Forest Stewardship Council® CoC Controlled Wood Risk Assessment for the Supply Area: Northwestern Ontario and Northern Minnesota

Version 2.0

August 15, 2017

Prepared by: KBM Resources Group

ABOUT KBM RESOURCES GROUP

KBM Resources Group is an environmental consulting firm based out of Thunder Bay, Ontario. The company operates in the resource management sector, with over 43 years' experience in forestry and extensive experience providing independent forest auditing and certification services to clients across Ontario. KBM's certification work includes assessment against Forest Stewardship Council® (FSC®) standards, which is a system that assures consumers that wood comes from well-managed forests (see https://ca.fsc.org/en-ca for more information).

CONTENTS

INTRODUCTION AND SUMMARY

For fibre to qualify as FSC Controlled Wood, FSC Chain of Custody certified companies must conduct a risk assessment (verified by the third-party Certification Body) that non-certified forest fiber meets FSC's Controlled Wood requirements. A revised version of the *Requirements for Sourcing FSC Controlled Wood* (FSC-STD-40-005 V3-1) was published in March 2017. This standard requires use of a Risk Assessment to evaluate risk of sourcing from unacceptable sources. In Canada and US where National Risk Assessments (NRAs) are currently being prepared, forestry companies are required to prepare a risk assessment, or may outsource preparation of a risk assessment to external parties having expertise. There is a Centralized National Risk Assessment for Canada completed for Categories 1, 2 and 5 with further work ongoing to complete Categories 3 and 4.

This supplier risk assessment was prepared by KBM Resources Group for use by FSC COC certified companies and prospective FSC COC certified companies that need to evaluate risk of sourcing from unacceptable sources within the defined supply area in accordance with the new *FSC Controlled Wood Standard FSC-STD-40-005 V3-1*.

The Risk Assessment was undertaken with reference to the following sources of direction:

- Requirements for Sourcing FSC® Controlled Wood (FSC-STD-40-005 V3-1)
- Centralized National Risk Assessment for Canada - Categories 1, 2 and 5 (FSC-CNRA-CAN V1-0)
- Centralized National Risk Assessment for the United States of America – Categories 1 and 5 (FSC-CNRA-USA V1-0)
- Controlled Wood Guide for FSC Chain of Custody certified companies
- Forest Stewardship Council Controlled Wood Toolkit
- FSC Canada's Controlled Wood Information Matrix
- Intact Forest Landscapes (IFL) Technical Working Document Version 1 (December 2016)
- Advice Note for the interpretation of the default clause of Motion 65 - ADVICE-20-007- 018 V1-0 (December 2016)
- FSC Canada Guidance on Free, Prior and Informed Consent (FPIC), Working Draft 1 - Release Date: November 24, 2016 (a comprehensive FPIC Guidance document is scheduled to be released with the new National Forest Management Standard in 2017)
- Indigenous Cultural Landscapes (ICL) Discussion Paper Version 1 (December 2016)

STATUS OF CANADA AND US CENTRALIZED NATIONAL RISK ASSESSMENTS (AS OF AUGUST 2017)

United States of America	An NRA is being formally developed in the country. It will incorporate and build upon the results of the CNRA developed by FSC International.	1	YES - finalized		CNRA approved*; will be incorporated in the NRA		
		2	YES - contracted (WOLF)	2014	CNRA delivered, will be incorporated in the NRA	31.03.2016	by mid-2018
		3	YES - focus of NRA	Depends on NRA	Depends on NRA	Depends on NRA	by mid-2018
		4	YES - contracted (Nepcon)	01.06.2015	CNRA delivered, will be incorporated in the NRA	31.07.2015	by mid-2018
		5	YES - finalized		CNRA approved; will be incorporated in the NRA		
Canada	An NRA is being formally developed in the country. It will incorporate and build upon the results of the CNRA developed by FSC International.	1	YES - finalized		CNRA approved*; will be incorporated in the NRA		
		2	YES - finalized		CNRA approved; will be incorporated in the NRA		
		3	YES - contracted (AVES)	01.03.2016	Review of CNRA by FSC; will be incorporated in the NRA	31.08.2016	by mid-2018
		4	YES - contracted (AVES)	01.03.2016	Review of CNRA by FSC; will be incorporated in the NRA	31.08.2016	by mid-2018
		5	YES - finalized		CNRA approved; will be incorporated in the NRA		

SUPPLY AREA

The Supply Area encompasses the Northwestern Ontario and Northern Minnesota Supply Units (Figure 1). These are located within the following three ecoregions[1]:

1. Midwestern Canadian Shield forests (NA0609);
2. Central Canadian Shield forests (NA0602); and,
3. Western Great Lakes forests (NA0416).

The World Wildlife Fund defines an ecoregion as a "*large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions*". The scale of an ecoregion is large, generally encompassing hundreds of thousands of square kilometres, which is consistent with the FSC requirement for a high-level assessment of risk (i.e. country/region) until the final FSC National Risk Assessment is made available for Canada (referenced in this report is the Centralized National Risk Assessment).

[1] https://www.worldwildlife.org/biomes

The Northern Minnesota Supply Unit includes lands encompassed within the Western Great Lakes ecoregion as follows:

- State, county and private forest lands.

The Northwestern Ontario Supply Unit encompasses:

- The Boreal West (northwest) Forest Region as defined in MNRF's Forest Management Guide for Boreal Landscapes[2] (some of these are certified to FSC forest management standards, e.g. Wabigoon Forest, Black Spruce Forest, Dog River-Matawin Forest); and,
- Private land forests.

[2] OMNRF. Forest Management Guide for Boreal Landscapes. URL: https://dr6j45jk9xcmk.cloudfront.net/documents/2783/guide-boreal-landscape-aoda.pdf

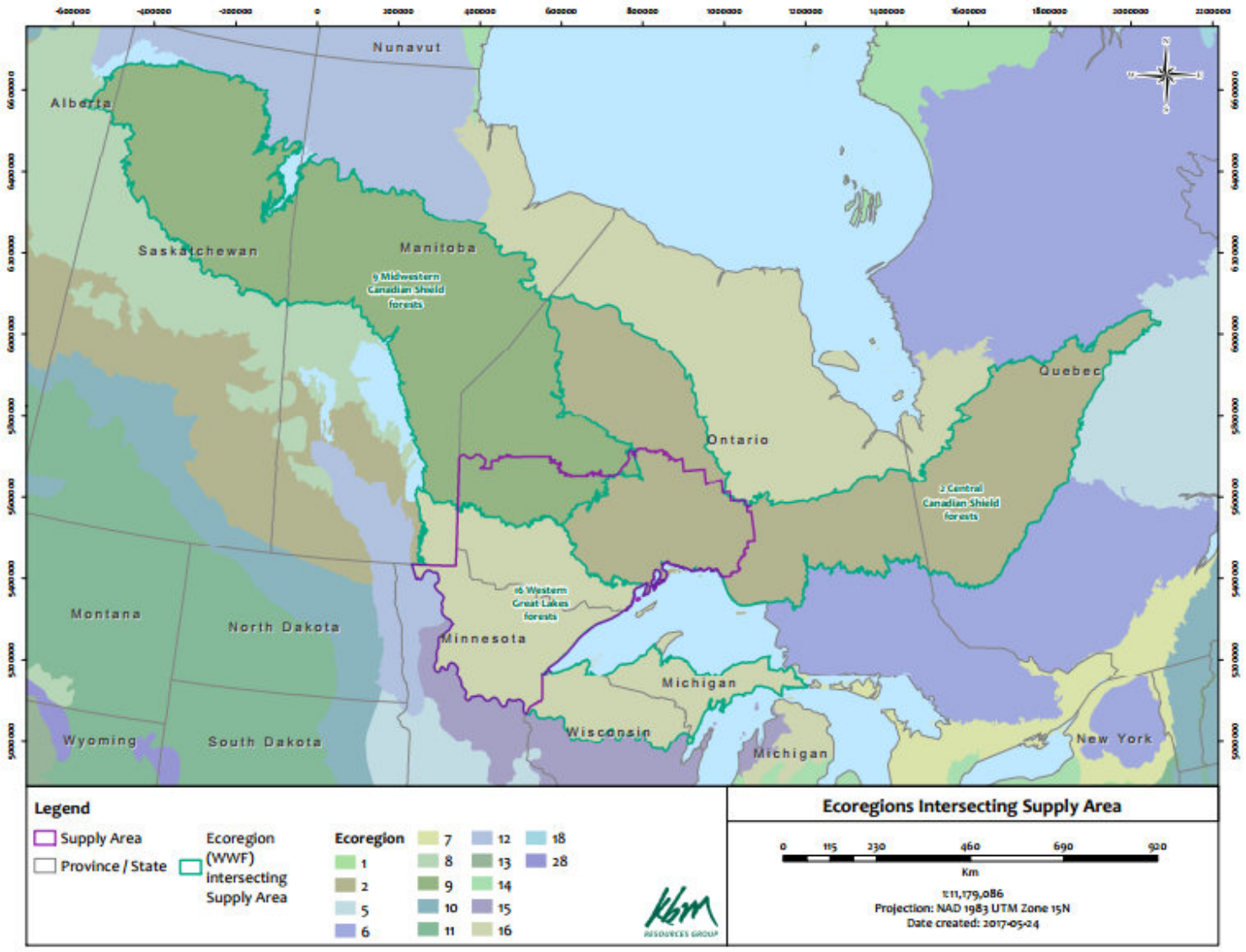


Figure 1. Supply Area map – Northwestern Ontario and Minnesota Western Great Lakes Ecoregion Supply Units.

EXPERT QUALIFICATIONS OF KBM

Organizations that undertake FSC Risk Assessments are required to have expertise relevant to the controlled wood categories being assessed. Minimum qualifications for experts are defined in Annex C of the FSC Standard. KBM has the required expertise with an in-depth understanding of conservation and forest management issues in Ontario, based on a 43-year history practicing forestry in the province of Ontario. This includes detailed knowledge of species at risk, the landscape context for habitat management as well as an sound understanding of the complexities of woodland caribou management direction in the forest management context in Ontario. KBM has applied this knowledge in the development of many "High Conservation Value" forest reports for various forestry clients in the province. KBM also sits on the Ontario Provincial Forest Technical Committee, that is involved in the review and update of forest management guidelines in the province. KBM also has experience developing HCV reports for Minnesota private lands, and a sound understanding of the state's forest management systems as a result of many third-party audits of forest operations in the state.

FOREST MANAGEMENT CONTEXT

ONTARIO

Based on KBM's recent experience with jurisdictional scans that looked at forest management systems in Canada, the US and internationally. These scans concluded that Ontario has one of the most developed set of laws, regulations and guidelines for forest management and conservation of biodiversity in the world. This is consistent with the findings of the FSC Centralized National Risk Assessment, in which it is noted that in a comparison of forest legislation in eleven jurisdictions around the world, "Canada (BC & Ontario) and Australia (NSW) are the countries with the most demanding legislation." In Ontario, forest management activities and compliance with planning and operational requirements are verified through many layers of oversight, including compliance monitoring programs, regular 5-year independent forest audits and third-party certification systems. All of the information and findings are available to the public for review. The province uses an adaptive management approach that includes the development of multi-scaled forest management guidelines (from site to landscape scale) based on best available science. These are reviewed and updated on a regular cycle (previously 5, now moving to a 10-year review cycle). The guidelines as well as proposed new forest policy are reviewed by a panel of experts and stakeholders who comprise the Provincial Forest Technical and Policy Committees.

On Crown lands in Ontario the forest management planning process is extensive and includes multiple opportunities for public input and engagement, including Local Citizens' Committees representing a wide range of interests. LCCs sign off their agreement/support for forest management plans, and processes are in place to request a review of contentious issues. Under Ontario's Environmental Assessment (EA) Act, it is possible to have the broadly applicable Environmental Assessment required for all Crown timber lands - "bumped up" from a class Environmental Assessment to a more thorough individual Environmental Assessment.

The federal and provincial governments must meet their legal obligations to consult with Indigenous communities about proposed forest management activities and ensure these are consistent with Aboriginal and treaty rights as described in Canadian law. Forest managers also play a significant role in developing working relationships with Indigenous communities within and adjacent to their license areas.

The province has an established network of protected areas (provincial parks and conservation reserves) and identified conservation priorities for filling gaps in the system (provincial gap analysis). There are several areas (wilderness parks) of substantial size in the Boreal, where natural disturbances, including forest fires, can run their course consistent with public safety goals (e.g., Wabikimi Provincial Park). Several of these areas represent core intact forest landscapes under permanent protection, and connect with the intact landscapes in the northern Boreal. Overall, Ontario's multi-scaled approach e.g., from regional to landscape to site level (including species/ ecosystem specific protection based on best available science) ensures there is strong and effective protection for identified high conservation values.

Based on the above, it can be concluded that Ontario has a strong legal framework in place that mitigates risks from forest operations in the identified Supply Area described in this report.

MINNESOTA

Within the broad category of public land, Minnesota has national forests and parks, state forest land, including state forests, parks, and scientific research areas, and county forest land. State lands are subject to an extensive body of legislation, including the Sustainable Forest Resources Act (SFRA). The Act establishes policies and programs to ensure sustainable use and management of the state's forests. Its implementation is overseen by the 17-member, governor-appointed Forest Resources Council (FRC). The Forest Resources Council serves as an advisory group to government and land management organizations on sustainable forest resource policies and practices. Members represent a range of public and private organizations including research and high education, conservation and environmental groups, tourism, labor organizations, hunting interests, and forest products. Various Technical Committees oversee the review of guidelines e.g., most recently a report on advances in scientific understanding of forest management impacts on riparian areas.

The Sustainable Forest Resources Act includes a number of guidelines that provide direction for riparian forest management, forest wildlife habitat, soil productivity, historic and cultural resource protection, water quality, and visual quality. Under the Act, the Department of Natural Resources monitors the extent to which the timber harvesting and forest management guidelines recommended by the Forest Resources Council are achieving their intended objectives. Minnesota's 1971 Endangered and Threatened Species law directs the DNR to identify those species that are at greatest risk of disappearing from the state and take actions to protect them.

A process for landscape-level forest resource planning and coordination provides a forum where forest landowners and stakeholders can collaborate to address forest resource issues over broad regions of Minnesota's forests, enabling long-range forest resources planning across land ownerships and forest types.

SUMMARY OF RISK ASSESSMENT

The overall results of the analysis indicate a low risk of sourcing wood from uncertified sources when assessed at the ecoregional level in accordance with the applicable standard. Table 1 provides a summary of the assigned risk rating for all five categories of controlled wood for the two supply units. It should be noted that a portion of wood is supplied from FSC-certified management units in Northwestern Ontario and Northern Minnesota. In these management units, there is no requirement to conduct risk assessments to meet requirements of FSC-STD-40-005 V3-1 however they are included in part, because these units are integral to the regional landscape and their respective FSC certification status can change.

The findings are generally consistent with the FSC Centralized National Risk Assessment for Canada (Categories 1, 2 and 5) and the Centralized National Risk Assessment for the US (Category 1 and 5), with any exceptions noted and rationale provided.

Table 1. Summary of risk rating for Northwestern Ontario and Northern Minnesota Supply Units.

Supply Unit	Risk Rating				
	Category 1: Illegally Harvested Wood	**Category 2: Violation of Traditional or Civil Rights**	**Category 3: High Conservation Value Forest**	**Category 4: Forest Conversion**	**Category 5: Genetically Modified Trees**
Northwestern Ontario	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
Northern Minnesota	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk

CONTROLLED WOOD RISK ASSESSMENT

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
1. ILLEGALLY HARVESTED WOOD		LOW RISK
The supply area may be considered low risk in relation to illegal harvesting when all the following indicators related to forest governance are met:		
1.1 Evidence of enforcement of logging related laws in the supply area. a) The organization shall use the 'Minimum list of applicable laws, regulations and nationally ratified international treaties, conventions and agreements' for the identification of logging related laws in the supply area under evaluation. b) The organization may use existing national lists from approved FSC National Forest Stewardship Standards and other reputable sources in order to compile the list. Where the FSC Global Forest Risk Registry contains an FSC approved list of applicable laws for a country, it is mandatory to use this list.	FSC Global Forest Risk Registry: https://sustainablefurnishings.org/fsc-global-forest-risk-registry Transparency International's Corruption Perceptions Index 2016 https://www.transparency.org/news/feature/corruption_perceptions_index_2016 The Royal Institute of International Affairs www.illegal-logging.org WWF www.wwf.panda.org ELDIS www.eldis.org Regional and country profiles Private suppliers audit reports Centralized National Risk Assessment for Canada (FSC-CNRA-CAN V1-0) Centralized National Risk Assessment for the	According to the FSC Global Forest Risk Registry assessment, there is legislation in place to regulate forestry activities in both Canada and U.S.A., and that there is evidence of enforcement. National and provincial/state regulations and processes for the management of provincial/state lands and 3rd party certification of forest management help ensure that the risk of illegal harvesting is low. Random audits of private wood suppliers are further verification that the wood is legally harvested. There is evidence of enforcement of harvesting laws in the province (1), little or no evidence of illegal logging (2), and a low perception of corruption relative to harvesting (3). Wood from Crown lands is harvested consistent with the law, regulation and licensing requirements of the Province of Ontario. Wood purchased from private land by or from Crown Lands must be accompanied by appropriate documentation to confirm ownership and the approval of the harvesting by the landowner. Ownership validation is a prerequisite to signing any procurement contract and wood that is known to be harvested illegally will be refused.

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
	United States of America (FSC-CNRA-USA V1-0)	There is legislation in place to regulate forestry activities in the U.S. and evidence of law enforcement is generally found in all States including Minnesota. *Conclusion: Both Canada and the US have strong systems in place to regulate forest harvesting.*
1.2 There is evidence in the supply area demonstrating the legality of harvests and wood purchases including, for example, robust and effective systems for granting licenses and harvest permits.		FSC Global Forest Risk Registry assessment for the indicator 1.2 is that harvesting without required permit or felling license is not known to be a problem in neither of the countries. Both Ontario and Minnesota have strong legislation is in place in regards of regulating harvesting rights. The Centralized National Risk Assessment for the US indicates that the risk of illegality in entering into contracts, public or private, is real, but is considered low. *Conclusion: Both Canada and the US have effective systems in place for granting harvest licences and permits.*
1.3 There is little or no evidence or reporting of illegal harvesting in the supply area.		FSC Global Forest Risk Registry assessment for the indicator 1.3 for both Canada and U.S.A states that there is little evidence on significant levels of illegal harvesting. Minor cases of theft do occur occasionally in U.S.A, however the share of illegal felling in hardwoods is much smaller than 1%. *Conclusion: Illegal harvesting is not a significant problem in either Canada or the US.*
1.4 There is a low perception of corruption related to the granting or issuing of harvesting permits and other		FSC Global Forest Risk Registry assessment for the indicator 1.4 puts both countries as low risk. The Transparency International's Corruption Perceptions Index is greater than 50

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
areas of law enforcement related to harvesting and wood trade. The annually published Transparency International Corruption Perception Index (CPI) shall be used. Countries with a score of less than 50 shall be considered unspecified risk, unless there is specific independent and credible information at a lower scale (e.g. implemented independent timber tracking systems) that demonstrates the contrary.		for both Canada and the U.S.A. (Canada CPI – 83, United States – 76 for 2016). *Conclusion: Both Canada and the US are identified as low risk in Transparency International's Corruption Perception Index.*
2. WOOD HARVESTED IN VIOLATION OF TRADITIONAL OR HUMAN RIGHTS		LOW RISK
The supply area may be considered low risk in relation to the violation of traditional and human rights when all of the following indicators are met:		
2.1 There is no UN Security Council ban on timber exports from the country concerned.	Global Witness http://www.globalwitness.org FSC Global Forest Risk Registry http://www.globalforestregistry.org/map Centralized National Risk Assessment for Canada (FSC-CNRA-CAN V1-0)	*Conclusion: There are no UN Security Council bans on timber exports from Canada or the US.*
2.2 The country or supply area is not designated a source of conflict timber (E.g. USAID Type 1 conflict timber).	US AID Natural Resource Management and Development Portal: Forest Governance, Policy, Conflict Timber and Illegal Logging http://rmportal.net/library/V/C/conflict FSC Global Forest Risk Registry	*Conclusion: Canada and the U.S. are not designated a source of conflict timber.*

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
	http://www.globalforestregistry.org/map	
2.3 There is no evidence of child labour or violation of ILO Fundamental Principles and Rights at Work taking place in forest areas in the assessed supply area.	Canadian Labour Code http://laws-lois.justice.gc.ca/eng/acts/L-2/index.html Ontario Ministry of Labour http://www.labour.gov.on.ca/english/es/ FSC Global Forest Risk Registry http://www.globalforestregistry.org/map Ontario Labour Relations Board http://www.olrb.gov.on.ca/english/homepage.htm U.S. Labour Relations http://www.dol.gov/dol/topic/labor-relations/ U.S. Employment Law Guide http://www.dol.gov/compliance/guide/ Minnesota Department of Labour & Industry http://www.dli.mn.gov/	Both federal and provincial/state labour codes respect the following ILO provisions: - freedom of association and the effective recognition of the right to collective bargaining; - the elimination of all forms of forces or compulsory labor; - the effective abolition of child labor; and - the elimination of discrimination in respect of employment and occupation. *Conclusion: ILO Global Report on Fundamental Principles and Rights does not identify any issues in Canada or the U.S.*
2.4 There are recognized and equitable processes in place to resolve conflicts of substantial magnitude pertaining to traditional rights including use rights, cultural interests or traditional cultural identity in the assessed supply area.	Aboriginal and Northern Affairs Development Canada http://www.aadnc-aandc.gc.ca/eng/1100100030285/1100100030289 Ontario Ministry of Aboriginal Affairs https://www.ontario.ca/aboriginal/land-claim-negotiation-process	In Canada, disputes with respect to land use rights are resolved either before the courts or through accepted treaty processes with the federal and provincial governments. Equitable processes are in place in the Province of Ontario to resolve conflicts of substantial magnitude pertaining to traditional Aboriginal rights. On SFLs managed within Ontario, an Aboriginal consultation program is carried out during the development of forest

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
	FSC Global Forest Risk Registry : http://www.globalforestregistry.org/map and http://www.globalforestregistry.org/hp/feedback Forest Management Planning on Ontario's Crown forests http://www.ontario.ca/rural-and-north/forestry FSC-US National Initiatives Guidance on Controlling Wood Sources www.fscus.org	management plans, consistent with the legal requirements of the Forest Management Planning Manual for Ontario's Crown Forests. This process involves the collection of Aboriginal values information, and the preparation of an Aboriginal Background Information Report, and a Report on the Protection of Identified Aboriginal Values for the communities within or adjacent to SFL areas. There is also a requirement to carry out Stage II archaeological assessments in high potential cultural value areas identified on each SFL. In addition to existing legal processes, there is a dispute resolution process available through the forest management planning process. In practice, both the Company and the OMNRF have sought to develop harvest, roads and renewal and tending prescriptions in accordance with the Forest Management Planning Manual which is regulated by the Crown Forest Sustainability Act. Opportunities for public and Indigenous participation are a key component of all forest management planning in Ontario as required by law. The extensive public consultation process provides multiple opportunities (open houses, letters, committees, planning teams, face to face meetings) for forest stakeholders and interested parties to engage in forest management decisions for each forest (SFL). Individual members of the public are invited to contribute information, discuss the management plan with the planning team and examine the plan progressively at various stages of its development. Indigenous communities are offered the opportunity to engage through an existing, or develop their own consultation approach within the forest management

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		planning process. The legal requirement to inform and consult is audited in every 5-7 years through regulated Independent Forest Audit process which takes place on all Crown management units. Within the Supply Area, there are known, ongoing issues related to wood harvested from the Whiskey Jack forest. Asabiinyashkosiwagong Nitam-Anishinaabeg (ANA's) concerns with the Whiskey Jack Forest are currently being addressed through a Process Agreement that was signed between ANA and MNRF. The Government of Ontario has committed to continuing to consult with Grassy Narrows First Nation, Naotkamegwanning First Nation (Whitefish Bay), Ochiichagwe'babigo'inning First Nation (Dalles), Wabaseemoong Independent First Nations (Whitedog), Wabauskang First Nation and Kenora Métis Council and respect any existing obligations in relation to their rights. Despite the ongoing issues, this indicator is assigned low risk since no wood is being procured from the management unit. In other locations within the Supply Area, the companies have established good working relationships with many Indigenous communities. Indigenous tribes within the US are diverse, encompassing 556 federally recognized tribes. There are many federally recognized tribal organizations who have significant timberland resources. Assessment of Indian forest management in the United States prepared for Intertribal Timber Council, indicates

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		that significant progress has been made toward closing the gaps between tribal goals for their forests and the ways they are managed. Indian tribes are sovereign nations with the right and power to regulate their own internal affairs. The legal system in the country is generally considered fair and efficient in resolving conflicts pertaining to traditional rights including use rights, cultural interests or traditional cultural identity. There are different mechanisms or processes that allow Native American tribes, as well as any private citizen, to deal with disagreement and conflict related to decisions affecting natural resources, and forests in particular that are considered equitable. These include: lawsuits at both the state and federal level; scoping and public comments within the National Environmental Policy Act (NEPA); initiatives of the federal and state governments to collaborate with local and tribal communities; coalitions that allow interested parties to advocate for specific positions; consultations between designated representatives of the federal and tribal governments; and, lobbying directly with legislators and government entities. Based on review of national and international sources it can be concluded that conflicts or violation of traditional rights of substantial magnitude are not a significant problem in the United States. In Minnesota specifically, there are seven Anishinaabe (Chippewa, Ojibwe) reservations and four Dakota (Sioux) communities. Reservations were generally created through

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		treaties. After 1871, some were created by Executive Order of the President of the United States or by other agreements. Tribes are considered separate and distinct nations by the United States government. As in Ontario, court cases on ongoing as to define and clarify treaty rights. In recent years, treaty conflicts have focused on land use rights, with tribe members asserting the right to hunt, fish and gather on ceded lands and with traditional techniques prohibited by state law. There was no evidence found to suggest conflicts of substantial magnitude related to forestry rights within the MN Supply Area. Both Canada and the U.S.A. are participants in the Organization for Economic Co-operation and Development (OECD). *Conclusion: Per the Global Forest Risk Registry both Canada & the US are considered low risk because of "their generally efficient law enforcement and the lack of major social conflicts related to forests." This finding is consistent with the situation in the Ontario and Minnesota Supply Units, with the noted exception that there will be no harvesting of trees for subsequent sale or other commercial purposes other than for firewood within the area of the Whiskey Jack Forest north of the English River, without the consent of Grassy Narrows First Nation (Asabiinyashkosiwagong Nitam-Anishinaabeg or ANA).*
2.5 There is no evidence of violation of the ILO Convention 169 on Indigenous	Government of Canada Constitutional Documents; Canadian Charter of Rights and	Violation of ILO Convention 169 and the rights of Indigenous and Tribal peoples is not indicated by international sources

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
and Tribal Peoples taking place in the forest areas in the supply area concerned. The standard does not refer to the ratification of ILO 169 and a risk assessment shall involve an assessment of evidence of violation of ILO requirements, irrespective of whether or not they have been ratified by the country in which the risk assessment is made.	Freedoms: http://laws-lois.justice.gc.ca/eng/Const/Const_index.html FSC Global Forest Risk Registry : http://www.globalforestregistry.org/map Aboriginal and Northern Affairs Development Canada: http://www.aadnc-aandc.gc.ca/eng/1100100030285/1100100030289 Ontario Ministry of Aboriginal Affairs: https://www.ontario.ca/aboriginal/land-claim-negotiation-process Keewatin Vs. Ontario (Natural Resources), 2013 ONCA 158 (Keewatin): http://www.canlii.org/en/on/onca/doc/2013/2013onca158/2013onca158.html U.S. Department of the Interior: http://www.doi.gov/tribes/index.cfm Centralized National Risk Assessment for Canada (FSC-CNRA-CAN V1-0)	within the Supply Area. Although Canada has not ratified ILO Convention 169, both federal and provincial social and labour laws protect the rights of all workers including Indigenous employees. In Canada, the rights and freedoms of all Canadians including Indigenous and Tribal people are protected by the Canadian Charter of Rights and Freedoms. Disputes in respect of land use rights are resolved either before the courts or through accepted treaty processes with federal and provincial governments. Equitable processes are in place in the Province of Ontario to resolve conflicts of substantial magnitude pertaining to traditional Aboriginal rights. Although under appeal, the recent Superior Court of Ontario "Keewatin" decision (*Keewatin v Ontario (Natural Resources), 2013 ONCA 158 (Keewatin))*, provides clear evidence that such processes exist, and are currently functioning in the province on Treaty Lands. As indicated in the specific definition of the procurement district, FSC controlled wood certificate holders will not accept fibre from the Whiskey Jack Forest while there are ongoing negotiations between Grassy Narrows First Nation and the Provincial Government. *Conclusion: All certificate holders in the Supply Area respect and adhere to Federal and Provincial laws and regulations and*

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		decisions regarding Indigenous and Tribal peoples' rights of ownership and use of traditional areas.[3]
3. WOOD HARVESTED FROM FOREST IN WHICH HIGH CONSERVATION VALUES ARE THREATENED BY MANAGEMENT ACTIVITIES		LOW RISK
The supply area may be considered low risk in relation to threat to High Conservation Values (HCVs) if: a) Indicator 3.1 is met; or b) Indicator 3.2 eliminates (or greatly mitigates) the threat posed to the supply area by non-conformity with 3.1.		
3.1 Forest management activities at the relevant level (ecoregion, sub-ecoregion, local) do not threaten eco-regionally significant HCVs. The organization shall first assess whether any HCVs are threatened at the ecoregional level. If any HCVs are threatened at the ecoregional level, the organization shall assess how forest management activities relate to these HCVs at the supply area level. For the risk assessment of this category	Conservation International: http://www.conservation.org/where/north_america/pages/priorities.aspx Global 200 Ecoregion WWF: http://www.worldwildlife.org/science/ecoregions/nearctic.cfm and http://worldwildlife.org/science/wildfinder/ Biodiversity A-Z: http://www.biodiversitya-z.org/content/centres-of-plant-diversity-cpd#areaReferences Intact Forest Landscapes: http://www.intactforests.org	The Supply Area falls within the following ecoregions (as defined by World Wildlife Fund or WWF)[4]: - Central Canadian Shield forests (Northwestern Ontario Supply Unit) - Midwestern Canadian Shield forests (Northwestern Ontario Supply Unit) - Western Great Lakes forests (Northwestern Ontario and Northern Minnesota Supply Units) **WWF Global 200 Ecoregion Assessment** WWF International has identified globally 200 terrestrial, aquatic and marine ecosystems that warrant special consideration. None of these identified ecosystems are located

[3] As per the most recent FSC guidelines for Free Prior and Informed Consent (FPIC, November 2016), there remains some uncertainty about existing Indigenous community engagement processes and whether they adequately respect the right to FPIC in the Canadian context. For this reason, FSC controlled wood certificate holders in the Supply Area are committed to collaborate with FSC Canada, the Ontario Government, First Nations and our certifying bodies to ensure clarity of understanding regarding interpretation and applications of the FSC guidelines for FPIC.

[4] As defined by World Wildlife Fund: https://www.worldwildlife.org/biomes.

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
the identification of eco-regionally significant HCVs is required, which in practical terms implies that locally relevant values are not in the focus of this step of the risk assessment. Threatened ecoregions can be identified through the supporting information that references, but is not limited to e.g. Biodiversity Hotspots, Global 200 Ecoregion, Frontier Forest, Intact Forest Landscapes. Regarding Intact Forest Landscapes, firefighting or fire prevention for the protection of public safety is not considered to be an economic activity of minimal disturbance. Fire control in the context of forest management activities is not considered to be an economic activity of minimal disturbance. Low risk for this indicator may be demonstrated as follows: a) Material does not originate from any of the mapped areas of HCVs (as listed in 3.1), or	http://www.globalforestwatch.ca Canada's Wilderness Committee: http://www.wildernesscommittee.org OMNR's Guide for Crown Land Use Planning: http://www.ontario.ca/environment-and-energy/guide-crown-land-use-planning OMNR's Sustainable Forest Management: http://www.ontario.ca/environment-and-energy/sustainable-forest-management OMNR's Forest Management Planning Process & approved FMPs: http://www.ontario.ca/environment-and-energy/forest-management-planning OMNR's State of Ontario's Forests Report: http://www.ontario.ca/environment-and-energy/forestry-reports Canadian Boreal Forest Agreement (CBFA): http://canadianborealforestagreement.com/ Environment Canada's Network of Protected Areas: http://www.ec.gc.ca/ap-pa/default.asp?lang=En&n=989C474A-1 Convention on Biological Diversity – Canada's Involvement:	within the Supply Area. WWF has assessed the status of the ecoregions described in the defined Supply Area and none of them are ranked as endangered or critical. Summary of the WWF ecoregion assessment: Relatively stable/intact: Western Great Lakes forests Vulnerable: Central Canadian Shield forest and Midwestern Canadian Shield forests. Private lands only represent approximately 7% of the total supply area in Ontario. Given the scattered location of private lands within the larger matrix of Crown land, it is not expected that harvesting on private lands would pose any significant risks to HCV at the ecoregional level. Protection of species at risk under the Endangered Species Act extends to private lands in Ontario and is overseen by the OMNRF. **Conservation International Global Biodiversity Hotspots** There are no Biodiversity hotspots identified in the Supply Areas. **Centres of Plant Diversity by the World Conservation Union's Centre** There are no Centres of Plant Diversity in either Supply Area.

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
b) There are no eco-regionally significant HCVs in the supply area according to independent verifiable information at the supply area/supply unit level (NGO reports, environmental impact assessments, etc.).	https://www.cbd.int/countries/default.shtml?country=ca Convention on Biological Diversity Reports: https://www.cbd.int/reports/search/default.shtml?type= Ontario's Parks & Protected Areas: http://www.ontario.ca/environment-and-energy/ontarios-parks-and-protected-areas USGS Protected Areas Data Portal: http://gapanalysis.usgs.gov/padus/viewer/	**Intact Forest Landscapes (IFLs)** IFLs[5] are present in all three ecoregions in the NW Ontario portion of the Supply Area. There are no IFLs in the Northern Minnesota Supply Unit. **Wide-Ranging Species (Ontario)** Wide-ranging species at risk are identified as eco-regionally significant HCVs due to the coordinated landscape habitat management approach required and effort across administrative borders to maintain or restore sustainable species populations. The following wide-ranging species can be found within the NW Ontario supply area: • Wolverine (*Gulo gulo*) • Woodland caribou (*Rangifer tarandus caribou*) • Cougar (*Puma concolor*) There are no wide-ranging species in the Minnesota Supply Area ***Conclusion**: The risk assessment identifies eco-regionally significant high conservation values (HCV) within the Supply Area. In this case, the risk assessment cannot designate the Supply Area as low risk at indicator 3.1 and therefore shall demonstrate compliance with indicator 3.2 as specified under*

[5] The Global Forest Watch International Intact Forest Landscapes (2013). Available at www.intactforests.org

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		FSC-DIR-005-14.
3.2 A strong system of protection (effective protected areas and legislation) is in place that ensures survival of the HCVs in the ecoregion. Low risk for this indicator shall be demonstrated as follows: a) A strong system of protection of HCVs is in place. The definition of strong shall be based on the effectiveness of law enforcement in the country. This can be demonstrated through a high rating (≥ 75%) in the World Bank 'rule of law' index (www.govindicators.org), and b) There is significant support by relevant national/regional stakeholders from the assessed supply area, or c) The forest manager has agreed to an approach of HCV protection at the supply unit level with national/regional environmental stakeholders relevant for the assessed supply area.	FSC Global Forest Risk Registry http://www.globalforestregistry.org/map a) Percentage of the ecoregion in protected areas b) Degree of protection compared with the degree of protection in neighbouring jurisdictions c) Recent and current activities to increase protection d) Results of recent published, peer reviewed gap analyses e) Information provided by interested parties (NGOs, Aboriginal communities, etc)	**Rule of Law and Protection of HCVs** Both Canada and the US have scored over 90% (minimum rating for strong rule of law = 75%) under the World Bank Rule of Law Index since 2005.[6] In the US, there are both national and state level legislation which contribute to protection of HCV areas. Some examples are: Clean Water Act, Endangered Species Act, National Historic Preservation Act, and Resource Conservation and Recovery Act. However, specific regulations can differ significantly between states. Across the US, the forest areas within National Parks and National Forest Wilderness Areas are considered as being relatively well protected. All of Minnesota's state lands managed by DNR are FSC certified. On private land, laws protect historic and cultural sites as well as endangered species. Land owners may also have to follow restrictions on timber harvesting imposed by various local units of government. For instance, counties have shore-land ordinances that public and private landowners must follow. As a result of the Minnesota Sustainable Forest Resource Act of 1995 and 1999, the MFRC also developed a set of voluntary guidelines to help protect historic and cultural resources, riparian areas, soil productivity, visual quality, water quality,

[6] World Bank Governance Indicators. URL: http://info.worldbank.org/governance/wgi/index.aspx#home

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
c) Indicator 3.2 cannot be met if there is substantial objection from relevant national or regional stakeholders against a low risk designation for the HCV category.		wetlands, and wildlife habitat. MFRC Landscape Plans and Committees provide a forum to discuss and agree to basic landscape goals and management approaches. **Certification** MN has a relatively high rate of uptake in certification. Approximately 8 million acres of commercial timber lands in MN are certified under one of three systems – the Forest Stewardship Council® (FSC), Sustainable Forestry Initiative® (SFI®), and American Tree Farm System (ATFS). These systems, through independent third parties, certify that forest landowners and businesses embrace sustainable forestry practices that maintain ecological, economic, and social components of forests. Under FSC, this specifically includes measures to ensure that HCVs are protected at the management unit level. The Minnesota Biological Survey (MBS) has been completed for a significant part of the state and provides detailed ecological information for identifying HCV at the site or management unit level (though some areas remain incomplete). As part of its HCV management efforts, DNR identifies those areas that warrant cross-ownership coordination efforts as a result of HCVs e.g., spanning multiple land ownerships. On Crown lands in Ontario, forest managers are mandated by law to ensure protection for HCVs under an extensive body of forest policy, legislation and regulated manuals and guidelines (landscape and site level for the conservation of biodiversity and cultural heritage values). The planning process includes multiple opportunities for public

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		input and engagement, including Local Citizens' Committees representing a wide range of interests. LCCs sign off their agreement/support for forest management plans, and processes are in place to request a review of contentious issues. Under Ontario's Environmental Assessment (EA) Act, it is possible to have a timber-class environmental assessment - required for all Crown timber land - "bumped up" from a Class EA to a more thorough individual Environmental Assessment. Ontario has robust forest legislation and a suite of supporting regulations and guidelines in place. This management system is complemented by an extensive network of provincial parks and other protected areas, which has resulted in an effective landscape level management approach. The status of forest management is assessed and publicly reported on a regular basis. Overall, Ontario's multi-scaled approach e.g., from regional to landscape to site level (including species/ecosystem specific protection based on best available science) ensures there is strong and effective protection for identified high conservation values. These include recovery strategies and other landscape and site level approaches to meet its commitments to manage species as well as recover species at risk.[7] All species at risk and their habitats in Ontario are managed under extensive policy,

[7] To learn more about species at risk recovery in Ontario, please visit the Ministry of Natural Resources Species at Risk webpage at: www.ontario.ca/speciesatrisk.

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		guidelines and regulations that include a comprehensive management planning process with extensive stakeholder engagement and Indigenous consultation, as well as guides for the management of habitat at a landscape and site level (e.g., *Forest Management Guide for Boreal Landscapes, Forest Management Guide for Great Lakes-St. Lawrence Landscapes, Forest Management Guide for Conserving Biodiversity at the Stand and Site).* The guidelines as well as proposed new forest policy are reviewed by a panel of experts and stakeholders who comprise the Provincial Forest Technical and Policy Committees. In addition, Ontario has subscribed to the notion of active adaptive management. The process of periodic review of forest management guides is prescribed through the *Class Environmental Assessment Terms and Conditions*. The province carries out two key forms of monitoring: (1) there are broad-scale cumulative effects monitoring programs that are designed to monitor changes occurring across the province resulting from many causes (including forest management operations); and (2) a Guide Effectiveness Monitoring program evaluates "outcomes" and relies on hypothesis-based monitoring to test how well directions in the guides produce intended results. Risk mitigation measures in place for protection of eco-regionally significant HCVs are summarized as follows: 1) Intact Forest Landscapes - KBM undertook a comprehensive review of Global Forest Watch IFL assessments applicable to Canada; FSC Guidance and FSC

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		Advice Notes. The results of comprehensive review are summarized in Appendix 1. At the ecoregional level, there is a strong system of protection in place based upon the legal framework for protected areas which includes the Provincial Parks Act; the Conservation Reserves Act and the Far North Act. In addition, significant IFLs within the supply area are managed in accordance with the Dynamic caribou habitat Schedule and are deferred from forest activities for long term up to 100 years. IFLs will continue to persist at the ecoregional level since they are encompassed within permanently protected areas and areas north of the area of forest licencing in Ontario (also known as the Area of the Undertaking). The IFL HCVs and associated risk mitigation measures that rationalize low risk are assessed in detail in Appendix 1. 2) Wide-ranging species at risk: • Woodland Caribou – In Ontario woodland caribou is listed as a threatened on the Species at Risk in Ontario List under the Endangered Species Act (ESA) meaning that caribou receive both species and habitat protection, and the government is mandated to prepare recovery strategies and government response statements. As a result, Ontario has developed a comprehensive set of policies, analytical tools and legally binding guidance directing woodland caribou habitat management. Further, this guidance is and

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		will be regularly reviewed with public input as a part of the regulatory adaptive management cycle. This strong legal framework mitigates risks from forest operations on woodland caribou. The woodland caribou HCV and associated risk mitigation measures that rationalize low risk are assessed in detail in Appendix 2. • Wolverine – Ontario's Forest Management Guide for Boreal landscapes addresses wolverine habitat protection by applying the coarse filter in forest management and uses the woodland caribou management as direction for managing this landscape species per the Ontario Recovery Strategy for Wolverine. This strong legal framework mitigates risks from forest operations on wolverine. The wolverine HCV and associated risk mitigation measures that rationalize low risk are assessed in detail in Appendix 3. • Cougar – The cougar is protected from hunting and killing in Ontario. Landscape level management aims to maintain/restore habitat in accordance with regulated guidance that requires natural disturbance emulation approaches and target setting according to natural range of variation. This regulatory approach to forest management will not adversely impact survival of this HCV. The cougar HCV and associated risk mitigation measures that rationalize low risk are assessed in detail in Appendix 4. ***Conclusion**: Ontario has a strong system of protection (effective protected areas and legislation) in place that ensures survival of*

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		the identified eco-regionally significant HCVs.
4. WOOD HARVESTED FROM AREAS BEING CONVERTED FROM FORESTS AND OTHER WOODED ECOSYSTEMS TO PLANTATIONS OR NON-FOREST USES		LOW RISK
The supply area may be considered low risk in relation to conversion of forest to plantations or non-forest uses when the following indicator is met: NOTE: the change from plantations to other land uses is not considered forest conversion.		
4.1 There is no net loss or no significant rate of loss (> 0.5% per year) of natural forests and other naturally wooded ecosystems such as savannahs taking place in the eco-region in question.	FSC Global Forest Risk Registry http://www.globalforestregistry.org/map Ontario Ministry of Natural Resources Forestry Reports: http://www.ontario.ca/environment-and-energy/forestry-reports USDA Forest Service Forest Inventory and Analysis: http://www.nrs.fs.fed.us/fia/data-tools/state-reports/MN/default.asp USDA Forest Service Northern Research Station Research Note NRS-175 http://www.nrs.fs.fed.us/pubs/rn/rn_nrs175.pdf Minnesota Forest Resource Assessment http://files.dnr.state.mn.us/forestry/subsection/mnForestResourceAssessment.pdf	Current deforestation rates for all activities have been estimated at 30,000 ha annually or less than 1/100th of 1% of the total forested area this includes roads, pipelines, mines and communities. Ontario's forest area is 71 million ha or 66% of the total area. Ontario Crown land is subject to provincial land use and planning requirements. The United Nations Food and Agriculture Organization's (FAO) State of the World's Forests 2001 reports that North American forest cover expanded nearly 10 million acres (4 million hectares) over the last decade. As per the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service, based on the 2012 report for Minnesota (Research Note NRS-175), there has been an increase in forest land since 2007 of 4.2% assuming a 0.5% sampling error. A 2010 Minnesota Department of Natural Resources Report notes that forest lands have been relatively stable in Minnesota over the last 30 years.

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
		Conclusion: There is not net loss of natural forests in the Ontario or Minnesota Supply Units.
5. WOOD FROM FORESTS IN WHICH GENETICALLY MODIFIED TREES ARE PLANTED		**LOW RISK**
The supply area may be considered low risk in relation to wood from genetically modified trees when one of the following indicators is met:		
a) There is no commercial use of genetically modified trees of the species being sourced; or b) Licenses are required for commercial use of genetically modified trees and there are no licenses for commercial use of the species being sourced; or c) It is forbidden to use genetically modified trees commercially in the country concerned.	FSC Global Forest Risk Registry http://www.globalforestregistry.org/map Canadian Update on GM trees http://www.nwrage.org/index.php?name=News&file=article&sid=1418 Canadian Food Inspection Agency http://www.inspection.gc.ca/plants/plants-with-novel-traits/general-public/overview/eng/1338187581090/1338188593891 USDA Animal and Plant Health Inspection Service website: http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/biotechnology FAO, IUFRO 2010. Forests and Genetically Modified Trees. Social, legal and regulatory issues related to transgenic trees *(R.A. Sedjo)*. Available online: http://www.fao.org/docrep/013/i1699e/i1699e0	In Canada, the Federal government regulates genetically modified tree species. There are currently no genetically modified commercial tree species authorized for use in the area that fibre is sourced from. There is no commercial use of genetically modified trees in Minnesota. Hybrid poplar is planted and harvested in Minnesota, but it is not considered a GMO. In the U.S.A. The Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA) regulates the introduction (importation, interstate movement, or environmental release) of certain genetically engineered (GE) organisms. All regulated introductions of GE organisms must be authorized by APHIS under either its permitting or notification procedures. According to a paper in FAO, IUFRO Rome 2010 workshop titled Social, legal and regulatory issues related to transgenic trees *(R.A. Sedjo),* "Thus far, no country has publicly approved the deregulation, and hence commercialization, of a transgenic forest tree. Only one tree – the papaya – has been deregulated and is now commercialized in Hawaii. A transgenic plum tree

Requirements related to illegally harvested wood	Sources of information reviewed	Documentation or other resources supporting compliance
	0.htm Centralized National Risk Assessment for Canada (FSC-CNRA-CAN V1-0) Centralized National Risk Assessment for the United States of America (FSC-CNRA-USA V1-0)	resistant to pox appears about to be deregulated. In China, a transgenic poplar has been released". *Conclusion: There are no GMO trees planted in the Ontario or Minnesota Supply Units.*

APPENDIX 1: INTACT FOREST LANDSCAPES

FSC DIRECTION ON INTACT FOREST LANDSCAPES

- Intact Forest Landscapes, Global Forest Watch International (September 2015)
- Canada's Large Intact Forest Landscapes, Global Forest Watch Canada (2003)
- Intact Forest Landscapes & Indigenous Cultural Landscapes: A Facilitated Strategic Discussion with FSC Canada Board of Directors and Selected Chamber Representatives (May 2015)
- Intact Forest Landscapes & Indigenous Cultural Landscapes: Working Together to Find a Functional Approach - Discussion Paper (January 2016)
- Advice Note on the Development of Indicators for the Protection of Intact Forest Landscapes and Indigenous Cultural Landscapes in Brazil, Canada, the Congo Basin, and Russia (FSC-ADV-20-007-018), FSC International (December 2016)
- Practical Implementation of the IFL Concept, Intact Forests

TERMS AND DEFINITIONS

According to Global Forest Watch, Intact Forest Landscapes (IFLs) are territories within today's global extent of forest cover which contain forest and non-forest ecosystems minimally disturbed by human economic activity, with an area of at least 500 km^2 (50,000 ha) and a minimal width of 10 km (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory).[8] There are currently two main IFL assessment completed for Canada: one by Global Forest Watch International[9] and other by Global Forest Watch Canada.[10] Advice notice FSC-ADV-20-007-018 also provides criteria for IFL mapping. In addition, on May 27, 2017, FSC Canada published another guidance document: Interim Guidance for the Delineation* Intact Forest Landscapes (IFL). [11] on its website. The main differences in the mapping criteria can be viewed in Table 1.

All four methods use different criteria for IFL mapping, resulting in significant differences in terms of location and area under IFLs. KBM Resources Group assessed IFLs according to each of the four criteria. Based on the comprehensive review of mapping methods and FSC guidance, the IFLs as mapped by Global

[8] Intact Forests/Global Forest Watch. Glossary and definition as provided on Intact Forest website. 2006-2014.

[9] Intact Forest Landscapes website by Global Forest Watch (international). Available at http://www.intactforests.org/index.html

[10] Global Forest Watch Canada website: Intact Forest Landscapes. Available at http://www.globalforestwatch.ca/intact-forest-landscapes

[11] FSC Canada website: Interim Guidance for the Delineation* Intact Forest Landscapes (IFL). May 25, 2017. Available at https://ca.fsc.org/preview.delineating-intact-forest-landscapesdocument.a-1483.pdf

Forest Watch International were selected for the Risk Assessment. The mapping criteria follows most closely the latest FSC advice[12] on IFL identification. Namely, the core area of an IFL needs to be large enough to fit a 10 km-diameter circle and the corridors or appendages to the IFL must be at least 2 km wide. In addition, as per Smith and Cheng (2016),[13] the Global Forest Watch Canada's imagery was coarser compared to the Global Forest Watch International imagery, resulting in coarser assessment of the IFLs: "*While Global Forest Watch Canada has used Landsat satellite imagery as the baseline data for digitizing anthropogenic disturbances in all iterations, this update used 2013 Landsat satellite ortho-mosaics rather than individual Landsat images of varying dates. The ortho-mosaics are more convenient and efficient to use than individual Landsat images and have a more consistent date range. However, they have a slightly coarser resolution, which has likely resulted in interpreters identifying fewer disturbances than if they had used individual Landsat images*." As a result, Global Forest Watch Canada mapped significantly higher amount of areas that, however, do not correspond to the definition of the IFL as per FSC guidance as discussed above (Figure 2).

[12] FSC Canada website: Interim Guidance for the Delineation* Intact Forest Landscapes (IFL). May 25, 2017. Available at https://ca.fsc.org/preview.delineating-intact-forest-landscapesdocument.a-1483.pdf

[13] W. Smith and R. Cheng. 2016. Canada's Intact Forest Landscapes Updated to 2013. Ottawa: Global Forest Watch Canada. 26 pp. Available at http://globalforestwatch.ca/sites/gfwc/files/publications/GFWC%20IFL%20bulletin%202016%20July%20Final_0.pdf

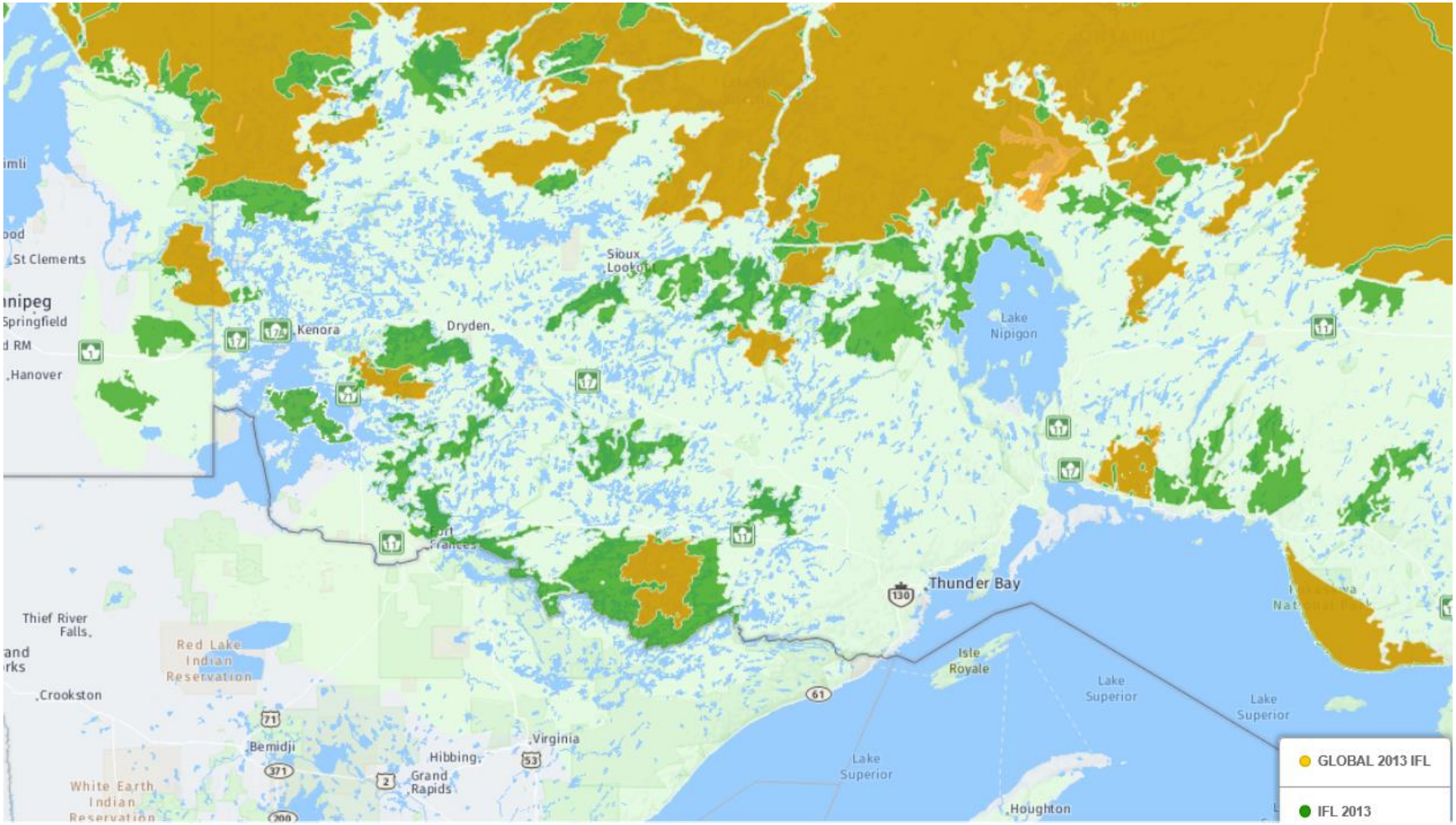


Figure 2. IFLs in the Northwestern Ontario as mapped according to the Global Forest Watch International (brown polygons) and Global Forest Watch Canada (green polygons). Map copied from Canada's Intact Forest Landscapes 2000-2013: Interactive Map (http://globalforestwatch.ca/node/254). [14]

[14] Global Forest Watch Canada data derived from Hansen/UMD/Google/USGS/NASA Landsat Imagery by Smith, W. and R. Cheng. 2016. Canada's Intact Forest Landscapes Updated to 2013. Ottawa: Global Forest Watch Canada, Potapov P., Yaroshenko A., Turubanova S., Dubinin M., Laestadius L., Thies C., Aksenov D., Egorov A., Yesipova Y.,

Table 2. IFL mapping criteria as per four different sources, all of which are recognised by the FSC.

Decision Rule	GFWI[15]	GWFC[16]	ADVICE-20-007-018 V1-0	Interim Guidance for Delineating IFLs[17]
Size	larger than 500 km^2	IFLs as 500 km^2 in size.	IFLS as 500 km^2 in size.	All IFLs greater than 500 km^2 must be identified
Width	At least 10 km wide at the broadest place (measured as the diameter of the largest circle that can be fitted inside the patch)	No criteria	Minimum 10 km internal width (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory).	The minimum width of an IFL is 10 km as measured by one 10 km diameter circle that is entirely within its boundaries.
Corridors and Appendages	At least 2 km wide	No criteria	No criteria	Corridors or appendages to the IFL must be at least 2 km wide.
Buffers	1 km all infrastructure, including navigable waters.	Buffers only highways with 1 km, other features with 500 m, not including navigable		Notable anthropogenic features (including most roads) are to be buffered by 1 km Cut-blocks are to be buffered by 500 m.

Glushkov I., Karpachevskiy M., Kostikova A., Manisha A., Tsybikova E., Zhuravleva I. 2008. Mapping the World's Intact Forest Landscapes by Remote Sensing. Ecology and Society, 13 (2)., Global Forest Watch Canada, © CARTO

[15] From GFWC IFL bulletin 2016 July Final.pdf

[16] From GFWC IFL bulletin 2016 July Final.pdf

[17] FSC Canada website: Interim Guidance for the Delineation* Intact Forest Landscapes (IFL). May 25, 2017. Available at https://ca.fsc.org/preview.delineating-intact-forest-landscapesdocument.a-1483.pdf

		waters.		Notable anthropogenic features include: • roads ≥ 5 m wide • utility corridors • buildings • highways • railways • pipelines • settlements Where there are roads ≥ 5 m wide within cutblocks, the extent of the buffer into to forest should be the farthest extent of either the road buffer or the cut-block buffer Buffers should not be applied around: • snowmobile or ATV trails • hiking trails • canoe routes or portages • roads < 5 m wide
Natural Disturbance	Areas affected by stand-replacing wildfires during the last 30–70 years were eliminated if located in the vicinity of infrastructure or developed areas; fire scars within undeveloped forest landscapes were assumed to have natural causes and were not used as a reason for an area to be eliminated.	Fire scars, even if these touch infrastructures are not treated as human disturbance.		Natural disturbance (fire, blow down, insect infestation) are not to be excluded from IFLs.
Non-forest Area	Forest was defined as an area with a year 2000 tree canopy cover greater than 20%. The minimum forest patch size considered as part of the forest	Includes naturally-treeless forest ecosystems minimally disturbed by human activity, as detected on Landsat		IFLs may contain up to 50% non-forest terrestrial and wetland areas as part of a broader ecosystem, including:

	zone was 4 km^2. The forest zone embodied all non-forest areas (including lakes and rivers) included within forest ecosystems. Fragments of the forest zone smaller than 500 km^2 were not considered in the analysis.	satellite imagery		• wetlands – bogs, fens, marshes; • grasslands, meadows, scrub; • bare rock.
Open Water	See above.	Report does not mention open water. Based on preliminary observations of closeup maps - varies. Some IFLs included open water entirely and are made of mostly water (e.g. Lac de Millet Lac), other did not (e.g. Lake Nipigon).		Open water is to be included in the IFL up to 500 m off shore.
Protected Area				Protected areas and FSC Candidate Protected Areas are not to be excluded from IFLs. All considerations included in this document regarding the identification of IFLs should be applied to existing legally protected areas and candidate protected areas. Where these areas abut other portions of the MU, the total area to be considered for possible designation as IFLs includes the protected areas and candidate protected areas.

ECOREGIONAL CONTEXT IFLS

The Supply Area is embedded in three ecoregions: Western Great Lakes (50% of the Supply Area), Midwestern Canadian Shield Forests (15% of the Supply Area) and Central Canadian Shield Forests (35% of the Supply Area).

Western Great Lakes[18]

Three relatively large blocks of relatively intact habitat remain. According to the WWF Ecoregion Profile, the status of the ecoregion is Relatively Stable/Intact. The most important blocks are comprised of areas under permanent protection in the form of provincial, state and federal parks in Canada (Figure 3). The largest IFL – NAM_88 (167,403 ha) is fully embedded in the Quetico Provincial Park, and buffered from south by protected Boundary Waters Canoe Area Wilderness area in Minnesota. Below is the list of protected areas that overlap with IFLs in the Western Great Lakes ecoregion:

- Quetico Provincial Park – 166,124 ha of the IFL
- Dryberry Lake Conservation Reserve – 15,655 ha of the IFL
- Eagle-Dogtooth Provincial Park (Waterway Class) – 3,600 ha of the IFL
- Musk Lake Conservation Reserve – 2,485 ha of the IFL

[18] World Wildlife Fund Ecoregions. URL: https://www.worldwildlife.org/biomes

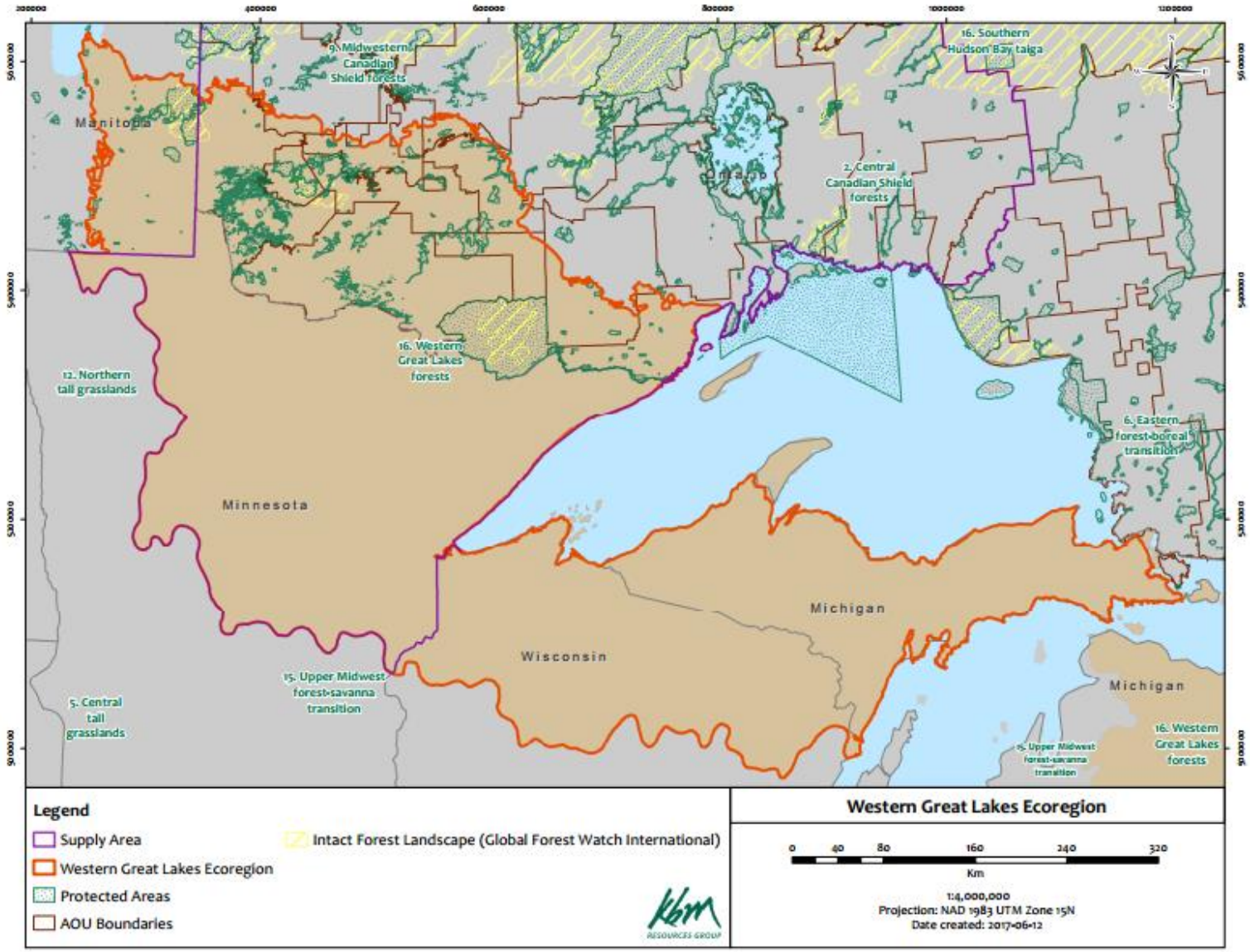


Figure 3. IFLs and protected areas in the Western Great Lakes Ecoregion and in the Supply Area.

Midwestern Canadian Shield Forests[19]

Over 75% of this ecoregion is currently outside the active forest management zone. According to the WWF Ecoregion Profile, the status of the ecoregion is Vulnerable. The mapping exercise revealed that in total, there are 16,813,766 ha of IFLs within the Midwestern Canadian Shield Forest Ecoregion, of which 80% receive formal protection and/or are located north of the management zone (Figure 4).

Significant intact areas under formal protection in the northwestern Ontario portion of the ecoregion include IFLs within:

- St. Raphael Lake Provincial Park (Waterway Class) – 83, 693 ha of the IFL
- Whitemud Conservation Reserve – 18,244 ha of the IFL
- Harth Lake Conservation Reserve – 3,370 ha of the IFL
- Brokenmouth River Conservation Reserve – 1,066 ha of the IFL

[19] https://www.worldwildlife.org/ecoregions/na0609

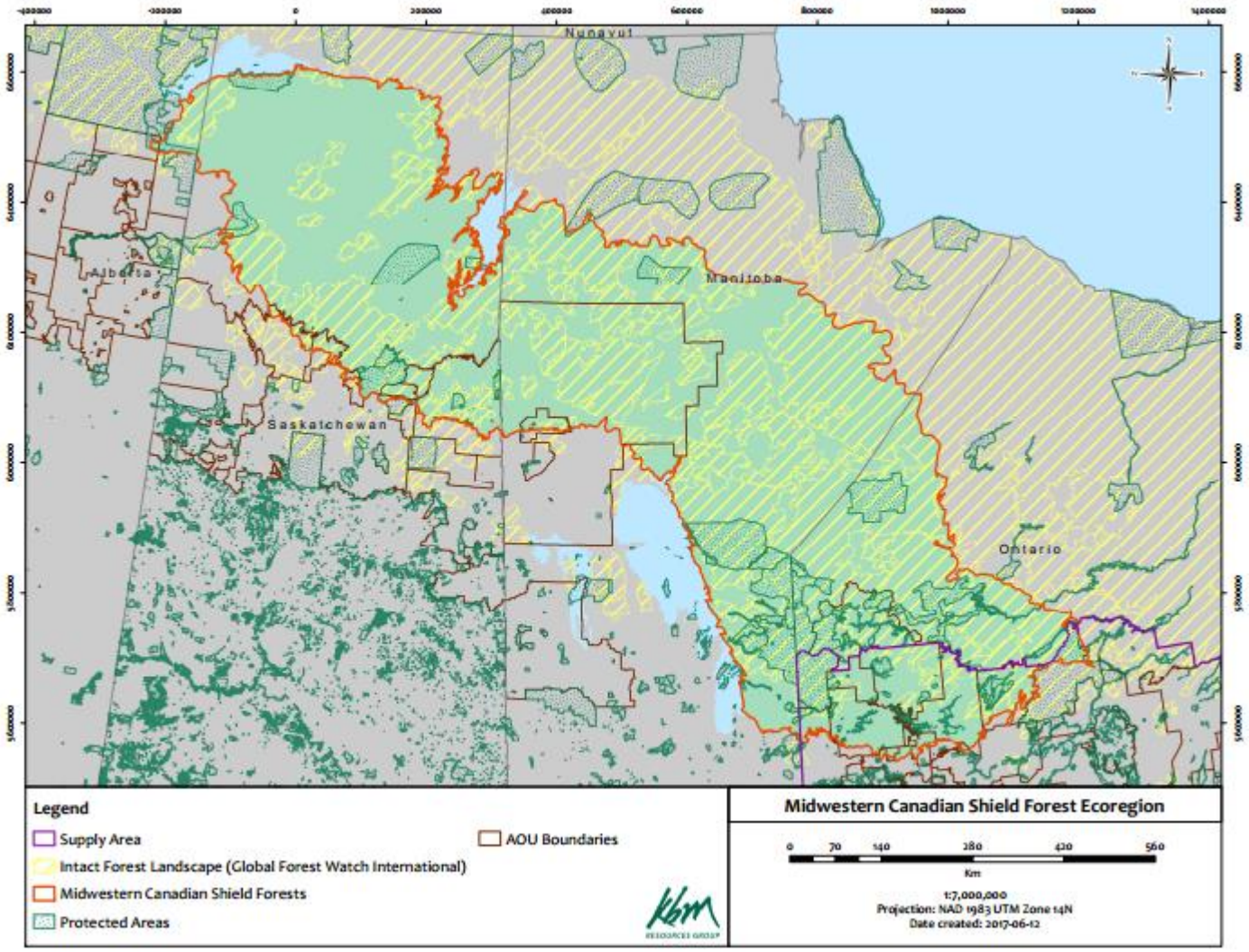


Figure 4. IFLs and protected areas in the Midwestern Canadian Shield Forest Ecoregion and in the Supply Area.

Central Canadian Shield Forests

According to the WWF Ecoregion Profile, the status of the ecoregion is Vulnerable. The vast majority of the IFLs are north of active forest management zone (>70%) (Figure 5). Remaining IFLs within the management zone include a large block north of Lake Nipigon in Ontario and along the northern fringe of the ecoregion as well as lands under formal protection as provincial or federal parks, including:

- Wabakimi Provincial Park – 622,378 ha of the IFL
- Brightsand River Provincial Park – 24,606 ha of the IFL
- Ogoki River Provincial Park (Waterway Class) – 22,245 ha of the IFL
- Albany River Provincial Park – 6,825 ha of the IFL
- Sedgman Lake Provincial Nature Reserve – 5,065 ha of the IFL
- Little Current River Provincial Park – 2,871 ha of the IFL
- Whitesand Provincial Park (Waterway Class) – 2,680 ha of the IFL

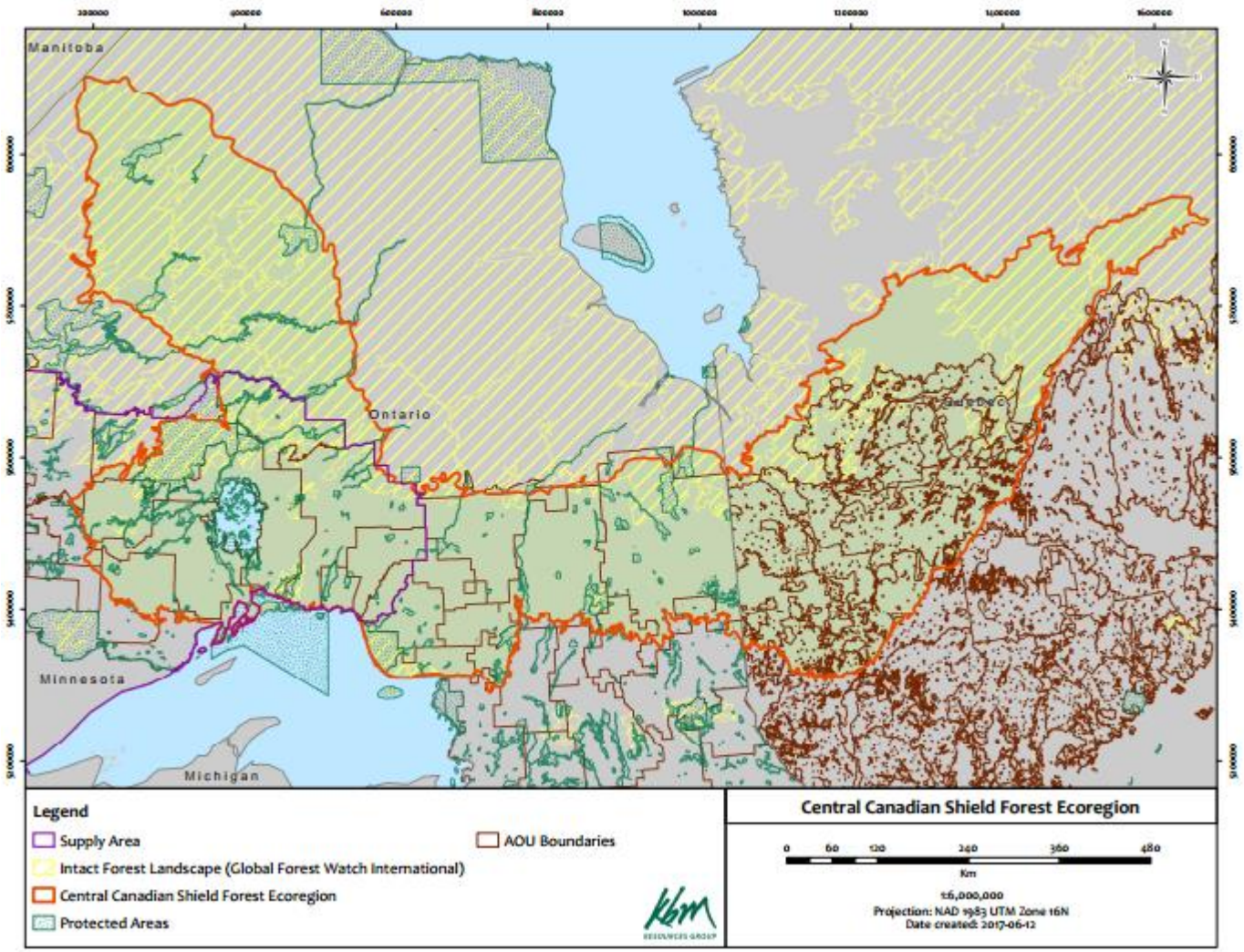


Figure 5. IFLs and protected areas in the Central Canadian Shield Forest Ecoregion and in the Supply Area.

SYSTEM OF PROTECTION

At the ecoregion level, there is strong system of protection in place resulting from legal framework of protected areas. Protected areas are defined to protect natural and cultural features, maintain biodiversity and provide opportunities for compatible recreation.[20] The areas are selected based on their ecological, geological and cultural heritage values, such as old-growth forests, lakes, rivers, wetlands, habitat for rare or endangered plants and habitats etc. Provincial parks and conservation reserves are in Ontario are managed in accordance with the *Provincial Parks and Conservation Reserves Act*. This Act establishes ecological integrity as the priority in all aspects of planning and management for these types protected areas. Wilderness areas that are established with the objective to protect flora and fauna and are regulated under the *Wilderness Areas Act*. In addition, the Indigenous communities in Far North can establish unregulated protected areas under the community-based land use plans, or in collaboration with the Government of Ontario to identify areas that will be protected under the *Provincial Parks and Conservation Act* or under the *Far North Act*. Ontario also has several National Protected Areas (1.3% of the landbase). All protected areas currently compromise 10.7% of the province.[21] In addition, most IFLs within the Supply Area fall into the woodland caribou distribution zone that is managed according to the Dynamic Caribou Habitat Schedule in large continues tracks (>10,000 ha) over 100-140- year period. Currently, over 2 million hectares of IFLs within the Supply Area are deferred from harvesting under current forest management plans. As such, it can be concluded that IFLs will continue to persist at the ecoregional level since they are encompassed within permanently protected areas and areas north of the area of forest licensing in Ontario (also known as the "Area of the Undertaking"). The Supply Area has been evaluated at the ecoregion and forest management unit level to establish low risk regarding Intact Forest Landscapes (IFLs).

[20] Government of Ontario website: Ontario's parks and protected areas. Available at https://www.ontario.ca/page/ontarios-parks-and-protected-areas

[21] Ibid.

APPENDIX 2: WOODLAND CARIBOU POLICY DIRECTION

SPECIES PROTECTION STATUS

The forest-dwelling ecotype of the woodland caribou (*Rangifer tarandus*) has been listed as "threatened" by COSEWIC since 2002 and by COSSARO in 2004. Thirteen contiguous caribou ranges have been delineated in Ontario, plus an additional discontinuous range along the Lake Superior coast (Figure 6). In Ontario, woodland caribou, forest-dwelling boreal population is listed as a threatened species on the Species at Risk in Ontario List under the **Endangered Species Act** (ESA) meaning that caribou receive both species and habitat protection, and the government is constituted to prepare recovery strategies and government response statements. As a result, Ontario has developed a comprehensive set of policies and analytical tools to guide woodland caribou habitat management. This legally binding guidance has been and will be regularly reviewed with public input as a part of the adaptive management cycle. It is implemented through the Ontario's regulated forest management planning and is subject to regular forest audits (Independent Forest Audits) – both of which include significant public participation.

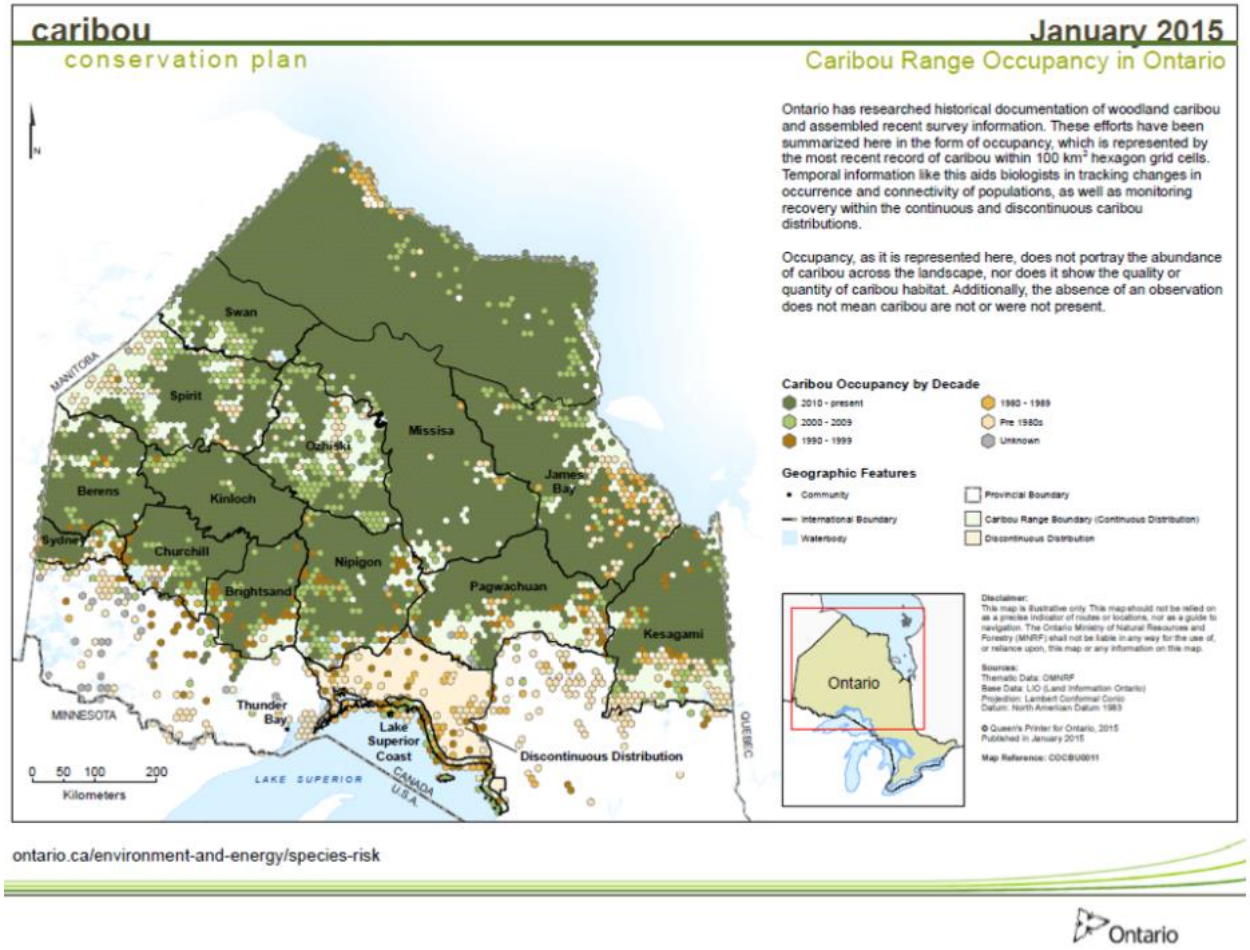


Figure 6. Woodland caribou ranges and occupancy in Ontario (from Ontario Species at Risk Evaluation Report for Caribou, Boreal population (Rangifer tarandus)[22])

[22] Available at https://www.ontario.ca/page/ontario-species-risk-evaluation-report-caribou-boreal-population-rangifer-tarandus)

HISTORICAL CONTEXT

The onus of the protection and management of woodland caribou lies with the Ontario Ministry of Natural Resources and Forestry (OMNRF), primarily through applying policy guidance in the forest management planning process, and takes the form of habitat management and the reduction of stressors. The decision to list woodland caribou as species at risk in Ontario was based on studies by Cumming and Beange[23] and Harris.[24] By using historic observations and records, Cumming and Beange demonstrated a steady decline in woodland caribou numbers since the early 20th century. The decline was attributed to the forest management practices that up 1970s in Ontario were scattered through the landscape and generally did not include artificial regeneration to restore conifer coverage. In addition, with the introduction of the *Timber Management Guidelines for the Provision of Moose Habitat* (1988), the policy guidance aimed to enhance moose habitat by further increasing forest edge and landscape fragmentation. All these historic forest management practices had significant negative impact on woodland caribou.

Up until the early 1990s, forest management guidelines were not required to consider woodland caribou in their management planning. Northwestern Ontario was one of the earliest regions in Canada to incorporate landscape scale woodland caribou habitat management into the FMP process. Early implementation of the **Northwest Region Interim Caribou Habitat Management Direction** (Caribou Direction) (1994) and the **Forest Management Guidelines for the Conservation of Woodland Caribou — A Landscape Approach** (Caribou Guidelines) (1999-2014) were crucial to integrate woodland caribou habitat management with forestry activities. These guidelines directed management of caribou habitat in large areas (mosaic blocks) to create large contiguous patches of mature conifer dominated forest, minimize access, and maintain connectivity between habitats. The caribou guidelines were in concert with the disturbance emulation requirement as per the *Crown Forest Sustainability Act* (1994) and the *Forest Management Guide for Natural Disturbance Pattern Emulation* (2001-2014). This past policy direction laid a strong foundation in Northwestern Ontario for the current management approach that aims to transition fragmented landscape to one supporting sustainable caribou populations and sustain existing woodland caribou habitat.

CURRENT POLICY DIRECTION

The **Caribou Conservation Plan** (CCP) was released by the OMNR in 2009. The CPP is a broad caribou conservation strategy that includes direction to maintain naturally-occurring low densities of alternate prey (e.g. moose, white-tailed deer) and predators (p. 15, s 5.5; CCP). The policy stipulates that caribou conservation and habitat management should follow serval guiding principles, including the of precautionary principle, adaptive management, and ecosystem-based management.

[23] Cumming, H. G. and Beange, D. B. 1993. Survival of woodland caribou in commercial forests of northern Ontario. Forestry Chronicle 69:579–588

[24] Harris, A. 1999. Report on the Status of Woodland Caribou in Ontario. Report prepared for the Committee on the Status of Species at Risk in Ontario (COSSARO), Ontario Ministry of Natural Resources, Thunder Bay, Ontario.

In accordance with the CCP, Ontario's forest management planning process uses a variety of tools to provide for caribou habitat, including the requirement for area of concern prescriptions for strategic caribou habitat, commitments for silviculture, decommissioning strategies for roads within the caribou range, scheduling of harvesting and deferrals, science-based modeling, precautionary planning in the face of natural uncertainty such as wildfire, and a requirement for caribou habitat provision objectives and a dynamic caribou habitat schedule. The **Dynamic Caribou Habitat Schedule** (**DCHS**) is used as a main tool to reduce habitat quality for and encourage spatial separation of moose and deer from areas inhabited by caribou. Within this schedule, large tracts of land (over 10,000 ha) are created with the intent to maintain large blocks of suitable winter and year-round caribou habitat on the landscape through time in a pattern similar to what would be generated from a natural fire driven ecosystem. These habitat tracts are identified and delineated based on landscape level features including: on-line winter and refuge habitat, landscape capability, landscape use and occupancy. The DCHS is believed to ensure the opportunity for caribou to be sustained over a 100–140-year planning horizon.[25] Management according to the DCHS is the primary management objective in all FMPs in the caribou zone, and it has major impact on available harvest area and on long-tern management direction.

As caribou requires contiguous blocks of mature forest, and the DCHS is a recent approach with none of the DCHS block reaching habitat age, the measured effectiveness of this approach remains to be seen. However, the preliminary results are positive. In its 2012 Ontario's Woodland Caribou Conservation Plan Progress Report[26], OMNRF reported that there is some evidence from three case studies carried out in forests near Lucy Lake, Catelwood Lake and South Alley Lake that caribou returned to the formerly harvested areas that were managed according to DCHS-like approach in large contiguous even-aged blocks with conifer dominated regeneration. The study areas were harvested between 1952 and 1970 and each of these were planted with pine or with the mixture of pine and spruce. The study areas were in vicinity of lakes, swamps and fens providing needed habitat connectivity and refuge habitat. The DCHS is developed and implemented in all Crown forest management units that overlap with the woodland caribou distribution range. The DCHS is also used to rehabilitate un-even aged fragmented areas on the caribou southern range to increase future suitability for caribou.

The General Habitat Description for Woodland Caribou (Forest-dwelling boreal population) (*Rangifer tarandus caribou*) in Ontario[27] categorizes entire Ontario's caribou zone into sub-range habitat types, including high use areas, seasonal ranges and remaining areas within the range. This categorisation enables to identify areas that are more susceptible and vital for the species and establish management direction to conserve habitat or mitigate forest management

[25] Elkie P., K. Green, G. Racey, M. Gluck, J. Elliott, G. Hooper, R. Kushneriuk and R. Rempel, 2014. Science and Information in support of Policies that address the Conservation of Woodland Caribou in Ontario: Occupancy, Habitat and Disturbance Models, Estimates of Natural Variation and Range Level Summaries. Electronic Document. Version 2014. Ontario Ministry of Natural Resources, Forests Branch. Electronic Document. Version 2016.

[26] OMNRF. Ontario's Woodland Caribou Conservation Plan Progress Report. Winter 2012. Available at http://www.porcupineprospectors.com/wp-content/uploads/Woodland-Caribou.pdf

[27] Available at http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_ghd_car_en.pdf

impacts. The high use habitats include areas that are strongly associated with the repeated, intensive use, e.g., for calving, nursery, winter use and travel corridors. These habitats often receive Area of Concern prescriptions in forest management plans. Category 2 Seasonal Ranges are large habitat types that encompass the majority of current caribou distribution during all seasons. These areas are large (>100 km2), interconnected tracts of mature (>40-60 years), conifer dominated (jack pine and/or black spruce) or low shrub forest cover that are relatively undisturbed and unfragmented and are interspersed with wetlands and lakes. In DCHS, these areas form "on-line" caribou habitat blocks. The remaining areas in the Category 3 are young or recently disturbed and are often used randomly or include travel corridors. These areas are managed according to the CCP and will become Category 2 habitat tracks as forest ages. Figure 7 illustrates the factors that need to be taken into consideration in the assessment of activity impact on caribou and its habitat.

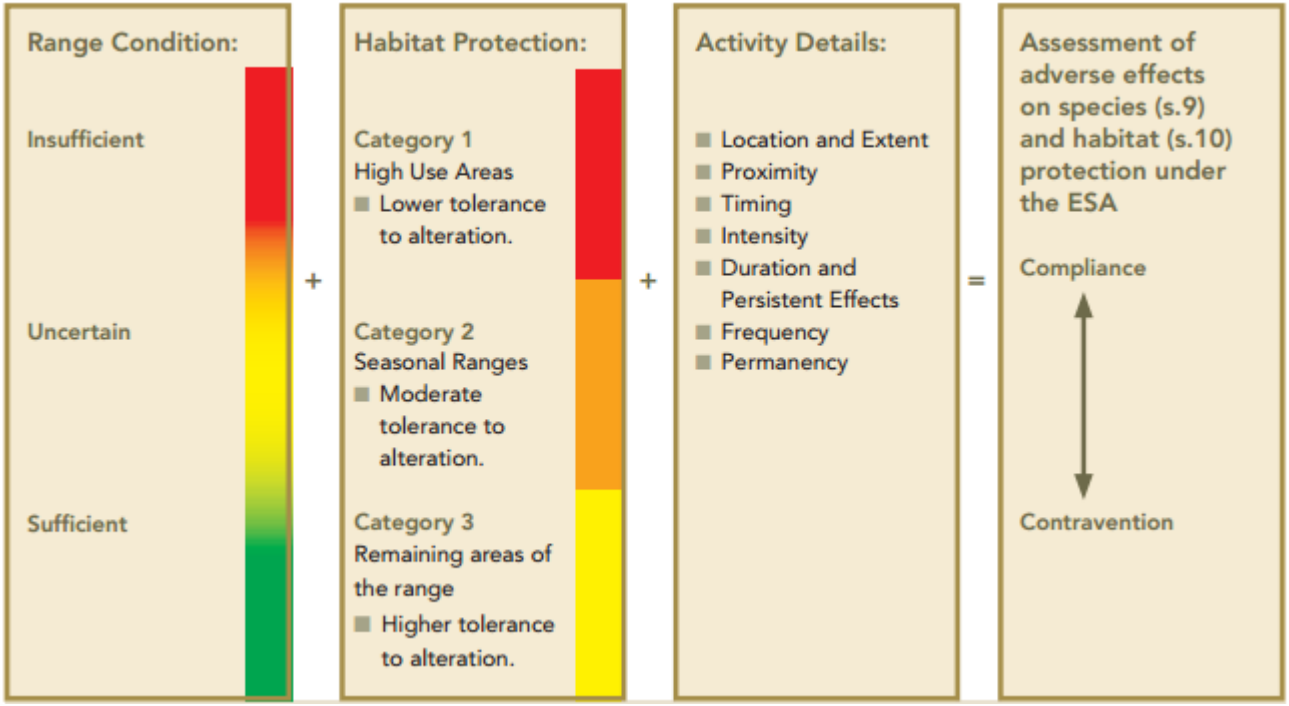
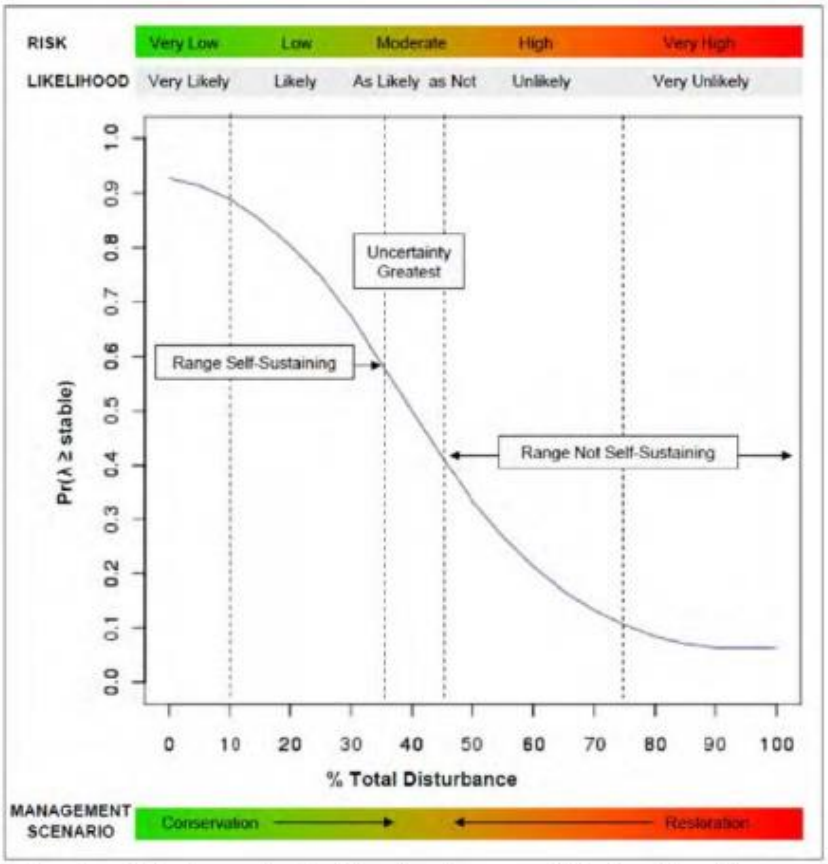


Figure 7. Integration of range condition into the Activity Review and Assessment process for caribou.[28]

[28] From OMNR. 2014. Range Management Policy in Support of Woodland Caribou Conservation and Recovery. Available at https://dr6j45jk9xcmk.cloudfront.net/documents/3945/caribou-range-management-en-final-december-2014.pdf

The **Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada** (Environment Canada 2012) introduced the 35% disturbance threshold value. This value was found to be required for a self-sustaining population based on a modelling exercise of 24 caribou herds and their range condition. The Recovery Strategy (Section 7.4.) stated that range level plans and/or action plans for each caribou population range are needed to guide protection and management of critical habitat, and overall recovery actions.

As a direct response to the Environment Canada's Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada Ontario established the **Range Management Policy in Support of Woodland Caribou Conservation and Recovery** (2014) which describes the Ontario's range management approach and how the OMNRF will make planning decisions to maintain, or improve range condition in the continuous distribution zone. Under the Range Management Policy, OMNRF developed the **Integrated Range Assessment Reports** for each of the thirteen Ontario's caribou ranges. These assessments were based upon standardized caribou collaring studies, aerial surveys, and broad habitat assessments. Each range assessment evaluates risk on the sustainability of local populations based on the range condition (cumulative disturbance level, habitat amount and arrangement) and population size and trend (Figure 8). Range specific management guidelines are developed for each range and implemented through forest management planning.



Probability of observing stable or positive growth (λ ≥ stable) of caribou populations over a 20-year period at varying levels of total range disturbance (fires ≤ 40 years + anthropogenic disturbances buffered by 500 m). Lambda (λ) was calculated using disturbance specific recruitment values from the meta-analysis and a mean annual adult female survival rate of 0.85, consistent with other components of the critical habitat assessment. Certainty of outcome, ecological risk, and management scenarios are illustrated along a continuum of conditions.

The following disturbance footprint estimates are plotted on the risk assessment graph based on - Environment Canada's – *Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population in Canada 2011 update* (**Environment Canada, 2011**) 2

Figure 8. Assessment of risk from anthropogenic disturbance to woodland caribou.[29]

[29] From OMNRF. 2016. State of Caribou Ranges. Cumulative Impacts Monitoring 2016 Estimates. Available at http://www.olt.tbayteldirectit.com/Science%20and%20Information%20-%20Package%20Caribou.pdf

The Supply Area includes six woodland caribou Population Ranges in the Continuous Caribou Zone and one separated range (Lake Superior Coast Range) (Figure 9). The Lake Superior Coast subpopulation is isolated from the rest of continuous distribution in Ontario, however, this isolation is driven by anthropogenic disturbances and not by an evolutionary response to local ecological conditions. As such the conservation efforts include reconnecting this subpopulation with northern populations via habitat tract management.

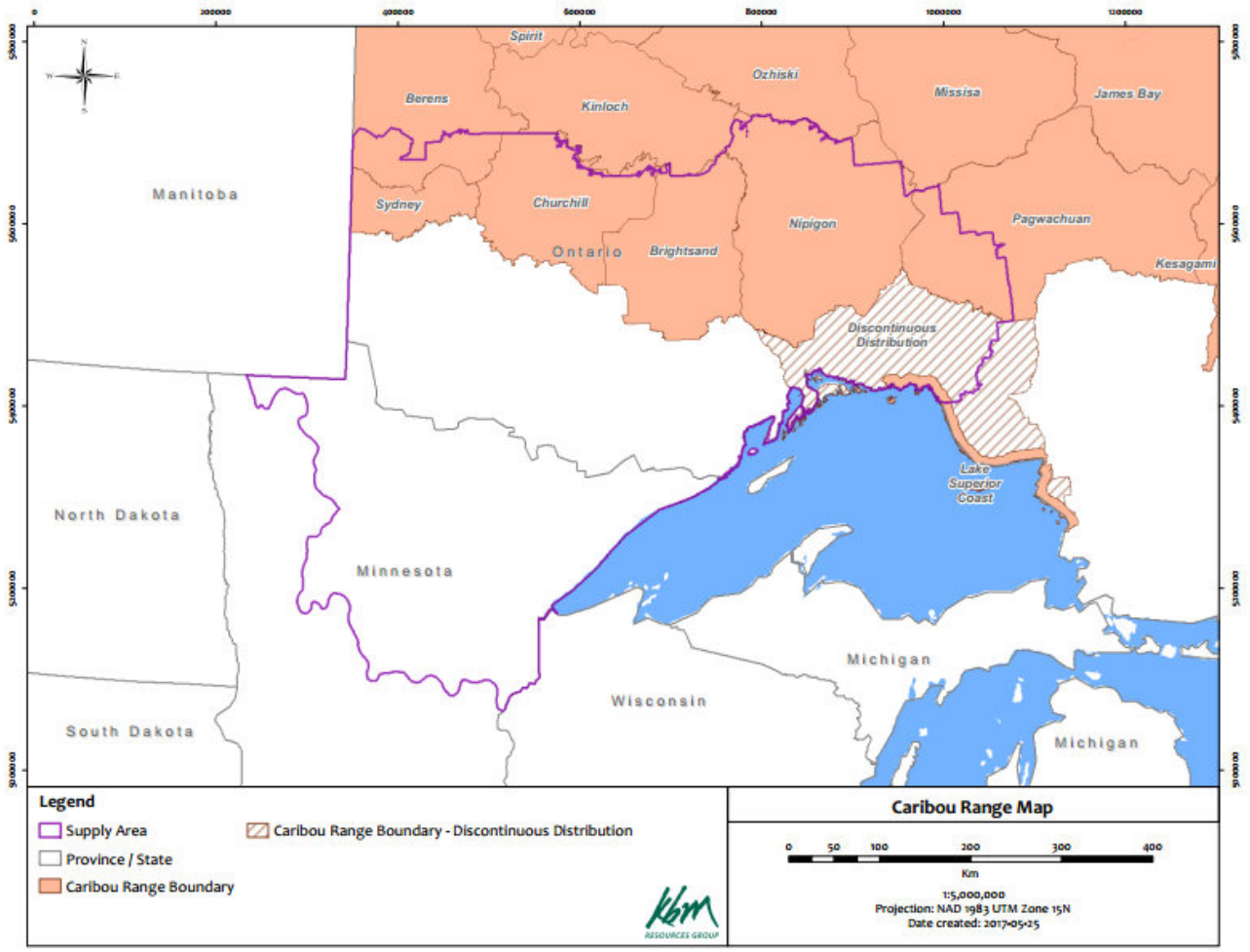


Figure 9. Caribou ranges as per the Range Management Policy in Support of Woodland Caribou Conservation and Recovery.

In 2014, the **Forest Management Guide for Boreal Landscapes**, replaced the Forest Management Guide for Natural Disturbance Pattern Emulation. The objective of the Boreal Guide is to direct forest management activities to maintain or enhance natural landscape structure, composition and pattern that provide for the long-term health of forest ecosystems in an efficient and effective manner. 'Landscape' describes an area covering hundreds of thousands, to tens of thousands of square kilometres, aligning well with wide-ranging habitat requirements of woodland caribou. The Boreal Guide uses Boreal Forest Landscape Dynamics Simulator (BFOLDS), a spatially explicit simulation model for Simulated Natural Ranges of Variation (SNRVs). BFOLDS took nearly twenty years to develop as a spatially explicit decision support system toolkit. The model is applied province-wide and has therefore undergone considerable peer review, refinement and scrutiny. Given the investment in decision support system and analytical tools, the new Boreal Landscape Guide is arguably state of the art and represents a significant scientific and forest policy achievement on landscape level forest management. The benchmarking approach taken in the Boreal Guide aligns entirely with the first Canadian Boreal Forest Agreement Forestry Requirement for Natural Range of Variation (NRV) Analysis and Target Setting [30] to "*intended to set natural range of variation (NRV) of forest structure and composition as the principal guide for a variety of types and scales of management actives*." It plays vital role in planning to restore/maintain woodland caribou habitat. The Boral Guide enables benchmarking natural forest patterns resulting form natural disturbances and succession to provide measurable short-, medium- and long-term forest management targets for an adequate amount and distribution of caribou habitat on the landscape. In the spring of 2016, the OMNRF released SNRVs for each caribou Range.[31] The SRNV for a woodland caribou habitat is expressed as both the amount (i.e., usually area based) and distribution (i.e., relative landscape pattern).

According to the OMNRF range assessments, the five out of six ranges in the continuous caribou zone have currently uncertainty related to their range condition in regards of whether range is capable to sustain caribou. In most ranges, however, the amount of caribou winter and refuge habitat and young forest/disturbance remains within Interquartile Ranges (IQRs) or within SNRVs' minimum and maximum ranges (Table 3). As for habitat arrangement, the assessment showed that in most ranges there are currently less that natural habitat patches that contain over 80% of preferred or winter habitat. The DCHS is expected to increase the amount of habitat dominate large landscape level patches as a result of harvesting in large blocks during short period of time followed by even-aged conifer dominated regeneration and road decommissioning activities.

[30] CBFA, 2015. Forestry Requirements for Natural Range of Variation (NRV) Analysis and Target Setting. CBFA Secretariat: Ottawa, Canada. Copyright © 2015, the Canadian Boreal Forest Agreement. Available at http://cbfa-efbc.ca/wp-content/uploads/2016/01/NRV-Requirements_2015_FINAL_CompressedEnglish.pdf

[31] Boreal Landscape Guide's Caribou Science and Information Package: State of Caribou Ranges - Cumulative Impacts Monitoring 2016 Estimates. Available at http://www.olt.tbayteldirectit.com/

Table 3. Woodland caribou range conditions in the area of interest. The disturbance estimates and habitat condition amount estimates are from OMNRF 2016[32] and likelihood for stable to increasing population from COSSARO 2015.[33]

Range	Disturbance total (%)	Fire (%)	Anthropogenic (%)	Likelihood for stable to increasing population	Winter habitat amount	Refuge habitat amount	Young forest and permanent disturbance amount	Range condition
Berens	30.4	20.3	10.2	0.7	Within IQRs	Within ranges	Within IQRs	Uncertain if range condition is sufficient to sustain caribou
Sydney	66	15.2	50.7	0.2	Within ranges	Below ranges	Within IQRs	Insufficient to sustain caribou
Churchill	44.1	4.9	39.2	0.47	Within IQRs	Within IQRs	Within IQRs	Uncertain if range condition is sufficient to sustain caribou
Brightsand	45.4	8.9	36.6	0.45	Within IQRs	Within IQRs	Within IQRs	Uncertain if range condition is sufficient to sustain caribou

[32] From OMNRF. 2016. State of Caribou Ranges. Cumulative Impacts Monitoring 2016 Estimates. Available at http://www.olt.tbayteldirectit.com/Science%20and%20Information%20-%20Package%20Caribou.pdf

[33] COSSARO. May 2015 Ontario Species at Risk Evaluation Report for Caribou, Boreal population (Rangifer tarandus). Available at www.ontario.ca/page/ontario-species-risk-evaluation-report-caribou-boreal-population-rangifer-tarandus

Nipigon	39.3	4.3	35	0.55	Within IQRs	Within IQRs	Within IQRs	Uncertain if range condition is sufficient to sustain caribou
Pagwachuan	33.1	0.6	32.5	0.65	Within ranges	Below ranges	Within IQRs	Uncertain if range condition is sufficient to sustain caribou

Another strong aspect of Ontario's approach to the caribou habitat management is the subscription to the notion of active adaptive management (Figure 10). The process of periodic review of forest management guides is prescribed through the Class Environmental Assessment Terms and Conditions. The province carries out two key forms of monitoring: (1) there are broad-scale cumulative effects monitoring programs that are designed to monitor changes occurring across the province resulting from many causes (including forest management operations). (2) a Guide Effectiveness Monitoring program evaluates "outcomes" and relies on hypothesis-based monitoring to test how well directions in the guides produce intended results. The term "effectiveness" implies testing a specific hypothesis, whereas the term "effects" implies investigating unknown consequences. The effectiveness of specific goals and targets in conserving biological diversity via the Boreal Landscape Guide will be measured through this adaptive management process[34].

[34] http://www.olt.tbayteldirectit.com/Science%20and%20Information%20-%20Package%20A.pdf

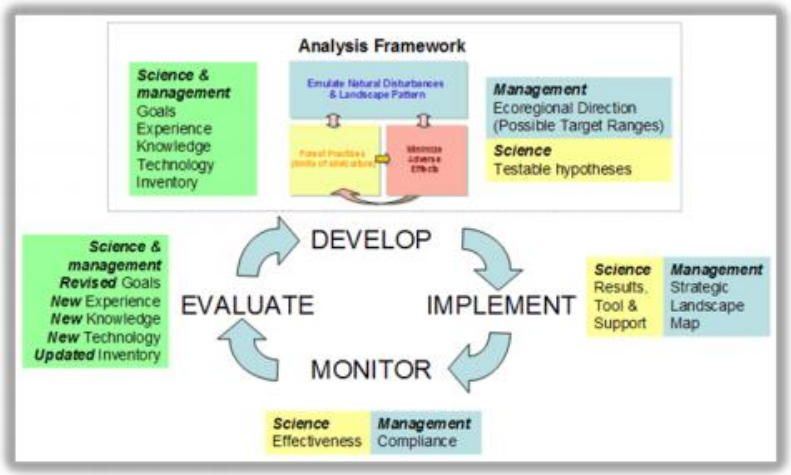


Figure 10. Adaptive management cycle[35].

The legal obligation for Guide Effectiveness Monitoring is derived from the 2003 Environmental Assessment Act Declaration Order Conditions 30, 31, and 38f. Forest management guides operate within the context of the Crown Forest Sustainability Act (CFSA 1994). Meeting the intent of the CFSA means the principal goal of the guides is to maintain ecosystem services by conserving ecological integrity by emulating natural disturbance patterns and processes while minimizing adverse effects. The Guide Effectiveness Monitoring program supports the adaptive management cycle and employs a top-down process to prioritize project selection and implementation based on critical evaluation of information needs and associated risks. This process is also used to assess priorities as new monitoring issues arise. The review of forest management guides is led by the appointed Provincial Forest Technical Committee. The Provincial Forest Technical Committee then advises the Assistant Deputy Minister of Ontario on matters, keeping current with the best available science and how it shall be incorporated into revised forest management guides.

Protected areas in Ontario are managed in accordance with the **Provincial Parks and Conservation Reserves Act** (2006). This Act establishes ecological integrity as the first priority in all aspects of planning and management for Ontario's protected areas, and strongly contributes to the maintaining or restoring woodland caribou habitat connectivity and providing important wintering and refuge habitat. Regulated protected areas total 9.8% of Ontario's land mass. The Crown Land Use Policy Atlas is used during the development of Forest Management Plans in Ontario to identify protected areas (Provincial Parks; Conservation Reserves); Enhanced Management Areas and General Use Areas.

[35] http://www.olt.tbayteldirectit.com/Science%20and%20Information%20-%20Package%20A.pdf

The MNRF uses decision support tools (e.g. Ontario's Caribou Screening Tool ('CST')) during activity assessment. The CST reports on how an activity affects cumulative disturbance and habitat amounts, and describes the activity location relative to delineated sub-range habitat features. Activities are evaluated in the context of existing land use direction (e.g. Far North Community Based Land Use Plan) and resource management plans (e.g. Forest Management Plans) for consistency with the direction or planning objectives.

ASSESSMENT OF RISK TO WOODLAND CARIBOU IN THE SUPPLY AREA

Ontario has a robust forest legislation and suite of supporting regulations and guidelines in place that along with several strategic decisions, such as expansion of Wabakimi Provincial Park and other protected areas, has resulted in effective habitat management approach. Ontario seems to be ahead of other Canadian jurisdictions with its state of the art Natural Ranges of Variation modelling tools and science based caribou management policies that account for cumulative effects and reach beyond management unit borders. The status of forest management is assessed and publicly reported on a regular basis. All forest management guides and regulated manuals go through regular review process (every 5-10 years) that includes also public review. Based on the above, it can be concluded that Ontario has a strong legal framework in place that mitigates risks from forest operations on woodland caribou. As such, the Supply Area can be considered as low risk.

APPENDIX 3: WOLVERINE (*GULO GULO*)

Very little is known about wolverines. As a result, there is currently no direction provided in the policies concerning recognizing wolverine habitat, except for denning sites that are contained in the Forest Management Guide for the Conservation of Biodiversity at the Stand and Site Scales (2010). The Recovery Strategy for the Wolverine (*Gulo gulo*) in Ontario[36] identifies knowledge gap as one of the most significant obstacles for the habitat description. The Government Response Statement to the Recovery Strategy for Wolverine in Ontario[37] further proposes that "*approaches to recovery for Wolverine in Ontario will focus on addressing knowledge gaps through research and monitoring, minimizing known threats such as incidental trapping through collaborative efforts, and increasing the level of knowledge and awareness of the species amongst individuals and organizations in Ontario*."

The Canadian Boreal Forest Agreement report on wolverine[38] suggests that caribou and wolverine conservation should be, highly complementary because these species share the same landscape and have similar threats and similar large landscape requirements; and brings an example that management of cumulative disturbance for caribou should also be favorable for resident wolverine populations. The Ontario's Forest Management Guide for Boreal Landscapes addresses wolverine habitat protection by applying the coarse filter in forest management and uses woodland caribou management guidelines as direction for managing this species. This is also the direction provided in the Ontario Recovery Strategy for the Wolverine (*Gulo gulo*) in Ontario. Ontario's Woodland Caribou Conservation Plan provides guidance for landscape management in large unfragmented and interconnected habitat tracks. The Range Management Policy in Support of Woodland Caribou Conservation and Recovery requires habitat management in consideration of cumulative disturbance. As such, based on available knowledge on wolverine, Ontario's forest management approach for woodland caribou applies also to wolverine.

[36] Ontario Wolverine Recovery Team. 2013. Recovery Strategy for the Wolverine (Gulo gulo) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 66 pp. Available at http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_rs_wolverine_en.pdf

[37] OMNRF website: Government Response Statement to the Recovery Strategy for Wolverine in Ontario. Available at http://apps.mnr.gov.on.ca/public/files/er/draft-wolverine-grs-2016.pdf

[38] CBFA Secretariat. 2014. Boreal Priority Species - Wolverine: Additional Considerations for Conservation Planning. CBFA Secretariat: Ottawa, Canada. Available at http://cbfa-efbc.ca/wp-content/uploads/2016/11/BPS_Wolverine2015.pdf

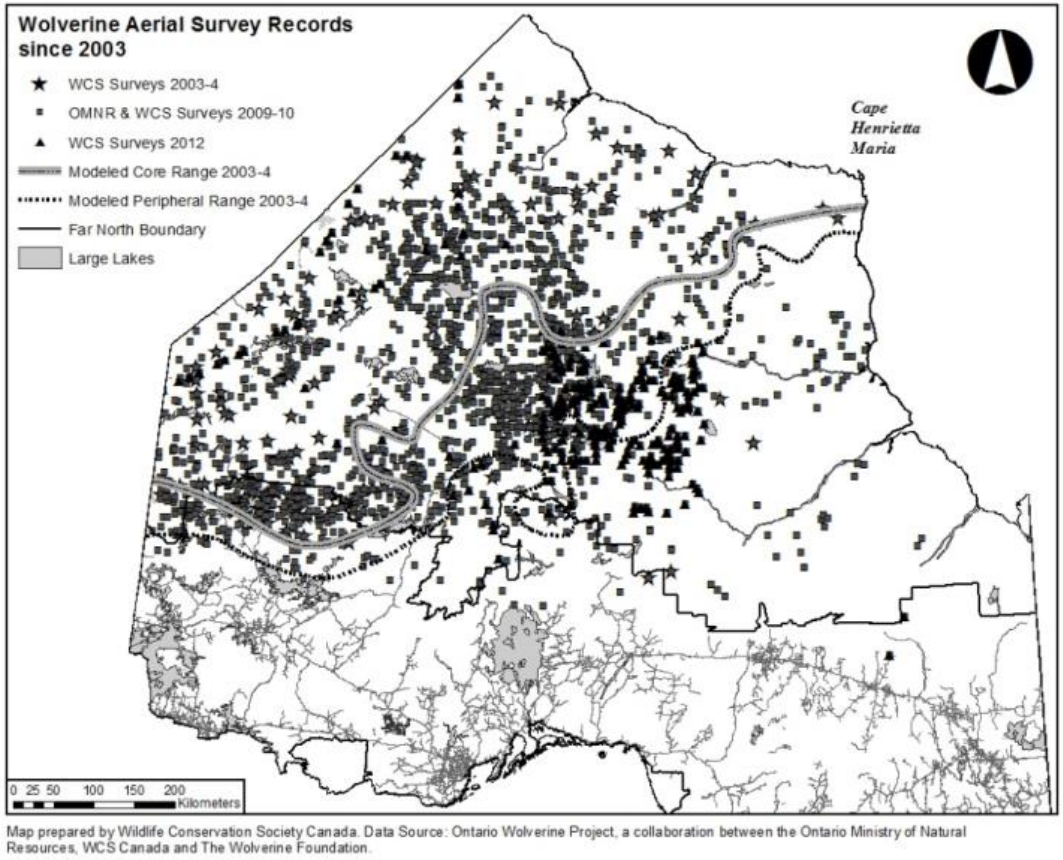


Figure 11. Wolverine tracks and observations from aerial surveys conducted by Wildlife Conservation Society (WCS) Canada and OMNR in 2003-4, 2009-11 and 2012 depicting increasing frequency of Wolverine occurrences beyond the 2003-4 core and peripheral ranges (modeled from aerial survey occurrence data). Sources: Magoun et al. (2007), Ontario Boreal Wolverine Project, WSC Canada, and OMNR. From the Recovery Strategy for the Wolverine (Gulo Gulo) in Ontario.[39]

[39] Ontario Wolverine Recovery Team. 2013. Recovery Strategy for the Wolverine (Gulo gulo) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 66 pp. Available at http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_rs_wolverine_en.pdf

APPENDIX 4: COUGAR OR MOUNTAIN LION (*PUMA CONCOLOR*)

In Ontario, cougars have "Endangered" species status. Cougars found in Ontario may be escaped or released pets, animals dispersing from western North America, native animals or a combination of those factors. The population size is unknown.[40]

Due to significant uncertainty related to cougar, its native population numbers and habitat requirements, there are currently no direct recovery actions in place for this species, besides applying landscape level management approach that is designed to be in accordance with the natural disturbance emulation concept and as such aims to maintain/restore habitats according to the Natural Ranges of Variation. Cougars are protected from hunting and killing in Ontario.

Minnesota Department of Natural Resources website[41] suggest that "*while evidence might suggest the animal's prevalence is increasing, the number of verified cougar observations indicate that cougar occurrence in Minnesota is a result of transient animals from the Western Dakotas. In addition, Department of Natural Resources annual scent-post and winter tracking surveys have recorded no evidence to suggest the possibility of a resident breeding population of cougars in Minnesota*." Because there is no evidence of a viable breeding population in Minnesota, cougars are not currently tracked in the Department of Natural Resources' Rare Features Database and do not appear on the range map.

[40] Ontario Ministry of Natural Resources website: Species at Risk - Mountain lion (Cougar). Available at https://www.ontario.ca/page/mountain-lion-cougar

[41] Minnesota Department of Natural Resources website. Species profile - *Puma concolor*. Available at http://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AMAJH04010

Figure 12. Cougar's North-American historical and current primary range.[42]

[42] Canadian Geographic website. Animal facts: Cougar. Available at https://www.canadiangeographic.ca/article/animal-facts-cougar