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High Conservation Values in the Hearst Forest



Report prepared by Hearst Forest Management Inc., in conformance with the Forest Stewardship Council®, Canadian National Standard (2018)

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Executive Summary

This High Conservation Report (HCV) report for the Hearst Forest has been completed in accordance with Principle 9 of *The National Forest Stewardship Standard of Canada*, (Approved 19.10.2018, Effective 01.01.2020). The report was produced by the certificate holder, Hearst Forest Management Inc. (HFMI) with the purpose of identifying values and outlining a concrete strategy to protect them (see Table 1). It has consistently been reviewed and updated as new information emerges. This is a living document built on decades of relationships with Indigenous groups, local communities and other forest users.

Table 1. Summary of HCVs on the Hearst Forest

Category	Element	HCV
1 - Species Diversity	1 - Biodiversity/Species at Risk (SAR)	Species at Risk (see Table X)
	5 - Species at edge of range or outlier populations	Red and White Pine
	6 - Conservation area	MECP Parks & Conservation Reserves
2 - Large Landscape - Level Forests	7 - Significant forest landscape	Missinaibi - Coal Node IFL
3 - Ecosystems	8 - Naturally rare ecosystems	Black ash - Elm - Wild rice communities
	10 - Large landscape level forests	Hillmer Lake X-Tract
4 - Ecosystem Services	12 - Drinking water	Kenogomi watershed
5 - Community	17 - Local communities	Community trapline areas (around Constance Lake and Pagwa)
		Mature cedar stands
		Hearst cross-country ski and snow-shoe club LUP area
		Renesig Creek Route Area of Interest
		Calypso Trail & Camp Source de Vie
6 - Cultural	18 - Traditional cultural identity	Community engagement needed to identify HCV

Introduction

This report was produced by Hearst Forest Management Inc. (HFMI) to fulfill the requirements of the Forest Stewardship Council® (FSC®) certification process to identify and protect High Conservation Values (HCVs) and associated areas located within the management unit. The framework for HCV protection is outlined as Principle 9 and elaborated on as Annex D in the FSC®'s National Forest Stewardship Standard (2018).

The Hearst Forest is Crown land which is managed by HFMI under the authority of a Sustainable Forest License (SFL) granted by the Government of Ontario. SFL managers are required to fulfill a rigorous forest management planning (FMP) process that involves the identification and protection of a wide range of values and extensive consultation with local First Nations and community members. Although Ontario regulations do not allow for the explicit recognition of HCVs, there is significant overlap with values protected under the current FMP (2019 – 2029). The consensus in the Hearst Forest is that all of the forest has value both to local ecosystems and to human communities. The intent of HCV identification was to decide when certain FSC®-defined thresholds have been met. This challenge was met in partnership with local stakeholders and members of Achikamii-Achikamaw or Constance Lake First Nation (CLFN). Where protection measures in the FMP are insufficient, HFMI will take extra measures to meet FSC®'s international standards for HCV protection.

Forest Description

The Hearst Forest is about 1.2 million hectares of crown land and conservation areas which encompasses several large tracts of privately owned townships and three provincial parks. Human population density remains low, with about 7000 people calling the area home. After over 100 years of timber harvesting, about 98.6% of the Hearst Forest Management Unit remains productive forest. Over the last century, the suppression of most stand replacing fires is believed to have resulted in an abundance of mature and overmature stands.

The topography and surficial geology of the Forest is the result of several glaciations. From an ecological classification standpoint, the Hearst Forest is almost entirely within EcoRegion 3E, in EcoDistricts 3E-1 and 3E-2 of Northeastern Ontario. Most of the Hearst Forest is in the Northern Claybelt (3E-1), which is flat with very little topographical relief, having been overridden and depressed by glacial ice and then buried beneath lacustrine deposits of glacial lake Barlow-Ojibway. Soils are generally clays, silt clays to clay loams deposited as glacial-lacustrine sediments. In the south part of the Forest (3E-2) and along the northeast boundary, a mixture of glacial till and lacustrine deposits and pre-Cambrian bedrock exposure causes topography to vary from gently rolling to very hilly. Soils vary from clays to loams to sands resulting from a wide range of types of glacial deposition. Beyond the Forest's northern boundary are expanses of poorly drained, deep organic soils of the James Bay Lowlands (EcoRegion 2E). Interspersed throughout these regions are areas of organic soils and poor drainage, with some expanses large enough to influence forest management planning and fire behaviour on the landscape.

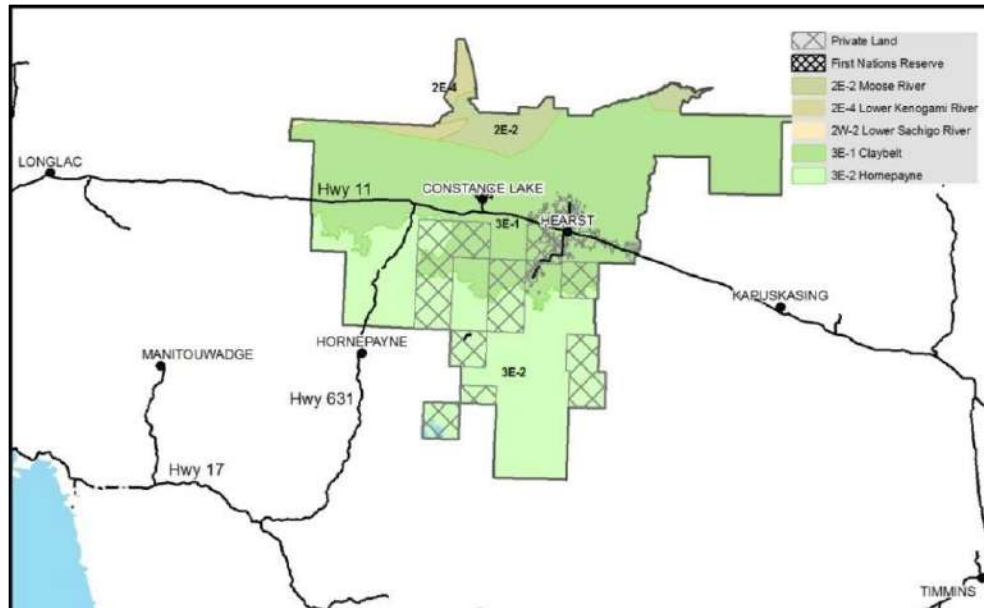


Figure 1. The Hearst Forest management unit showing extents of Ontario's Ecoregions and Ecodistricts on the forest

Black spruce dominates about two thirds of the forest, occurring in varying degrees as pure and mixed stands from poorly drained lowlands to rolling uplands. The southwestern and northeastern areas of the forest have higher proportions of hardwood, and significant amounts of jack pine. In general, species found in the Hearst Forest are well adapted to periodic, stand-replacing fires and extreme temperatures (ranging from +40°C to -40 °C). In turn, wildlife species which rely on the Hearst Forest are those which require vast habitat of varied environmental conditions.

Indigenous Engagement

The Hearst Forest is on the traditional lands and Treaty 9 territory of distinct Cree, Oji-Cree and Anishinaabe Nations who first inhabited, cared for and live on this land. The FSC® requires that Indigenous Peoples be involved in the designation of HCVs. For the initial designation (in 2011), this need was satisfied not through a single formal meeting but rather through decades of personal involvement in the community, FMP consultations, trapper meetings, and countless individual drop-ins which HFMI's open door policy encourages. In these encounters, individuals relayed their experiences and observations, and what interested or concerned them. This could be a special place, a phenomenon, a type of plant or species of wildlife. Information provided by Indigenous community members greatly enhanced the quality of this report.

Report Structure

The Standard defines HCVs in 6 *categories*, each further broken down into *elements* of which there are 19. Numbering used in section and sub-section titling maps onto these category and element numbers for ease of comparison with those listed in Annex D of the FSC® National

Standard. Excerpts taken from the text are in italics. The categories listed in the Standard and addressed in this report are:

1. Species Diversity (elements 1 - 6)
2. Landscape-level ecosystems and mosaics (element 7)
3. Ecosystems and habitats (elements 8 – 11)
4. Critical ecosystem services (elements 12 – 16)
5. Community needs (element 17)
6. Cultural values (elements 18 – 19)

To satisfy the indicators associated with Principle 9, each category of HCV listed in Annex D of the FSC® National Standard was assessed using the sources of information listed below. A general assessment of risk associated with forest management operations as well as strategies to protect values is provided in this introduction. The most valuable resource in terms of values monitoring are the forest land users (machine operators, birdwatchers, anglers, hunters, etc...). Both HFMI and the MNR maintain databases of various forest values and welcome observations from the public. Where specific management and/or monitoring strategies apply to a value, they will be addressed in that section.

Risk Assessment

The potential risk to values posed by management activities is assessed by considering the probability, reversibility, and severity of potential damage. This will be slightly different for each value but, in general, risk is considered low for a number of reasons. Overall, less than 1% of the Hearst Forest is harvested each year and significant tree cover often remains post-harvest. Aside from the creation of new roads, the forest remains forest and is almost never cleared for development or agriculture. Within harvest blocks, modern aerial imagery combined with extensive sampling provides good knowledge of the timber and terrain so that informed decisions can be made prior to entering an area. Harvested areas are regenerated either artificially (through tree planting) or naturally, according to site conditions. Best management practices are in place to ensure that all values are protected. Protection measures exist at the site scale and the landscape scale.

Monitoring

The most important source of information when monitoring values are the land users (forestry workers, hunters, anglers, birdwatchers...). HFMI has an open-door policy and seeks out observations of species at risk, stick nests, unidentified creeks and other values not previously identified. All operators are trained to identify values and HFMI's *Standard Operating Procedure for Reporting Unidentified or Misidentified Values* describes the process for forest industry staff to share newly observed values. These observations are then incorporated into values maps

Both HFMI and the district MNR take other steps to monitor values. Annual satellite aerial photography can be useful for updating some values. Harvesting and road construction operations are subject to regular compliance inspections to ensure that best management

practices are being followed. Certain populations are monitored by the MNR and MECP through Multispecies Species Inventory Monitoring plots and aerial surveys.

Management

At the landscape-scale, Ontario's forest management policy has been to maintain conditions on Crown forests within the estimated range of natural variation for a given area through planning operations which mimic historic natural disturbances. This is accomplished through setting short and long-term targets related to forest composition, structure and texture. The maintenance of critical wildlife habitat targets (by clumping forest units into "landscape classes") also ensures sufficient habitat is maintained across the Hearst Forest. The only species whose needs are specifically addressed at the landscape-scale is the woodland caribou. Several targets related to the maintenance of forest patches of sufficient size and quality to support caribou are included in the 2019-2029 FMP. More details related to coarse-filter targets can be found in table FMP-10.

Site-scale protection measures are required to protect certain values. Various Conditions on Regular Operations (CROs) and Areas of Concern (AOC) prescriptions are applied during harvesting and road building operations where values are mapped or encountered in the field. Water courses and the surrounding area are always protected through the application of water crossing regulations and buffers. These measures serve to protect both watershed quality and riparian habitat. Other specific values protected at the site scale include stick nests, dens, and culturally important features.

1. Species Diversity

Concentrations of biological diversity including endemic species, and rare, threatened, or endangered species, that are significant at global, regional, or national levels.

1.1 Biodiversity and Species at Risk

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

Species at Risk

At present, HFMI has determined that 25 Species at Risk (SAR) are or could be, in the Hearst Forest. These designations are determined both federally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and provincially by the Committee on the Status of Species at Risk in Ontario (COSSARO). Both designations were considered in this report. As per the guidance provided in the FSC® National Standard, all SARs are automatically HCVs. Table 2 provides a list of all SAR which might be found on the forest and information about their status, habitat, occurrence and vulnerability to forest management. For each species, both federal and provincial conservation plans were consulted to determine management recommendations.

Many SAR found on the Hearst Forest are considered at low risk of being negatively affected by forest management operations either because their habitat is unaffected, or because sufficient

protection is provided through a combination of coarse and fine-filter protective measures. All SAR are monitored and their needs considered in management planning according to the guidelines discussed in sections 0.8 and 0.9. In all cases, forestry workers are provided with the resources to identify SAR and required to report their presence to the SFL.

In the years to come, climate change is predicted to impact species worldwide in complex and unpredictable ways. As the climate of the Hearst Forest warms, environmental conditions may become comparable to those of areas directly to the south, although projections related to moisture regimes are inconclusive. Many of the species at risk which are found on the Hearst Forest have ranges which extend further south in Ontario and beyond. For these species, the forest is likely to continue to be within their range. Some expected challenges associated with climate change include alterations in hydrology associated with changing rainfall patterns, changes in phenology, extreme weather events, and reduction in snow cover during the shoulder seasons

Table 2. Species at Risk as designated by COSEWIC (federal) or COSSARO (provincial) which are likely present on the Hearst Forest. These species are all of HCV (question 1 in the FSC® National Standard).

Species	Status (COSSARO)	Status (COSEWIC)	Habitat	Occurrence	Risk Associated with Forest Management Activities
Lake Sturgeon - S. Hudson Bay/James Bay Population	special concern	special concern	- lakes and rivers with soft bottoms of mud, sand or gravel - usually found at a depth of five to 20 meters. - migratory to fulfill seasonal and life cycle requirements (spawning & wintering) - on the Hearst forest: the Pagwachuan (Pagwa), Kabinakagami (Kabi), Nagagami, and Missinaibi rivers	- known to be found in the Pagwachuan, Kabinakagami, Nagagami and Missinaibi rivers - no other rivers thought to be suitable as habitat	<i>Low risk:</i> - 2 of the 4 large rivers which provide habitat are within provincial parks - Riparian buffer zones prevent sedimentation in managed forest. - No bridges or dams planned on these rivers - Increased public access from forestry roads could increase removals of sturgeon - species has demonstrated an ability to adapt rapidly to changes in their environment and to recover quickly from perturbation
Snapping Turtle	special concern	special concern	- prefer aquatic habitats characterized by slow-moving water with a soft muddy bottom and dense aquatic vegetation - uses adjacent terrestrial habitat	- Hearst Forest is at the northern edge of potential species range - it is unlikely to be found on the forest	<i>Moderate risk:</i> - Potential for collisions on forestry roads (especially at or near water crossings) - Riparian buffers and water crossing regulations protect habitat

American white pelican	threatened	not at risk	- nest in groups on remote islands that are barren or sparsely treed located in lakes, reservoirs, or on large rivers	- Sighting on island in Fushimi Lake Provincial Park	<i>Low risk:</i> - Species uses islands (not affected by operations) - Riparian buffers protect any potential habitat - Only sighting was in Provincial Park
Wood thrush	special concern	threatened	- Lives in second-growth mixed-wood and deciduous forests - Nests in brush, saplings or shrubs - Prefers large forests but will also use smaller stands of trees	- Expert sightings in young, regenerating forests	<i>Low risk:</i> - Main threat is habitat loss and degradation in Southern Ontario due to forest conversion for urbanization and agriculture - Area of landscape classes used as habitat (immature and older hardwood and immature mixed wood and young forest) are currently above the target range set in the FMP (table FMP-10) - Targets related to forest texture ensure large contiguous patches of immature forest are maintained on the landscape. - Forest management creates more suitable habitat (young regenerating forest)
Short-eared Owl	threatened	threatened	- Nests in wet meadows, grasslands, idle pasture, bogs and marshes - Hunts in open fields	- Expert sighting of nesting pair in a field - No reports in the forest (only on roads and in fields)	<i>Low risk:</i> - Threatened by loss of nesting ground due to agricultural conversion in southern Ontario (not a concern on the Hearst Forest)

					- AOC prescription "SEO" applied to all nests known or expected to be occupied
Common Nighthawk	special concern	special concern	- Nests on ground in forest openings, gravel lakeshores, and harvested or burned areas	- Detected at 4 of 12 stations (all cutovers) in the F102014 Breeding Bird Songmeter Survey - Detected acoustically in MNR's MSIM plots - Occupied nest encountered during tree plant - Many sightings in town	<i>Low risk:</i> - Habitat created by harvesting - Tendency to aggressively defend nest means there is little risk of accidental damage during operations - AOC prescription "CN" is applied to any ground nests encountered or mapped
Barn Swallow	special concern	special concern	- Builds cup-shaped mud nests almost exclusively on human-made structures - Structures often re-used from year to year	- No nests associated with forestry water crossings found during the MNFR Barn Swallow Bridge Surveying program (began 2014)	<i>Low risk:</i> - No apparent association with forest operations - AOC prescription "BRNS" applied to nests during the critical breeding period - Nest checks are standard procedure for HFMI for removal of permanent bridges

Bank Swallow	threatened	threatened	- Lives in steep (>70°) exposed, active aggregate pits and sand riverbanks (e.g. the Pagwachuan and Kabinakagami rivers)	- Some colonies identified in MNR surveys of aggregate pits (2014-2019)	<i>Low risk:</i> - Does not use mature timber stands - Forestry aggregate pits in Hearst Forest are rarely steep enough to be suitable habitat - Nests are highly visible - The Ontario Stone, Sand, & Gravel Association fact sheet for mitigating the impact of operations on bank swallows used as guidance - AOC prescription "BNKS" applied to colonies during the critical breeding period.
Olive-sided Flycatcher	special concern	special concern	- Nests in coniferous or mixed forests close to rivers or wetlands - Forages for insects in forest openings	- Expert sightings recorded - Detected in 2 of 12 stations in 2014 Breeding Bird Songmeter Survey - Achievement of CRO for patch retention monitored and included in annual report	<i>Moderate risk:</i> - Retention of mature residual trees in harvest areas provides sufficient mature trees next to forest openings - Achievement of CRO for patch retention monitored during compliance reporting
Black Tern	special concern	not at risk	- Builds floating nests in marshes and wetlands		<i>Low risk:</i> - Wetlands are common and rarely altered on the Hearst Forest - Forestry operations maintain buffers around wetlands which are monitored by HFMI and

					the MNR through site inspections and SAP imagery
Yellow Rail	special concern	special concern	- Breeds and lives deep in the reeds surrounding marshes and shallow wetlands		<i>Low risk:</i> - Wetlands are common and rarely altered on the Hearst Forest - Forestry operations maintain buffers around wetlands which are monitored by HFMI and the MNR through site inspections and SAP imagery
Lesser Yellowlegs	threatened	threatened	- Summers in boreal wetlands of northern Ontario - Nests on dry ground near wetland areas		<i>Low risk:</i> - Wetlands are common and rarely altered on the Hearst Forest - Forestry operations maintain buffers around wetlands which are monitored by HFMI and the MNR through site inspections and SAP imagery
Canada Warbler	special concern	special concern	- Summers in Canadian boreal - Nests on or near the ground in lowland deciduous areas with dense understory vegetation	- Detected at 7 of 12 stations during the 2014 Breeding Bird Songmeter Survey - Detected acoustically in MNR's MSIM plots	<i>Moderate risk:</i> - Lowland habitat is harvested when the warbler has migrated south for the winter - Recently harvested sites provide ideal habitat - Retention of buffers along water features and residuals retained during harvest operations

Rusty Blackbird	special concern	special concern	- Summers in Canadian boreal - Breeds in coniferous forests near wetlands	- Expert sightings - Not detected by MNR's MSIM plots - Detected at 0 of 12 stations during the 2014 Breeding Bird Songmeter Surveys	<i>Moderate risk:</i> - Nests small and hard to detect - Low levels of harvest during summer in breeding habitat
Eastern whip-poor-will	threatened	threatened	- found in areas with a mix of open and forested areas - forages in open areas - uses forested areas for roosting and nesting		<i>Low risk:</i> - Ideal habitat is created by harvesting operations
Evening Grosbeak	special concern	special concern	- Nests in conifer-dominated forests - Breeds in open, mature mixed-wood forests dominated by fir, white spruce or trembling aspen - Abundance linked to its prey - the Spruce budworm		<i>Moderate risk:</i> - Nests are small and hard to detect during operations - Low levels of harvesting occur during the nesting season - Area of the mature and molder mixed wood landscape class is currently only at about 60% of the low end of the target range of natural variation
Little Brown Bat	endangered	endangered	- Habitat generalist - Forages for insects in open areas (forest openings, waterways, meadows, recently harvested areas) - Roosts in tree cavities - Hibernates in caves and mines (probably outside of Hearst Forest)	- Lots of activity detected in edges of mature forest and harvested areas (interior of mature forest not measured) (Mills. 2013) - Monitored by MNR in 2014 using wildlife	<i>Low risk:</i> - Main threat is White nose syndrome which is transmitted in hibernacula (none identified on the Hearst Forest) - Sufficient residual and cavity trees left for roosting during harvesting operations - Ideal habitat is created by harvesting operations

				recorder with inconclusive results	- AOC prescription "BAT" for Bat Hibernacula and "BMR" for Bat Maternity Roost is applied when encountered
Northern Long-Eared Bat	endangered	endangered	- Lives in forests as far north as Moosonee - Prefers forest edges and forages in dense habitats - Roosts in tree cavities - Hibernates in caves and mines (probably outside of Hearst Forest)	- Presence in adjacent forest confirmed Mills. 2013) - Monitored by MNR in 2014 using wildlife recorder with inconclusive results	<i>Low risk:</i> - Main threat is White nose syndrome which is transmitted in hibernacula (none identified on the Hearst Forest) - Sufficient residual and cavity trees left for roosting during harvesting operations - AOC prescription "BAT" for Bat Hibernacula and "BMR" for Bat Maternity Roost is applied when encountered
Tri-coloured bat	endangered	endangered	- Forms roosts and maternity colonies in older forest - Forages over water and along forest edges	- Study on adjacent forest did not detect presence from acoustic sampling (Mills. 2013)	<i>Low risk:</i> - Old forest is not rare - Main threat is White nose syndrome which is transmitted in hibernacula (none identified on the Hearst Forest) - Sufficient residual and cavity trees left for roosting during harvesting operations - AOC prescription "BAT" for Bat Hibernacula and "BMR" for Bat Maternity Roost is applied when encountered

Wolverine	threatened	special concern	- Home range is much larger than similar-sized carnivores due to scavenging lifestyle - Occupies tundra and boreal forest in Ontario - Denning period in spring requires 1m of snow	- Sightings of tracks on the forest - One known accidental trapping near forest boundary - Detected during aerial surveys conducted by the Wildlife Conservation Society and the MNR	<i>Moderate risk:</i> - Increased density of access roads might result in more illegal and/or accidental trapping - Habitat loss and fragmentation from road construction and harvesting operations - Reduction in snowfall due to climate change increases species vulnerability - If a wolverine or a suspected den is encountered during the denning season, operations will be suspended until protective measures can be applied.
Eastern Cougar	special concern	not designated	- Habitat generalist - Very large range - Often found in forest settings where deer are abundant (but will prey on a variety of larger and smaller animals)	- Several credible sightings mapped by HFMI - Not listed as occurring in the Hearst Forest by MNR because no photograph or physical evidence was associated with the sightings	<i>Unknown:</i> - Little is known about the cougar in Northeastern Ontario - If a den or other credible evidence of occurrence is encountered, operations will be suspended and appropriate protective measures applied

Boreal Caribou	threatened	threatened	- Very large range - Winters in mature, tight canopy spruce and pine forests with patches of ground lichen (<i>cladina stellaris</i>) and/or arboreal lichen - Seeks refuge in areas with low densities of other prey (moose and deer) to avoid predation	- Sightings around Hornepayne and west of Highway 631 - Knowledge shared by members of Constance Lake First Nation - Satellite collaring programs show occurrence in Nagagamis Lake area, the "railroad", and crossing the "finger" at the northern border of the forest	<i>High risk:</i> - Roads associated with forestry facilitate predation - Caribou are known to avoid disturbed, young forest and require large areas of mature conifer to survive. Harvesting can limit available habitat if not carefully planned - Caribou is managed for at the landscape scale. On the parts of the Hearst Forest that are within the Pagwachuan Caribou Range, the Dynamic Caribou Habitat Schedule is applied to ensure sufficient habitat is maintained over the long term and across the landscape. See FMP Supplemental Document 6.2.c for more information.
Yellow-banded Bumble Bee	special concern	special concern	- Habitat generalist - Able to forage for a variety of nectar-producing plants in different environmental conditions		<i>Unknown:</i> - Causes of decline only partially understood (pathogens, pesticides, climate change, habitat loss) and largely not related to forest management
Monarch Butterfly	special concern	special concern	- caterpillars are confined to meadows and open areas where milkweed grows - butterflies feed on the nectar of a variety of		<i>Low Risk:</i> - Threatened by habitat loss in winter habitat further south of the Hearst Forest

			wildflowers - monarchs spend the winter in Mexico		
Black Ash	endangered	Threatened	- facultative wetland species that occurs in moist bottomland habitats - occasionally occurs in upland habitats where it will take advantage of moist microsites - tolerates a wide range of soil types	- observed on alluvial flats of large rivers (especially around the Mattawiskwia) - unique Black ash / White elm / Wild rice community found around the Mattawishkwia Lakes	<i>Low Risk:</i> - Never commercially harvested on the Hearst Forest - occurs within areas already protected as riparian buffers

Globally and Regionally Rare Plant Species

Ontario's Natural Heritage Information Centre (NHIC) provides information about plant species on the Hearst Forest which are rare, but not designated as SAR. Some of these species were noted by researchers doing exhaustive vegetative sampling on the Hearst Forest. In particular, species found along the Missinaibi River (which is known to have a warmer microclimate) may indeed be regionally rare. Species found at more common site types might be found more often if more surveys were done.

Table 3. List of rare plant species found on the Hearst Forest according to information provided by the NHIC. The NHIC ranks species based on number of occurrences estimated for the entire province: 5 or fewer occurrences (S1), 5 – 20 occurrences (S2), or 20 – 100 occurrences (S3).

Common Name	Scientific Name	S Rank
McCalla's Willow	<i>Salix maccalliana</i>	S3
Limestone Oak Fern	<i>Gymnocarpium robertianum</i>	S2
Field Sedge	<i>Carex conoidea</i>	S3
Rough-fruited Fairybells	<i>Prosartes trachycarpa</i>	S2
Rigid Sedge	<i>Carex tetanica</i>	S3
Purplish Copper	<i>Lycaena helloides</i>	S3
Short-beaked Screw Moss	<i>Aloina brevirostris</i>	S3

Other sources of exhaustive species' identification on plots can be found in the 2000 *Earth Science Survey* by North-South Environmental in Nagagamisis Provincial Park & EMA and the 2001 NEBIE Plot Network by Wayne Bell (MNR) south of Kapuskasing. Additionally, many other sources include individual sightings. For example, MNR staff found false ground cherry, likely *Leucophysalis grandiflora*, an S3 species, in two different, remote locations.

HFMI will encourage the reporting of rare plants, and of exhaustive species identification, to NHIC. Since these species are not designated SAR, however, they are not considered HCVs.

1.2 Endemic Species

Does the forest contain an endemic species?

The extent of the geographic area in which a species has to be restricted in order to be considered 'endemic' for HCV assessments is open to question. The certified Management Unit may be too small of an extent. A more appropriate frame could be the Ecodistrict (e.g. 3E-1, the Claybelt) or the Ecoregion (e.g. 3E, the boreal shield in Northeastern Ontario).

Available information was obtained from regional and district MNR staff, and MNR's LIO information system. There are no species that are specifically endemic to the Hearst Forest (i.e. exist only in the Hearst Forest), nor endemic to the Ecodistrict, or to the Ecoregion. Therefore, there is no HCV associated with Element 2.

1.3 Regionally Specific Critical Habitat for Seasonal Concentrations of Species

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

Important Bird Areas

The Hearst Forest is within the Ontario portion of Bird Conservation Region 8 (ON-BCR 8) which has been described as North America's "bird nursery" due to its role in sustaining North America's landbirds. Bird Studies Canada identifies Important Bird Areas (IBAs), which are sites providing essential habitat for one or more species of breeding or non-breeding birds. The BSC website indicates no IBAs in the Hearst Forest; the only IBAs in Ontario are along the coasts of Hudson Bay, James Bay, the Great Lakes and in Southern Ontario. This is not an HCV on the Hearst Forest.

Great Blue Heron Habitat

Great Blue Heron are a migratory bird species that return to the forest each spring. According to the MNR, Herons are not a SAR and not generally of conservation concern. The Ontario Landbird Conservation Plan for BCR8 noted that there appears to have been a population decline recently, but the MNR Stand and Site Guide Background indicates that the decline is not significant given high overall numbers.

MNR's LIO spatial data "Wildlife Activity Area" includes a number of heron rookeries on the Hearst Forest. The *Significant Wildlife Habitat (SWH) Criteria 3E* lists Colonially- Nesting Bird Breeding Habitat as a potential SWH. Criteria for "Confirmed SWH" includes "Presence of 4 or more active nests of Great Blue Heron" which is met by at least one known rookery on the Hearst Forest.

When appropriate measures (AOC buffers) are used to protect heron nests and rookeries forestry operations have a very low impact on this species. One comprehensive study found that cutting appeared to have little effect when beyond 100 to 200 m of colonies (Naylor 2009).

Great blue heron are not Species at Risk, because their habitat does not meet the Guidance criteria of being 'critical' or 'regionally important'. As such, great blue heron habitat is not an HCV.

Moose Wintering Areas

MNR's LIO spatial data "Wildlife Activity Area" includes moose early wintering areas and moose late wintering areas for neighboring Forests, but not for the Hearst Forest. The *Significant Wildlife Habitat Criteria 3E* lists Moose Late Winter Cover as a potential SWH, adding, "the relative importance of the site to the surrounding landscape should be considered."

Moose are common in the Forest and gather in wintering areas throughout. These do not meet the guidance criteria of being *critical* or *regionally important*, and MNR did not see a wintering area that warranted inclusion in the LIO data. Therefore, moose wintering areas are not considered an HCV.

Moose Aquatic Feeding Areas

The *Significant Wildlife Habitat Criteria 3E* lists Aquatic Feeding Habitat as a potential SWH. Moose Aquatic Feeding Areas (MAFAs) are quite common in the Hearst Forest. They are indicated spatially in the LIO "Wildlife Activity Area".

MAFAs do not have their own AOC prescriptions in FMP harvest planning because no-harvest reserves of at least 15m are already on all watercourses and waterbodies. This is noted in the current FMP Plan Text Section 4.2.2.2:

"Separate Moose Aquatic Feeding Area (MAFAs) AOC or CRO are not required, since MAFAs can be considered in the planning of residual forest associated with the riparian AOCs. In this FMP, there were no instances of this occurring because planned residual forest was abundant."

Since moose aquatic feeding areas do not meet the Guidance criteria of being 'critical' or 'regionally important', they are not considered an HCV.

1.4 Significant Regional & Focal Species

Does the forest contain critical habitat for regionally significant species (e.g., species declining regionally)?

Caribou

Note that Caribou is also a federally and provincially designated SAR and was listed as part of element 1.1. This issue will be discussed in more detail in this section.

In recent decades, the long-term sustainability of Boreal Caribou has become a priority for forest management in Ontario and Canada-wide. This species relies on large, contiguous patches of mature conifer to forage for lichen during the winter months. Forest management activities are known to have an impact on the Boreal Caribou's ability to avoid predation through the proliferation of linear features (roads) and the creation of young forest patches on the landscape.

Parts of the Hearst Forest fall into the southern portion of the Pagwachuan Range for boreal caribou. Ongoing monitoring efforts have increased our knowledge about how and where caribou use the Hearst Forest. There have been sightings over the years of caribou around the Nagagami Lake area north of Hornepayne and west of Highway 631, including within Nagagamisis Provincial Park. Satellite collaring studies carried out by the MNR have confirmed this. Caribou collared north of the Hearst Forest have also been recorded as using the "Finger" at the forest's north-western border. The MNR has designated an Area of Application of its Caribou Conservation Plan (CCP). This area, delineated by the MNR was not intended to imply

caribou occupancy (Glen Hooper pers. comm. 2016) and the presence of caribou within the bounds of this mapped range is contested by members of the Constance Lake First Nation. Roger Wesley of CLFN, who reviewed this report, noted:

"Boreal Caribou conservation is very important to all our communities here in the north, especially CLFN. When this Caribou Conservation Plan (CCP) came into play, I was working with HFMI as a Special Projects Forester and my primary role was directly involved in the development of the HFMI CCP. I played a liaison role to assist CLFN and their delegates with this development and engagement. Through this exercise I was overwhelmed with the knowledge shared by the CLFN Elders and knowledge holders as per their knowledge of caribou in the Hearst Forest and north of the Hearst Forest. What they shared with HFMI, and the Ministry of Natural Resources and Forestry (MNR) were as accurate as ever.

The MNR collaring program supported all the information CLFN shared as per location and migration routes and times caribou were actively living. As shared from CLFN the caribou did not use the Hearst Forest very much aside from the north-south route between the Nagagami and Otasawian Rivers and a little bit at the "finger" portion of the Hearst Forest to cross between the Kenogami and Kabinakagami Rivers in a west-east fashion.

Although CLFN objected to the MNR plans repeatedly, their objections were never noted or recorded in any of the studies carried out by the MNR. Due to this failure on the part of the MNR I would like to take this opportunity to acknowledge the information shared by CLFN in this report to go on record that CLFN has objected to the CCP.

This report should somehow acknowledge this position for the record."

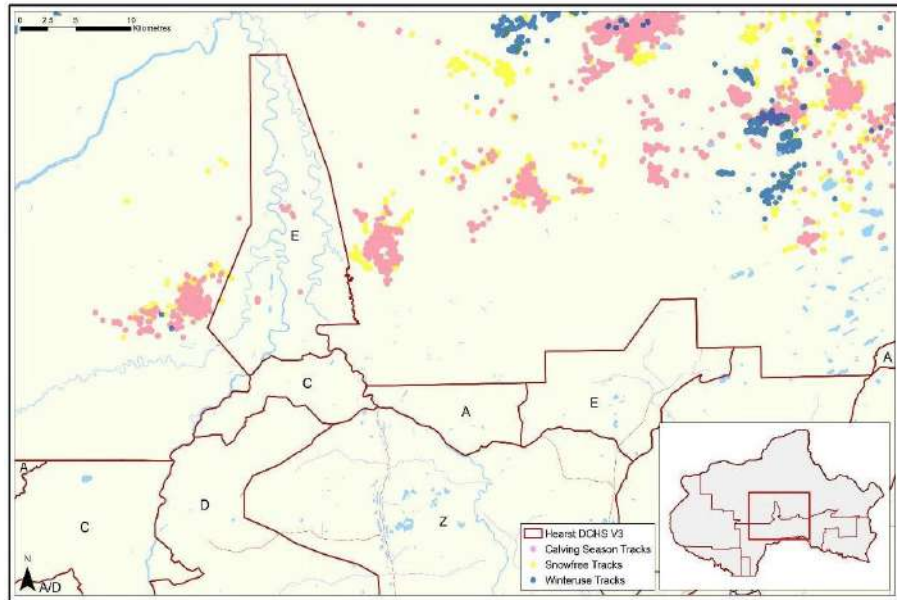


Figure 2. Caribou tracks recorded in relation to the northern most portion of Hearst Forest known as the 'Finger' through collaring programs. These findings confirm what had already been voiced by members of CLFN.

The area of the Hearst Forest which falls within the Pagwachuan Range is managed according to the Dynamic Caribou Habitat Schedule (See Figure 3). This approach divides the managed forest within the caribou zone into “blocks” which will be harvested with-in a 20-year period. These blocks are of a sufficient size to provide the large patches of even-aged conifer forest which caribou rely on. Adhering to this harvesting schedule as well as decommissioning roads post-harvest will hopefully improve the habitat suitability for caribou and reduce risks associated with forestry activities over the next 100 years.

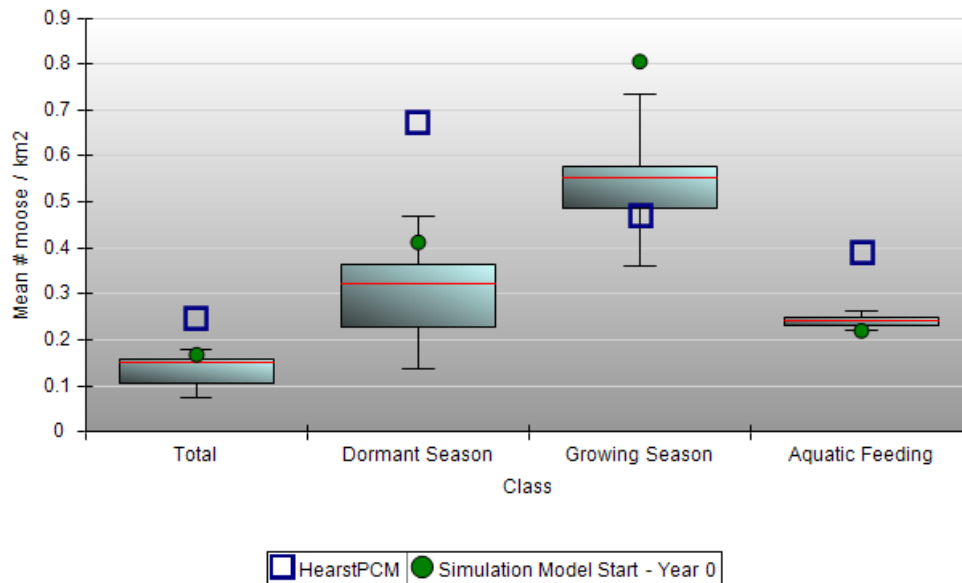


Figure 4. Moose habitat carrying capacity: the total, the dormant season (winter), growing (summer) and aquatic. Blue square represents the current forest condition from the Hearst PCM. The green circles represent the forest condition when the model was created. The box and whiskers represent the simulated levels (interquartile range) and upper/lower limits of natural variation.

Since population levels are a function of hunting pressures more so than habitat availability, moose are not an HCV.

Birds

Much of the information available related to the health of bird populations is produced by dedicated volunteer birders who monitor species year after year. *Partners in Flight* (PIF) is a network of more than 150 partner organizations throughout the Western Hemisphere whose stated mission is to: “Keep common birds common and help species at risk through voluntary partnerships”. Their 2016 revision of the “Landbird Conservation Plan” was an important source of information regarding the status of bird species on the Hearst Forest (including for those listed as SAR in section 1.1). The “Bird Conservation Strategy for Bird Conservation Region 8 in Ontario Region: Boreal Softwood Shield”, produced by the federal government and updated in 2014 was also referenced.

The Hearst Forest falls within Bird Conservation Region (BCR) 8 – the Boreal Softwood Shield. This region spans 6 provinces but, within Ontario covers about 1,470,000 km². It is believed that 229 species of bird breed, overwinter, reside year-round or migrate through BCR8. Both the Canadian government and PIF list species which are of priority for conservation. Some are also SAR and others are considered common but are experiencing steep population declines. Priority species might be considered “locally at risk or in decline” as per the guidance criteria.

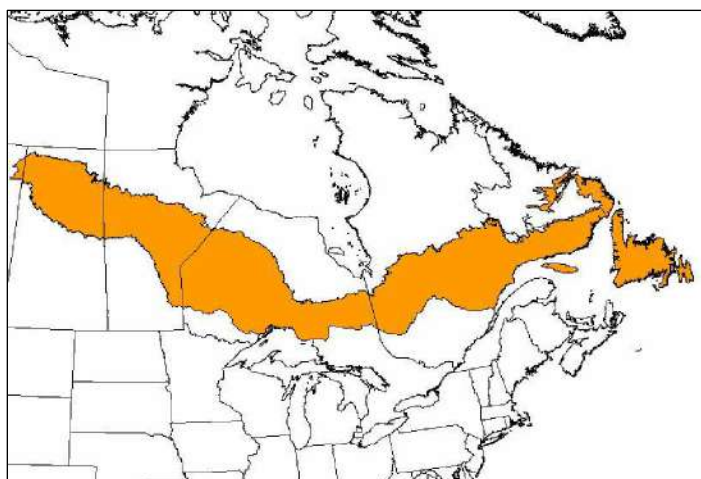


Figure 5. Extent of the BCR 8 in the central to eastern Canadian boreal forest

Most priority species are threatened by the effects of intensive agriculture (land conversion and pesticide use) to the south of the Hearst Forest. Conservation objectives for forest-dwelling species coincide with the current forest management requirement to maintain forest composition, structure and texture within the range of what is considered “natural” over time. Another forest management requirement that coincides with many bird species’ needs is the requirement to leave residual trees as individual stems, clumps, and patches during harvesting. Where stick nests are mapped during operations a buffer is applied to the tree according to either a species-specific or generic AOC prescription.

There is no priority species (as listed by NRCAN or PIC) which require additional protections beyond what is mention in this section or section 1.1. There is no HCV designation for this element.

1.5 Species at Edge of Range & Outlier Populations

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

A variety of sources were checked for this element. For tree species, the FRI produced in 2016 for the Hearst Forest was queried, for both species composition and incidental species. There are also well-known sites with rare species which don't appear in the FRI (due to polygon size restrictions). MNR Natural Heritage Information Centre (NHIC) data was also checked. Another reference is the *Significant Wildlife Habitat Criteria Schedule for 3E*, which lists regionally rare vegetation communities. For perspective on the historical range, historical references include the Province of Ontario Map of 1901 (which noted tree species), surveyor notes, and the early 1900's township boundary surveys compiled by Pinto et al. were used. There are a number of tree species at the northern limit of their range in the Hearst Forest. Some of

these species may have been carried north with the large rivers that flow northward through the Forest, while others may be retreating due to climate change.

Most animal species live in the Hearst Forest home have continental-scale ranges, so there so there are no known east-west range boundaries in the forest. The forest's northern boundary is roughly where the Canadian Shield Ecozone transitions into the James Bay Lowlands Ecozone, which is uninhabitable for many species (and preferable for some), so there are probably some species whose range edge lies just past the northern reaches of the Forest. These species do not require additional protection beyond the site and landscape scale habitat conservation efforts already discussed. There are birds, deer, and fish species whose ranges seem to be progressing into the Clay belt from the south with the warming climate. A range edge advancing into the Forest does not warrant HCV designation.

Red and White Pine

There is no known Red or White pine found north of the Hearst Forest, and only rare outliers within the Forest. The current age structure and distribution of these species as well as historic maps and surveyors' notes seem to indicate that Red and White pine were more prevalent on the Hearst Forest in the past. The range of these tree species has seemingly decreased over time to the degree where only these small populations continue to exist.

The cause for the decreased range is likely the result of a failure to naturally regenerate in the absence of fire. Red and White pine may have been occasionally harvested historically, but not commercially since the 1970's. Current policy prevents them from being licensed for harvest and there is little risk of illegal logging. The natural mature trees have a finite lifespan and, as individuals die, there is a significant risk of there being no replacements. Both red and white pine only seed and regenerate where mineral soil is exposed and under partial light conditions. Even further south of the forest, where Red and White pine are abundant, forest managers often rely on artificial regeneration for these species. As the climate of the Hearst Forest warms, its suitability for these species may improve although the soil and terrain conditions that are limiting will not change.

Red pine is found in small patches or individuals in the Hearst Forest in the vicinity of the Hornepayne Highway, Highway 631, and on the coarse-soiled Arnott Moraine (Figure 6). Mature red pine is found on the shores of Red Pine Lake, Corine Lake, Big Skunk Lake, and Arnott Lake, generally on top of steep south-facing shorelines. There are also some along an esker lake along Rogers Road. In cutovers near mature individuals, scattered individual red pine have successfully seeded into some planted areas and are now about 20 years old.

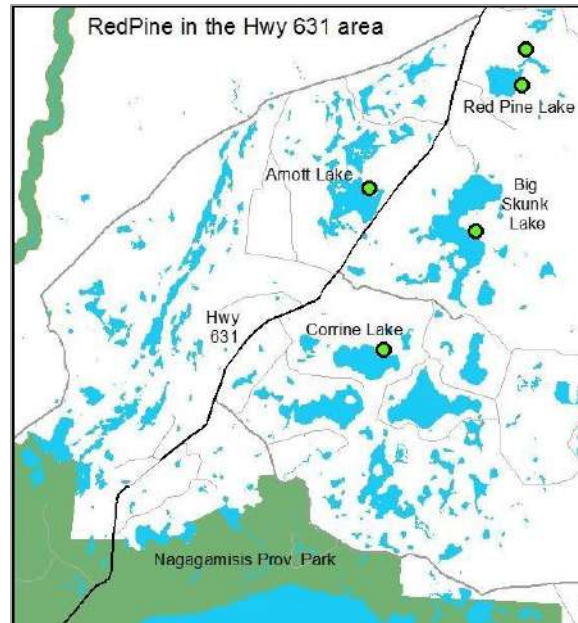


Figure 6. Map of natural, mature Red pine (green dots) found in the vicinity of Highway 631 on the Hearst Forest

The Earth and Life Science Report for the Nagagamis Signature Site (2000) considered the mature Red pine found in the Arnott Moraine Area to be of special significance. It was recommended that the riparian reserves which house the mature red pine be maintained and extended to capture young naturally seeded red pine in the adjacent areas. These areas do not need to be delineated as Designated Conservation Reserves as they are already protected in no-harvest riparian reserves.

There are only 7 mature, natural-origin White pine super-canopy trees (The Seven Sisters) in the Hearst Forest (Figure 7). They are found near the junction of the Calstock Bypass and Rogers Road. The white pine has had some success at seeding underneath the canopy and there is currently regenerating white pine in the area. As noted by the reviewer Roger Wesley:

"These 7-9 Eastern White Pine are naturally regenerating at this site which is something I believe needs further assessment. Assessing why and how they came to grow in this site so far north from their range is something I would consider an HCV that needs more detailed assessment, thus the fine filter approach suggestion.... The 7-9 Eastern White Pine at this site are much older than the mentioned tree planted pine found elsewhere in the forest, so assessing their origin is something of importance. This site and species may want to be considered as a Biodiversity Reserve."



Figure 7. Photo of the "Seven Sisters" super-canopy White pine trees peaking out above the canopy.

Red and White pine are an HCV on the Hearst Forest because they are naturally occurring outliers at the edge of their range and are significant to First Nations communities. They both have protected status on the Hearst Forest and are never licenced for harvest. Red pine regeneration, where it occurs, is protected by riparian buffer AOCs which (as demonstrated in the case of the Nagagamisis provincial park area) will be extended if necessary. The "Seven Sisters White pine" area has been identified as a DCL candidate (under FSC® indicator 6.5). It is believed that maintaining Red and White pine populations over the long term will require artificial regeneration efforts as conditions for natural regeneration (mineral soil exposure and partial light conditions) are hard to achieve given the absence of fire. In the current FMP, objective 2.7 is to increase the area of Red and White pine stands from zero to 100 hectares over the next hundred years through tree planting efforts. If successful, this would increase the amount of these species to projected historical levels.

Red and White pine plantations are monitored as part of the regular silvicultural program on the Hearst Forest. Areas are revisited within a year or two of planting to assess regeneration success and the need for herbicide application to control competing vegetation. In subsequent years, the areas will be assessed to determine the free-to-grow status of the plantation. Monitoring efforts will inform future regeneration strategies to ensure these species are maintained in the long term.

White Elm

There are two known stands with significant White elm components on the Hearst Forest (Figure 8). Both are associated with the large rivers that flow north from the Mattawishkwia River. It is likely that this is the result of the transportation of the seed northward on the river, possibly during high water events that saw seed being deposited. Growth of these southern species may also be facilitated by the climate-moderating effects of the big rivers. Elm can exist beyond the rivers as evidenced by the trees that were planted in Kapuskasing around the time the town was established (and are now mature trees). In the rest of its range, elm in concentrations is susceptible to Dutch Elm Disease. This may make these healthy outliers of special conservation importance as they remain isolated and unaffected by the pest outbreak.

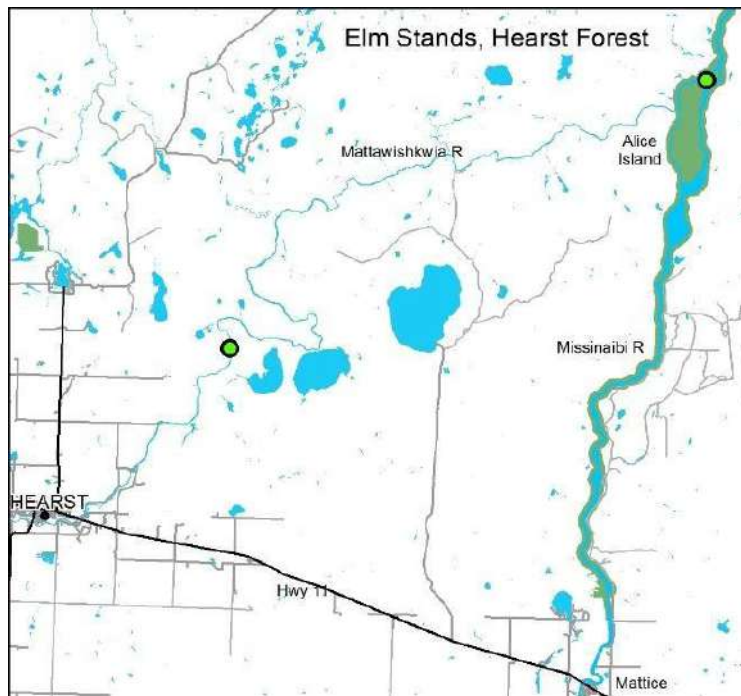


Figure 8. Two known occurrences of White elm on the Hearst Forest (green dots): Mattawishkwia Lakes area (left) and Goldwin Townships Islands (right)

NHIC data indicates that the Goldwin Township Islands on the Missinaibi River supports an Ash/Elm community in conjunction with other species that are considered to be rare on the Claybelt including wild ginger, red baneberry, and hairy Solomon's seal. Similarly, poison ivy was reported along the Missinaibi River near Thunderhouse Falls. Good drainage along this river makes for warmer than normal micro-climates. The islands are protected as part of Missinaibi Provincial Park. Elm also occurs in the Mattawishkwia Lakes area and was recently observed by HFMI staff. Crown surveyors in 1901 also recorded it there.

Since elm is at the edge of its range and naturally rare on the Hearst Forest, it is an HCV. Both areas where White elm occur are protected. The entire Missinaibi River is included in the provincial park boundary on the Hearst Forest. The elm found near Mattawishkwia Lakes is currently listed as a DCL.

1.6 Conservation Areas

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

Provincial parks

The definitive spatial data for official Provincial Parks, Conservation Reserves, Natural Heritage Areas, and Wilderness Areas is the MNR LIO spatial data. There are three provincial parks

(Fushimi, Nagagamisis, and Missinabai) and no federal parks within the boundaries of the Hearst Forest. The Canadian Protected and Conserved Area Database was utilized, as well as the UNESCO database. In 2000, MNR designated new Parks and Conservation Reserves through its Ontario Lands for Life/ Living Legacy (OLL) exercise. To determine whether there were any areas of the Hearst Forest that had previously been identified as potential protected or conservation areas, but not adopted during OLL, the 1983 Hearst District Land Use Guidelines (DLUG) and Ontario's Living Legacy (OLL) were consulted. No areas of potential protection were identified. An ANSI (Area of Natural & Scientific Interest) was designated in the 1980's abutting Fushimi Provincial Park on the east, but MNR chose not to include it in the parks and conservation reserves designated through OLL.

There is one 32 ha area whose status is unusual - the Sankey Township Nature Reserve Wilderness Area 2 km west of Skunk Island in Missinaibi River Park. It is shown in the Crown Land Use Atlas as a Forest Reserve P1544-W1009 (P1544 being Missinaibi Provincial Park). In MNR's LIO database, it is not in the Parks or Conservation Reserves layers, but rather in the Natural Heritage Area and Wilderness Area layers. It is only 32ha and was designated when the surrounding area was harvested in approximately the 1970's (part of it was harvested too). It is near the maintained access road to the Missinaibi. No significant or unusual value is apparent. During the FMP planning, attempts were made to ascertain its purpose, to no avail.

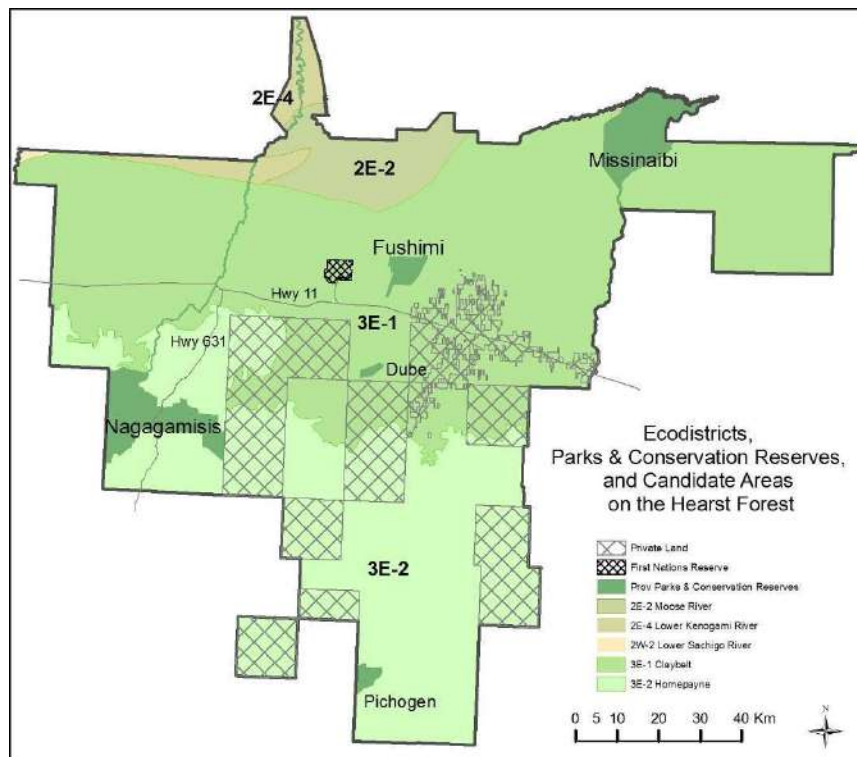


Figure 9. Provincial parks and conservation reserves within the Hearst Forest (dark green).

The Nagagamisis, Missinaibi and Fushimi Provincial Parks were identified for their recreational and ecological value. The question of what the Park value is, and what external buffer or prescription is required to protect it, was a topic of debate during the FMP preparation. It has been concluded that the boundaries were designed to enclose all values being protected, while minimizing road access to unauthorized areas. The AOC prescription “PP” dictates how modified operations must be carried out within 200m of a provincial park boundary. This AOC does not permit the building of any new permanent roads within the area of modified operations. Operational roads are allowed but must be minimized and decommissioned as quickly as possible so as to minimize unwanted access to the park. See table FMP-11 for more details about this AOC prescription.

The values for which Pichogen and Lac Ste Therese were identified during Lands for Life/OLL was their Landform-Vegetation types as per a gap analysis. Dubé Creek was delineated to capture Iceberg Keel Marks, a landform feature. This is a good example of iceberg keel marks, which exist elsewhere in the Forest. An even better example has been captured in Designated Conservation Land #2 (Mulloy Iceberg Keel Marks). The boundaries were designed to enclose all the value being protected, and no external buffer has been required by FMPs. For this reason, and since the parks/CRs are surrounded by forested land (as opposed to permanently cleared land), no external buffer or connector is considered necessary to maintain these values.

Since they are officially designated protected areas, and provide conservation value, these Provincial Parks and Conservation Areas are HCVs. According to the AOC for provincial parks in the current FMP, all forestry operations within 200 m of the park will be modified so as to ensure no unplanned access to the park is created. Aesthetic values (“viewsapes”) will also be identified and protected as needed. These protective measures will be monitored during regular compliance checks.

Enhanced Management Areas

Through the Lands for Life/Living Legacy exercise which established new protected areas throughout the province in 1999, an Enhanced Management Area (EMA) was designated in the Hearst Forest, straddling Highway 631 for the purposes of maintaining recreational activities along with timber management. The EMA, together with Nagagamisis Provincial Park, was designated a Signature Site, justifying special management. The soil and terrain of the EMA is well-drained loam which supports fast timber growth. The lakes are locally famous marl (turquoise) cold-water kettle lakes which are stocked with trout to support recreational fishing. The area was historically very important to Indigenous peoples and, along with Nagagamisis Park, likely has the highest concentration of archaeological artifacts in the Forest. The entire area, except for the wide riparian reserves, was harvested from 1976 - 1998. Since this area was designated for recreational use and timber production rather than conservation, the EMA does not meet the criteria for an HCV.

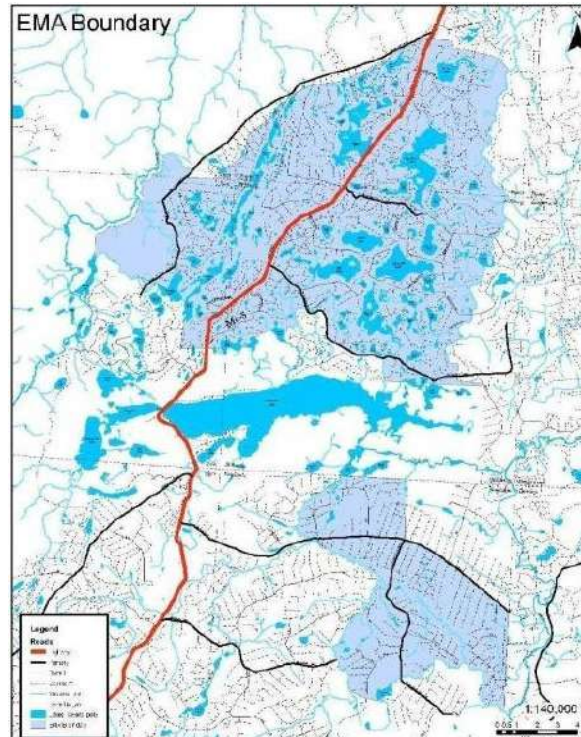


Figure 10. Enhanced Management Area designated in 1999

Designated Conservation Lands

In accordance with the FSC® National Standard, criteria 6.5, HFMI has identified 17 *Designated Conservation Lands* (DCLs) which will be deferred from harvest and protected with the intent of eventually pursuing official protective status for these areas. The DCLs were chosen to protect areas of cultural importance (identified through engagement with the public and Indigenous communities) and so as to ensure a representative area of all types of ecosystems is in conservation land across the forest and the ecozones. A gap analysis was performed to determine which types of ecosystems might be lacking protection in the region. For more details on the DCLs and their selection process see HFMI's *Designated Conservation Lands Report*.

These areas are permanently deferred from harvest but have no official status as conservation lands. Further engagement with First Nations and the public is required to confirm DCL areas. Ontario regulations do not allow for the explicit inclusion of DCLs in FMPs. The DCL candidate areas are not HCVs – although many are HCVs because of various other elements listed in this document.

Boreal Wildlands

In 2022, the Nature Conservancy of Canada purchased 7 townships which together amount to over 144,000 hectares of private land encompassed by the Hearst Forest. This property, known as the “Boreal Wildlands”, will be managed with the objectives of conservation and restoration. The NCC has produced a property management plan which states their intentions and will be continually updated as the project progresses. The Boreal Wildlands is the largest private conservation project ever undertaken in Canada's history.

The NCC and HFMI have a strong working relationship and the NCC has expressed their full support of including the Boreal Wildlands in the HCV network. The area was also considered as conservation land in the gap analysis used to select DCLs. The Boreal Wildlands are an HCV.

2. Large Landscape Level Forests

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

2.7 Intact Forest Landscape

Does the forest constitute or form part of a globally, nationally, or regionally significant forest landscape that includes populations of most native species? Are there contiguous forest landscapes that have the following characteristics:

- *at least 50,000 ha in size;*
- *minimal width of 10 km;*
- *free of permanent infrastructure and less than 5% non-permanent anthropogenic disturbance;*
- *free of large-scale industrial resource extraction activities;*
- *dominated by forest, but inclusion of other ecosystems to a reasonable extent is permissible;*
- *dominated by native plants and communities;*
- *not necessarily dominated by old forest communities*

The Global Forest Watch IFL GIS data was examined to assess the area of Intact Forest Landscape (IFL) on the Hearst Forest. The condition of the Hearst Forest was assessed in 2017 and reviewed in 2023 and 2024 using the Intact Forest Landscape Guidance for Forest Managers (2020). This was done using local knowledge and the current FRI, depletion and roads GIS files. Figure 11 shows how the Hearst Forest is situated within Canada's IFL as per the Global Forest Watch 2021 shapefiles. As part of the analysis, portions of the Missinaibi Provincial Park and the south-east management area not impacted by anthropogenic disturbance are included as intact.

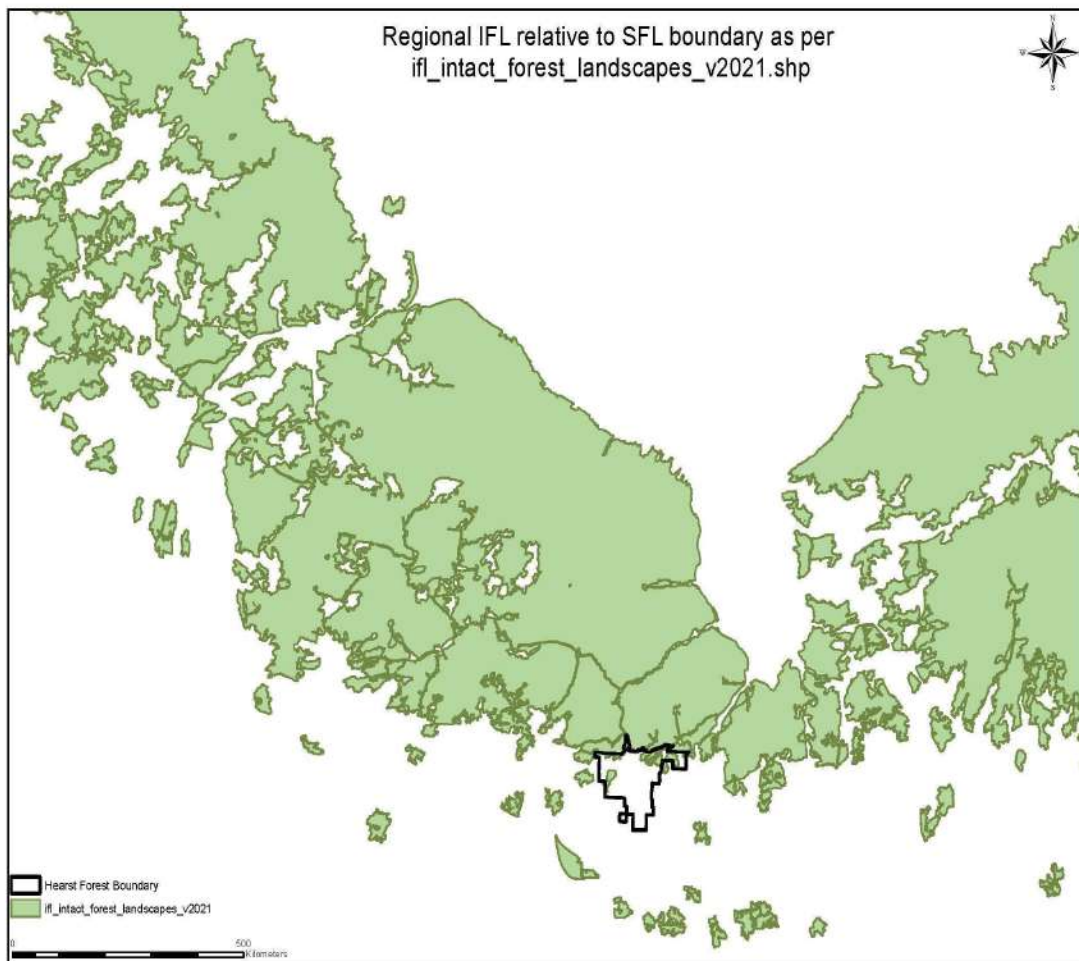


Figure 11. The Hearst Forest (black outline) within Canada's Intact Forest Landscape as defined by Global Forest Watch

The area identified as IFL, seems disconnected on the Hearst Forest, yet constitutes an IFL as it connects to the larger regional intact forest north of the Hearst Forest. Between 2016 and 2023, 6,092 hectares of IFL were depleted representing 5% of the Hearst Forest IFL. However, when applying the 1-kilometer buffer to roads and the 500-meter buffer on harvest blocks as per guidance, the area “impacted” grows to 18,036 hectares or 15% of the IFL. On the Hearst Forest linear or elongated blocks are employed to emulate the type of natural disturbance that would occur from stand replacing fire. This means, however, that the guidance for this element to apply a buffer as disturbance, accounts for 10% of the “disturbance” itself. Supposing a full harvest and depletion of all available harvest area, the Hearst Forest IFL will be depleted by 9% by the end of the 2019-2029 FMP. After applying the 1 km buffer on roads and 500 m buffer on harvest blocks, the “disturbance” would, in theory, reach 20% of Hearst Forest IFL (the FSC® guidance threshold).

Table 4. Analysis for the defined IFL on the Hearst Forest.

Description	Area (Ha)	Comments/notes
Total area on FMU of IFL as per the 2021 GFW layer:	248,238.17	(16.31% of the Hearst Forest)
IFL Review - Exclusions as per standard direction		
Area 14 (West of Friday Creek Road)	5,879.60	Area not contiguous - connected to IFL by corridor of 44.5 meters (less than the 2 km requirement)
Area 15 (East of Friday Creek Road)	24,244.72	Area not contiguous - not connected to
Area 16 (Frost/Cross)	44,746.84	Area less than base size of 50,000 Ha as per minimum requirements.
Areas 1 to 13 (red on map): Total area previously disturbed and included as "intact forest landscape", plus buffers***	75,723.67	GFW layer included area depleted between 1947 and March 31, 2016 as intact forest. Area previously disturbed showing Operational roads including from mining activities in area 6 were included.
Total area removed:	150,594.83	61% of IFL
IFL Review - Additions as per standard direction		
Missinaibi Provincial Park undisturbed addition	23,752.98	10% of IFL as per standard direction
Total area on FMU of IFL as per the 2021 GFW layer, updated to meet FSC IFL guidance:	121,396.31	(7.98% of the Hearst Forest)
Updated and Estimated Depletions to 2029		
Without buffers		
Area depleted in the IFL from April 1, 2016 to March 31, 2023:	6,092.37	5% of IFL
Area to be depleted in the IFL under current FMP (April 1, 2023 to March 31, 2029):	5,110.67	4% of IFL
Total area to be depleted in the IFL from April 1 2016 to March 31, 2029:	11,203.04	9% of IFL
With buffers		
Area depleted in the IFL from April 1, 2016 to March 31, 2023:	18,036.17	15% of IFL
Total area to be depleted in the IFL from April 1 2016 to March 31, 2029:	24,757.02	20% of IFL
Description of analysis: Evaluation of Intact Forest Landscapes (IFL) on the Hearst Forest was completed and derived from the Global Forest Watch 2021 dataset and revised based on the Intact Forest Landscape Guidance for Forest Managers (FSC-GUI-30-010 V1-0 EN) for the identification and assessment of IFLs. Previously harvested areas representing 75,723.67 Ha mistakenly included in the GFW shapefile were removed based on depletion files and photo analysis of aerial photos and high resolution SAPs to March 31, 2016 since operations are tracked by AWS year (April 1st to March 31 of every year) not by calendar year. The analysis also removed areas identified by GFW that did not meet standard requirements (less than 50,000 Ha, disconnected or previously disturbed by anthropogenic disturbance (i.e. mining, hydro, forestry, etc.).		

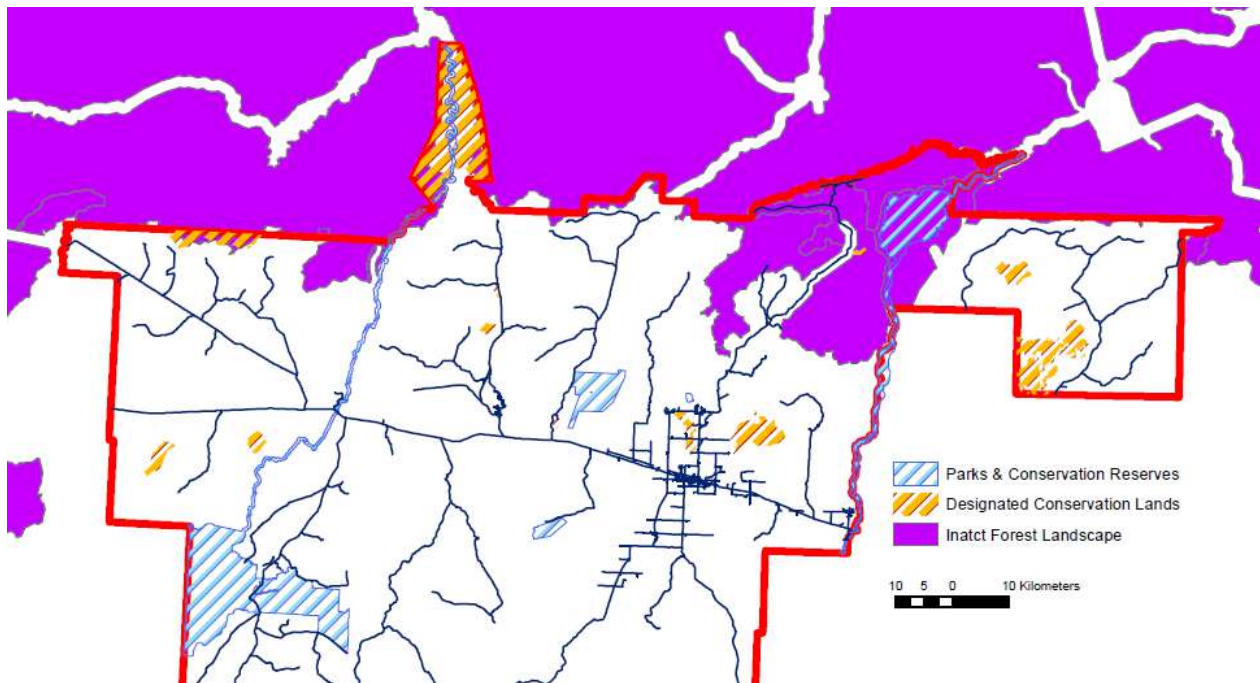


Figure 12. Area of intact forest landscape (pink) on the Hearst Forest. Some of this area is protected by parks and conservation areas (blue) or designated conservation lands (yellow). The boundary of the Hearst Forest is shown in red.

The area pictured in Figure 12 qualifies as an IFL and is considered an HCV. The area of IFL will be monitored in the manner described above and disturbance will be limited to <20% of the total area of IFL. This is in alignment with the FSC® *IFL Guidance for Managers* (2020) document which states that IFL “core areas” of at least 80% of the total IFL area (in 2017) must remain undisturbed.

While HFMI is committed to adhering to achieving this standard, the management of this HCV is complicated by the fact that the qualities of an IFL such as "late seral stage", "structural complexity with deadfalls", and "climax species" are not necessarily within the range of natural variation for a fire adapted ecosystem such as the boreal forest. These qualities are increasing on the Hearst Forest and gradually rendering the landscape less desirable as caribou habitat, whose protection is being used to promote requirements for intactness in the first place. These are considerations which may need to be addressed in the coming decades.

3. Ecosystems

Forest areas that contain rare, threatened, or endangered ecosystem, habitats or refugia

3.8 Naturally Rare Ecosystems

Does the forest contain naturally rare ecosystem types?

Black Ash/Elm Forest

With only two occurrences on the Hearst Forest, the Black ash/White elm ecosystem is considered regionally rare. Black ash occurs on alluvial flats along large rivers – an ecosite which is slightly uncommon. It is also a SAR (addressed in element 1.1) as all species of ash are threatened by the spread of the invasive Emerald ash borer. White elm, as previously noted in element 1.5, is very rare and a range outlier species. The Black ash/White elm ecosystems are found along large rivers and are subject to periodic flooding during spring high water season since the rivers are free flowing and not dammed. While the FRI indicates that black ash is persisting, (7,379ha have >10% Black Ash), the two sites with elm do not appear to be regenerating under the existing canopy (B Ekstrom pers. obs. 2007) and the trees in the overstorey are succumbing to the effects of old age and weather. It is uncertain how well these two Black ash/White elm communities will persist without an effort to regenerate them to the existing species. Given the riparian location of these areas, it is not likely that they could be sustained through artificial regeneration efforts.

One of the two black ash-elm communities is on the Goldwin township islands in the Missinaibi River. The other is an especially large community of wild rice and black ash, with an elm tree, in the linked Mattawishkwia Lake, East Mattawishkwia Lake and Mattawishkwia River. At about 2 meters in places in the middle, these are likely the shallowest large lakes in the Hearst Forest. Wild rice occurs rarely in the Hearst Forest, and Mattawishkwia Lake is the largest occurrence. Surveyors in 1901 observed elm in the Mattawishkwia Lakes in 1901. An MNR biologist remarked that the place seemed like somewhere far from the Hearst Forest. This area is teeming with waterfowl in season and is one of two Ducks Unlimited project areas in the Hearst Forest. The lakes have been used historically, as the Mattawishkwia River forms a once-valuable waterway link between the Kabinakagami River (Albany River system) and the Missinaibi River (Moose River system).

Both sites have already been identified as HCV under elements 1.1 and 1.5 but also constitute an HCV according to this element.

3.9 Ecosystems in Decline Regionally

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

This element is addressed principally by looking at objective two of the Hearst FMP (see table FMP-10) which is to maintain or move towards desired forest structure and composition as per the Boreal Landscape Guide. In Ontario, strategic direction for management units is set by assessing the current forest condition and comparing it to an estimate of the preindustrial condition which is referred to as the Simulated Range of Natural Variation (SRNV) and modeled as part of the Boreal Landscape Guide information package. Indicators for objective two reference achievement of target areas of 11 landscape classes. The landscape classes were developed by performing a cluster analysis of habitat types (by forest unit and development stage) used by a variety of local fauna. These groupings allow us to simplify the problem of addressing the habitat requirements of local wildlife and represent a variety of forest types. All landscape classes listed in objective two of table FMP-10 were assessed and those which were below the SRNV in 2017 (when the plan was written) were considered for this element.

Table 5. Assessment method for identifying ecosystems in decline regionally. All Landscape Classes (from objective two, FMP-10) were considered. Those which fall below the target area (SRNV) (light orange) were explored as candidates for element 3.9.

Landscape Class	Area in 2017 (ha)	Target area (ha) (SRNV)
Immature and older pine (PJI)	5,443	21,460 to 34,172
Mature and older mixedwood (MM)	56,798	93,549 to 123,766
All ages of red and white pine (PRPW)	0	100
All ages of Jack pine (P)	36,485	55,040 to 93,567

As we see in Table 5, there are four landscape classes which fall below the SRNV in the short and/or long term. Although HFMI would like to increase the area of all landscape classes which are lacking, some can be extremely difficult to regenerate intentionally and without fire. This is the case for shade-intolerant species such as White birch, Trembling aspen and Jack pine which do not regenerate well under their own canopy and require large-scale disturbance. Limited utilization for low-quality hardwood stands has also led to decline (as White birch and Trembling aspen require heavy disturbance to regenerate). In the past HFMI has applied for extra funding to be able to execute stand improvement cuts in some areas. In all cases, it is believed that the main factor leading to decline in the area of these ecosystems is the exclusion from fire from the landscape.

Red and White pine

The area of Red and White pine stands starts at zero at the start of the plan with objective 2.7 being to gradually increase this to 100 ha (the estimated pre-industrial level) over the century. This will be achieved through conversion of selected sites and aggressive silvicultural intervention followed by monitoring efforts. These species are never harvested but, obviously

have finite lifespans. Red and White pine stands are an HCV and are addressed in more detail in section 1.5.

Burned Condition

An ecological condition which is estimated to be in decline is the burned condition, due to modern fire-fighting capabilities. Undisturbed examples (not salvage logged or converted to road) are particularly valuable. Old fire areas exist but, when the trees have fallen, ecologically, more recent burns are needed for the maintenance of this site type within the range of natural variation. The exclusion of fire is also thought to be a factor contributing to the decline of certain landscape classes.

Maintaining the burned site type on the forest is complicated and largely beyond the control of HFMI due to the regulatory and public safety concerns with letting fires burn or prescribed burning on the Hearst Forest. Areas which are currently in a post-burn state are protected as DCLs and do not require additional protection as an HCV.

3.10 Large Landscape-Level Forests

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

The guidance for this item is to identify undeveloped watersheds over 5000 ha in size, containing a significant proportion of climax species. The item also calls for the identification of remnant forest patches (remaining patches of “natural” forest, as judged by structure and composition of the stand).

The estimated natural age structure and species composition of the Hearst Forest is a mix of the legacy of the pattern of wildfires that burned freely before the introduction of effective forest fire protection, and forest harvesting patterns. Prior to the arrival of European settlers in the area around 1910, fires (both naturally occurring and intentionally set by Indigenous Peoples) were the driving force behind forest succession on the landscape. Over the last century humans have completely transformed the Hearst Forest through fire exclusion. Since about 1950, there's been very little fire on the Hearst Forest, other than prescribed burning in cutovers until 1995 (and in 2012). Fire exclusion in a boreal ecosystem affects both age distribution and species composition and has resulted in an overabundance of shade tolerant, climax species such as Balsam fir. The “large, unfragmented” condition referenced in this element would not be naturally abundant in the boreal forest, under historic fire regimes. The current management paradigm seeks to mimic this pre-industrial condition in order to provide sufficient habitat for all native wildlife.

The areas of never-harvested forest that remain in the Hearst Forest today mostly arose following wildfires that occurred in the early 20th century, specifically the fires of 1901, 1910, and 1923 (Figure 15). The resulting forests were not of merchantable age to harvest until recently. There are also areas of significant size that have not had access created in them and have never undergone harvesting operations. They exist within a matrix of continuous forest, so they are not really 'remnant' but still fit the criteria.

The largest landscape level forest area without permanent roads or infrastructure is included in the Intact Forest Landscapes HCV (already addressed as item 2.7), which centers on the Missinaibi Provincial Park (part of the area which burned in 1901). The Mattawishkwia Black Ash – Elm – Wild rice ecosystem also meets the criteria as an LLF but was addressed as item 3.8.1 (rare ecosystems). The Hillmer Lake area (6455 ha) also meets the criteria for an LLF is captured by DCL #7. Caribou were seen in the area in the 1970s and it is now an X zone in the DCHS. Hilmer Lake is managed as a remote tourism lake. This area is an HCV under this category – the others which meet the criteria have already been listed as other HCVs.

3.11 Diverse or Unique Ecosystems

Are there nationally/regionally significant diverse or unique forest ecosystems, or forests associated with unique aquatic ecosystems?

To assess this indicator, the eFRI data was considered as well as the MNR's Significant Ecological Area data, Natural Heritage information and records of wildlife sightings and fires.

As discussed in the previous section, inventory data shows that the fire-origin condition is now rare on the Hearst Forest. This is relevant because it is well established that fire significantly alters the soil conditions and species composition as compared to disturbance from harvesting activities. The fire origin condition is particularly different from those which have become over-mature and are experiencing natural succession in the form of individual tree mortality. A former MNR area biologist claimed that the rarest site type in the Hearst Forest is the recently burned type. Indeed, on the 3E-1 ecodistrict in the Hearst Forest, only 28,300 ha have burned in large (>200ha) wildfires since 1920. Most of this area has since been altered by humans (salvage cut, roaded, planted, or farmed) or is private land.

All unique ecosystems found on the Hearst Forest currently receive protection as candidate DCL areas; therefore, no HCV designation is required. See DCL report for more details.

4. Ecosystem Services

Basic ecosystem services in critical situations, including protection of water catchments and control of erosion on vulnerable soils and slopes.

4.12 Drinking Water

Does the forest provide a significant source of drinking water?

Municipal information was used to examine the water sources used by communities and annual reports were used to examine the degree to which the water sources are vulnerable to forest operations, considering the proportion of forest operated on and mitigation measures in Forest Management Plans. The communities in the Hearst Forest that obtain their drinking water from municipal water supplies are Hearst, Mattice, and CLFN. Residents of other villages in the forest (Val Cote, Hallebourg, Jogues, and Lac Ste Therese), as well as the rural residents living outside

of these communities, obtain their drinking water from wells. At this time there has been nothing identified that would impact these wells.

The climate of the Hearst Forest is characterized by sufficient precipitation (768mm/year average for Hearst, as per the Ontario Flow Assessment Tool) such that drought is uncommon and brief. There have been years in which low water levels in rivers and the ground-water table have led to water shortages in towns and for people on less productive wells. To combat this, the town of Hearst installed two weirs in the Mattawishkwia River to ensure the town does not run out of water.

CLFN has the third largest population with an on-Reserve population of 820 (CLFN website). The community used to draw water from the lake which was considered an HCV in the original 2011 report. In 2011-2012, the community's water system was upgraded and now draws from a groundwater well due to concerns about surface water quality. With the upgraded water system not drawing from the lake (or surface water), the lake itself is not necessarily an HCV, but the entire Kenogami watershed is.

The town of Hearst draws its water from the Mattawishkwia River which flows through the town. The Mattawishkwia River watershed upstream of Hearst is 1,171 km² in size and is half Crown and half private land. Other than agricultural land (3%) and land permanently cleared for infrastructure (1%), the watershed that supplies Hearst's water remains 94% forested. Because its watershed remains forested, the water supply of Hearst is not affected by forestry operations on Crown Land. The watershed of the Mattawishkwia River is not an HCV.

The community of Mattice draws its water from the Missinaibi River and treats it in a community water system. The Missinaibi River watershed upstream of Mattice is 8,940 km² and is within a provincial park with no dams for the entire length north of Mattice. There is a 200m no-harvest zone on the Missinaibi itself from shoreline, as well as no-harvest buffers on tributaries. The water source for Mattice is likely to be unaffected by forestry operations, therefore, it is not an HCV.

4.13 Watershed Regulation

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

The Hearst Forest has a number of large rivers running through it, and is part of two second-order watersheds, divided up the middle of the Forest. The Kenogami watershed is on the west and the Missinaibi-Mattagami watershed is on the east. The west part of the Forest drains into the Pagwachuan (Pagwa), Nagagami, and Kabinakagami (Kabi) Rivers, which are large rivers (100m wide at points). The Pagwa joins the Kenogami which then joins the others at historic Mammamattawa at the northern boundary of the forest. From there, all drain to the Albany River and James Bay. The east of the Forest is drained by a number of smaller rivers that ultimately drain into the Missinaibi River and then to James Bay. One of these smaller rivers is the Pivabiska River. The Pivabiska River starts at a series of 5 lakes, the Chain of Lakes, that are large for this part of the province. These lakes serve as a reservoir absorbs excess surface water after rain events and moderates water levels.

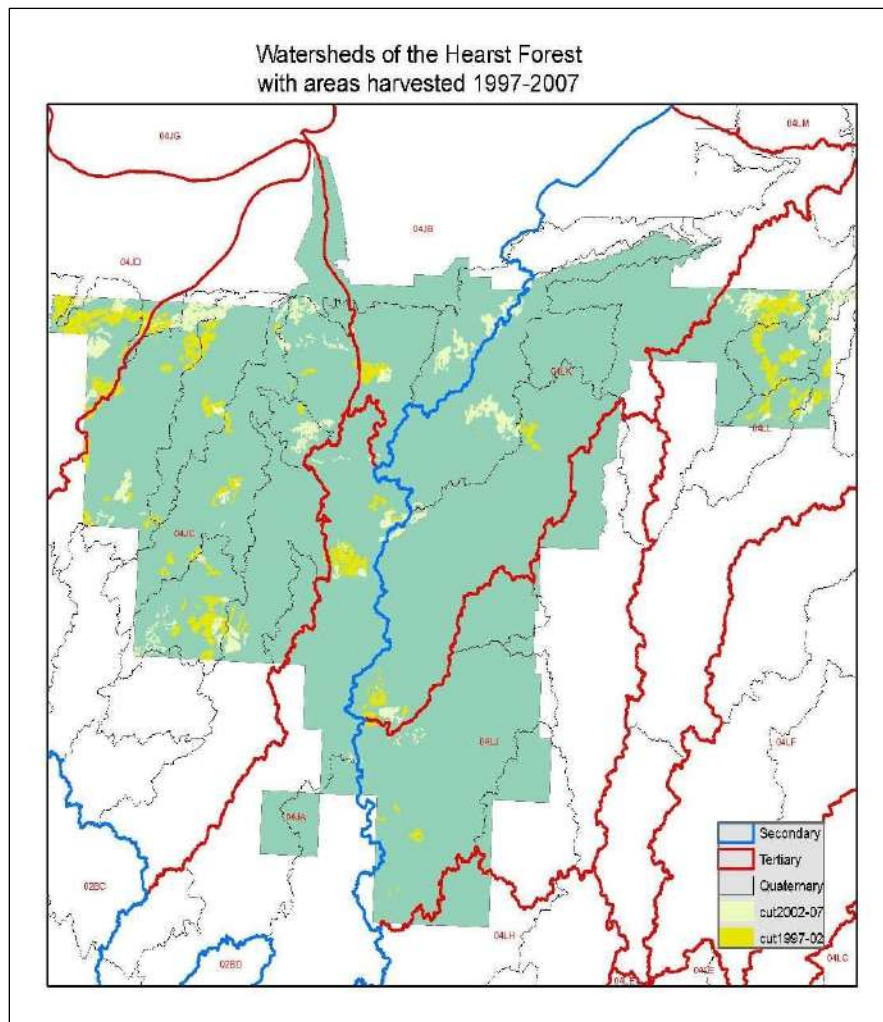


Figure 13. Watersheds in the Hearst Forest with harvested areas from 1997-2007

There are no high-risk areas for flooding. The Hearst Forest is largely a contiguous natural forest with only 1.4% of the land area developed as settlement, road, railway, or agricultural land. The remaining area is forested and provides the ecological services of moderating water flows. The vegetation on the land regulates the speed at which the water flows from the land following rain events. The extensive wetlands and muskegs (48,000 ha of TMS and OMS on Crown Land, as per table FMP-1) buffer the fluctuation in runoff and water levels and the lack of topography results in slow water flows.

The climate of the Hearst Forest is characterized by sufficient precipitation to forestall drought (768mm/yr average for Hearst, as per Ontario Flow Assessment Tool), as evidenced by the rarity of fire and the prevalence of muskegs. There have been years in which low water levels in rivers and the ground-water table have led to water shortages in towns and for people on less productive wells. To combat this, the town of Hearst installed two weirs in the Mattawishkwia River to ensure the town and the Columbia Forest Products mill do not run out of water.

Operations on the Hearst Forest have historically never been a threat to hydrological regulation and it is expected to stay this way into the future. No impact on the land is expected, nor has been observed. There is no HCV associated with this element.

4.14 Erosion Control

Are there forests critical to erosion control?

The relatively flat terrain of the Hearst Forest makes the land less prone to erosion than in mountainous regions. Throughout most of the forest, rivers alternately erode and deposit on their banks so that, over the millennia, banks are formed that, in some places, are higher than the surrounding terrain. On the large rivers, there have been cases where the high riverbanks slumped into the river, temporarily blocking the water flow. This is a natural phenomenon that occurs several times over the lifespan of the river as it meanders towards James Bay. This type of erosion is natural and unrelated to forest management.

Where harvesting operations are carried out adjacent to rivers and other water bodies, buffer zones of an appropriate width will be left to ensure adequate vegetation is retained to maintain stable shorelines. Buffer zones adjacent to waterways are of varying widths depending on the slope of the banks (greater slopes receive wider buffer zones).

One activity where the potential for erosion occurs is at the installation of water crossings, both at the installation phase and then ongoing as long as the water crossing remains in place. Best management practices for the installation, monitoring, and maintenance of water crossings have been developed with the industry operators to eliminate or mitigate the effects of erosion on water bodies that are crossed. For more information refer to the MNR guidelines for water crossing installation, maintenance and removal.

HFMI, in partnership with the forest industry, has developed a manual describing different methods of minimizing site damage while carrying out forest operations (*Guide for Minimizing Site Damage and Site Disturbance on the Hearst Forest*). This manual has been distributed to all harvesting operators and supervisors who work in the forest. By following the practices described in the manual, site damage and subsequent erosion is minimized or mitigated.

No HCV is associated with this element.

4.15 Fire Breaks

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

Fire is a natural process in the boreal forest and important for maintaining a healthy forest. Periodic destructive fire serves not only to renew the forest but also to occasionally destroy the seed bank of tree and shrub species that impede regeneration of fire dependant species (which are naturally more prevalent on the landscape). Even very wet spruce and cedar lowlands will occasionally dry out enough to burn.

Active fire suppression (over the last century but especially since the 1980's), has mostly eliminated large fires from the landscape of the Hearst Forest. This is done by aggressively suppressing small fires before they have a chance to become larger landscape-altering fires. This strategy has resulted in an age class structure and species composition that may not be a reflection of the historic natural forest. For example, it is believed that certain tree species which exhibit high post-fire mortality (i.e. Balsam fir and White cedar) now persist in the forest in increasingly larger numbers than they would

Fire is rare and, from a forest health and regeneration perspective, sometimes desirable on the Hearst Forest. There are no areas which would act as a critical barrier to fire on the landscape, therefore there is no HCV associated with element.

4.16 Agriculture and Fisheries

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

In the current FMP, no-harvest reserves of at least 15m are prescribed along all rivers, creeks, and waterbodies adjacent to harvesting operations. These riparian forest reserves provide bank stability, sediment control, moderation of nutrient inputs, and shade which moderates temperature fluctuations. The successful implementation of these measures means that

MNR LIO spatial data, "Fish_Activity_Area" shows known areas of significant fisheries habitat (i.e. nursery and spawning beds). Where these values are known, restrictions on water crossing types and locations are put into place so as to not negatively impact fisheries values.

Large scale agricultural activity in and around the Hearst Forest is limited to livestock and haying to provide winter forage. Forest operations on the Hearst Forest do not affect these activities.

Because there are no forest landscapes that have a critical impact on agriculture or fisheries, there is no HCV associated with this Question.

5. Community Needs

Sites and resources fundamental for satisfying the basic necessities of local communities or Indigenous Peoples identified through engagement with these communities or Indigenous Peoples.

5.17 Meeting Basic Needs of Local Communities

Are there local communities (includes people living inside the forest area and those living adjacent to it)?

The local communities in and surrounding the Hearst Forest rely on the Forest for many aspects of daily life. By most metrics, the forest and forest industry are integral to CLFN, Hearst and Mattice-Val Côté. Many depend on forest resources for everything from food and fuel to

economic opportunities. The access to forest resources in the form of roads created for harvesting operations is also highly valued by local communities.

The impact of forest management on the local economy and community values was evaluated as part of forest management planning process and continually reassessed through various community engagement efforts during the implementation process. Community representatives of CLFN, Hearst, and Mattice-Val Côté are also members of HFMI's board of directors and have a say in decisions taken by the SFL. HFMI strives for continuous, active engagement with the communities both in the field and in the boardroom to ensure that the forest continues to be able to meet their needs. While the entirety of Hearst Forest is both needed and highly valued by the communities, it is recognized that it is not appropriate to call a whole forest an HCV.

Food and Medicine

The ability to harvest wild foods and medicines from the forest is considered an important basic need both for subsistence and to maintain ties to traditional ways of life for local people. This is especially true for members of Indigenous communities whose traditional territories overlap the Hearst Forest area. Many households obtain important quantities of meat from fishing and hunting. The annual fall moose hunt is especially important in this regard. Hunting, fishing, and gathering occurs throughout the entire Hearst Forest area, although some locations are known to be of special importance. Information about heavily used areas is maintained by both HFMI and the local MNR and kept confidential if requested.

Fuelwood

Many residents use the roads developed for logging operations to access past and present harvest areas in order to collect personal fuelwood. Low quality wood left behind after the harvest is often used for this purpose. Access to the forest for this activity significantly improves the quality of life for many residents of the Hearst Forest. Lecours Lumber, GFFP and Columbia also provide fuelwood to CLFN residents at a convenient central location. The use of this free fuel source represents a win-win situation by which "waste" wood is made accessible to benefit locals.

Employment

The town of Hearst is reliant on the local forest industry, and the local forest industry relies on workers from the community to maintain their mills and operations. The hard work of hundreds of both in the bush and at their respective local sawmills is required for Lecours Lumber Co. Ltd, Green First Forest Products, and Columbia Forest Products to remain operational. These are the largest employers in the area and essential to maintaining economic stability.

Resource-Based Tourism

Many resource-based tourism establishments that use various areas of the Hearst Forest in support of their businesses. Records of these businesses and their use of crown resources (fish, bear and moose) are maintained by the MNR and considered in forest management planning. The resource-based tourism designation covers a range of activities from remote destinations to road-based tourism including hunting, fishing, canoe trip outfitting, and camping. HFMI

endeavours to operate in a way that does not affect the ability of these organisations to continue to offer an undisturbed, remote wilderness experience to their customers. Two of the three *Designated Remote Tourism Lakes* which Hearst Air Service uses (McLeister and Hillmer) are encompassed by DCL candidate areas.

6. Cultural Values

Sites, resources, habitats, and landscapes of global or national cultural, archaeological, or historical significance, and/or of critical cultural, ecological, economic, or religious/ sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples.

The communities directly located in the Hearst Forest are: Hearst, Constance Lake First Nation, Mattice, Val Cote, Hallebourg, Lac Ste Therese, Jogues and Coppell. Other communities with residents that may also use parts of the Hearst Forest on a regular basis include: Hornepayne, the Hornepayne First Nation, Opasatika, Val Rita, Kapuskasing, Longlac, Moosonee and Moose Cree First Nation.

6.18 Traditional Cultural Identity

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

Members of the above communities regularly use specific areas of the Hearst Forest in a somewhat traditional way. Groups of campers traditionally return with the same group to the same site year after year, imparting almost a family cottage nature to the area. Many of these are captured in MNR's Fishing Access Point layer in LIO. Moose hunters also, will regularly hunt with the same group in the same area annually. HFMI has begun to record high public use areas, which are not already recorded by the MNR as Land Use Permits or Fishing Access Point, in a shapefile of "Unofficial Values". Residents regularly use the area of the Hearst Forest for camping, hunting, trapping, fishing, canoeing, birdwatching, and more. HFMI considers requests from land users to mitigate the impact of harvesting and access on their use of the land. While these locations are not likely at risk from forestry operations, the risk to a value is not a factor in HCV designation. Engagement with the community will help determine what locations may warrant HCV designation.

Constance Lake First Nation is the only Indigenous community located on the Hearst Forest. The Hearst Forest also overlaps the traditional territory of Hornepayne, Brunswick House, Moose Cree, Missanabie Cree, Netmizaaggamig Nishnaabeg, Taykwa Tagamou and Michipicoten First Nations. Engagement with these Indigenous communities to identify and protect values is integral to the forest management planning process and occurs at every step of implementation through notifications, conversations, meetings and field outings. All potentially affected First Nations are contacted to determine whether or how they want to be involved in forest management planning and implementation. As part of the effort to locate Indigenous values prior

to planning and beginning operations, the *Aboriginal Background Information Report* was prepared for the recent FMP (2019-2029) and is included as supplemental document 6.1.b. This report provides a good starting point for limiting the negative impact of forest management on traditional land use while identifying potential opportunities to enhance values.

Collaboration and engagement are continuous as CLFN (and other First Nations who use the Hearst Forest) work with HFMI to mitigate the effects of road construction, harvest, and regeneration activities on their use of the land. Roger Wesley, forester in practice and CLFN community member reviewed previous versions of the HCV report and made critical recommendations for additional HCVs. One such comment speaks directly to HCV 5:

"In my review I noticed a lack of acknowledgement of Indigenous elements of conservation. I did not see any species or sites being identified that support Indigenous needs and health. For example, I did not see any HCV's for the Indigenous dietary species such as rabbits, grouse, geese, ducks, beavers, pin tails, moose, and fish which are still of high importance to the indigenous population across the Hearst Forest. On this line of thought there was no identification of fur bearing animals that support many indigenous trappers as their sole source of income. Animals such as marten, mink, fisher, beaver, otter, muskrats, fox, lynx, weasels, squirrels, wolves, and coyotes are not even mentioned. Conserving a way of life and traditional industry should be part of identifying HCV's.

Although these species are not recognized to be endangered or species of concern, the way of life is and should be considered for conservation, especially as it pertains to Indigenous peoples and their Canadian Constitutional rights that should be protected. Inclusion of these species and this way of life must be considered an HCV for the record. Conserving a three-centuries-old industry would also fall into this line of thought. There may not be any identified course of action on how this gets accomplished but should be an item for consideration and developing a possible strategy for the record."

Roger Wesley's comments have been considered in updating this report and are particularly relevant to this HCV category.

Community Traplines

CLFN is responsible for the management of *Community Traplines* around Constance Lake and Pagwa (see Figure 14). The community trapline is subdivided and assigned to individuals so as to provide band members with the opportunity to carry out the cultural activity of trapping with less difficulties related to access. The community traplines are subdivided and assigned to individuals. CLFN is responsible for management of harvest levels within this area. As noted in Wesley's comments, trapping hunting and fishing are ways for community members to participate in a traditional and endangered way of life. This land's importance to the community, warrants its designation as an HCV.

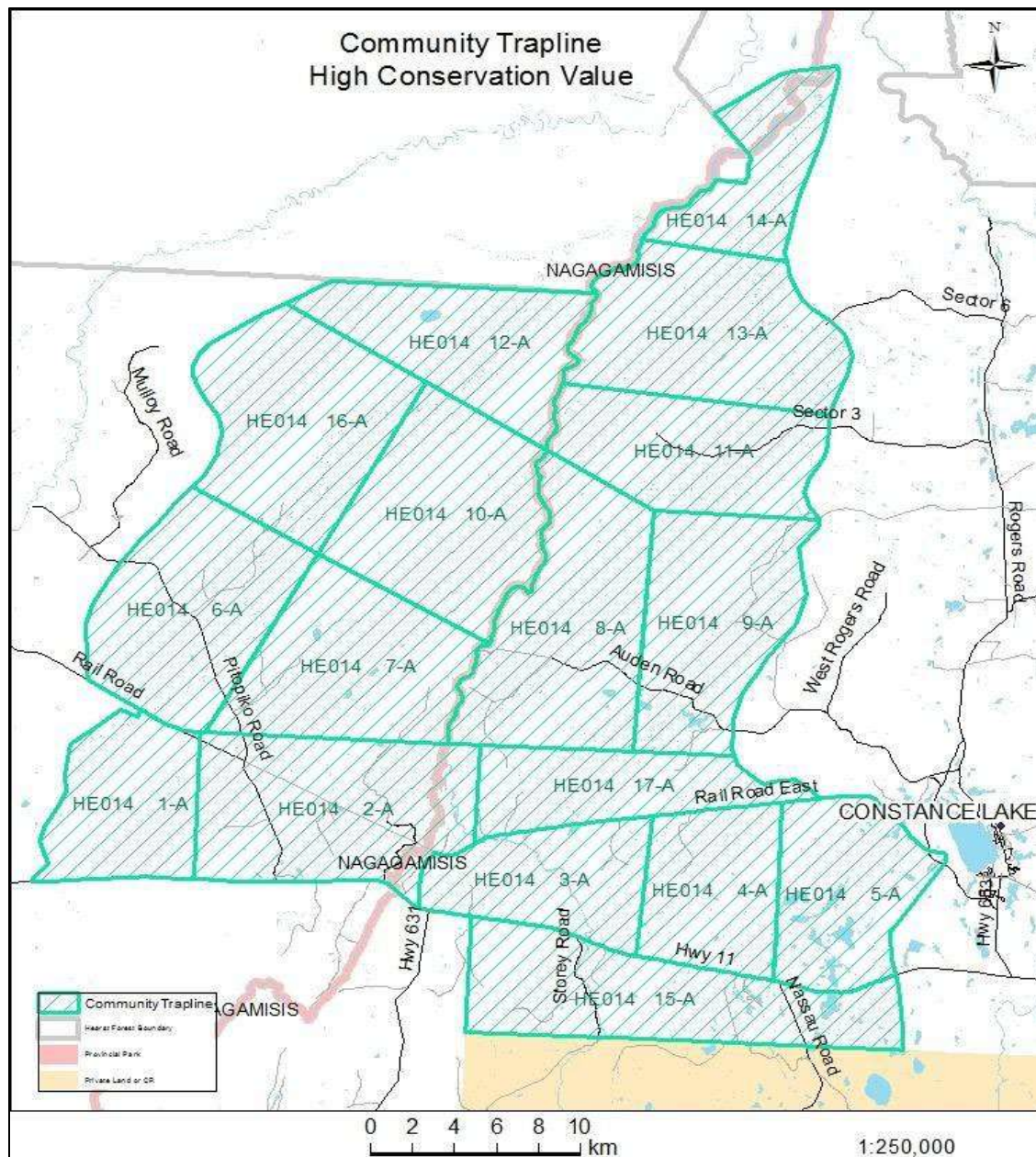


Figure 14. Community Traplines on the Hearst Forest

Accessible Mature Cedar Stands

Cedar is of great cultural significance to First Nations, for ceremonial, medicinal, and practical uses. A culturally modified stand of cedar trees of national significance is protected within the bounds of Nagagamisis Lake Provincial Park. In the words of Roger Wesley:

“The Hearst Forest is known to be in an area of high concentration of Ma-sa-kee-sic-mee-stik (“Tree of Many Uses” - Cedar). This is one of the Indigenous people’s primary gifts

from the Creator. It is also considered one of the four sacred medicines utilized in ceremony for Indigenous spiritual practitioners. Such a value in the Hearst Forest should have some acknowledgements put towards it. Identifying the large high concentration areas of cedar as areas of special concern would be a step in the right direction as per respecting indigenous culture and customs which need to be conserved at all times. It would also support indirectly a form of reconciliation towards indigenous peoples and their ways of life.”

The west side of the Hearst Forest encompasses some of the greatest concentrations of cedar in Ontario. Cedar is not a marketable species (aside from small uses) so is rarely harvested. It seeds well into cutovers, both uplands and lowlands. Cedar is not rare on the landscape but large mature trees tend to occur in relatively small pockets along waterways, and in lowlands which are not easily accessed. Just north of CLFN, 534 ha of accessible forest with high concentrations of mature cedar has been proposed as a DCL (#14). This area, as well as other accessible mature cedar stands on the Hearst Forest are HCVs.

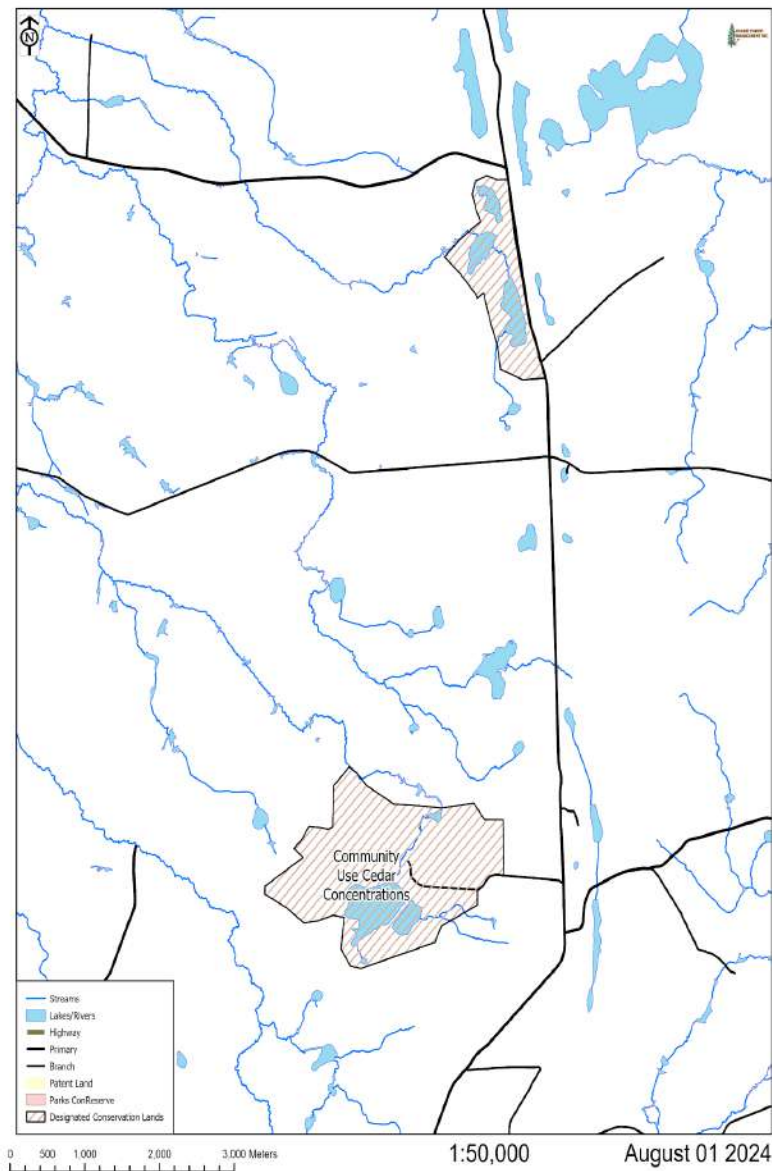


Figure 15. Locations of two important concentrations of mature cedar used by the CLFN community

Recreational Trails

Three recreational trails have been identified on the forest. People living in the area have always maintained a strong connection to the forest. These trails and the area around them provide an accessible way for all community members to spend time in nature. All have been brought forward as meriting special protection by the public during consultation processes and are candidate DCL areas.

The Hearst Cross Country Ski and Snowshoe Club trails are currently held under a Land Use Permit from the MNR. Hundreds of users enjoy the trails for skiing and snowshoeing in the winter and hiking in the summer. Club members have recently opposed harvesting around the ski and snowshoe trails, and alternative buffer widths around the area (beyond what is protected as a DCL) have been proposed.

The Calypso Nature Trail was developed in 1989 and is still accessible to all members of the public. It encompasses the local youth camp *Source de Vie* (located on the shores of the Kennedy Lake) which teaches leadership and survival skills. The trail was initially created by and continues to be maintained by volunteers associated with the camp. The trail has interpretive signs and provides a snap shot of boreal forest ecology, flora and fauna. The trail is used by residents year-round and valued by the community.

The Renesig Creek area of interest (better known locally as “Thunder House Trail”) has been identified as a DCL to protect the recreational value of a 10 km winter route, and 13 km summer route along Renesig Creek. This trail partly follows the traditional trapline trail used by the Neegans, a First Nations family who have trapped the area for generations. In 2017, many requests from locals were received by the MNR to defer proposed harvesting along the “Thunder House Trail” route adjacent to the recently constructed Thunder Road. This value received the greatest ever number of written submissions from the public to a Hearst Forest FMP.

6.19 Overlapping Values

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

There is no location in the Hearst Forest with the kind of overlap referred to in this category.

Record of Changes

This report is meant to act as a living document and will be updated annually to better reflect the values found on the Hearst Forest and how they are managed and monitored. It was originally written in 2010 by Brad Ekstrom, RPF and Lauren Quist, RPF with significant consultation and contributions from CLFN and other local community members.

The HCV report is updated as needed to address new information and allow for adaptive management as monitoring efforts offer insight into how best to protect values. HFMI has an open-door policy and makes the HCV Report publicly and freely available on their website. The public is encouraged to comment on current HCVs or propose new ones. The following updates have taken place over the years:

- 2012 - Gaetan Baillargeon for Constance Lake First Nation
- 2012 - Desneiges Larose, MScF, Hearst
- 2015 - Anne Genier-Gardiner, MNR biologist (The Monitoring/Management Strategy)
- 2019 - Julie Boan, Boreal Program Manager, Ontario Nature
- 2019 - Gregor Beck, Senior Conservation Advisor, Bird Studies Canada
- 2020 - Roger Wesley, former Chief of Constance Lake First Nation and former manager of Amik Nuna Forestry Service, with advice from elders
- 2021 - Chris Wedeles, Aves Consulting
- 2024 - Carly Jackson, MFC
- 2025 - Hannah Adair, MFC

The document underwent a thorough revision by several expert contributors in 2019/2020. A record of their valuable suggestions and the ways in which they have shaped this document can be found in Table 6.

Table 6. Peer revisions of the HCV report made in 2019/2020

Peer Reviewer	Suggestion	Revision
Julie Boan (Ontario Nature)	Assessment of HCVs be clearly differentiated from management & monitoring strategies.	Statement 'xxx is an HCV' moved up to precede risk discussion.
	Explicitly state whether there may be a risk to a value instead of only including risk in mitigation strategies for said risk.	Added 'Risk' as a headline & organized text to address probability & severity.
	Search for recent science related to Boreal Caribou so as to cite facts instead of tentative wording.	Added recent studies on ground lichen, and recent evidence of caribou re-occupation in the Forest.
	Short-eared owl lack of evidence does not mean lack of presence, often hard to survey due to their silence.	Text added regarding silence and difficulty of detection.
	Should not use the term 'generalist species' when referring to all boreal wildlife since it does house specialist species as well.	Re-worded text in Section 2.0 and removed the term 'generalist' throughout.

	Recent science proves little evidence to link Canada Warbler and Spruce Budworm.	Removed text reflecting old science, included new research from Venier et al. 2012.
	Adjust statement regarding barn swallows as it could mislead people to think they only nest near human-occupied spaces.	Reference to use of natural environment added and an example from Thunder Bay included.
	Management strategies listed for olive-sided flycatchers are not enough to maintain and enhance HCVs.	Updated text to provide clarity, particularly regarding the significant amount of bypass and residual left post-harvest.
	Species at risk status corrections, wording corrections.	Fixed in the text.
Chris Wedeles (Aves Consulting)	Greater input from Indigenous Peoples.	Outreach and peer review from Roger Wesley, CLFN, outreach map of DCLs in English, French, and Oji-Cree, and precautionary designation of DCLs for values suggested by Roger Wesley.
	Should not use the category 'Potential HCV' as this is not an option.	Former 'Potential HCVs' changed to 1) not an HCV, and 2) an HCV.
	HCV decisions should not be based on threat from forest operations.	HCV designation written in text above risk analysis.
	IFLs and large landscape forests not designated as HCVs when they should be.	Designated.
	Unclear whether all guidance material related to IFLs has been considered.	Text worked to include FSC® Advice Notes.
	Text is out of date (from 2014).	All text updated to new Canadian Standard.

	Treatment of HCV 3 seems incomplete.	Re-written according to criteria of Canadian Standard.
	HCV 4 doesn't completely address Guidance and Definitive requirements.	Text strengthened and revised.
	Lacking rationale for discussion of HCVs.	Rationale for conclusions made more explicit.
	More substance for HCV 6.	Text revised where possible.
	Changes to certain terminology and syntax.	Revised.
Roger Wesley (CLFN)	Acknowledgement of traditional lands of three distinct First Nations, map of Treaty 9 territory.	Added to text in section 2.0.
	Lack of acknowledgment of Indigenous elements of conservation.	
	Use of fine-filter approach could be used on some HCVs. Example: The 7 Sisters.	
	Identifying high concentrations of cedar for conservation.	Site identified and set aside as preliminary site for future discussion with CLFN.
	Removal of the statement 'little to no human footprint has been made'.	Amended.
	CLFN has objected to the MNR's CCP.	Can be viewed in Wesley's peer-review letter attached as an Appendix.
	Suggestions related to syntax and terminology.	

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