and is checked by the Independent Forest Audits.
E280n- Batchawana Bay-Carp Lake Raised Delta 869 ha	Ancient lake bed, delta where ancient rivers emptied into Lake Superior is raised	MNR develops policy for management, conducts inventory, and provides guidance as to appropriate management.	Specific prescriptions are developed in cooperation with Clergue and local municipalities	Compliance and monitoring occurs in the forest planning process and is checked by the Independent Forest Audits
E283n Achigan Lake Area 2,524 ha	Old growth white pine and yellow birch, water quality, recreation and remote road access	MNR develops policy for management, conducts inventory, and provides guidance as to appropriate management.	Specific prescriptions are developed in cooperation with Clergue and local municipalities	Compliance and monitoring occurs in the forest planning process and is checked by the Independent Forest Audits
E290n Bellevue hanging Delta 158 ha	Glacial Lake Algonquin emptied into	MNR develops policy for management, conducts inventory, and provides	Specific prescriptions are developed in cooperation with Clergue and local municipalities	Compliance and monitoring occurs in the forest planning process and is checked by the

	Lake Superior and formed an ancient raised delta	guidance as to appropriate management.		Independent Forest Audits
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- Appendix I**                      **Sources consulted for this report**
- Appendix II**                    **questions from Appendix 5 of the Canada boreal Standards**
- Appendix III**                  **A description of the ranking system for ranking rare species in Ontario**
- Appendix IV**                  **Map containing all the HCVs on the Algoma Forest, available from Clergue Inc.**
- Appendix V**                    **Table 17 taken from the Forest Management Plan for the Algoma Forest**
- Appendix VI**                  **A companion document that is a map of the trails located on the Algoma Forest**