High Conservation Values in the Mistik Forest Management Agreement Area

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

Kevin Gillis
Mistik Management Ltd.

Tom Clark
CMC Ecological Consulting
Version 2.1

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Credit: K. GIllis

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

- **Important: Depending on your software, most links (Blue text) will require you hover over the text, hold the control key and click on the link.**

After following a link in the document, to return to the previous page:

Windows: return to previous page (PDF or WORD) by pressing ALT left arrow

IOS: return to previous page by pressing Command Tab

- This document is provided in PDF format because it is a widely available and functional format.

- Some web documents are large (> 20 or 30 megabytes, such as the Forest Management Plan documents and maps).

- References are provided in several formats depending on the purpose: Web links are provided for key documents in the text (blue fonts) or footnotes, and have been verified as of the date of this report; a citation list is provided for general scientific papers not available on line, and other papers of general interest. Additional links are listed under "assessment methodology" within each element. There is some redundancy to allow for different ways for users to access information.

- This document contains only a few maps and illustrations because the linked documents will provide better and normally more up to date graphical information.

- Common names in this report are capitalized to improve readability for people unfamiliar with the breadth of species (despite the desires of APA and other style guides).

- Comments are welcome on whether more maps and illustrations would help the readability of the document for the next version.

  Please send comments to Kevin Gillis (kevin.gillis@mistik.ca) or Niska Hodgson (niska.hodgson@mistik.ca)

Acknowledgements

The development of this HCV Report required the efforts and contributions of many groups and individuals. As well, efforts contributing to the development of the Forest

Management Plan and other documents must be acknowledged as those documents serve as the primary basis for this report.

- Mistik Advisory Groups and Co-management boards
- Ducks Unlimited Canada
- Indigenous Communities in and adjacent to the FMA
- Alberta Pacific Forest Industries generously shared text and information from their HCV report.

Appreciation to Ann Garibaldi for her prompt review of the document (Final appendix)

About Version 2.1, spring 2020

This HCV report was written with the new FSC 2018 standard as a guide. This report draws on the work Mistik has done in preparing the Forest Management Plan (FMP) and other planning documents. These are linked to or quoted frequently.

This version of the HCV report is a change in format from the 2009 report. In this version there is more reference to values that were considered but were not designated HCV. This version does not make major changes to previously designated HCVs, as would be expected given the long history of the company's certification to FSC.

This report includes a section on species at risk which is consistent with the analysis done for Principle 6.

Many new web Links are included to make verification of the HCV easier.

The discussion about Large Landscape Level Forest or Intact Forest Landscape that is occurring across Canada is centred on maintaining large fully functioning ecosystems. This discussion was still occurring as the new FSC standard was released in 2018. The approach to HCVs will change over the next few years as more information becomes available. Mistik has actively participated in the development of this new indicator.

This assessment was reviewed by a qualified specialist as required by FSC Standard indicator 9.1.5. The review is attached as the final appendix to this document.

Additional information

For further information on the HCV concept, the HCV Resource Network document (amended 2017) Common Guidance for the Identification of High Conservation Values is helpful.

For a video overview of HCVs in international conservation

CLICK HERE

Acronyms and terminology

AAC	Annual Allowable Cut
CMB	Co-management Board
CSA	Canadian Standards Association
EMS	Environmental Management System
FMA	Forest Management Agreement
FMP	Forest Management Plan
FSC	Forest Stewardship Council
HVS	Harvest Volume Schedule
HCVF	High Conservation Value Forest
HCV	High Conservation Value
IBA	Important Bird Area
IFL	Intact Forest Landscape
LLF or LLLF	Landscape Level Forest or Large Landscape Level Forest
LMWP	L&M Wood Products
MLTC	Meadow Lake Tribal Council
MML	Mistik Management Ltd.
NBS	National Boreal Standard (of FSC)
OIAS	Other Interested & Affected Stakeholders
ROC	Record of Consultation
SAR	Species at Risk
SCDC	Saskatchewan Conservation Data Centre
SG	Saskatchewan Government
VOIT	Values, objectives, indicators and targets (Canadian Standards Assoc.)

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High Conservation Values - Summary

This report is an assessment of High Conservation Values undertaken on behalf of Mistik Management Ltd. (MML) in accordance with Principle 9 of the FSC Principles and Criteria. MML manages the forest under the authority of a Forest Management Agreement (FMA) with the Government of Saskatchewan (GoS). Under the agreement, the company is licensed to sustainably harvest trees in NW Sask. The Forest Management Plan (Mistik FMP) is the guiding document for the management of values and is regulated and approved by the GoS.

This assessment of HCVs is guided by the "High Conservation Value Framework", which is Annex D of the FSC® National Forest Stewardship Standard of Canada. This is the accredited standard for Canada. This report is provided to meet the requirements for an FSC certification assessment. This HCV assessment resulted in the following HCV designations:

Table 1. Identified High Conservation Values on the Mistik FMA.

HCV Cat.	HCV Element (links)	Link HCV Designation Decision (links to assessment)	Management (Links)	Monitoring	Designation (link)
Category 1 Concentrations of Biodiversity	1 -- Biodiversity/ Species-at-Risk (SAR)	SARA listed species with more than a "small" risk from forest operations: Bobolink; Canada Warbler; Common Nighthawk; Evening Grosbeak; Olive-sided Flycatcher; Rusty Blackbird; Short-eared Owl; Wolverine Bank Swallow; Barn Swallow; Northern Myotis; Little Brown Myotis; Woodland Caribou Low Risk Species (HCVs) are listed in Table 4 - no management implications (aquatic)	SAR species managed through NRV approach Focal species or species with special strategies Mainly Riparian Aquatic Guidelines .	Monitoring SAR species managed through NRV approach Compliance by Company follows FMP strategies (**Error! eference source not found.**)	**HCV** **HCV** **HCV**
	2 -- Endemic Species	No endemic species	None required	None required	**None found**
	3 -- Regionally significant critical habitat for seasonal concentrations of species	Important Bird Areas Heronries Pelican Nesting Colonies	Follows FMP Vol II and Forest Operations Standard for working near water	Operations Compliance - company staff Effectiveness - Naylor (2009)	**HCV**

	4 -- Significant regional & focal species	Focal Species Woodland Caribou			**HCV**
	5 -- Edge species or outlier populations	No species designated	None required	None required	**None identified**
	6 -- Conservation Areas	Assessment of conservation land use designations adjacent to FMA: Conservation Areas Table 7 • Ecological Reserves • Provincial Parks • Wildlife Refuges • Wilderness components of recreational parks	Conservation lands are technically outside of the FMA area but require Protection FMP Ground Rules	Mistik and Gov't of Saskatchewan monitor compliance to control encroachment & access.	**HCV**
	7 -- Large Landscape Level Forest	Core areas and Intact Forest Landscape	Managed by access controls & landscape management (FMP	Mistik provides compliance effectiveness monitoring through VOIT system	**Possible HCV**
Cat 2 Large Landscape	8 -- Rare ecosystem types	Assessment of old forest types	None required	None required	**None identified**
	9 -- Significantly declined ecosystems	No declined ecosystems identified	None required	None required	**None identified**
Category 3 Ecosystems	10 -- Large landscape level in fragmented forests	No fragmented IFL were identified	None required	None required	**None identified**
	11 – Nationally Regionally signif. diverse/ unique ecosystems	No significant unique ecosystems were identified	None required	None required	**None identified**
	12 -- Drinking Water	Specific Drinking Water Intake location	As directed by Community	Compliance - company staff	**HCV**
Category 4	13 -- Flooding, drought, water quality ecosystem services	Marshes Open Bogs	Managed through riparian buffers (FMP; EM SOP 010_RIPARIAN)	Buffer size effectiveness (Naylor 2009)	**HCV**
	14 -- Erosion control	No areas of significant risk of	None required	None required	**None**

		erosion were identified			**identified**
	15 -- Barriers to destructive fire	Fire Smart Community Zone	Provincial responsibility	None currently required	**Possible HCV**
	16 -- Landscapes impacting agric. & fisheries	No commercial areas identified as HCV	None required	None required	**None identified**
Cat. 5 Community	17 -- Local communities' basic needs and livelihoods	No activities were identified as HCV	None required	None required	**None Identified**
Cat. 6 Cultural	18 -- Traditional cultural identity	Indigenous Values	Confidential to Indigenous Communities	Compliance by forest companies with agreed upon mitigation measures with communities	**HCV**
		Archeological sites verified to hold cultural artifacts, either Indigenous or non-Indigenous	Archaeological sites system	Compliance by forest companies; gov't oversight	**HCV**
	19 -- Other values that constitute HCVs	Areas adjacent to Surface Waters near Communities	Riparian buffers	Compliance by forest companies; gov't oversight	**HCV**

1 General information about management and monitoring for designated HCVs is provided in this link, but official documents should be used for operational information.

Overview of HCV Assessment

Mistik Management Ltd. is a woodlands management company based out of Meadow Lake, Saskatchewan providing timber procurement and forestry services to NorSask Forest Products Inc. (NFP),Meadow Lake Mechanical Pulp Inc.(MLMP) and L & M Wood Products (L & M) Mistik is dedicated to the sustainable use and stewardship of 1.8 million hectares of boreal forest in northwest Saskatchewan, the Mistik Forest Management Agreement area (FMA area) (https://www.mistik.ca/) with the Government of Saskatchewan.

Mistik is located in the midwestern section of the province of Saskatchewan in Canada, in the southern half of the mid boreal upland ecoregion, and the transition from farm land to forest land. The Mistik FMA encompasses 1,878,499 hectares of forests, water and non-forested land. Most of the FMA is located north of the town of Meadow Lake extending north to the Kimowin River (north end of Peter Pond Lake), bordered on the west by the Alberta/Saskatchewan border and the Cold Lake Air Weapons Range and on the east by Dore Lake, Lac la Plonge and Lac Ile a la Crosse. An additional portion of the FMA occurs south of Meadow Lake. The FMA is currently managed within the context of thirteen management units, including timber reserve and recreation areas.

In 2020, Mistik will transition to the FSC National Forest Stewardship Standard of Canada. Part of the certification process is a requirement for the managers to complete an assessment of High Conservation Values (HCVs) using the definition of the Forest Stewardship Council's Principle 9. According to the definition, High Conservation Values (HCVs) possess one or more of the following attributes:

Forest areas containing globally, regionally or nationally significant:

- HCV 1 – Species diversity. Concentrations of biological diversity* including endemic* species, and rare*, threatened* or endangered species that are significant* at global, national or regional levels.
- HCV 2 – Landscape*-level ecosystems* and mosaics. Intact Forest Landscapes* and large landscape*-level ecosystems* and ecosystem* mosaics that are significant* at global, national or regional levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.
- HCV 3 – Ecosystems* and habitats*. Rare*, threatened*, or endangered ecosystems*, habitats* or refugia*.
- HCV 4 – Critical*ecosystem services*. Basic ecosystem services* in critical* situations, including protection* of water catchments and control of erosion of vulnerable soils and slopes.
- HCV 5 – Community needs. Sites and resources fundamental to satisfying the necessities of local communities* or Indigenous Peoples* (for livelihood, health, nutrition, water, etc.), identified through engagement* with these communities or Indigenous Peoples*.
- HCV 6 – Cultural values. Sites, resources, habitats* and landscapes* of global or national cultural, archaeological or historical significance, and/or of critical* cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities*

> or Indigenous Peoples*, identified through engagement* with these local communities* or Indigenous Peoples*.

This assessment of HCV is guided by the "High Conservation Value Framework", which is Annex D of the FSC National Forest Stewardship Standard of Canada. It follows the guidance provided by FSC in High Conservation Value Guidance for Forest Managers FSC-GUI-30-009 V1-0 EN.

Understanding HCV assessment on public land in Saskatchewan requires an understanding of the provincial approach to non-timber forest values. The Mistik FMA area is a large forest and publicly owned through the government of Saskatchewan. The scale of the forest alone pushes the requirements for HCV analysis to a high level as described by the HCV National Framework. Current provincial forest policy addresses a wide range of values using policy documents, or resource guides for special values, and the background information for the FMP.

Current Provincial forest policy addresses a wide range of values using policy documents, or resource guides for special values[1]. The role of the FSC HCV process is to verify that the forest operations being carried out meet the global standard that seeks to protect an overarching set of conservation values. There is no intention of changing the current values terminology, which is quite mature in the FMA. The public engagement process will be based on the use of local terminology rather than the FSC terminology. It is the responsibility of the managers to ensure that the full FSC meaning of HCV is conveyed through the forest management planning (process. This report will be made available to the public.

For example, a forest has "high" conservation value when "local communities use the forest for their basic needs or livelihoods." This area is, and has been, the mainstay of loggers, trappers, tourism establishments and outfitters for a long time. For Indigenous communities it has been home for much longer. Therefore, defining the values which are "special" and should receive HCV designation is the main function of this report. HCVs are managed using a precautionary approach, as defined in the FSC National Forest Stewardship Standard of Canada. HCVs are clearly designated as part of the individual analysis in each section of the report.

The FSC standard and the HCV Framework, focused at the international level, state that culturally appropriate engagement with Indigenous Peoples and affected and interested stakeholders is required. On public forest everywhere, law and common sense require extensive ongoing engagement with forest users, although compromise and difference of opinion are routine. In an earlier guide, Proforest effectively described the value judgement in designating HCVs:

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

To this end, the HCV Common Guidance (page 20) advises:

[1] General reference to Forestry planning https://publications.saskatchewan.ca/api/v1/products/77492/formats/86843/download

> "In practical terms, significant values are those recognized as being either unique, or outstanding relative to other examples in the same region, because of their size, number, frequency, quality, density or socio-economic importance, on the basis of existing priority frameworks, data or maps, or through field studies and consultations undertaken during the HCV assessment."

Mistik uses the following tenets based on the Standard as their guidance:

- Key stakeholders will be made aware that an HCV assessment was being conducted; the Public Advisory Group will be the main forum for presentation, discussion and feedback.
- Key Provincial ENGOs are informed.
- The report itself is a public document and comments are always welcome.
- Participation can take many forms... planning, participation on focused consultations, etc.
- Report will contain descriptions of stakeholders that were consulted – this report describes consultation. Mistik conducts a wide range of frequent check ins with many forest users located in the forest (Table 2).
- Feedback on conclusions to the respondents is as appropriate – the HCV report is publicly available. Copies are sent to people who express an interest or ask questions.
- Review by an expert is conducted (as required).

In assessing HCVs, the managers have been inclusive in their approach in keeping with the FSC Principles & Criteria. The prescriptions and approaches have been thoughtfully prepared with input from experts, Indigenous people and affected stakeholders. Prescriptions are based on the best available science, a system of effectiveness monitoring, and are operationally sound. The managers are open to reconsidering any of the approaches to manage HCVs, if it is forestry related. Engagement is described in other sections of this report (Overview of Engagement, and Government Regulatory Consultation).

Purpose & Method

Methodology -- HCV National Framework (Canada)

The framework provided in Annex D of the 2018 National Standard provides the basic approach and guidance for assessing HCVs. There are four criteria in Principle 9 relevant to forest managers. In short, these require: assessment of values, engagement of forest users, management prescriptions for values, and monitoring in order to ensure the prescriptions are effective. Management activities for HCVs must "maintain and enhance the attributes which define such forests". The four P9 criteria are:

9.1 requires an assessment and describes conditions for reporting
9.2 requires developing "strategies" for managing HCVs
9.3 mandate for implementation of the strategies
9.4 requires monitoring the effectiveness of the management strategies

All four criteria include tests of engagement of Indigenous Peoples, and affected and interested stakeholders. There is also a requirement for an independent review of the report. As shown in Figure 1, the FSC standard follows a continuous improvement cycle.

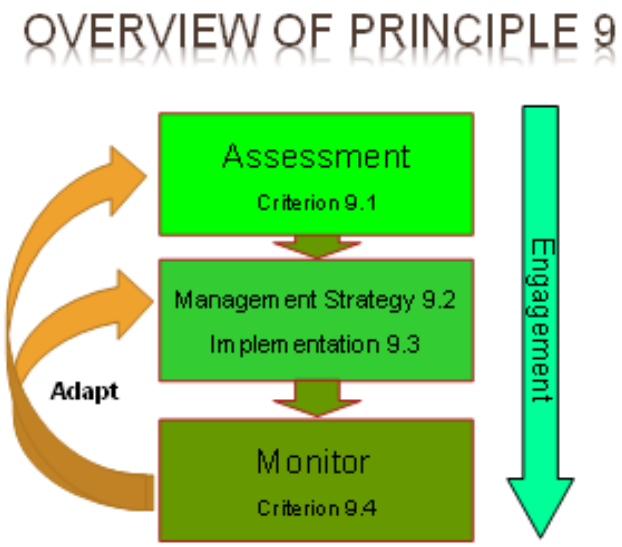

Figure 1. FSC Principle 9 Criteria & Continuous Improvement and Adaptive Management.

Assessment for HCV Attributes
Within the first phase of the HCV assessment, the National Framework provides a list of 19 questions (called elements in this report) that assist in determining whether individual attributes are HCVs. For each value the Certificate Holder, with expert consultation, has defined thresholds for designating a High Conservation Value.

Overview of Engagement
FSC-certified companies must work cooperatively with affected and interested parties (e.g. Indigenous Peoples, Environmental Non-Government Organizations (ENGOs), and other stakeholders) toward achievement of FSC Principle 9 - High Conservation Values.

Criterion 9.1 directs the assessment of HCVs "... through engagement with affected stakeholders, interested stakeholders ..." specifically (indicator 9.1.2) and the development of management and monitoring using "input from qualified (technical and/or scientific) specialists" and "with Indigenous Peoples*, and affected* and interested stakeholders*" (asterisks are defined terms in the FSC standard).

The most efficient approach to engage both Indigenous Peoples and interested and affected stakeholders is via the Public Advisory Group (PAG), as many participants may have an interest in High Conservation Values. In this forum, discussions involving Indigenous Peoples, scientists, and biologists bring all parties together and cover a broad range of knowledge and

informed opinions to seek scientific and traditional knowledge influence decisions on HCVs. Managers also reached out to other stakeholders who may have an interest in HCVs, but who do not participate on the PAG, including municipalities, recreational clubs, outfitters and watershed societies. Table 2 outlines the stakeholders and Indigenous peoples that were engaged.

As directed by indicator 9.4.2, The extent to which each group plays a role in monitoring will depend on the technical expertise needed, their interest, abilities, and capacity required to participate.

The broad review and public consultation described in the first bullet point, is documented in detail as part of regular Saskatchewan FMP process, as part of the public record, and in the plan. This will also serve as part of the HCVF documentation process. In general during the course of a year Mistik participates in about 130 to 150 scheduled meetings (Table 2) with Indigenous groups, stakeholders, and other partners (not including those with a business relationship). Discussion of "forest values" in general is central to these meetings.

Table 2. List of groups engaged in the designation of HCVs.

Indigenous, Stakeholder, Partner & Others	Group Description	Meeting Description	# of Mtgs / yr
1. Advisory / co-management boards	Local community-based groups representing a broad spectrum of stakeholder interests including cabin owners, recreational users, environmental groups, outfitters, trappers, elders, contractors, local gov't. officials, wild rice growers, municipalities and traditional resource users.	The following is a list of the groups: 1. Divide Forest Advisory Corporation 2. Pierceland/Goodsoil Forest Advisory Board Inc 3. Waterhen Lake Land and Resources Board 4. Buffalo Narrows Co-management Board 5. Sakitawak Resource Management Inc. (ILX) 6. DeneSuline Co-management Board (Dillon) 7. Canoe Lake Traditional Resource Users Board 8. Beauval Co-management Board Inc. 9. Big Island Lake Cree Nation (not a formal co-management board but periodic meetings are held with the Band)	**9** **5-6** **6** **9-10** **3-4** **3-4** **10** **10** **3-4**
2. Trapping	Zone 8 trappers - northern trappers are represented on each of the co-management boards.	Mistik interacts with or meets individually with over 30 trappers per year. Mistik no longer attends Trapper Conventions (2 per year in Sask.) but trapper reps are on all advisory/co-management boards.	**30**
3. Outfitting	Saskatchewan Outfitters Association -- a large, informally organized group with significant interest in the provincial forests of Saskatchewan - with a designated 'forestry' representative.	Mistik attends the outfitters convention once every 2 years, Mistik communicates, interacts or meets with at least 25-30 outfitters per year.	**25-30**
4. Commercial fishing	There are a number of commercial fishing co-operatives within the Mistik FMA area. Commercial fishing is a significant economic activity in the local area. Most co-management boards have commercial fishing reps.	Mistik communicates, interacts or meets with at least 5 commercial fishermen per year	**5**
5. Urban	Meadow Lake is the primary	Semi-annual interaction occurs with the Meadow Lake	**2**

Indigenous, Stakeholder, Partner & Others	Group Description	Meeting Description	# of Mtgs / yr
municipality	service center in northwest Saskatchewan and home to most of the employees of Meadow Lake Pulp Limited Partnership, NorSask and Mistik.	urban municipality.	
6. Rural municipality	Rural Municipality (RM) of Meadow Lake #588 has some overlap with the Mistik FMA area (Divide and Beaver River MUs).	Quarterly interaction occurs with the rural municipality.	**4**
7. Environmental non-governmental organizations (ENGO)	Represent the interests of the hunting, fishing and trapping public as well as environmental sustainability issues - habitat protection, conservation and environmental quality.	Can be quite variable on a seasonal or yearly basis but at a minimum some type of interaction will occur 10-12 times per year.	**10-12**
8. Snowmobile association (recreation)	The Northern Lights Snowmobile Club has an extensive network of trails throughout portions of the Mistik FMA Area.	Informal interaction occurs once or twice during the winter months.	**1-2**
9. Grazing permittees	Portions of the Mistik FMA Area are allocated to grazing leases..	Infrequent meetings – 2-3 times per year	**2-3**
Business relationships			
10. Forest workers	Mistik undertakes its activities through a significant # of local contractors.	Interaction on weekly basis for approximately 8 months of the year for monitoring purposes	**8**
11. Small volume timber harvesters (SE is main contact)	Some representation on advisory boards but no official or organized representative body.	Mistik communicates, interacts or meets with at least 2 small volume timber harvesters per year.	**2-4**
12. Meadow Lake Pulp employees	All clerical, technical, management and operations staff at the Meadow Lake Pulp Limited Partnership pulp mill.	Monthly interaction occurs with the pulp mill.	**12**
13. NorSask management staff	All clerical, technical, management and operations staff at the NorSask Forest Product's sawmill.	Monthly interaction occurs with the NorSask management staff.	**12**
14. NorSask unionized staff	All mill workers at NorSask Forest Products sawmill.	Semi-annual interaction occurs with NorSask unionized staff.	**2**
15. Meadow Lake Tribal Council	Represents the leadership of nine of the First Nations in northwest Saskatchewan (in and around the Mistik FMA Area).	Quarterly interaction occurs with MLTC.	**4**
16. Regulatory agency	Represents the local regulatory (provincial government) agencies responsible for administrating forestry and other activities on behalf of the province of Saskatchewan.	Weekly to bi-monthly interaction occurs with the regulatory agencies (approx. 8 meetings).	**12**

Indigenous Communities engaged by Mistik are listed in Table 13. This is in Element 18 (page 63) which describes the Mistik approach to HCVs for communities. They are either Métis or First Nation.

HCV Designation Decision by the Manager

Under the FSC system, the manager makes the final designation of HCVs. In this case, the role of manager, and decision maker was Kevin Gillis (Appendix 4). This decision must be transparent (as documented in this report) and based on engagement as described above. A brief summary of the credentials of the other HCV team members are also in the Appendix.

Peer Review

In Appendix 5 is the full peer review of this report as required by the FSC Standard. The review process uses the HCV Resource Network Guidance for Peer Review of HCV Assessment Reports (Version 2.1 September 2010).

Keeping HCVs up to date – Process

HCVs and their associated management strategies will be reviewed annually as part of the HCV monitoring process. This review will also include an assessment of the HCV Assessment Report's alignment with the forest management planning process, the regulatory framework of GoS as well as best management practices identified through a continuous improvement and adaptive management focus.

Mistik is open to changes when new values are identified at any time, consistent with their adaptive management approach.

Mistik FMA Forest Description

The Mistik FMA area (Figure 2) is located in west central Saskatchewan adjoining the border with Alberta. The Mistik FMA encompasses 1,878,499 hectares of forests, water and non-forested land. Most of the FMA is located north of the town of Meadow Lake extending north to the Kimowin River (north end of Peter Pond Lake), bordered on the west by the Alberta/Saskatchewan border and the Cold Lake Air Weapons Range and on the east by Dore Lake, Lac la Plonge and Lac Ile a la Crosse. An additional portion of the FMA occurs south of Meadow Lake. The FMA is currently managed within the context of thirteen management units, including timber reserve and recreation areas.

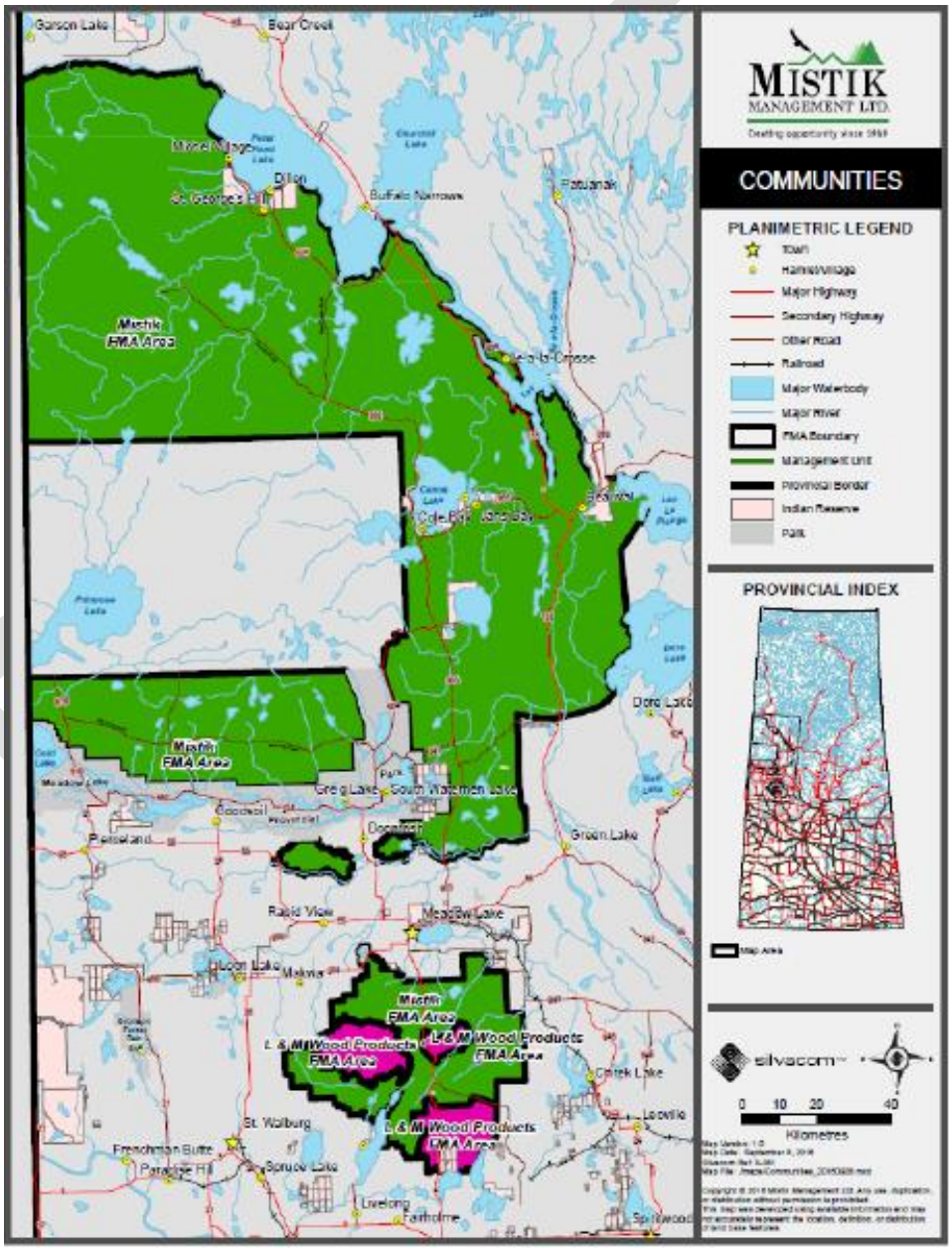

Figure 2. Location of the Mistik Forest.

Forest Management Plan

The forest management planning (FMP) system for Saskatchewan forests is based on policy and legal framework that requires sustainability, public involvement, Indigenous involvement, and adaptive management. An overview of the system is provided in Appendix 2. Forest Management Planning System Overview. Plans are publicly available (FMP).

Appendix 2 contains a description of the forest management planning system which may be useful for readers not familiar with the terminology and hierarchy of planning. In this HCV report, the operational direction (on the ground activities) near values is the provincial Forest Operations Standard. ~~xxx~~. These will be referred to during this report. Appendix 2 puts the ground rules into the context of the overall planning system.

Phase 1: Process for assessing for the presence of HCV attributes

The following assessment for the presence of HCV attributes is based on the 19 questions (called elements here) posed by the National HCV framework divided into six categories related to the definition of HCV.

Table 3. National Framework process for assessing the presence of HCV attributes.

Category 1: "…significant concentrations of biodiversity values."
1. Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or territorial/provincial authorities?
2. Does the forest contain endemic species?
3. Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentrations of species (one or several species e.g. concentrations of wildlife in breeding sites, wintering sites, migration sites, migration routes or corridors – latitudinal as well as altitudinal)?
4. Does the forest contain critical habitat for regionally significant species (e.g. species declining regionally)?
5. Does the forest support concentrations of species at the edge of their natural ranges or outlier populations?
6. Does the forest lie within, adjacent to, or contain a conservation area: a) designated by an international authority; b) legally designated or proposed by relevant federal/provincial/territorial legislative body, or c) identified in regional land use plans or conservation plans?
Category 2. "…large landscape level forests…"
7. Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species?
Category 3 "…rare threatened or endangered ecosystems."
8. Does the forest contain naturally rare ecosystem types?
9. Are there ecosystem types within the forest or ecoregion that have significantly declined or under sufficient present and / or future development pressure that they

will likely become rare in the future (e.g. old seral stages)?

10. Are large landscape level forests (i.e. large unfragmented forests) rare or absent in the forest or ecoregion?
11. Are there nationally/regionally significant diverse or unique forest ecosystems or forests associated with unique aquatic ecosystems?

Category 4 "…basic services… watershed protection"

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

Category 5 "…meeting basic needs of local communities."

17. Are there local communities? (This should include both people living inside the forest area and those living adjacent to it)

Category 6 "…communities' local cultural identity…"

18. Is the traditional cultural identity of the local community particularly tied to a specific forest area?
19. Is there a significant overlap of values (ecological and/or cultural) that individually did not meet HCV thresholds, but collectively constitute HCVs?

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

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

Rationale:

Ensures the maintenance of vulnerable and/or irreplaceable elements of species diversity. This indicator allows for a single species or a concentration of species to meet HCV thresholds.

Assessment Methodology:

- Gov of Canada Public Registry Species at Risk
- Species at risk public registry (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html)
- IUCN Red List (http://www.iucnredlist.org)

Consultation with experts included discussion with GoS

biologists and local biologists (including Alberta Pacific Forest Industries – adjacent to Mistik FMA and Ducks Unlimited Canada). A list of species at risk on the FMA is maintained and updated annually. This list includes all species present on the FMA that are legally listed on Schedule 1 of the federal *Species at Risk Act*. Additionally, any species recommended for listing as Endangered, Threatened, or Special Concern by the federal (Committee on the Status of Endangered Wildlife in Canada, COSEWIC) or other species not yet legally listed, are also included on this list.

Assessment Results:

Species extinctions begin with loss in abundance of individuals. Rosenberg et al. (2019, see References) reported in Science that population losses across much of the North American avifauna over 48 years approaching 3 billion birds or 29% of 1970 abundance. This level of impact can result in functional changes to ecosystems. This HCV assessment starts with SAR because these are the fine filter species of biodiversity and ecosystems.

In Table 4 is a description of all of the species that are listed as special concern, threatened, or endangered that occur on the forest. Regulated (listed) species are considered to be HCVs. The list is available in the federal Species at Risk Public Registry and Saskatchewan Conservation Data Centre Species List. This list is also the list of SAR as required by indicator 6.4.1 of the National Boreal Standard.

Species rankings provided by the International Union for the Conservation of Nature (IUCN) were referenced in the assessment but not listed in the Table. IUCN gives a more global context to the local rankings.

Table 4. **Species listed as "at risk" by COSEWIC and Saskatchewan Conservation Data Centre and located in the FMA**. is based primarily on consultation with biologists / ecologists in the FMA area who supplied the basic list from federal government and government sources.

Error! Reference source not found. lists some element occurrences for some plants. These pecies are not listed by the province as SAR and were not listed as HCV. They are rare in occurrence as part of their ecology. Rareness may be attributed to a lack of data within the assessment area.

During assessment of individual species, values are designated as HCV, or possible HCV. The use of designation "possible HCV" is to ensure that the forest company is only asked to manage and monitor actual HCV occurrences on the forest. Some HCVs are likely to occur but are hard or almost impossible to locate. Forest companies have limited responsibility for grassland and aquatic species which do not occur near operations. In cases where there is no management prescription at all for a value because there is no interaction, then the company does not have a direct responsibility. The HCVs are listed here for transparency and maintaining an awareness of the values in the area of the forest.

Table 4. Species listed as "at risk" by COSEWIC and Saskatchewan Conservation Data Centre and located in the FMA.

Species	Map source	Status	Recovery Plan	Habitat Association	Forest Management Considerations Threats & Links to Status Reports and Maps
Amphibians					
Northern Leopard Frog *Lithobates pipiens*	COSEWIC	Special Concern	Yes	Winter cold water/ Breed ponds lakes/ Summer uplands	Link to Status threats from emerging disease (*chytridiomycosis*) and non-native species. Little risk from forestry.
Western Tiger Salamander *Amby stoma mavortium*	COSEWIC	Special Concern	YES	grasslands, parklands, subalpine meadows, semi-deserts	Link to Status Threats from habitat loss and fragmentation, fish stocking, and emerging diseases, such as the *Ambystoma tigrinum* virus. No risk from forestry.
Arthropods					
Yellow-banded Bumble Bee *Bombus terricola*	COSEWIC	Special Concern	No	Prairie to northern conifer	Link to Status Threat - Not affected by timber harvest; in the known Canadian range many of the threats are unknown or considered negligible.
Birds					
Bank Swallow *Riparia riparia*	COSEWIC	Threatened	No	Vertical banks	Link to Status Infrequent in boreal. Small risk from forestry effects on breeding habitat (vertical banks rare in the FMA).
Barn Swallow *Hirundo rustica*	COSEWIC	Threatened	No	Open areas; nest buildings/bridges	Link to Status Small forestry effects. Bridge repairs and maintenance should be conducted outside of the nesting season unless dictated by safety or logistical constraints.
Bobolink *Dolichonyx oryzivorus*	COSEWIC	Threatened	No	Hayfields, wet prairie & peatland	Link to Status Natural Range of Variability principles including maintenance of old forest targets (by strata). Minimal risk from forestry.
Canada Warbler *Cardellina canadensis*	COSEWIC	Threatened	Yes	Deciduous forest, complex structure	Link to Status Follow ecosystem-based management / Natural Range of Variability principles including maintenance of old forest targets (by strata).

Species	Map source	Status	Recovery Plan	Habitat Association	Forest Management Considerations Threats & Links to Status Reports and Maps
Common Nighthawk *Chordeiles minor*	COSEWIC	Threatened	No	Open land & forest clearings	Link to Status - No specific actions required. Small risk from forestry activities.
Evening Grosbeak *Coccothraustes vespertinus*	COSEWIC	Special Concern	No	Mature mixedwood forests	Link to Status - Follow ecosystem-based management / Natural Range of Variability principles. Low threat from forestry
Horned Grebe *Podiceps auritus*	COSEWIC	Special Concern	due 2020	Open water bodies	Link to Status - Minimal if any threats from forestry.
Olive-sided Flycatcher *Contopus cooperi*	COSEWIC	Special Concern	No	Edge openings wetland clearcuts	Link to Status - Follow ecosystem-based management / Natural Range of Variability principles. Follow fire salvage planning standards and guidelines.
Red-necked Phalarope *Euphagus carolinus*	COSEWIC	Special Concern	No	Wetland edges	Link to Status - Minimal if any threats from forestry. Rare on FMA.
Rusty Blackbird *Euphagus carolinus*	COSEWIC	Special Concern	Yes	Boreal wetlands	Link to Strategy - Forestry effects small - riparian buffer guidelines
Short-eared Owl *Asio flammeus*	COSEWIC	Special Concern	No	Open habitat, grassland	Link to Strategy - Uncommon in forested areas; may benefit from timber harvest as they are associated with open areas.
Sprague's Pipit *Anthus spragueii*	COSEWIC	Threatened	No	Intact native grassland	Link to Strategy - Minimal if any threats from forestry.
Western Grebe *Aechmophorus occidentalis*	COSEWIC	Special Concern	Not Avail.	Open water bodies	Link to Strategy - Minimal if any forestry effects, follow OGR riparian buffer guidelines (section 6.0)
Yellow Rail *Coturnicops noveboracensis*	COSEWIC	Special Concern	No	Boreal wetlands- grassy fens	Link to Status - Forestry effects unlikely. Riparian buffer guidelines address risk.
Mammals					

Species	Map source	Status	Recovery Plan	Habitat Association	Forest Management Considerations Threats & Links to Status Reports and Maps
Little Brown Myotis *Myotis lucifugus*	COSEWIC	Endang.	YES	old aspen and white spruce	Link to Status - Emergency listing driven by white-nosed syndrome where risk is primarily associated with caves. Minimal from forestry - follow structure/ snag retention protocols.
Northern Myotis *Myotis septentrionalis*	COSEWIC	Endang.	YES	old aspen and white spruce	Link to Status Emergency listing driven by white-nosed syndrome where risk is primarily associated with caves. Minimal from forestry - follow structure/ snag retention protocols.
Wolverine *Gulo gulo*	COSEWIC	Special Concern	Yes	Generalist near food	Link to Strategy - Habitat needs for wolverine are similar to caribou. Impact is through road building and Caribou. No direct impact.
Woodland Caribou *Rangifer tarandus*	COSEWIC	Threatened	Yes	Treed bogs/fens, plus use of pine forest	Link to Status Follow caribou conservation strategy. Participate in recovering plan & implementation led by government.

Appendix 3 contains a longer list of species assessed for this report, and determined to be not in FMA, not listed or not designated HCV for other reasons.

Note that the ranking is linked to the Saskatchewan Data Centre. This Table was updated April 2020. See the footnote* at the bottom of this Table for links and details. * E = Endangered T = Threatened SSC = Species of Special Concern Can = Canada

COSEWIC = Committee on the Status of Endangered Wildlife in Canada

To access plant and invertebrate species status information, see:

- Saskatchewan Conservation Data Centre Species List LINK
- Wild Species: The General Status of Species in Canada

FSC Manager's list for Species at Risk (*Table 5****)***

Table 5 is the current assessment of SAR based on understanding of these species on the Mistik FMA. This Table is also the manager's list as required in indicator 6.4.1 of the FSC standard. The following information is a supplement to the brief discussion in the above table.

Landscape Driven Biodiversity

Caribou are listed in Table 5, but also in element 4, focal species. Caribou is a landscape driven species. In other words, the impacts from resource-based industry occurs over a long period caused by altering of access through road development. Other species are influenced more by the local conditions. Caribou are landscape species and so have special management requirements determined by their biology. For the discussion on Caribou see Focal Species.

HCV Designation Decision:

Listed species at risk are designated HCV[2] based on a review of current status of species at risk, as rated by provincial, national and international agencies.

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

Rationale:

To ensure the maintenance of vulnerable and/or irreplaceable elements of biodiversity.

Endemic refers to species that are unique to a defined geographic location, such as an island, nation or other defined zone, or habitat type. Endemic is sometimes misunderstood as simply occurring in an area. This is an incorrect definition.

Assessment Methodology:

- Nature Serve; Nature Conservancy
- Birdlife International
- IUCN; NHIC; Conservation International
- Saskatchewan Conservation Data Centre (SCDC)
- WWF Ecoregion Conservation Assessment & Terrestrial Ecosystems of North America (Ricketts et al.1999)

The presence of any endemic species identified by an appropriate agency (e.g. SCDC, COSEWIC) would meet the threshold of this criterion.

Assessment Results:

As with most boreal forests, which have evolved with short-term disturbance (fire and wind) and long-term disturbance (continental glaciers), endemism is rare. Moreover, the public forests of Canada consist of a huge expanse of contiguous forest cover over the landscape that does not inhibit genetic mixing. In general, these conditions prevent endemism. Some endemics can be caused by species that have been extirpated everywhere else. The Whooping Crane is an example from northern Canada, but there are no occurrences in this forest, although they are seasonal migrants on an annual basis

[2] This designation was reviewed in April 2020, including a review of the web info and other sources.

A report in June 2020 by NatureServe and The Nature Conservancy provided an overview of endemics in Canada. There were no endemics listed in the Mistik FMA. Birdlife International (verified Oct 2019) does not show any biodiversity Endemic Bird Areas in Saskatchewan or Canada. Conservation International does not identify any "Hotspots" in Canada.

In their book "Terrestrial Ecoregions of North America", Ricketts et al. (1999) provided an analysis of the geographic patterns of species richness and endemism and a series of maps for illustration. According to Ricketts et al endemism is not a factor in the Boreal forest. Boreal species are widely distributed.

HCV Designation Decision:

At this time, there are no known endemic species on the forest[3].

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

Rationale:
Addresses wildlife habitat requirements critical to maintaining population viability (regional "hotspots").

Assessment Methodology:

- Forest Management Plan
- Stakeholder engagement; Mistik staff
- Saskatchewan Bird Atlas
- BirdLife International; Conservation International -- Important Bird Areas
- Bird Studies Canada IBAs
- Ducks Unlimited
- Western Hemisphere Shorebird Reserve Network
- Saskatchewan Conservation Data Centre - Government of Saskatchewan

For this element assessment, various mapped information sources were used to determine wildlife concentration areas such as critical breeding or winter habitat for a single species or concentration area for a diversity of species as they are identified in the field. Also, important here is the information recorded in the FMP with regard to special wildlife management areas.

Assessment Results:

Bird Areas
Ducks Unlimited Canada (DUC) has not identified any areas that meet their benchmark for a special bird area which is wetlands that are 500 ha in size containing over 5000 birds at a single survey. Company staff have observed large congregations in late fall on Peter Pond Lake and Churchill Lake (Lesser Scaup, Ring-necked ducks, Common goldeneye and Buffleheads). These were considered HCVs.

[3] This designation was reviewed in April 2020, including a review of the web info and other sources.

Large, intact wetlands provide critical molting and staging habitat for waterfowl, waterbirds, shorebirds and migratory land birds. These wetlands provide security and abundant food resources for waterfowl during the vulnerable molting period. Sites within the FMA area were identified from a list provided in the NAWMP (North American Waterfowl Management Plan) 2007-2012 Implementation Plan (Figure 3).

Small waterfowl production and small staging areas that do occur are not considered HCV. They are protected through Provincial Standards and Guidelines protection on water bodies. Risk of incidental loss of nests is discussed in this report in Phase 2: Managing and Monitoring HCVs . Ducks Unlimited Canada has commented on this issue in several documents notably in their mitigation risk document, also called "Incidental Take".

Important Bird Areas (IBAs)

According to Bird Studies Canada, an Important Bird Area (IBA) is a site providing essential habitat for one or more species of breeding or non-breeding birds. These sites may contain threatened species, endemic species, species representative of a biome, or highly exceptional concentrations of birds. There were three IBAs nearby or within the Mistik FMA area: Primrose Lake (id# SK092) part of the Cold Lake Air Weapons Range, Kazan Lake to the northeast (id# SK110), and Midnight Lake (id# SK087) in the south (Figure 3).

- Primrose Lake is 1259.52 km^2 in size within the Primrose Lake Air Weapons range, a large boreal forest lake containing Backes Island which supports American White Pelicans[4], California Gulls and Common Terns. Link to Map.
- Kazan Lake is 249.1 km^2 and supports a large colony of American White Pelicans, and other colonial birds. It is partially surrounded by mixedwood forest. It is also a provincial wildlife refuge. Link to Map
- Midnight Lake is 130.05 km^2 and is 12 km north of Glaslyn and is described as a "forest fringe lake", along its northern half. It is known as a staging area for Whooping Cranes. Link to Map

Two of these IBAs are not located directly on the forest, but because of their proximity they were assessed. The third IBA, Kazan Lake is located wholly in the FMA. Key values are breeding American White Pelican (Primrose and Kazan) and staging observations by whooping cranes (Midnight). As IBAs, these have been designated as HCVs.

Bird Colonies

Most large bird colonies are associated with large bodies of water. In the case of the Mistik FMA Pelicans do occur in a few multiple locations. They were designated HCV (Figure 3).

In some cases, Gulls and Terns can nest colonially on islands or lakeshores. There are no reports of significant colonies within the FMA. None of these species were identified in the FMA as regionally significant. These have not been designated HCVs.

Great Blue Herons are colonial nesters, especially vulnerable to human disturbance during the nesting season when, in some cases, large numbers of birds are concentrated in a relatively confined area. There were a few small heronries identified and designated as HCV (Figure 3).

[4] IBA http://www.birdlife.org/datazone/species/index.html?action=SpcHTMDetails.asp&sid=3814&m=0

Figure 3 includes locations of the above bird colonies, staging areas and IBAs with non-identifying information.

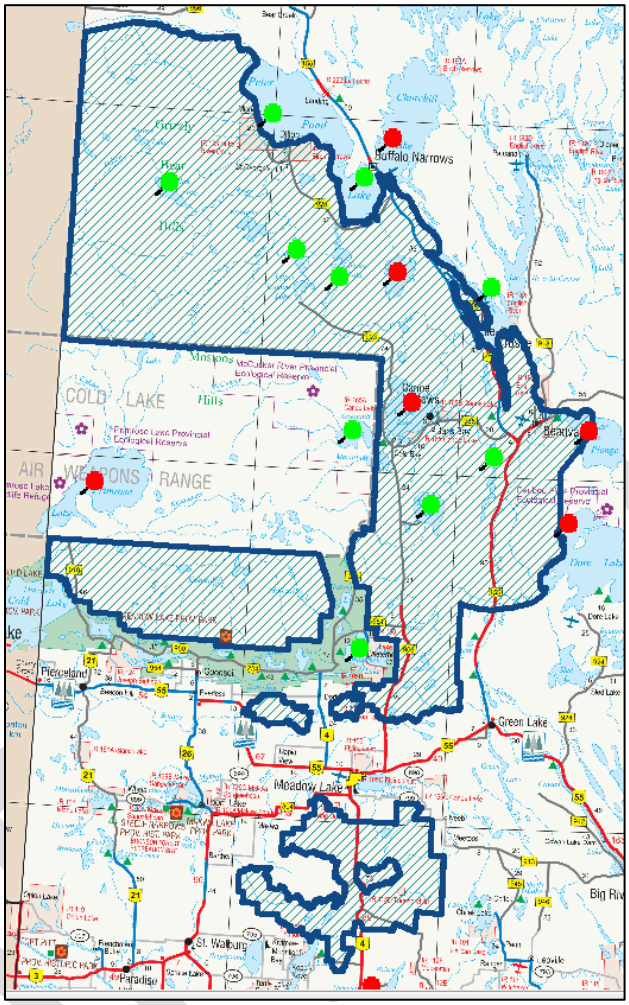

Figure 3. Important Bird Areas, Bird Colonies and Staging Areas in the Mistik FMA

Cervix Concentration Areas

In some parts of Canada, Corvids (members of the deer family) migrate and congregate seasonally. For example, Caribou migrations in the far north are one of nature's great migrations. In some parts of the county with heavy snow, white-tailed deer will congregate in "deer yards" which are areas with more conifer cover for protection adjacent to hardwood for food. There are no significant concentration areas for Corvids reported in the FMA area.

Critical Fish Spawning Areas

Fish-bearing streams are identified through stream assessments conducted.

Arctic Grayling occurs in the forest and is being considered for designation by COSEWIC in some areas of Canada. It is not at risk in the FMA and was not designated.

We reviewed the Saskatchewan Conservation Data Centre (2008) fish listing for (E) mid-boreal upland which is the eco-region covering Mistik. On the Mistik FMA area, as discussed above in

element 1, there were no SAR that were fish. COSEWIC 2008 lists four species of fish, and none of these occurred.

- Lake Sturgeon *Acipenser fulvescens (S2 mid boreal lowland)*
- Chestnut Lamprey *Ichthyomyzon castaneus (S3 S4 mid boreal lowland)*
- Bigmouth Buffalo *Ictiobus cyprinellus (does not occur in either upland or lowland)*
- Shortjaw Cisco *Coregonus zenithicus* (*does not occur in either upland or lowland)*

Mistik takes a cautious approach to the protection of fisheries values. Spawning areas are at potential risk from impacts of water crossings and some forest operations. The relatively undisturbed nature of much of the forest has ensured that there are abundant spawning sites and fairly low impact. This is not HCV under this element, although all fish species are safeguarded through riparian protection. It is reviewed again in the social values discussed in elements' 16-19.

Lake Sturgeon (*Acipenser fulvescens)* distribution comes close to the southern edge of the forest but is not reported here (COSEWIC). The closest occurrence is the North and South Saskatchewan River systems.

Walleye (*Sander vitreus*) is main fish species of economic interest to the tourism and commercial fishing industry. This species is widespread and managed carefully through regulation. Spawning sites were not designated as HCV.

Forest management activities have the potential to impact aquatic environments both positively and negatively. Government maintains strict rules about operations near critical fish habitat because of sedimentation risk. Besides risk from construction, road access can adversely affect fish populations due to increased access and angling pressure.

Forestry operations that occur in riparian zones and along shorelines if not implemented properly are considered higher risk for erosion, sedimentation, debris, elimination of shade and cover, a temporary increase in water temperature and alteration of the forage base.

The FMP and approved Forest Operations Standard (2019) protect fisheries values and wetland ecosystem function by:

- Application of buffers to regulate forest management activities around streams and other watercourses
- Following timing restrictions for water crossing installations
- Conducting harvest operations within or adjacent to sensitive areas during winter only

Fish spawning areas in general, aside from Species at Risk such as Sturgeon, have not been identified as HCVs because spawning areas are abundant in this area. The Government of Saskatchewan ensures that a conservative approach to protection is employed through their approval of the Forest Operations Standard (2019).

HCV Designation Decision:
Important Bird Areas, waterfowl staging and molting areas, and concentration areas (Nest locations) for White Pelicans and Great Blue Herons are identified as HCVs[5]. Included in this are Peter Pond Lake, Churchill Lake, Kazan Lake, Primrose Lake, Lac la Plonge, Dore Lake, Durocher Lake, Waterhen Lake, Upper Cummins Lake, Dillon Lake and Canoe Lake as identified by Mistik staff.

[5] This designation was reviewed in April 2020, including a review of the web info and other sources.

4) Does the forest contain critical habitat for regionally significant species (e.g. species representative of habitat types naturally occurring in the management unit, focal species, species declining regionally)?

Rational:

Meta-population viability.

Assessment Methodology:

- Results from Forest Management Plan habitat models
- 2019 FOREST MANAGEMENT PLAN – VOLUME II Values, Objects, Indicators, and Targets (VOITs) for the Mistik and L&M Forest Management Agreement (FMA) Areas
- Species representative of naturally-occurring habitat types or focal species
- Species identified as ecologically significant through consultation
- Environment Canada Scientific Assessment of Critical Habitat for Woodland Caribou
- DRAFT Range Plan for Woodland Caribou in Saskatchewan (SK 2 West)

NOTE: Species identified in Saskatchewan Conservation Data Centre SAR databases and ranked nationally as SAR by COSEWIC were discussed in Question 1.

Under this question, the HCV framework provides definitive (required) guidance that asks "Is the regionally significant species in significant decline as a result of forest management". Under considerations for "habitat for regionally significant species" means special places on the forest for species that may be important because they are rare, at risk, or economically or socially important.

Assessment Results:

In this element is included an assessment of:

1. focal species
2. featured species
3. landscape driven species
4. regionally representative species.

These terms are defined below. The reasons for identifying these four species assemblages is varied - from regulatory requirement to subjective stakeholder opinion that is difficult to pin down. If people have identified the species as significant, Mistik accepts that and will do an HCV assessment. In the assessment, the use of stakeholders' experiences, staff expertise, and Indigenous knowledge were considered. This element specifically mentions "declining species" which can be difficult to assess for some species. This is discussed below.

Values, Objects, Indicators, and Targets (VOITs) are used by Mistik to assess and manage the key values on the forest. This includes Caribou habitat, which is addressed in this element because it is a declining species nationally, a Focal species as well as being at risk (HCV in Element 1). Caribou is also noted in other elements, but the primary discussion is in this element.

Determining critical habitat for regionally significant species can be addressed from both the landscape scale and the site scale.

Focal Species

Focal species are species whose requirements for persistence define the attributes that must be present if a landscape is to meet the requirements of the other species that occur there (Lambeck 1997). In other words, this definition means that the species themselves have a role to play in maintaining habitat types. The Boreal forest is a fire dominated ecosystem, rather than one that is stable and influenced by slower processes such as those caused by animals. For focal species, often their role is to exercise control on the forest cover. Abundant herbivores in more southern areas are capable of this. A related concept is "keystone" species which was defined by R. T. Paine (1966) as a species that plays a disproportionately large role in ecosystem function, relative to its numerical abundance or biomass. Also related is "cultural keystone species" (Garibaldi (2004). These were not specifically evaluated here, as the other concepts are closely linked and capacity to address these concepts is limited.

Table 5. Focal species in Saskatchewan, based on FMP VOITS.

Species	Value	VOIT #
Fisher	Important Trapping species	Mistik Ind. #7a habitat available
Caribou	Landscape driven species, Species at Risk	Mistik Ind. #7b habitat available Mistik Ind. #2a % old forest
Moose	Important hunted species, economically significant	Mistik Ind. #7c habitat available

Mistik staff work closely with Saskatchewan Ministry of Environment (FMP p266) on particular wildlife issues. For example: set aside two operating areas specifically to address habitat issues for a small herd of Caribou known to exist between Niska Lake and Cummins Lake. Great Grey Owl, Pileated Woodpecker are examples of species that are considered but are not listed or designated HCV.

The focal species list in Table 5. Focal species in Saskatchewan, based on FMP VOITS. was based on species review and consultation during the FMP preparation and were identified in the Values, Objectives, Indicators, Targets (VOIT Table in FMP) exercise for the 2019 plan. These are considered by Mistik as focal species. Caribou is designated as HCV in element 1, as SAR (Table 5). It is also designated here (see below). The other focal species occur in robust dynamic habitat areas of the FMA and are common and not considered HCV. There are no species on the list which are in fragile ecosystems. These species were not designated HCV here.

Featured Species and Regionally Representative Species

These are two concepts that are similar to "Focal" species - Featured species and regionally representative species. Featured species (Thomas 1979) are species whose habitats, and sometimes populations, are managed for their importance to society, possibly as game species (e.g., Moose or Deer), focal species (as discussed above), important furbearers (e.g., Fisher, Marten), or for other reasons (e.g., at risk). Caribou could also be a featured species because it is a species of pre-eminent position in the forest.

Regionally representative species are selected with local interests in mind and are managed through habitat supply modelling because it is the most effective way to ensure human disturbance will not dramatically alter habitat availability – either too much or too little. Moose and Fisher are prominent locally in the Mistik FMA and are represented in the FMP VOIT. They were not designated as HCV because they are considered managed species, and there is a high level of conservation activity to support them. Other species have been considered previously such as

Pileated Woodpecker and Great Grey Owl. A list of observations is maintained, in the event these species become higher profile in the future.

Landscape Driven Species
Caribou

Woodland Caribou is a focal species and dominates discussion of landscape management. Although it is also designated HCV in element 1, its role as a landscape species influences the habitat of all species in its range so it is designated as a Focal species HCV under this element.

Mistik operates within an ecosystem-based management framework, which is a strategy that models forest harvest on the patterns of forest fires. Fire has been the main natural disturbance that has shaped boreal forests since the retreat of the Ice Age glaciers about 10,000 years ago. Plants, animals and ecosystems have adapted to forest fires that sweep through the forest every 40 to 150 years. Fire creates unique new habitats for wildlife and helps maintain the natural balance of young and old forests. At the landscape scale the strategy is to emulate natural disturbance patterns and the range of natural variation. This is described in more detail in the FMP.

The company has invested in research on fire and ecosystem-based management across the boreal forest landscape (Andison 2007a). The goal is to minimize the effects of the forest companies' harvesting operations and approximate the ecological benefits of fire by following the patterns of this natural disturbance as closely as possible. These characteristics of fire are now used as a guideline for establishing the type, size and distribution of timber harvest areas and stand structure.

The preferred habitat of Woodland Caribou is mature forests which contain large quantities of lichen adjacent to wetland complexes composed of bogs and fens. The Mistik FMP area contains an abundance of such habitat. Provincial woodland caribou experts estimate that there are approximately 300 woodland caribou within the Primrose Woodland Caribou Management Unit. (FMP Vol 1 p 122-123).

In collaboration with the provincial Woodland Caribou Taskforce, Mistik developed a management strategy for the previous FMP for the protection of prime woodland caribou habitat in the vicinity of known herd locations throughout the Mistik FMP area. This forestry impact mitigation plan will be implemented within the context of the provincial woodland caribou recovery strategy which is currently in draft (Recovery Plan for Woodland Caribou in Saskatchewan, Boreal Plain Ecozone, Draft 2019).

In 2002, boreal woodland caribou were recommended for "threatened" status by COSEWIC and listed as "threatened" under the Species at Risk Act (SARA). As required under SARA, the federal government developed the "Recovery Strategy for the Woodland Caribou Boreal Population in Canada" released in October 2012. The recovery strategy identified 65% undisturbed habitat as the disturbance management threshold, which provides a measurable probability (60 per cent) for a local population to be self-sustaining.

The recovery strategy indicates that Saskatchewan's Boreal Plain (SK2) population is at risk from habitat disturbance. Range plans were identified as documents that would outline how caribou ranges will be managed to protect critical habitat from destruction. The current federal recovery strategy identifies 40 % undisturbed habitat in the SK1 (Boreal Shield) conservation unit as the disturbance management threshold. The SK1 has high levels of natural disturbance (fire) but very low levels of human-caused disturbance and has been shown to have a stable population status (McLoughlin et al., 2019).

The known herds of Woodland Caribou within the FMP area occur east of the Beaver River in the Beauval Management Unit (Dore Lake), between Kazan Lake and Canoe Lake and the Cold Lake Air Weapons Range in the Ile a la Crosse and Canoe Lake Management Units (Kazan Lake), north of Upper Cummins Lake in the Buffalo Narrows Management Unit (Cummins Lake), in the Dillon

Lake area (both in the Dillon and Peter Pond Management Units) and south of the Cold Lake Air Weapons Range in the Muskeg River Operating Area.

MOSAIC harvest patterns (FMP Vol 1 p 124) are used to emulate disturbance events utilizing a 'one-pass' system. A diversity of harvest block sizes is planned. Natural (irregular) boundaries are used to define the perimeter of harvest areas. Mistik attempts to maintain overstorey structure and immature canopies in a natural MOSAIC harvest pattern. Mistik attempts to emulate the natural, fire-origin patterns and habitats found in the boreal forest landscape. Mistik's intent is to maintain a range of forest structural attributes postharvest within every harvest block except in those cases where forest health issues dictate otherwise.

Update on Caribou

Currently the Woodland Caribou Range Plan is a 'work in progress' on the SK2 WEST unit by the Saskatchewan government, with the support of forest companies like Mistik. The Caribou Range Plan, is in draft at the moment with 2 final phases (population assessment and population trend) yet to be completed. There will be an addendum to our plan once the Range Plan is finalized. Currently caribou habitat is divided into three types of caribou habitat management areas, (Tier 1, Tier 2 and Tier 3) different management strategies were developed for each of the Tiers based on their relative importance to known use by caribou (see Figure 4 for map of potential long term deferrals).

Moose

As demonstrated in community meetings, moose are likely the most valued wildlife species in the FMA area. They are an important focus of Indigenous and non-Indigenous hunting, have high viewing value, and have considerable value related to success in the guiding and outfitting businesses and related retailing. Moose occur throughout the FMA area. They are an adaptable species and are well suited to sites where forest succession has been set back by fire or by logging creating abundant browse production. Optimal moose habitat may occur where sufficient forest cover has been retained to maintain connectivity among important habitat features, such as conifer cover, shrub-land or newly generating forests, wetlands and riparian zones. Potential negative impacts of larger, aggregated harvest blocks on moose habitat are addressed through harvest area planning which limits line-of-site and maintains connectivity of habitat through unharvested, retained stand structure.

Moose are a widely distributed featured species and iconic across the Boreal forest of Canada. They were not designated as an HCV because there was no geographical critical life requirement that was identified in the FMA. As well, they are not a listed species. Management actions occur though landscape management and the Operating Ground Rules.

Wolverine

Wolverine is a species often associated with Caribou. It occurs in the FMA but is not common. It is an important species symbolically because it is iconic of wilderness. It does not play a significant role in driving landscape management or influencing other species. Although it is associated with Caribou, it is not the main population determinant. As a habitat generalist, it is not considered a landscape driven species, although the association with Caribou implies there is some effect. It is designated as HCV in element 1, because it is a SAR, but is not designated here.

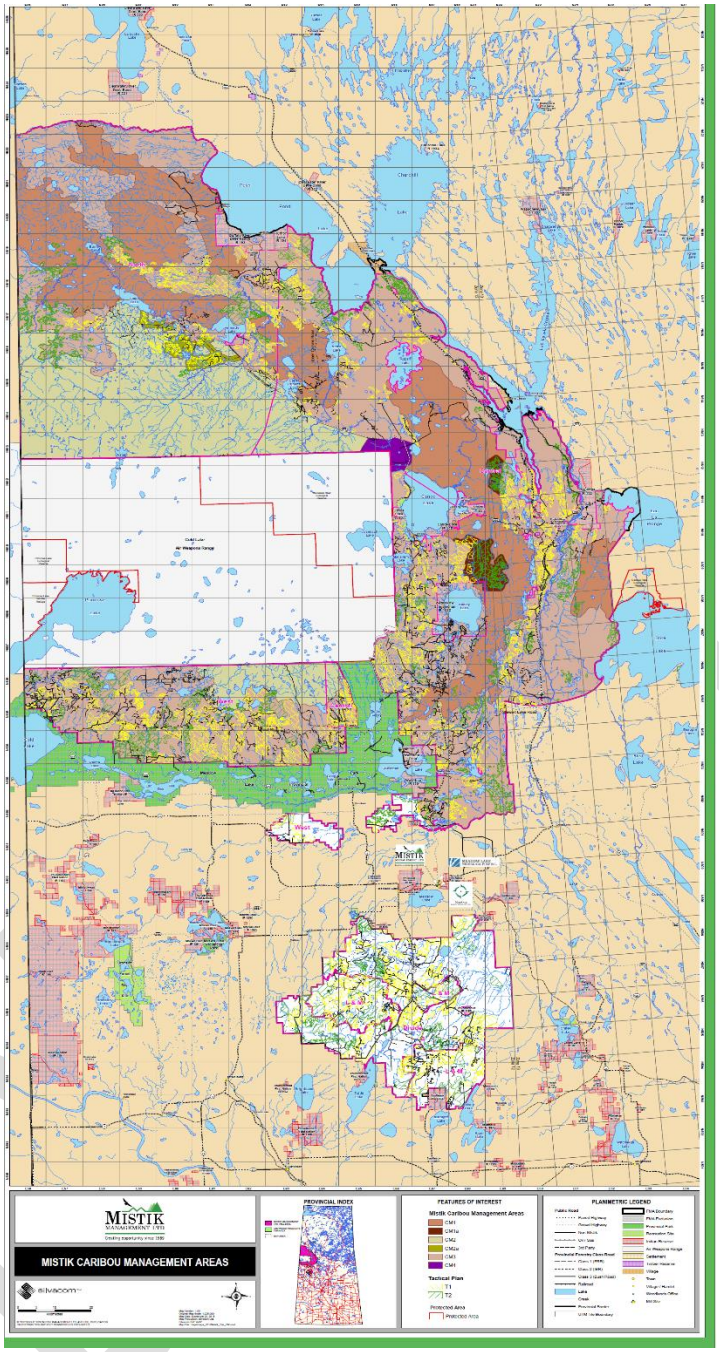

Figure 4. Long-term harvest deferrals within caribou range in the FMA Area.

HCV Designation Decision:

Woodland Caribou is designated HCV because of its wide range and sensitivity to landscape management. It can also be considered a focal species, because of the effort put on its management across the forest. It is considered HCV in element 1 as a SAR. There were no other HCV designations[6] in this element. This was mainly because "Focal" species involve the interaction of a species with other species; the food web and habitat interrelationships in the FMA

[6] This designation was reviewed January 2020 including a review of the web info and other sources.

are widespread and robust so one species would not put other species in peril. There is no species which influences a broad area of forest cover, thereby affecting other species.

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

Rationale:

Relevant conservation issues include vulnerability to range contraction and potential loss of genetic adaptation at the edge of the geographic range.

Assessment Methodology:

- Range and population estimates from Mistik, local authorities and local experts for: plant species
- Species identified as ecologically significant through consultation
- Table 6. Plant species occurrence with possible forestry Impact (Ecomark Ltd.)

Assessment Results:

As a northern forest, the FMA is the limit for a number of species, and the southern limit for others. Some species at their range limit may be candidate HCVs, have been assessed in Element 1 as either a SAR or a species that is rare.

The Mistik FMA area sits just above the transition from the boreal plains to the mid boreal ecoregion in Saskatchewan. Notably the southern edge of the continuous forest cover is also in this area, and that explains most of the range limits for species. The result is that a number of species can be identified that are either at the northern or southern limit of their range. This is biologically interesting, but most of these species are secure according to national and provincial agencies (COSEWIC, Saskatchewan Conservation Data Centre). Animal species that may be HCVs are already designated in Table 4. They are not designated HCV in this element.

Caribou, for example, is at the edge of its range in this forest, but this is explained by the edge of continuous forest cover. Caribou is designated HCV, but not in this element of the framework because “edge of range” is not the limiting factor, and potential genetic variation at range edge, as the element mentions, has not been mentioned as an issue by experts.

Other Plants

Ecomark (2006 b and Table 6) surveyed vascular plant species in the Mistik FMA area. They conducted surveys and reviewed distribution maps in the Flora of North America, Argus and Pryer (1990) and Maher et al. (1979) with distribution at the edge of their known natural range. This work provides an assessment of edge of range species that are possibly subject to forestry impact (located in forested area). All of the species identified in Table 6 are ranked globally very common or common. They also note that these are outlier populations in the Mistik FMA area and may represent an incomplete database for the boreal forest region of Northwestern Saskatchewan. Species with G5 ranking and an S2 ranking are at the edge of the range. Conservation is through landscape management, ensuring the habitat for these species is always abundant on the forest. They were not designated HCV.

Tree species

Tree species provide some explanation of the lack of rare or unusual species extending their range into this forest. The Mistik FMA area contains only the most common boreal species: Hardwoods

-- White Birch, Trembling Aspen and Balsam Poplar; Softwoods – Jack Pine, Tamarack, White and Black Spruce and Balsam Fir. There are also the boreal shrub species such as willows, swamp birch and alders, but there are no other species with a large life form. Adjacent forest has species such as Lodgepole Pine to the west and south; and Green Ash, American Elm, Bur Oak to the east and south. Aside from the obvious climatic constraint, an explanation for low diversity and few outliers and range extensions is related to the soils of the area. Multiple glaciations have left a complex soil structure, with evidence of up to eight previous glaciations. The soils of the area are remarkably deep (hundreds of metres in some places) but are acidic and have little buffering capacity. This reduces fertility and consequently supports fewer species. In contrast, to the east of the forest the soils are more buffered and calcareous, and this results in some additional tree species, as listed above.

Table 6. Plant species occurrence with possible forestry Impact (Ecomark Ltd., 2006 b) and possible edge of range species.

Genus Species (=Synonyms)	Common Name(s)	Global* & Provincial Rank
Botrychium lancelolatum var. lanceolatum	Lance-leaved grape fern	G5T4 S1
Botrychium lunaria	Common moonwort	G5 S1
Carex arcta	Slender sedge	G5 S1
Carex laxiflora var. varians	Pleasing sedge	G5TNR Q S1
Trichophorum clintonnii (= Scirpus clintonii)*	Clinton's bulrush	G4 S1
Anemone richardsonii	Yellow anemone; Richardson's anemone	G5 S1
Trientalis europaea var. arctica	Arctic starwort	G5T5 S1
Achillea millefolium var. megacephala	Large-headed woolly yarrow	G5T1 S1; SC
Diphasiastrum sitchense	Ground-fir	G5 S2
Oryzopsis canadensis	Canadian rice-grass	G5 S2
Stipa richardsonii	Richardson's needle grass	G5 S2
Cypripedium calceolus var. pubescens	Yellow lady's slipper	G5 S2
Ribes oxyacanthoides ssp. setosum	Northern gooseberry	G5T4T5 S2
Pedicularis labradorica	Labrador lousewort	G5 S2
Anaphalis margaritacea	Pearly everlasting	G5 S2
Lactuca biennis	Tall blue lettuce	G5 S2
Luzula acuminata	Hairy wood rush	G5 S1S2
Delphinium glaucum	Tall larkspur	G5 S1S2
Streptopus amplexifolius var amplexifolius	Clasping-leaf twisted-stalk	G5T5 S2S3
Corallorhiza striata (= C. s. var. striatat)	Striped coralroot	G5T4T5 S2S3
Platanthera orbiculata	Round-leaved bog orchid	G5 S2S3
Spiranthes lacera (S. L. var. lacera)	Northern Slender ladies'- tresses	G5T5 S2S3
Polygala paucifolia	Fringed milkwort	G5 S2S3
Chimaphila umbellatta ssp. occidentalis	Prince's-pine	G5T5 S2S3
Lilium philadelphicum var. andinum	Western red lily	G5T4T5 S3S4
Osmorhiza depauperata	Spreading sweet-cicely	G5 S3S4
Lilium philadelphicum var. philadelphicum X var. andinum	Hybrid; western woo lily	Not ranked
Streptopus amplexifolius var. americanus	Twisted-stalk	Not ranked
Coeloglossum viride ssp. bracteatum	Bracted green orchid	Not ranked
Adoxa moschatellina	Moschatel	G5 S3

*G5 Very Common >100 occurrences; widespread and abundant, but may be rare in parts of its range, especially peripherally. Demonstrably secure.

HCV Designation Decision:
In conclusion, a number of species could be declared at the edge of their range, but none represent a dramatic or even unusual range extension, and do not appear to have special genetic characteristics. No HCVs were designated.

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

Rationale:

This question ensures compliance with the conservation intent of a conservation area.

Legally, parks and conservation areas may be removed from the license area. They are still considered HCVs, but the responsibility of the manager is limited to ensuring that the boundaries are protected and there are no indirect impacts or incursions into the Conservation Area.

Assessment Methodology:

- Saskatchewan Land Use Mapping Online
- National Ecological Framework For Canada
- http://ontora.ca/ref/gov/mnr-policies-procedures/ontarios-living-legacy/Canadian Heritage Rivers System
- RAMSAR sites
- Canadian Conservation Areas Database (NASA supported GIS layers) – detailed and complex compilation of datasets.

Assessment Results:

Provincial:
In Canada provincial governments control, and own, most of the forest resources (under Treaty rights with Indigenous People). Consequently, Provincial land use designations are relevant. Saskatchewan has several classifications for conservation areas, and permits different degrees of industrial and other activity within them.

There are two significant (legally designated) provincial parks within the region of the Mistik FMA area designated HCV: Makwa Lake Provincial Park and Meadow Lake Provincial Park.

- Makwa Lake Provincial Park is primarily for recreation and has many facilities including more than 250 campsites.
- Meadow Lake Provincial Park encompasses more than 1,600 square km in area and has more than 20 lakes.

Clearwater River Provincial Park is north of the forest and is not designated HCV.

There are five provincially legislated ecological reserves known as Representative Area Networks (RANs) located within the Mid-boreal Upland Ecoregion. The Primrose Lake, McCusker River,

Caribou Flats, Budd Lake, and Selenite Point representative areas comprise nearly 189,585 hectares of ecologically important land within the ecoregion. Commercial timber harvesting, mineral exploration, hydroelectric development and other developments are not permitted in these areas (SERM, 2006*a*). In addition, there are a number of provincial parks adjacent to or within the vicinity of the FMA area including Meadow Lake Provincial Park, and Makwa Lake Provincial Park located west and northwest of Meadow Lake (SERM, 2006*a*). There are also approximately 10 timber exclusion areas throughout the Mistik FMA area near First Nation communities and villages. Some of the RANs and provincial parks are considered HCVs.

IUCN Categories

The parks and other conservation areas in the FMA were examined for alignment with the International Union for the Conservation of Nature (IUCN) designation of protection which is consistent with FSC requirements.

- **I a Strict Nature Reserve**: Category I a are strictly protected areas set aside to protect biodiversity and also possibly geological/ geomorphic features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring

- **I b Wilderness Area**: Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

- **II National Park**: Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

Of the regulated designations, Provincial Parks and Wildland Provincial Parks have the most restrictions. Parks are Category I and Wildland Provincial Parks are Category II. These do not allow logging and as such meet the conventional usage of the term “protected”. There would be some exceptions, and some multiple designations within one area (I and II) occur. These meet the level of significance consistent with HCVs and as such are designated HCVs. Note the protected areas are not part of the forest licence, but the managers bear responsibility for safeguarding against impacts and incursions within the boundaries. Forest Operating Standards stipulate restrictions near parks.

Table 7. Parks, Conservation Reserves and Protected Areas within/near the Mistik FMA.

Reserve Name	Area (ha approx.)	Location within or near Mistik FMA area	Location	IUCN category	Land Use Plan
Caribou Flats Ecological Reserve	9,600	Adjacent to Beauval MU Ecoregion: Mid-Boreal	Lat.: 54.91298° N Lon: 107.20890° W	II – Trad. use; trappers; Trap cabins	LINK
McCusker lake Ecological reserve	139,000	Cold Lake Air Weapons Range Ecoregion: Mid-Boreal	Lat.: 55.08900° N Lon: 108.41920° W	1b - within Cold L. Air Weapons Range Some indigenous use	LINK

Primrose Lake Ecological Reserve	19,500	Cold Lake Air Weapons Range Ecoregion: Mid-Boreal	As above	1b - within Cold L. Air Weapons Range Allows fishing	As above
Primrose Lake Wildlife Refuge	11,750	Cold Lake Air Weapons Range	As above	IV - within Cold L. Air Weapons Range	As above
Balance of Cold Lake Air Weapons Range	430,000	Military reserve – mining forestry hydro excluded	As above	IV - within Cold L. Air Weapons Range	As above
Meadow Lake Provincial Park	160,000	Adjacent to Pierceland, Big Island L, Murray Bay Waterhen MUs	Lat.: 54.45971° N Lon: 109.00631° W	II -	LINK
Turtle Lake Recreational Exclusion	1600	South end of Divide MU		recreational	
Nesset Lake Recreational Area	600	Northwest corner of the Divide MU		recreational	
French Bay Provincial Recreation Area (Alberta)	700	Alberta -- adjacent boundary with Mistik FMA		recreational	

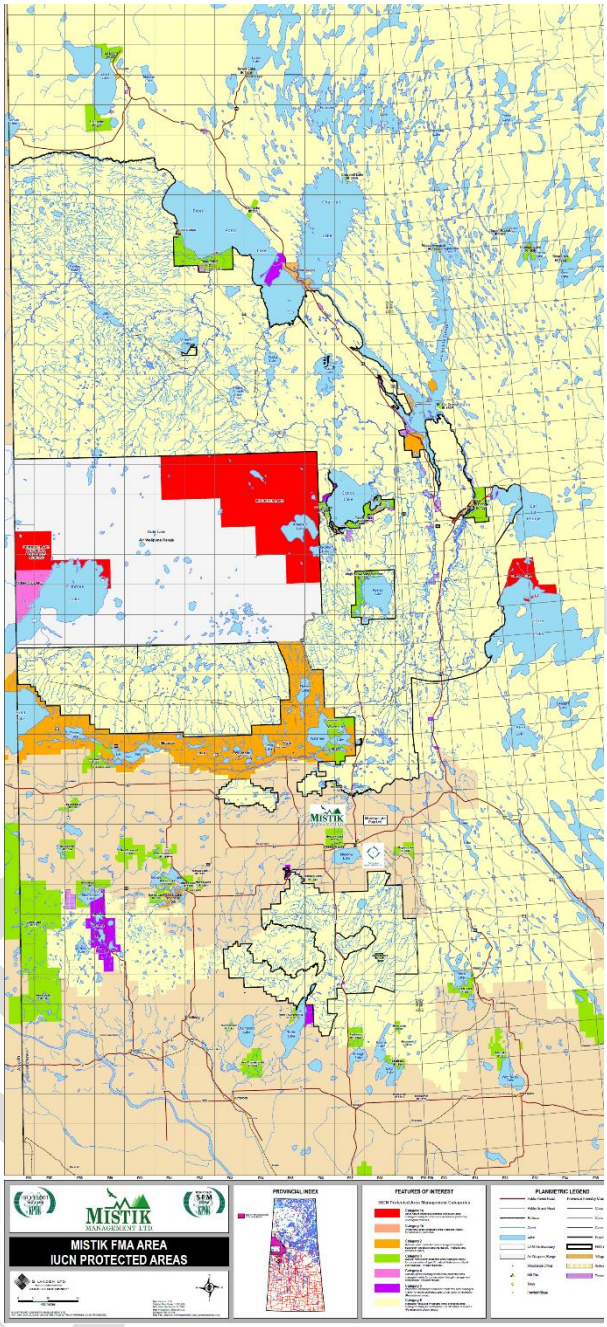

Figure 5. Mistik FMA Area IUCN Protected Areas.

International Designations

There are no Ramsar Sites (internationally recognized wetlands) immediately in the FMA.

There are no UNESCO World Heritage Sites within the FMA;

The International Biological Program (IBP) was an effort between 1964 and 1974 to coordinate large-scale ecological and environmental studies. No sites are located in the vicinity of the forest.

National Designations

There are no Federal protected areas in the FMA. Prince Albert National Park lies to the east of the FMA.

The Clearwater River is designated as a heritage river (Canadian Heritage River System) designates however it is north of the FMA and not designated HCV for the Mistik FMA.

Regional Land Use Plans

Land use planning can be an important contribution to protected areas if there is regulated protection afforded to ecological or cultural sites. This is often a useful context for including sustainable resource use as a recognized economic activity. Saskatchewan has a system of regional land use plans. These plans do not include protection of natural values at this time.

Provincially Significant Wetlands

There are no wetlands which have been protected through provincial regulation because of their provincial or regional importance. Wetlands are assessed in more detail for their provincial status as HCVs in Element 13 ecosystem services.

HCV Designation Decision:

The following designated protected areas are HCVs in the Mistik FMA

- Ecological Reserves
- Provincial Parks
- Wildlife Refuges
- Wilderness components of recreational parks

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

7) Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species?

Rationale:

Under this question, the forest must not only be large enough to support most or all native species, but long-term, large-scale natural disturbances should be able to take place to maintain the full range of ecosystem processes and functions (i.e., naturally functioning landscapes).

Assessment Methodology:

- Andison (2007) – Preindustrial condition analysis
- Global Forest Watch
- Mistik FMP

The vigorous discussion about Intact Forest Landscape (IFL) that is occurring within FSC Canada is centred on maintaining large fully functioning ecosystems. For clarity, the term used in FSC category 2 Large Landscape Level Forest (LLLF) is defined the same in this report as Intact Forest Landscape (IFL). Normally the term IFL is used.

Mistik conducted their own extensive analysis of IFLs in the FMA. And for comparative purposes, Global Forest Watch information is presented below.

In the region encompassing the FMA, fire, blowdown, and insect outbreaks are the principal natural disturbances. Forest fires are suppressed and although some fires continue to occur, their frequency and size class distribution are different than the pre-settlement distribution of fires. Consistent with the definition above, large scale insect and blowdown occurrences are not controlled – specifically, there is no spraying to control insects. Forest harvesting is planned and conducted to emulate forest fires and other disturbances to the extent possible. The intent of the team that developed the FMP was to ensure that this is a naturally functioning landscape. The application of Caribou habitat requirements is a significant driver in some parts of the forest. The designation of a LLLF as an HCV does not preclude some human activity, like forestry and tourism, but to be precautionary, there needs to be measures in place to maintain the ecological integrity of the forest.

Assessment Results:

Pre-industrial Condition Analysis - Andison

Andison (2007) provides a model of the pre-historic condition of the Mistik FMA area to establish the natural range of variation for important landscape characteristics, particularly old growth. This is closely tied to IFL. He discusses the fundamental assumption of landscape management on large northern forests:

> "The theory is certainly attractive; by maintaining the type, frequency, and pattern of change on a given landscape, we are more likely to sustain all biological values therein (Landres et al. 1999). So-called "coarse-filter" knowledge can also be applied directly and immediately to planning and management programs since the "language" of disturbance patterns is largely consistent with that used by forest management agencies. Finally, natural vegetation patterns serve as excellent indicators of biodiversity since many can be simply and easily measured and compared to historic benchmarks. However, the first challenge for those who wish to use natural patterns as management guides is defining those historic benchmarks."

The report assesses core areas and, just as important from the point of view of IFL, linear disturbance. Andison recommends that for the Mistik landscape the focus for Core Habitat should be on "measuring the impact of permanent and/or recent cultural disturbances." Andison provides tight criteria so that the outcome can be planned for, and will be measurable, auditable and enforceable through the FMP. Specifically, his criteria for assessing core are:

1. 500 m is buffer distance from cultural and linear disturbance features
2. tracking at both the MU and total FMA area scales
3. any area that has been culturally disturbed (whether harvested or salvage logged) with forest less than 20 years of age be excluded from the CFH calculation (as well as any culturally disturbed area with no forest)
4. Use the existing FMA boundary to calculate current and future CFH areas for the next 10 years.
5. expansion of the current linear feature network on the Mistik landscape by at least 50% over the next decade due to a combination of external (and thus uncontrollable) agencies, and internal competing values.

Interested readers should consult the original report for a full description of Core. This assessment resulted in the determination of the core in the forest to be as listed in Table 8. To achieve this Mistik established an indicator for size distribution of harvest events and natural disturbance events (see VOIT Table Indicators 3, 11 and 12; Table 17) in the 2019 FMP.

As IFL definitions are still under discussion within FSC, Mistik has recognized that the FMA contains possible HCVs.

Table 8. Core area in Mistik FMA area by Management Unit

Mistik Management Unit	Area (ha)	Core Forest (%)
Divide	158,031	23
Pierceland	114,281	6
Big Island Lake	37,588	11
Waterhen	180,170	34
Beauval	144,357	51
Canoe Lake	177,299	69
Ile a-la-Crosse	109.908	76
Buffalo Narrows	115,611	61
Dillon	345,597	57
Murray Bay	60.561	39
Beaver River	13,448	23
Peter Pond	275,180	81
TOTAL	1,732,033	52

In addition to the assessment of core by Andison (2007), Mistik managers considered the requirement of the rationale for areas "…large enough to potentially support most or all native species" while retaining resilience for long-term, large-scale natural disturbances. Logically, it is wildlife species that are potentially affected by forestry, so a direct review of the projected FMP impact is very relevant. As part of their previous plan, Mistik worked with Environment Canada on the FMA to assess this question using bird communities as the indicator (Van Wilgenburg, S L and K A Hobson 2008). This work was further developed in the 2018 analysis (Van Wilgenburg et al., 2018). Mistik endeavours to lead in the application of "on the ground" landscape management concepts.

Van Wilgenburg's work addressed the central challenge of forest management which is to maintain all species assemblages; this was done through the use of modeling known bird habitat relationships and integrating these with forest growth-and-yield simulations. The authors modeled several species and guilds to assess the trade-offs and potential conflicts. With more than 120 species of birds on the Mistik FMA area any habitat change will cause some species to decline and others to increase. They selected several species/guilds to represent a substantial proportion of possible outcomes.

Global Forest Watch

In Figure 6 is an overview of the disturbance within the FMA from Global Forest Watch Canada which uses their own criteria, including:

- "a contiguous mosaic of natural ecosystems in the forest landscape, essentially undisturbed by human influence"
- > 50,000 hectares in size.

The GFW interpretation of intactness, "undisturbed by human influence", provides a large area considered intact. The dark green area of IFL in the northeast is consistent with ongoing discussion of protected area and IFLs in the Mistik FMA. As stated above, IFL definitions are still under discussion within FSC; Mistik has recognized that the FMA contains possible HCVs.

2 IFLs are considered to be mostly within the FMA boundary (NAM_254 at 137 263 hectares and NAM_242 at 67 897 ha for a total of 205 160 hectares, Mistik is not operating within or near these areas.

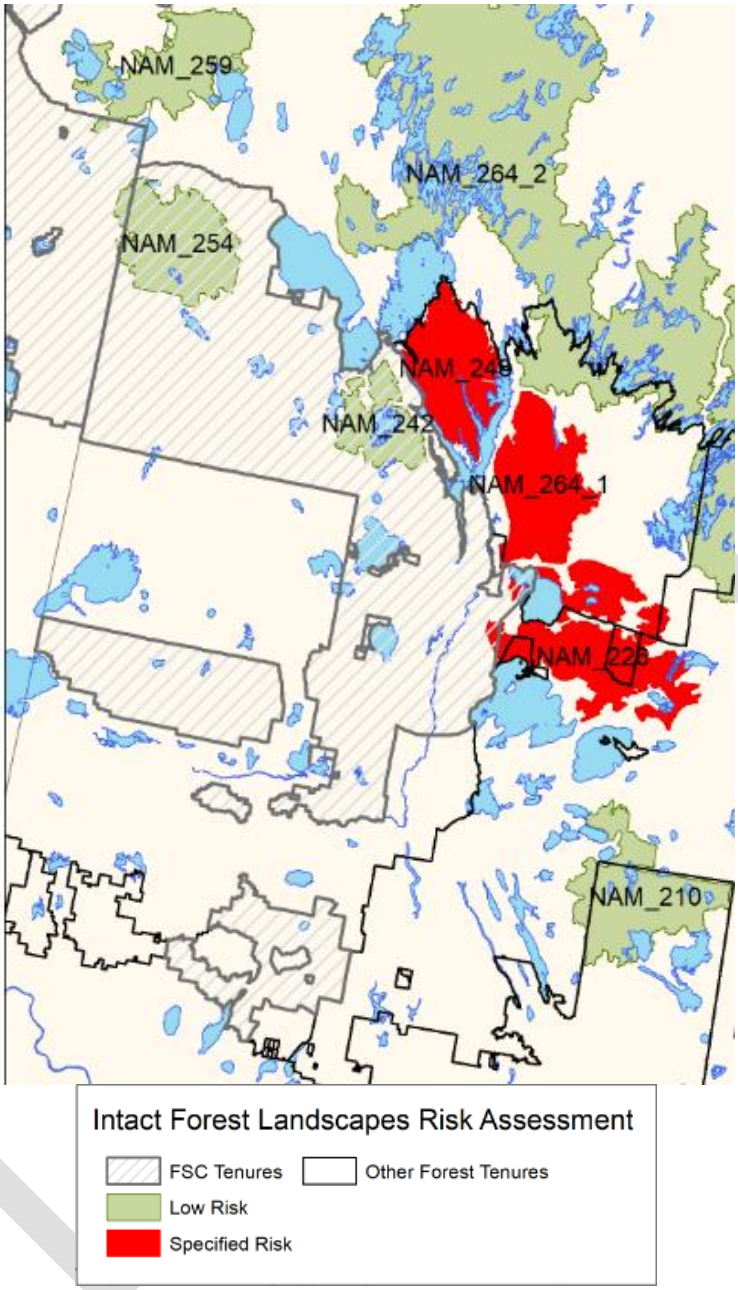

Figure 6. Global Forest Watch IFLs in the Mistik FMA area.

HCV Designation Decision:

Maintaining the natural landscape pattern is the priority in the management plan, and this was identified as such by input from a wide range of groups and individuals. Large core forest areas within the Mistik FMA area confer higher than average natural habitat features, likelihood of natural wildlife population dynamics and remoteness from human-related activities. IFL and unfragmented forest are designated possible HCV, based on current discussions within FSC regarding definition and methods for boundary determination.

The challenge is to provide a definition that will be deliverable and measurable by the managers.

From Mistik FMP, based on Andison (2007) the possible HCV is to be defined.

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

8) Does the forest contain naturally rare ecosystem types?

Rationale:

Rare forest types may contain unique species and communities that are adapted only to the conditions found there. For this reason, they may qualify as “concentrations of biodiversity values”.

Assessment Methodology:

- NatureServe
- World Database of Key Biodiversity Areas
- Saskatchewan Conservation Data Centre
- Conservation International
- Ducks Unlimited Saskatchewan
- Information pertaining the Canadian Boreal Forest Agreement

Assessment Results:

Conservation International does not identify any biodiversity hotspots within Canada.

NatureServe Canada + United States National Vegetation Classification (USNVC) have databases that categorize the Boreal forest by ecological context. This database is linked with NatureServe and provides information about the forest category as well as the international conservation status of the forest type. The forest types on the FMA are listed as North American Northern Boreal Woodland Macrogroup. Conservation status was listed as GNV. It does not comment on rarity or risk.

These USNVC classifications are the dominant and widespread lowlands typical of the area. They were not designated as HCV.

The World Database of Key Biodiversity Areas (KBAs) presents internationally significant KBAs, including global KBAs, regional KBAs and those whose global/regional status is not yet determined. Primrose Lake and Midnight Lake were identified. No additional sites were presented. These sites are already designated HCVs in element 3, as areas of seasonal concentrations of wildlife; their primary value. They are not designated here.

Saskatchewan Conservation Data Centre (SCDC)

The SCDC database does not track rare ecosystem types. In the adjacent forest in Alberta, using the Alberta Conservation Information Management System does not record any ecosystems that met the criteria in the natural subregions within the area (Athabasca Plain, Lower Foothills, Lower Boreal Highlands, and Upper Boreal Highlands).

Rare forest types from Inventory

Mistik staff reviewed their inventory for unusual occurrences of species that may indicate a rare forest type. There were no unusual communities identified.

This assessment included potential old forests and very old forests within each of the forest types. As a fire-dominated system, old forest growth occurrences in the Boreal are rare and could qualify as regionally

significant especially for some less common forest types. The review of the inventory showed abundant old forest component throughout the FMA as part of the management approach that is based on natural range of variation. This requires bringing extensive forest cover along through progressive age classes (VOITs Table 17). Examination of the less common units did not indicate any particularly rare occurrences of old forest in a rare forest type. No old forest stands were designated specifically for their old forest characteristic.

Table 9. Seral Stage Definitions (Source FMP - D. Andison)

Strata	Juvenile (y)	Immature (y)	Mature (y)	Over-mature (y)
Deciduous	1-10	11-60	61-80	>80
Pine	1-20	21-60	61-80	>80
Black Spruce	1-20	21-70	71-120	>120
Mixed & white Spruce	1-10	11-60	61-100	>100

HCV Designation Decision:
No rare community types have been designated HCV[7]. The Samphire Emergent Marsh rare ecosystem is considered as a possible HCV pending specific location details.

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

Rationale:

Vulnerability and population viability are the key issues under this question. This indicator includes rare forest ecosystem types that may be rare to the area due to historic harvest practices (e.g. late seral stage red and white pine in eastern Canada). Grassland and Wetland ecosystems would also be included as HCVs if they meet the test of regional significance.

Assessment Methodology:

- NatureServe
- WWF Ecoregion Conservation Assessment
- Conservation International
- Saskatchewan Forest Management Planning Standard

Assessment Results:

Grasslands and Wetlands
HCVs internationally now include wetlands and grassland areas as described by HCV Resource Network. In the context of this element, grasslands and wetlands ecosystem decline would be candidate HCVs. The majority of the boreal wetland types are treed ecosystem types but many of these are not of commercial interest outside of forestry, within the FMA.

There is almost no land conversion happening in the FMA. There are some 'grazing leases' where farms fence land for cattle grazing directly in the forest, usually adjacent to better quality roads, where it is easy to start fencing and access is good. This is a small impact with very little disturbance.

In this assessment, there were no non-forest areas designated HCV.

[7] This designation was reviewed in May 2020, based on Mistik staff input.

Older Forest

Maintenance of late seral stand types within the FMP area is important for a number of ecological values – age class diversity, forest structural diversity, tree species diversity and associated habitat diversity. Industrial timber extraction can, over time, completely remove late seral stand types from the forest landscape. Retention and recruitment of old forest types must be explicitly managed for in order to achieve desired levels of late seral representation within the forest landscape. This is a requirement of the Saskatchewan Forest Management Planning Standard.

The Mistik FMA is not home to classic large old forests of pine with ancillary species - as often portrayed in media. This northern boreal forest is fire dominated; under natural conditions without human influence, there is little area that reaches older age classes. This also means that there are no species that are dependent on this structure. Old forest is purposely managed for in Saskatchewan, consistent with a broad landscape management approach. Older forest is not rare or difficult to regenerate. It is not designated HCV.

Note old forest management is also discussed in the previous element, as a rare ecosystem type in element 8, where it was not designated HCV.

HCV Designation Decision

No ecosystems have been designated HCV[8] because of a decline.

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

Rationale:

In regions where large functioning landscape level forests are rare or do not exist (highly fragmented forest), remnant forest patches may require consideration as potential HCVs (i.e. best of the rest). The question identifies remnant forest patches or blocks where landscapes that do not contain permanent infrastructure do not exceed size thresholds.

Assessment Methodology:

- Figure 5. Global Forest Watch IFL in the Mistik FMA area

Assessment Results:

Mistik FMA still contains significant areas of unfragmented forest. The GFW map of IFL areas (Figure 5. Global Forest Watch IFL in the Mistik FMA area) provides a snapshot of the amount of intactness. For this reason, rebuilding of fragmented IFL is not considered an HCV in the FMA. For more information see Element 7 page 41.

HCV Designation Decision:

No areas were considered as LLLF fragments as designated as HCV[9].

[8] This designation was reviewed in June 2020, including a review of the web info and other sources.

[9] This designation was reviewed in June 2020. This assessment will be reviewed in the near future when there is more clarity around the requirements of IFL in the FSC standard.

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

Rationale:

Vulnerability; species diversity; significant ecological processes.

Assessment Methodology:

- Ecosites of Saskatchewan's Provincial Forests
- NatureServe Communities
- Conservation Assessment (protected areas “gap analysis”) & Marxan Analysis

Assessment Results:

This Element looks for “uniqueness”. The large landscape scale conifer dominated ecosystems are typical of the area and are assessed in the previous element (LLLF). The discussion here, in Element 11, focuses on smaller more unusual ecosystem types that were explored through discussions with the local management staff, and searched using the websites mentioned above.

Ecosystem classifications

Saskatchewan’s ecosystem classification system was used as a basis for seeking unique ecosystems.

In the Mid Boreal Upland Ecoregion, there are some features which may provide substrate for uncommon vegetation features: escarpment, post-glacial processes and features (e.g., hummocky moraine, fluvial beds, sand dunes), and the Canadian Shield. In the Mistik FMA area, moisture regime, and to lesser extent, aspect and slope are important microclimatic conditions that strongly affect vegetation cover. Protected valleys, depressional sites, seepage sites, and areas with seasonal or temporal water supplies, all have the potential for high plant biodiversity, and rare plants. Rare plants, however, can occupy most habitat types in the region. Areas affected by fire are potentially subject to dramatic shifts in moisture and temperature changes, and thus vegetative cover.

The features described above are normal and fairly common formations in this area. The Ecosites of Saskatchewan are described in the Field Guide to the Ecosites of Saskatchewan's Provincial Forests. This was considered as the benchmark for ecosystem distribution in Saskatchewan. For an overview of the history of ecosystem classification in Saskatchewan see Introduction to Saskatchewan’s Forest Ecosystem Classification Guide. There were no sites that were designated HCV unique and diverse ecosystems.

Slope

Slope in Saskatchewan provides possibly unique ecosystems. In the FMP there is discussion of the physiography of the FMA the Manitoba Plain, the Saskatchewan Plain and the Alberta Plain (Ellis and Clayton, 1970). These plains are separated from east to west on the basis of major elevation changes which coincide with the three prairie "steppes" identified in the Palliser journals of the early 1860's. The Mistik FMA itself spans the transition between the Saskatchewan Plain and the Alberta Plain, which is marked most notably by the prominent south- and east-facing slopes of the Mostoos Hills at an elevation of 500-600 meters.

The Mostoos Escarpment (FMP p 37, 5.7.1.5) comprises the prominent steeply sloping south- and east-facing slopes of the Mostoos Hills. Elevations range from a little over 500 m at the base of the Escarpment to more than 700 m at the boundary with the Mostoos Upland. The landscape is a moderately to steeply sloping, eroded escarpment dissected by a series of deep-set, well defined valleys. No HCVs were identified based on slope during plan development.

Nature Serve

As reviewed in Element 8, on naturally rare ecosystems, the http://www.natureserve-canada.ca/United States National Vegetation Classification (USNVC) databases cover Canada as well and were examined but did not provide any additional unique ecosystem types for consideration as HCV.

HCV Designation Decision:

No special unique ecosystems were designated HCV[10] in this review.

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

The concept of the "basic services of nature" is of necessity, very broad. The following questions, 12 to 16, in category 4, are especially important in a working forest, like the Mistik FMA. Water management, land management, and business uses of the forest are all potential critical values that may be HCVs

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

Rationale

The potential impact to human communities is so significant as to be 'catastrophic' leading to significant loss of productivity, or sickness and death, and there are no alternative sources of drinking water.

Assessment Methodology

- Known usage of water by local communities from consultation
- OBM base maps showing topography, local terrain mapping

Assessment Results

Mistik FMP contains considerable information about water management (Section 5.10 Climate; 5.11 Water Yield for Management Units). Quality and quantity are a significant concern because of the location of the FMU in a part of the continent that is subject severe drought at times. The Mistik FMA area is primarily situated in the Churchill River drainage basin, which includes the Beaver River watershed and the Churchill River watershed. Drinking water in these watersheds are primarily surface waters from northern lakes and rivers. This means caution when working around water is important.

Agencies such as SaskWater, Saskatchewan Environment, and the Saskatchewan Watershed Authority are directly involved in the management of the province's water resources. Saskatchewan Environment's Drinking Water Quality section ensures safe drinking water for the province.

In Canada, poor quality drinking water is often an issue of concern in rural municipalities and especially Indigenous communities. While the water quality issues identified by the Province likely do not have a direct link to forestry operations, they do highlight the importance of clean drinking water supplies within the forest area.

The definitive question here is whether or not the forest area of interest encompasses a sole available and accessible source of drinking water for the communities located there. According to the available information, there is NOT one main source of drinking water on the Mistik FMA area. Many of the waterbodies and waterways within the Mistik FMA area are regularly used to provide water for human consumption.

[10] This designation was reviewed in January 2020, including a review of the web info and other sources.

Mistik has ongoing discussion and interaction with the Saskatchewan Watershed Authority (SWA) regional office located in North Battleford, SK (e.g. meetings, phone calls, forest tour, etc.).

Specific drinking water sites

Consultation identified one known source of potable water used frequently by local Beauval community residents. It is at the outflow point (weir location) of Lac La Plonge (FMP section 6.4). Although this situation occurred in 2001, local residents expressed their concern that the access to the waterway and that local water quality be maintained. When upgrading the La Plonge River crossing, Mistik attempted to maintain and facilitate continued easy access to clean, potable water for the local residents (Figure 6.17). All communities on the FMA have provincially regulated water treatment plants that distribute water to households. Regular testing of water quality at the communities is done on a daily basis.

Given the importance of clean drinking water for local communities, known sources of potable water or areas of concern may be considered HCV. There is a close relationship between this value and other riparian values, described generally as "areas adjacent to surface waters". Management prescriptions also apply to all of these designations.

HCV Designation Decision:

One specific outflow point (weir location) of Lac La Plonge is designated HCV; and other water source locations would be specifically identified as HCVs[11] if they were brought forward by communities.

Drinking water is also designated as part of the HCV referred to as Areas adjacent to Surface Waters in element 19.

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

Rationale:

Forest areas play a critical role in maintaining water quantity and quality, and a service breakdown could have catastrophic impacts or could be irreplaceable.

In this element there is also a discussion of carbon storage and sequestering. It is here because the primary location of carbon is in peat bogs in the north. This enormous reservoir can be put at risk by changes to hydrology.

Assessment Methodology:

- North American Waterfowl Management Plan – Canada http://nawmp.wetlandnetwork.ca/
- NAWMP – Updated summer 2020

Assessment Results:

Management of water is a shared responsibility among a number of agencies and companies. The government agency with legislative authority is Transport Canada. It is the federal department responsible for managing water levels for navigable waters, and includes the larger rivers. Water management is directed by long-established operational guidelines, the Canadian Environmental Protection Act, and the Fisheries Act.

[11] This designation was reviewed in May 2020, including a review of the web info and source protection plan.

Ducks Unlimited Canada (DUC) has provided a useful series of technical manuals to assist in wetland management, risk reduction from incidental take and other topics. In the References and Literature section of this report is a section listing the DUC technical literature and presentations that are available.

Wetland Inventory

Wetlands are well documented as a result of a long partnership with DUC. It is notable that wetlands are inventoried but linear boundaries are not applied because these designations would be of little value. Mapping boundaries across the subtle changes of this flat topography since one wetland flows unimpeded into the next. Watershed boundaries are blurred over large areas. In other jurisdictions where wetlands are more limited, there is emphasis placed on "evaluation".

Some wetland classes, open bogs and marshes are rare across this landscape, although most types are abundant. Marshes and open bogs are designated HCV based on their rarity and the species associated with these communities. Wetlands generally are extensive and interconnected across the landscape. The HCV designation focuses on those two types that are rare.

Table 10. Significant wetlands in the Mistik FMA area related to waterfowl habitat.

Wetland Name	Location
Canoe Lake	Canoe Man. Unit
Parker Lake	Canoe Man. Unit
Apps Lake	Ile A La Crosse
Kazan Lake	Ile A La Crosse
Amyot L (south to Durocher L)	Ile A La Crosse & Beauval MUs
Beaver River area	South of Beauval

The preferred strategy for water-associated harvest sites is to avoid activities in or near wet areas. There was no indication that aquatic areas are of special importance in the region, as they are common, but care around water is always essential. Where activities are necessary proximal to water, planning and operational practices, as outlined in the Saskatchewan Forest Management Planning Standard are followed.

The importance of wetlands in this part of North America is well known. Participation of DUC in all aspects of wetland management is important as they bring considerable expertise. DUC has worked with the forestry sector to produce the Forest Management and Wetland Stewardship Initiative. References to the guides from this initiative are in the references of this report. These guides provide technical guidance to working around water.

Hydrology Impacts

A paired, pre- and post-harvest experiment in aspen stands was conducted within the Alberta-Pacific Forest Products FMA (adjacent to Mistik) to investigate the effects of forest harvest on surface runoff and groundwater (Donnelly et al., 2016). Although timber harvest reduced transpiration and interception by trees, the excess water did not result in lateral surface runoff. Rather, this water was absorbed by the soil leading to groundwater recharge, such that the study found no difference in flow pre- and post-harvest. The study concluded that climate and beaver activity are the primary drivers determining runoff in this region. This is important because risk from forestry appears low (Devito et al. 2012).

Carbon and Peat Lands

Roads built across peatlands may impede or redirect the flow of water, resulting in flooding and drying on the upstream and downstream sides of the road, respectively. The hydrological functioning of peat

ecosystems is of key concern. This may result in tree death in the flooded side, and increased tree growth due to deeper rooting in the drier side, with implications for the process of soil carbon sequestration and storage.

Research conducted by Thompson et al (2017) suggests that the risk is highest in peatlands and graminoid shrubby fens with finely textured, clay-like soils, such that the road bed forms an impermeable barrier to water movement. The risk of flooding/drying may be mitigated if peat inventory depths prior to road layout, in order to avoid peatlands with deep finely textured soils; if such peatlands cannot be avoided, then mitigation methods to promote water movement such as multiple culverts should be implemented. The DUC Forest Management and Wetland Stewardship Initiative provides guidance on this issue.

Maria Strack is a leading researcher on carbon in peat and works in the area of mid-boreal forest. Her work provides some background for the dynamics of peat restoration and the level of risk from resource operations. In this area the primary impact is from peat extraction rather than forestry.

Peat distribution is widespread. Carbon distribution varies with wetland class (Table 11). It provides an obvious and significant ecological service but it is not restricted in area. There were no locations which were more noteworthy than others for carbon sequestration. Risk to peat carbon in this area is primarily from direct extraction. Protection of important peat carbon sinks from forest activities is addressed through appropriate Operating Ground Rules with road building being the main forestry impact. Ducks Unlimited Canada guide (2018) Wetland Best Management Practices for Forest Management Planning and Operations and the FP Innovations (2016) guide provide operational mitigation suggestions.

Table 11. Carbon deposition estimates by ecosystem Ducks Unlimited.

EWC Carbon Project - Detailed Class Total Carbon

Detailed Class	# of Sites	Organic Soil Depth (cm) All data sources	Organic Carbon Density (g/cm^3) Zoltai Data Only	Total Carbon (Tonnes/ha)
Open Water / Mudflats	0			289*
Aquatic Bed	3	73.67		289*
Emergent Marsh	9	41.33		289*
Meadow Marsh	38	122.53		289*
Hardwood Swamp	20	40.70		289*
Mixedwood Swamp	23	56.26		289*
Tamarack Swamp	26	55.12		289*
Shrub Swamp	108	75.56	0.057	429
Conifer Swamp	325	96.76	0.062	599
Open Bog	5	182.60	0.043	789
Treed Poor Fen	323	173.08	0.058	996
Treed Rich Fen	173	157.94	0.063	1001
Shrubby Rich Fen	78	208.03	0.053	1104
Graminoid Poor Fen	16	216.81	0.053	1147
Shrubby Bog	26	233.65	0.051	1199
Graminoid Rich Fen	98	241.06	0.052	1242
Shrubby Poor Fen	40	237.05	0.053	1248
Treed Bog	152	253.49	0.054	1367

HCV Designation Decision:
Wetlands are widespread and drive the ecosystem that they dominate. Forestry applies significant controls to protect all waterways in the forest as outlines in the FMP and other operational documents. Two of the wetland types, marshes and open bogs, are rare and because of that they are regionally significant and were designated as HCVs[12].

14) Are there forests critical to erosion control?

Rationale:
This question seeks to identify forests that contribute to the stability of soil, terrain or snow, including control of erosion, sedimentation, landslides, or avalanches.

Assessment Methodology:

- Review of Mistik FMP for references to sloped areas

Assessment Results:
There are few slopes of a significant size that could possibly endanger communities or that have occurred as a result of human manipulation of forest cover. More importantly, spring runoff can have serious impacts in this area. This is a landscape physiology issue that occurs across a wide area and is not exacerbated significantly by forestry activity. The FMP discusses the broader issue of slope across this ecoregion and provides a more detailed picture than is possible here.

Operations that occur along shorelines and in riparian zones are considered a higher risk for erosion and other negative impacts on water. During the planning stage for harvest operations adjacent to water bodies, the planning team assessed all lakes, rivers and streams for potential impacts related to shoreline activities.

Naturally occurring water erosion in the Mistik FMA (FMP Vol I, P 43) area is extremely low, being relegated to a few major river valleys and steeply sloping escarpments where bedrock is exposed and vegetative cover is poor. As a result, erosion control is focused on a relatively small area. For example, along the Mostoos Escarpment (FMP I P 47 Waterhen MU 4) where the landscape is characterized by a series of large deep-set, well defined valleys which are up to 1000 m across and nearly 100 m deep. These valleys typically contain relatively small creeks or streams called ‘misfit’ streams indicating that most were former glacial meltwater channels. The surficial deposits are largely till. The lower parts of the valley walls are often eroded and there are many coarse textured materials there, which are significantly less productive compared to the Loon River soils. Water erosion would be a serious concern in the valleys if the vegetation and productive organic surface layer were removed. In practice, Mistik is very cautious operating in these areas. There are no large-scale erosion events in the FMA and erosion sensitive areas were not designated as an HCV.

HCV Designation Decision:
There is no evidence of high-risk areas for compromised soil stability, sedimentation or erosion through forest operations on the forest; no HCVs[13] were designated.

[12] This designation was reviewed in May 2020.

[13] This designation was reviewed in May 2020, including a review of the web info and other sources.

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

Rationale: Are there forest areas where there is a high risk of uncontrolled, destructive fire and in which forest areas or forest types can act as a barrier to the spread of fires?

Do these forest* areas contain or are they adjacent to human settlements or communities that would be at risk from uncontrolled, destructive forest fire?

Managers should accept HCV designations for forests adjacent to communities and manage using the precautionary principle in consideration of the safety of the inhabitants. How this is defined should be determined locally.

Assessment Methodology:

In the past, this element is not considered an HCV in Canada. Recent fires in the boreal forest have affected communities significantly, including in the FMA. This has given rise to FireSmart plans near communities which involve making forests more fire resistant – making forest "fire resistant" is consistent with this element. In most areas, fire management strategies near communities will be considered as a priority should local municipalities decide they are needed.

Assessment Results:

Since the recent fire disasters in communities in western Canada (2015) there has been a heightened interest in FireSmart Communities. In northern Saskatchewan and Alberta communities are very interested in this program. During the crisis, Mistik actively accelerated harvest in high risk forest types (jack pine) around Beauval, at the request of the community. Saskatchewan is not looking into a more formal program at this time.

Other communities have established Forest Protection Areas surrounded by an approximate 10km area where full debris disposal is required. This program and the possible areas around communities are designated possible HCV.

HCV Designation

As FireSmart Community Zones[14] are not yet designated, this program is designated a possible HCV.

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

Rationale:

Mediating wind and microclimate at the scale of ecoregions affecting agriculture or fisheries production. Riparian forests play a critical role in maintaining fisheries by providing bank stability, sediment control, nutrient inputs and microhabitats. More local effects of forest areas (e.g. adjacency of forests to agriculture and fisheries production) may be more relevant in the HCV component regarding meeting basic needs of local communities.

Assessment Methodology:

- Mistik FMP section 6 – Other land use values in the Mistik FMP area
- Municipal socio-economic profiles

[14] This designation was reviewed in June 2020.

This element is looking at the ecological service that is provided by a forest ecosystem. Forests can significantly influence fisheries and agricultural production in some areas. Mismanaged forests can have a detrimental effect on farms and fisheries through stabilizing soils, controlling sedimentation etc. This tends not to be a large impact in Canada, where farms and forests tend not to be in close proximity.

Assessment Results:

Fisheries – Commercial and Outfitting

There are 452 lakes greater than five ha in size and numerous significant waterways (rivers and creeks) within the Mistik FMP area. Many of these lakes and waterways contain fish species that are of commercial or sport fishery significance. Of the 68 species of fish known to exist within Saskatchewan, 31 have been identified within the Mistik FMP area.

Of these 31 species, 11 are sought after as sport fish (angling), 9 are utilized commercially (netted) and 9 form part of the traditional use (Indigenous subsistence) fishery. None of the fish species within the FMP area are considered endangered. The greatest variety of fish species occurs in the Ile a la Crosse and Waterhen Management Units. Each of these management units supports more than 20 different species of fish. There is a significant and growing demand for sport fishing in the area. The most popular sport fish are northern pike, walleye, perch, burbot and various trout species. Fishing is popular throughout the year.

Table 12. Commercial harvest Lakes in Mistik FMA

Lake	Mean harvest (1984-2014)	Cumulative harvest (1984-2014)
Dore	147674	4577906
Ile a la Cross	144687	4485301
Peter Pond	113006	3504845
Keeley	41224	1278007
Canoe	38400	1190396
Lac La Plonge	22933	710935
Dillon	14085	436641
Vermette	3811	118150

Whitefish, walleye, pike and mullet (sucker) are the primary fish species commercially fished from the lakes within the Mistik FMP area. Approximately 50% of Saskatchewan's commercial fish harvest is derived from waterbodies within or adjacent to the Mistik FMP area. For the period 1984 to 2014, Dore Lake (on the east boundary of the FMP area) supported the most productive commercial fishery.

Sport fishing is also significant on the Mistik FMA. Multiplying the number of angler-days in the survey areas in which the Mistik FMA area is located by the average daily expenditure gives a total expenditure on sport fishing within the Mistik FMA area and adjacent areas of $35 million in 2000, according to angler surveys conducted across the province. Sport fishing is a considerable economic benefit.

Fisheries have clearly demonstrated sensitivity to forest harvesting *(i.e.* higher temperatures, increased sedimentation, increased flow rates, lower dissolved oxygen levels, reduced cover for juveniles, decreases in food sources for invertebrates, destruction of spawning habitat, etc.). Mistik maintains fish habitat attributes through riparian reserves and by applying guidelines for minimizing sedimentation from roadways and crossing structures. Fisheries are clearly important and widespread. No areas were designated as HCV based on fisheries values.

Agriculture and Non-Timber Forest Products

Agriculture does not comprise a significant part of the regional economy or land base within and around the FMA. There is little commercial or subsistence activity based on biological production due to the cold climate and limiting soils in the area. Private lands outside of the FMA are agricultural but do not come into conflict with forestry operations.

The bulk of important agricultural regions in Saskatchewan are located in the southern half of the province. A 2006 Census Agricultural Regions map shows the main agricultural production areas ending just north of Prince Albert, or south of the Mistik FMA.

The Mistik FMA area is adjacent to several agricultural communities including Pierceland, Dorintosh, and Meadow Lake, among others. A portion of the Mistik FMA area is also allocated to individuals that are granted grazing permits by Saskatchewan. Less than 1% of the FMA area itself is classified as agricultural. Agricultural lands are quite distinct from the forestry areas, and for the most part are private and not part of the license. Farms are economically independent of the rest of the economy, so forestry connection is minor. Agricultural activities therefore not classified HCV at this time.

Non-Timber harvest for commercial purposes is not significant in the FMA with the exception of wild rice harvesting. There are significant commercial wild rice harvesting areas dispersed across the central and northern portions of the FMA. Access and availability of lakes is opened to the public and is extensive in many areas with developed road systems. Due to the extent of the activity it was not designated as HCV. Note that personal use is described in the cultural element, 18.

Berry Picking

Currently there are no commercial sales of berries occurring, although personal use is still important. That is discussed as a cultural value in Element 18. It was not designated as a commercial HCV under this element. Note that personal use is described in the cultural element, 18.

HCV Designation Decision:

There were no HCV designations as commercial values under this element[15].

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

17) Are there local communities? (This should include both people living inside the forest area and those living adjacent to it as well as any group which regularly visits the forest).

Rationale:

This attribute looks at level of dependence of local communities on the forest to meet their basic needs and livelihoods. The framework asks:

- Is anyone within the community **making use of the forest**? (Look at members or subgroups rather than treating the community as homogenous)
- Is the use for their basic needs/ **livelihoods**? (Consider food, medicine, fodder, fuel, building and craft materials, water, and **income**)
- If it is not possible to say that it is NOT fundamentally important, then assume that it is.

Assessment Methodology:

[15] This designation was reviewed in May 2020 including a review of the web info and other sources.

Note this element deals primarily with livelihoods; including subsistence activities. In response to this direction, the following element includes a report on the significant industrial activities including forestry.

- Mistik 2019 FMP, Volume III Implementation Strategies
- Discussions and correspondence with non-Indigenous communities and stakeholders during forest management planning engagement process; also with Mistik PAG
- Review of First Nation Profiles and Métis Settlement at Crown - Indigenous Relations and Northern Affairs Canada
- Review Municipal Statistics Canada information
- Discussions and correspondence with Indigenous Communities during forest management planning consultation sessions Mistik Public Engagement Plan

Assessment Results:

This attribute looks at level of dependence of local communities on the forest to meet their basic needs. This includes a brief review of livelihoods in the area, which includes a wide range of sources of income including tourism, forestry, aggregates etc. In review, the concept of Cultural Keystone Places was brought forward (Cuerrier 2015) as a possible mechanism to describe some of the important sites in the forest. Bringing communities together with local experts is always desirable and the Company will seek to improve this activity.

Mistik's Community Approach

Mistik conducts its operations in a unique social and economic environment[16]. The list of communities in the forest is in Table 13 (Indigenous communities) and Table 14 (municipalities). There is very high value placed on local distribution of employment by communities associated with the Mistik FMA area. Individuals from local communities are prepared to work for a very small 'piece of the pie'. Mistik has chosen to work within this context, to the extent possible, given the economic reality of staying competitive in the forest industry. Mistik utilizes more contractors in conducting its forestry activities than its average forest industry peer. The lower ratio of work volume to contractor demonstrates Mistik's unique commitment to maximizing contract employment opportunities for communities in the Mistik FMA area. Due to strong public preference, Mistik has managed the FMA area as twelve (12) separate 'community forests' (these mirror the fur conservation area boundaries from the mid-1940s that have since turned into multi-resource use management zones). Employment opportunities have been created within the context of these community forest areas.

Distribution of forestry-related socio-economic benefits has occurred through a variety of means. Most economic benefits have flowed back to local communities through employment or contract-related activities. A unique approach that Mistik's shareholders have taken to contribute economic benefits back to local communities is to pay to co-management boards a per cubic meter fee for timber harvested within each community forest (forest management unit) associated with each local co-management board. These funds are 'unfettered' in that they can be used for whatever purpose the co-management board deems worthy. There are currently seven co-management boards that may benefit from co-management payments. Mistik provides financial assistance to two advisory boards in order to facilitate administration and basic functions of the advisory groups.

Table 13. Indigenous communities affected by the FMA.

Indigenous Community For more information follow LINK in blue	Description
Buffalo Narrows	Métis

[16] FROM Mistik FMP 16.7 Public Participation

Cole Bay Green Lake Ile A La Crosse Jans Bay La Loche Michel Village St.George's Hill Dore Lake Sled Lake	community
Buffalo River Dene Nation Canoe Lake Cree First Nation Waterhen Lake First Nation	First Nation Communities within the boundaries of the FMA
Big Island Lake Cree Nation Birch Narrows Dene Nation Clearwater River Dene Nation Cold Lake First Nation English River First Nation Flying Dust First Nation Makwa Sahgaiehcan First Nation Ministikwan Lake First Nation Onion Lake First Nation Pelican Lake First Nation Saulteaux First Nation Moosomin First Nation Witchekan Lake First Nation Thunderchild First Nation	First Nation Communities are outside the FMA but with traditional lands within its boundaries.

*Engagement is conducted in a manner directed by the community. Annual consultation takes place with First Nations and Métis Settlements affected by forest operations.

Table 14. Municipalities* in the area of the FMA.

Municipality
Dorintosh
Glaslyn
Goodsoil
Loon Lake
Makwa
Pierceland
Rapidview
Spiritwood
St. Walburg
Turtleford
RM #499 Mervin
RM #561 Loon Lake
RM # 588 Meadow Lake
RM #622 Beaver River

Conservation of values through engagement with communities is the hallmark of Mistik Management approach (see also Table 2). The FMP does not contain specific buffer sizes, or other technical practices

because the required measure is developed with the community. For Mistik, the protection measure is the engagement with the local community, as described below. This results in different measures for each locale, and each season and each community. Protection measures are mapped based on the outcome of engagement.

The Mistik FMP Vol III contains the following list of implementation measures to ensure minimal effect on Non-timber forest products including:

- outfitting/trapping (fur)
- cabins
- wild rice
- traditional use areas/spiritual
- tourism/recreation
- fishing/hunting
- berries/mushrooms
- aesthetic qualities

The following are specific measures to be implemented by Mistik to minimize impact to and maintain potentially high conservation and non-timber values

1. Evidence of the production and the opportunity for gathering of non-timber forest products (e.g., fur, mushrooms, berries, meat, wild rice, etc.) within the FMA area is maintained
2. Ensure opportunity for involvement in PAG and local advisory group processes and public participation and involvement in ongoing forestry planning and implementation
3. Update, on an annual basis, relevant data archives (outfitting, trapping, wild rice, cabins, special places, range, etc.) with the most recent data from Saskatchewan Ministry of Environment or other relevant sources
4. Prior to each operating season, issue a letter to all known stakeholders that may be affected by the operating plan
5. Follow up with a phone call to each individual stakeholder
6. Undertake one-on-one consultations- office and/or field visits with individual stakeholder as needed
7. Arrive at a workable outcome for the stakeholder and Mistik
8. Ensure that non-timber values/activities are integrated and accommodated as fully as possible into operational plans and implementation of forest harvesting
9. In the case that a mutually agreeable solution cannot be reached, refer the matter of Saskatchewan Ministry of Environment

See also Appendix 5. Specific Measures to be Implemented by Mistik to Minimize Impact to and Maintain Potentially High Conservation and Non-Timber Values.

Subsistence/Health

Access to Crown lands for recreational and non-commercial consumptive use is generally unrestricted, but fishing and hunting require licenses to ensure the sustainable use of local resources. Special prescriptions from the FMP are used during the management planning process to protect values that are identified in engagement with local communities.

Large Industrial Activities

The energy sector provides jobs in the vicinity of the FMA, but it is not as dominant as it is in Alberta just west of the FMA. There were 38 active gas wells within the Mistik FMP area at the end of plan preparation. This is down significantly from 1995 when there were 109 active gas wells within the area. The removal of

the Bronson Management Unit in 2002 from the Mistik FMA area reduced the number of wells falling within the licence area.

The forest products sector is another large industrial influence. In practical terms the FMP is the management and monitoring for the forest – it provides many livelihoods and this makes the forest industry functionally an HCV. Note that Mistik has an explicit Indigenous employment indicator and target as part of their VOIT. Recent years include 2015 at 484 years of employment and 375 years in 2016. These are a significant contribution to community stability. Similarly, Saskatchewan has strong policy framework supporting the energy sector. Economic benefits from these sectors provide significant "value" to communities. For simplicity, energy and forest products are not specifically designated HCV.

Aggregates

There are many aggregate pits which contribute to local economic activity, and are instrumental in road maintenance on the FMA. Often this sector is of benefit to smaller and Indigenous communities. As a support for the larger resource sector, it is not considered HCV for the same reason as discussed above. Impact from forest would be negligible.

Hunting / Fishing / Outfitting and Tourism[17]

There are businesses in or near the FMA that provide outdoor experiences from light recreation to full outfitting services both for hunting and fishing. Subsistence hunting and fishing is important for food, social and ceremonial purposes particularly in the Indigenous communities. Hunting is both an important source of food and an important cultural and social activity for Indigenous people within the Mistik FMA. Conservation and protection of these activities is a frequent point of discussion between Mistik and local residents. It is widespread across the FMA and locally significant. It is not a regionally or nationally noted and was not designated HCV.

Trapping

There are 17 Fur Conservation Areas (traplines) that overlap the FMA. Some of these trap lines are used recreationally, while others are used to provide a livelihood. In 2013, ~ 6,510 pelts were harvested from these FCAs worth a total cash value of ~ $305,524. Trapping is still a major cultural and commercial activity within the Mistik FMP area. Statistics show that between 2009 and 2012 the estimated number of trappers in communities were approximately 90 individuals.

As with hunting and fishing, this activity is widespread across the FMA and locally important. Mistik has assigned responsibility to the planning managers and planning supervisors for each area. This is a normal business activity. It is not a regionally or nationally noted and was not designated HCV.

Non-timber Forest Values[18]

Berry picking at a commercial level does not occur.

Peat has traditionally been used as an energy source and in horticultural applications as a soil amendment and is a significant industry elsewhere in Canada. There is no commercial extraction of peat from the Mistik FMA area.

There are no plants which form the basis of a commercial enterprise on the forest. There are of course plants which are considered a culturally important value in element 18 – through contacts with individual communities.

[17] Source FMP Reviewed January 2020.
[18] Reviewed June 2020.

Recreation

Recreational activities range from canoeing, hiking, skiing, ATVing, to snowmobiling. Hunting and fishing are also popular recreational activities on the forest. The recreational activity and tourism contribute to the economies and livelihoods of several communities. The benefits are widespread in the FMA and there is no central focus, and were not called HCVs. Element 18, culture, does reflect the importance of this activity.

Trails[19]

There are recreational trail networks used by the public and Mistik reaches out to the known groups that use these trails to request input. The trail networks are widespread. They are part of the infrastructure of the area. Interaction between trails and forestry is cooperative and low conflict. Because the trail network is spread across the landscape, rather than in a specific location, the trail system was not designated HCV.

Fuelwood

Local residents have an interest in fuelwood for heating. Fuelwood supply as a subsistence activity could be important depending on the level of dependence. One company, Turtle lake Wood Products does supply fire wood, but it is a small part of the business. Fire wood is a small amount of the products for the large companies. Mistik does provide access to firewood logs in harvest blocks and slash piles as well as firewood at the mill site. This was not considered an HCV in this element.

Important Economic and Cultural Waterbodies in the FMA

Waterbodies in the area that are important to local and Indigenous communities for food, social and cultural reasons are listed in Table 14. These waterbodies are listed because they have both economic (livelihoods) and cultural importance. A number of these have special arrangements for forestry management near them. They are also referenced in Element 18 Culture, because of the frequent and historical use. They have been designated under Element 19 (Overlapping values) because of the crossover values to many forest users.

Wild Rice Harvesting

Wild rice (*Zizania palustris*) is a non-native plant that has been introduced into a number of the lakes and waterways of the Mistik FMA. Wild rice production from Saskatchewan and the Mistik FMA region is a significant proportion of Canadian production. Wild rice production has recently become an important source of income for FMA residents. In 2000, the western wild rice producing region of Saskatchewan that corresponds closely with the Mistik FMA area, accounted for 37% of Canada's wild rice production and 55% of Saskatchewan's production. It has increased since then but more recent statistics are not available. Wild rice producing areas are considered HCV in element 19.

HCV Designation Decision:

This element focuses on the commercial, including subsistence, activities that support livelihoods. Access to Crown land for the purposes of recreational and non-commercial consumptive use is generally unrestricted in this area. There is a significant contribution from businesses such as tourism, recreation, trapping and other enterprises. Protection of these businesses occurs to the extent possible under current land use policies. It is addressed by the forest manager through the FMP process for the protection of non-timber values. Normal planning also incorporates consideration for other forest users including, for example, trappers. Fuel wood represents a basic need for local residents and is addressed through company cooperation with communities. Food and medicine represent critical cultural resources to local Indigenous communities and are further discussed and designated in element 18 (Culture). Livelihoods are a fundamental concern of commercial activities and are addressed during most of the planning exercise and a focus of forest planning. There were no HCVs designated in this element because forest use is widespread and the FMP provides guidance on minimizing risk to other users.

[19] Reviewed June 2020

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

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

Rationale:

In the context of this standard, 'local' is defined in the National Forest Stewardship Standard of Canada. Local communities as defined within the standard are "communities that are in or adjacent to the Management Unit*, and also those that are close enough to have a significant impact on the economy or the environmental values* of the Management Unit* or to have their economies, collective rights* or environments values significantly affected by the forest management activities* on the Management Unit*. (asterisk terms are defined in the standard). In Canada, communities to be considered are the ones officially identified as a municipality by the Canada Revenue Agency which list them and shows their qualified donee status under the Income Tax Act. The respective provincial lists may be also used.

In the context of the HCV assessment Element 18 will also include Indigenous communities with traditional territories that overlap the FMA area but are not necessarily recognized as municipalities by the Canada Revenue Agency.

Assessment Methodology:

- Indigenous community publicly sourced information
- FMP; GDP
- Discussions and correspondence with First Nations, Métis Settlements and Métis Regions during forest management planning consultation and engagement sessions. Confidential information excluded.
- Archeological Sites
- Canadian Heritage River Program

Assessment Results:

The answer to the Framework question "Do the communities consider the forests to be culturally significant?" Yes. This section is probably the most sensitive subject material assessed as HCVs. Even livelihoods (the last element) tend to attract less notice than the protection of individual and community cultural values. These values include Indigenous and non–Indigenous values. It also includes public values that are widely known and appreciated as a contribution to the culture of this area.

Indigenous land use sites include harvesting areas (non-timber), cabins and overnight camping sites, trapping, hunting or fishing camps, sacred sites, ceremonial sites and gathering areas. There are many other examples. Virtually all aspects of local Indigenous life and culture were (and to a great extent still are) intertwined with the land. The materials needed to practice a traditional lifestyle come from the forest. For instance, animals relied upon for food, as well as, plants needed for food and medicine originate from the forest. Some of the forest uses have changed over the years but the forests remain as critical as ever for Indigenous communities.

For the values that are confidential to people, Mistik has a process that respects the confidentiality and safeguards the value. The details of the agreements between the communities and the company are not discussed in this report; only the process is discussed. Further information can be obtained by contacting Mistik directly. In this element of the HCV assessment is described:

- Government Regulatory Engagement Requirements Conducted by Mistik
- Community Relationship Building
- Mistik's Public Advisory Group
- Mistik's Approach to Cultural Values Protection
- Protection of Cultural Heritage Values – Archeological Values
- Heritage Rivers in the FMA

Government Regulatory Engagement Requirements Conducted by Mistik

The Government of Saskatchewan directs resource companies across the province about which Indigenous communities (First Nations and Métis Settlements) require engagement depending on the location of the activity.

Mistik has eight (8) existing co-management / advisory boards that provide ongoing input into operational plans. Mistik also has significant communication with a range of other stakeholder groups (Table 2; outfitters, trappers, traditional use, grazing permittees, wild rice growers, cabin owners, etc.) in, and immediately surrounding, the Mistik FMA. In October 2004, as part of its CAN/CSA Z809 Sustainable Forest Management (SFM) public participation process, Mistik facilitated the formation of a single Public Advisory Group with representation solicited from all the major stakeholder groups associated with, or who have an interest in, the Mistik FMA.

For the current plan, Mistik's public engagement process related specifically to the 2017 20-Year FMP will consist of ~ 30 meetings / open houses to be held between March 2015 and September 2016. All comments and proceedings were documented, especially related to values conservation.

Community Relationship Building

In Mistik's public engagement plan is stated the intent to maintain the PAG and the various co-management / advisory groups on an ongoing basis during the implementation of the 2017 20-Year FMP.

> "Operational implementation of the 2017 20-Year FMP will include ongoing periodic meetings, information sessions and field tours with all public consultation groups. Amendments to the 2017 20-Year FMP will involve notifying and discussing the rationale for amendments with the various advisory groups in collaboration with GoS staff. Regular performance monitoring of forest management performance will be undertaken by Mistik and the results reported to the public through annual reports prepared by Mistik. The PAG shall serve as an 'accountability' group ensuring that planned performance monitoring is being conducted and reported. The PAG expects that action plans arising from Mistik-related non-conformances are being implemented. Periodic internal and 3rd party audits will be undertaken to assess performance. Members of the PAG will be invited to participate as observers during key audits of forest management performance."

Mistik's Public Advisory Group

The role of the PAG shall be to assist in addressing the requirements and ongoing maintenance of various sustainable forest management planning initiatives for the Mistik FMA according to specified timelines. A key aspect of this is ensuring cultural values are safeguarded. The purpose of the PAG is to represent the diverse interests of the public with respect to forestry activities. Mistik will not limit the number of interested parties participating in the PAG. The development and role of PAG is described in detail in the FMP Engagement Plan.

Mistik's PAG and the various co-management / advisory groups role in implementation:

- Regular meetings information sessions and field tours during the implementation of the 2017 20-Year FMP.
- Review amendments to the 2017 20-Year FMP and oversee notifying and discussing the rationale
- Review regular performance monitoring of forest management performance as undertaken by Mistik
- Receive results reported to the public through annual reports prepared by Mistik
- PAG serves as an 'accountability' group ensuring that planned performance monitoring is being conducted and reported
- Public Advisory Group receives action plans arising from Mistik-related non-conformances from periodic internal and 3rd party audits
- Members of the Public Advisory Group will be invited to participate as observers during key audits of forest management performance.

Each community has a different capacity for engaging with Mistik and engagement occurs in a manner as directed by the community. Some Indigenous communities have an internal system for values mapping and monitoring of the community's values. Other communities utilize Mistik to track their values. This provides a seamless sharing of values, and requires a high level of trust. For all communities, Mistik will provide areas planned for harvest for the community to review through the Operating Plan (5-year plan).

A list of Indigenous communities with known traditional territory in the FMA is in Table 12.

Forest Harvest Plans and Archeological Assessments

The document or plan that links the higher-level plans to what happens on the ground is the Operating Plan. All planned operational activities are screened by Heritage Conservation Branch of the Ministry of Parks, Culture and Sport. Activities are rated by the branch for heritage potential and indication is given as to the requirement to complete a Heritage Resource Impact Assessment (HRIA). The reviews include field investigations to identify heritage resource sites so they can be avoided. In addition, field crews are trained to assess, document and report on all cultural features they may happen upon while traversing in the field. Through this process, archeological sites which are discovered and registered are regarded as HCVs. Further listing of constraints on archaeological sites are in**Error! Reference source not found.**

Protection of Cultural Heritage Values – Archeological Values

As discussed above, archaeologists conduct field investigations to identify heritage resource sites so they can remain undisturbed. Archeological sites which are discovered and registered are regarded as HCVs.

The Mistik FMA has been inhabited by humans for approximately 8,000 years. The first settlers are suspected to have arrived in the area via either an ice bridge across the Bering Strait or over a land bridge that was revealed due to low sea levels during the last ice age. Subsequent population growth and settlement within the FMA occurred during the fur trade (ca. 1780s) and most recently, in the last century, with agricultural and forest fringe settlement associated with European immigrants. The significant number of sites of archaeological, heritage and cultural significance within the FMP area is indicative of the long history of human presence and settlement in the area. A number of these sites (wagon trails, portage routes, cabin sites, etc.) are of continued significance to local communities.

Several ongoing Indigenous land claims underscore the importance of the forested landscape in northwest Saskatchewan to Indigenous peoples. Traditional and cultural use within the FMA is well-recognized and well-documented in Mistik's 20-Year FMP and spatially identified in its geographic information system (GIS). On these maps are the actual (approximate) locations of archaeological values for the community. This is a very high level of openness for the communities to share this information.

The significant number of sites of archaeological, heritage and cultural significance within the FMA (Table 15 and FMP Table 21.1) is indicative of the long history of human presence and settlement in the area. A number of these sites (wagon trails, portage routes, cabin sites, etc.) are of continued significance to local communities.

Mistik's Approach to Cultural Values Protection

The entire Mistik FMA area, and adjacent area, has had continuous cultural and traditional use for millennia. Several ongoing Aboriginal land claims underscore the importance of the forested landscape in northwest Saskatchewan to Indigenous peoples. Traditional and cultural use within the FMA is well-recognized and well-documented in and spatially identified in its geographic information system (GIS).

The significant number of sites of archaeological, heritage and cultural significance within the FMA (Table 15 and FMP Table 21.1) is indicative of the long history of human presence and settlement in the area. A number of these sites (wagon trails, portage routes, cabin sites, etc.) are of continued significance to local communities.

Table 15. Important cultural and historic sites within the Mistik FMA area.
Source Saskatchewan Culture, Youth and Recreation – Heritage Resources Branch.

Site Type	Period	Culture	Culture 2	Culture 3	Total Sites
Artefact find	Pre-contact				134
Artefact find	Historic European	Euro-Canadian			2
Artefact find	Historic First Nation	Indian			1
Artefact find	Pre-contact	McKeen			1
Artefact Scatter	Pre-contact				103
Artefact Scatter	Pre-contact	Clearwater L	Late Taltheilei	Middle Taltheilei	1
Artefact Scatter	Pre-contact	Early Taltheilei	Late Paleo-indian		1
Artefact Scatter	Pre-contact	Pelican L			1
Artefact Scatter	Pre-contact	Besant			2
Artefact Scatter	Pre-contact	Besant	Pelican L		1
Artefact Scatter	Pre-contact	Clearwater L			3
Artefact Scatter	Historic First Nation	Indian			4
Artefact Scatter	Pre-contact	Mckeen			2
Pre-contact artefacts and features	Pre-contact				31
Historic	Historic	Euro-			8

Artefacts and structures	European	Canadian		
Historic artefacts and structures	Historic First Nation	Indian		3
Historic artefacts and structures	Historic First Nation/ Mètis	Indian	Mètis	1
Historic artefacts and structures	Historic Mètis	Mètis		2
Burial or suspected burial	Historic First Nation	Indian		1
Burial or suspected burial	Pre-contact			3
Burial or suspected burial	Historic Dene	Dene		1
Historic structures	Historic Dene	Dene		1
Historic structures	Historic European	Euro-Canadian		2
Historic structures	Historic First Nation	Indian		4
Historic cabins	Historic Dene	Dene		3
Stone Circle	Pre-contact			1
Fish Cleaning Station	Historic First Nation	Indian	Mètis	1
Traditional cultural location	Historic First Nation	Indian		3

Important Indigenous Viewscapes and Waterways

Several viewscapes near roads and waterways within the FMA area were identified during FMP engagement. Mistik has a commitment to modify logging near a few highways and specific lakes as described in the Operating Plan annually when a harvest block is adjacent to or may affect the visual effects of the area. These areas are deemed Visually Sensitive Areas (VSA) of which a visual quality objective will be set for the impacted area and an assessment will be completed post-harvest impact.

Waterways have a great cultural significance to the communities in and near the FMA and often are regarded as culturally significant. By way of example, we provide the following. The Buffalo Narrows Co-management Board, at a regularly scheduled meeting, expressed concerns to Mistik about development (e.g. forestry activity, traditional resource use cabin leases, commercial activity, etc.). They were

concerned that this may affect the fisheries and large ungulate habitat in the Niska Channel, Niska Lake and McCusker River areas. Mistik went to the Buffalo Narrows Co-management Board with a counter proposal that Mistik was comfortable with and which could serve to address many of the board's concerns. Mistik proposed a 200-meter buffer, versus the provincial standard of 90 meters, on Niska Channel, Niska Lake and the McCusker River. The buffer would serve to provide additional protection to the fishery resource in these areas, provide visual aesthetics and alleviate some of the board's concerns re: ungulate habitat in the area. Mistik also committed to increased interaction with the board when any harvest activity is planned adjacent to the 200-meter buffer. In May 2008, the Buffalo Narrows Co-management Board had a helicopter tour of planned harvesting and road development activities on the east side of Niska Lake. The Buffalo Narrows Co-management Board found Mistik's proposal to be acceptable.

Other areas in the FMA achieve the same level of regard by communities. In this assessment, the value is described as "Areas Adjacent to Surface Waters", which is vague but allows the manager to treat special locations near waterways as significant and requiring a precautionary approach. This value is designated HCV under element 19, due to the broad concept and locally important nature.

Heritage Rivers in the FMA

The Clearwater River runs north of the FMA and was designated by the Canadian Heritage Rivers System as a heritage river. The Saskatchewan section was designated in 1987, while the Alberta section, which includes the 31-km lower section of the Christina River, was designated in 2003. The total length of the designation is 326 km. The river was not designated HCV because it is north of the forest.

There are no other heritage rivers, although water bodies play an important role in the landscape and are designated in Element 19 because they contribute to overlapping values.

HCV Designation Decision:

Due to their high cultural and historical significance to communities, and their natural heritage values the following are designated HCV:

- Known Indigenous values (as documented in meetings; confidential –not on public maps)
- Archeological sites (only sites that have been professionally verified to hold cultural artifacts, either Indigenous or non-Indigenous are HCVs)
- Lakes important to Indigenous communities are designated in Element 19 – areas adjacent to surface water [20]

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

Rationale:

The managers and report authors reviewed the list of values assessed through each of the elements of the framework and looked for areas of overlap. Cultural features overlying good resource areas can lead to overlap warranting HCV designation. Typically, these follow large natural features such as significant lakes and waterways. In this forest areas near water were judged to be important and widespread. There has already been a significant effort at regulating use and recognizing conservation values. This is largely represented in the first 18 Elements of this report.

Assessment Results:

[20] This designation was reviewed in May 2020.

A continuing theme through the assessment was the importance of large water bodies. The following explanation describes the HCV designation rationale for these values.

Areas Adjacent to Surface Waters

During the assessment of HCVs throughout this document, and during the extensive previous engagement, there was a clear theme which arose in most of the elements. The critical importance of water. Perhaps this is not surprising given the importance of water for human use: historical, cultural, and for flora and fauna. Even the biophysical geography is shaped by water drainage, and it plays an important role in shaping the landscape. Saskatchewan is a dry part of Canada and that no doubt increases the human value of the resource. This is particularly important near communities in the FMA.

The managers have phrased the name of the HCV carefully as “Areas Adjacent to Surface Waters”. This very broad description shows that the very wide scope of this HCV from small wet areas to large waterways. This reflects the importance that the communities have placed on water. Water is fundamental to the economic and cultural well-being of these communities.

The nature of these values is self-evident. Individually the values of water are identified throughout the elements of the framework have merit, and these are described or referenced in the individual elements. Collectively, it is apparent that forest managers need to be diligent around water. The following is a basic list with hyperlinks to other elements:

Element 12 (p 50) Drinking water quality and quantity are a significant concern because of the location of the FMU in a part of the continent that is subject severe drought at times.

Element 13 (p 51) In general, wetlands on the forest provide ecosystem service functions such as: ground water recharge and discharge; flood damage reduction; shoreline stabilization; sediment trapping; and nutrient retention and removal.

Element 14 (p 54) While areas of steep terrain may be small and localized, they may still have significant erosion potential. All of slope classes greater than 30% follow along temporal and permanent drainages and need special attention.

Element 16 (p 55) There are over 500 lakes, rivers, and streams within the Mistik FMA, many of which are important to the commercial, subsistence, and recreational fisheries in the area.

Element 17 (p 57) Wild rice production has recently become an important source of income for FMA residents. Eco-tourism, trapping and other commercial values also are centred on water.

Element 18 (p 63) Waterways have a great cultural significance throughout Canada and especially in this FMA area and often are regarded as HCVs.

Mistik addresses surface water issues of one kind or another on a regular basis. Their approach has for practical purposes, always been to regard them as HCVs even before the term was coined.

HCV Designation Decision:

Areas Adjacent to Surface Waters[21], especially those near communities are designated. Management is primarily by buffers as described in **Error! Reference source not found.**

[21] This designation was reviewed in June 2020.

Phase 2: Managing and Monitoring HCVs

The overall goal of managing HCV in keeping with the FSC criterion 9.3 is to safeguard the value. Several points from the standard have guided the Mistik approach to managing HCVs:

- The FMP provides the direction for HCV management; there is no separate list of prescriptions or objectives for HCVs.
- Management strategies are developed and effective to maintain or enhance HCVs – detailed prescriptions are written for the values during the planning process and are shown to be effective.
- "Maintenance or enhancement" – based on the concept of no net loss, managers must aim at ensuring the value is sustained and use a precautionary approach.
- "Precautionary approach" – the precautionary approach sets a high standard for management – it requires the organization to take measures prevent damage even when scientific information is incomplete.

It is worth repeating that the FMP and the Operating Plan requirements drive the approach to HCVs. The planning process contains a significant amount of public engagement information, which has also been verified to meet FSC standards through the certification assessment process.

Table 15 provides an overview of the HCV values that were identified in this report. It also outlines the responsibility Mistik and outside agencies for monitoring and surveys. In that Table, specific contact information is provided for individuals with local or provincial responsibility for monitoring of the effectiveness of the prescription. Effectiveness monitoring is the practical link to the precautionary principle - a hallmark of HCV management in the FSC standard. Mistik is responsible for implementation of the detailed management prescription. These prescriptions must be shown to be effective based on current science.

Monitoring for HCV attributes are also described in this Table. Only monitoring for designated HCV attributes are listed here for which there is a management prescription. The information provided covers only who is responsible and basic information for reviewing the monitoring process. It is beyond the scope of this report to review all of the monitoring procedures. For further information, contact the expert listed in the right column of the Table.

In review, the process for deriving new Management approaches for HCVs for which management does not meet the precautionary principle was raised. The issue of "failed" prescriptions applies to all of the indicators in the Standard. Although HCVs have a particularly high requirement, any inadequate practice must be addressed promptly, as the standard requires. This is basic adaptive management, to which Mistik is committed. The process for addressing each value, each HCV or each management challenge is hard to anticipate (or we would). Therefore, the overall commitment to FSC implies and commits Mistik to immediately addressing inadequate practices of any kind as soon as they are known. In the case of HCVs this is a high standard because of the precautionary principle. Mistik feels they meet the test.

Table 16. Overview of HCV management and monitoring.

HCV	Attribute	Prescription, Management Direction, Guidance from Planning, Training or Communications	Monitoring for Compliance, Effectiveness and Status	Schedule & Experts
Species at Risk (SAR)	SAR managed through NRV Natural Range of Variation approach: Species Bobolink; Canada Warbler; Common Nighthawk; Evening Grosbeak; Olive-sided Flycatcher; Rusty Blackbird; Short-eared Owl; Wolverine	Emulating natural disturbance patterns, called Natural Range of Variation, is the principal approach to forest management and multi-species conservation is based on modelling forest harvesting strategies after natural disturbances, predominantly wildfire (see Andison in References). The boreal forest is a fire-adapted system, and Mistik attempts to mimic the patterns of wildfire to maintain forest types and ages within the natural range of variation for fire frequency, size, intensity and biotic response of historical fires, and use these characteristics guide timber harvest areas and stand structure. There are harvest techniques, including following natural stand boundaries when designing harvest areas, using different shapes and sizes for harvest areas across the FMA, leaving merchantable volume of trees in harvest areas, and using understory protection techniques in mixedwood stands to maintain the spruce understory. Where appropriate for individual species, site-specific management prescriptions have also been developed. Training on identifying species at risk and their habitat is provided for relevant team members and contractors, including layout crews and harvest operators.	Landscape-level monitoring is the principal approach to assess species at risk habitat targets. Mistik has a long history of measuring outcomes through their VOIT system. Monitoring of the NRV management is done through: • updates to FMA area inventory - forest cover is the driver for the habitat availability for all wildlife including SAR. Accurate inventory is necessary for habitat analysis. • ensuring old forest is continuously present on the landscape. All age classes are considered and balanced over long term. The variance target is based on landscape analysis by Andison (literature is in the References) • Government of Saskatchewan approval of direction • Ongoing research on NRV in partnership with Andison Note specific buffer distances exist for nest sites: Canada Warbler, Common Nighthawk, Olive-sided Flycatcher, Rusty Blackbird, Short-eared Owl,	Compliance monitoring: Company compliance staff Certification Coordinator Kevin Gillis Effective-ness: Species at Risk Act (SARA listings) GoS Biologist, Meadow Lake

HCV	Attribute	Prescription, Management Direction, Guidance from Planning, Training or Communications	Monitoring for Compliance, Effectiveness and Status	Schedule & Experts
Species at Risk	SAR managed by special strategies: Bank Swallow; Barn Swallow; Northern Myotis; Little Brown Myotis; Woodland Caribou	Barn Swallows may nest under bridges in the FMA. Management involves inspecting bridges for nests prior to starting any maintenance, and delaying maintenance until after the nesting season unless it is a critical safety issue. Northern & Little Brown Myotis management includes identifying and buffering potential roosting trees (large-diameter snags with loose bark) during layout. Roost sites require a buffer of 100 m for foot traffic; 500m vehicles; 500m road construction. In collaboration with the provincial Woodland Caribou Taskforce, Mistik developed a management strategy for the previous FMP for the protection of prime woodland caribou habitat in the vicinity of known herd locations throughout the Mistik FMP area. This forestry impact mitigation plan will be implemented within the context of the provincial woodland caribou recovery strategy which is currently in draft (Recovery Plan for Woodland Caribou in Saskatchewan, Boreal Plain Ecozone, Draft 2019).	Compliance for specific management strategies are conducted internally through field operational monitoring and verified by the Government of Saskatchewan	Company compliance staff Certification Coordinator Kevin Gillis Effective-ness: GoS Biologist, Meadow Lake
Regionally significant critical habitat for seasonal concentration of species	Important Bird Areas Heronries Pelican nesting colonies	Heronries, as colonial nesters, have a buffer assigned as: From Apr 1 to July 31 • Foot traffic – 500m • Vehicle – 1000m • Road construction -1000m Based on the Saskatchewan activity restrictions This designation is applied through the Forest Operating Plan which provides the compliance and regulatory authority.	Company staff conduct compliance inspections following the approved harvest plan. Effectiveness of buffer size and other restrictions is based on a number of studies. One of the most pertinent, for this type of forest (boreal) and continuous forest cover was by Naylor (2009) on 150 heronries in north and central Ontario. Ontario determined that conventional clearcutting is permitted within 151-300 m of small active colonies (Naylor, B.J. 2009. Forest management and stick-nesting birds: new direction for mitigation in Ontario. Forestry Chronicle 85:235-244).	Company compliance staff Certification Coordinator Kevin Gillis Effective-ness: GoS Biologist, Meadow Lake

HCV	Attribute	Prescription, Management Direction, Guidance from Planning, Training or Communications	Monitoring for Compliance, Effectiveness and Status	Schedule & Experts
Featured Species Caribou	Featured Species: Woodland Caribou	Draft Caribou Range Plan (2019) for details. Management Strategies As part of the range planning process, Saskatchewan has identified several management strategies that will be combined to reduce landscape disturbance. i.) Avoidance ii.) Reclamation and restoration iii.) Mitigation offsets iv.) Forest harvest patterns v.) Access management (Table 8). Each management strategy is supported by existing provincial legislation. Strategies will maintain or improve the amount and connectivity of suitable caribou habitat, over the 50-year time horizon of this range plan. . The five management strategies, their application, and potential considerations, are described in more detail in the Range Plan.	Caribou population monitoring is conducted by Saskatchewan. Currently under review	Compliance monitoring: Mistik Planning Manager Niska Hodgson Caribou population monitoring: Annual estimates from GoS Boreal Landscape Specialist
Protected Area Land-use Designations	Assessment of conservation land use designations adjacent to FMA Conservation Areas	Table 7. Parks, Conservation Reserves and Protected Areas within/near the Mistik FMA.: • Ecological Reserves • Provincial Parks • Wildlife Refuges • Wilderness components of recreational parks • Boundary protection • Compliance with harvest block Layout - no incursion • Link to PAGA project	As normal operating procedure, Mistik's Environmental Management System ensures boundary markings are respected. Approvals for roads are done by the provincial government, with consultation from the public, stakeholder organizations and Indigenous Communities Nations. There have been no requests for special management prescriptions adjacent to protected areas. In the event that a potential impact is identified, Mistik will implement a procedure to safeguard the HCV.	GoS Area Forester, Meadow Lake
Drinking Water	Specific Drinking Water Intake location	• Beauval area (La Plonge) • Specific restrictions as dictated by community	Company implemented restrictions as required by the community and continues to do so. Community can review implementation.	Mistik Community of Beauval
Rare Wetland Types	Marshes Open Bogs	• Riparian buffers outlined in the OGRs • Minimize sedimentation for water quality • Training operators for road installation and maintenance – water quality	Field Compliance of SAR locations by Field Operational monitoring Gov't of SK surveillance provides another level of assurance	Mistik GoS Biologist

HCV	Attribute	Prescription, Management Direction, Guidance from Planning, Training or Communications	Monitoring for Compliance, Effectiveness and Status	Schedule & Experts
Fire Smart Community Zone	Fire susceptible perimeters near Communities	Communities w Fire Smart plan • In cooperation with Communities • Compliance with harvest block Layout - no incursion • Follow operational prescription to minimize risk from wild fire	Follow-up with individual communities for appropriate management implementation	Contact Mistik Kevin Gillis As yet, no communities
Indigenous Values	Self-identified Community values related to the culture and livelihoods within the communities.	HCV management for Indigenous Values is centered around a relationship building process in line with Principle 3 of the National Forest Stewardship Standard for Canada. What this process looks like will be specific to the community or individual to which the value pertains. Activities included in this relationship building process include consultation on Forest Management Plan (FMP) and trapper engagement. Once values are identified, the approach to maintain or enhance that value will be determined through engagement with the community or values holder. Examples of management strategies are avoidance, buffers and maintenance. In addition to formal consultation and trapper engagement, Mistik works with Indigenous communities to build relationships that allow for the further sharing of knowledge and information through data sharing agreements and traditional land use studies.	Management activities described (left) are monitored for implementation and effectiveness. Compliance with Operating Plan is determined through site level inspection. This is normal supervision and post-harvest inspection regardless of HCV status. GoS also does compliance audits to verify the company compliance is working. Additionally, communities and trappers may do additional checks and provide feedback. Evaluating the effectiveness of management activities that protect social values is determined through dialogue with communities and trappers. For this to work, Mistik engages with communities and trappers to maintain open dialogue that provides opportunities for feedback. This can be demonstrated in the number of meetings held with communities and in the number of contacts with trappers.	Annual meetings for plan review or as requested by communities. Company Compliance staff Info Government Compliance staff Info

HCV	Attribute	Prescription, Management Direction, Guidance from Planning, Training or Communications	Monitoring for Compliance, Effectiveness and Status	Schedule & Experts
Archaeological sites	Archaeological sites as defined by Gov't Saskatchewan and communities for legacy values such as burial sites, sacred ceremonial sites.	• All planned operational activities are screened by Heritage Conservation Branch of the Ministry of Parks, Culture and Sport. • Activities are rated by the branch for heritage potential and indication is given as to the requirement to complete a Heritage Resource Impact Assessment (HRIA). • High heritage potential areas are typically located to larger rivers and creeks. Road construction and site preparation activities are most likely to trigger the requirement to do a heritage assessment. • Mistik uses only scarification for site preparation with a low impact disturbance created, this activity does not typically require and HRIA. • For road building, Mistik attempts to design road networks that avoid areas that would require a HRIA and have a high potential for heritage values. See also Appendix 5. Specific Measures to be Implemented by Mistik to Minimize Impact to and Maintain Potentially High Conservation and Non-Timber Values.	Communities are contacted regularly, as described above in Indigenous values management. Field crews are trained to assess, document and report on all features they may happen upon while traversing in the field.	Identification during development of blocks. Mistik Staff Kevin Gillis GoS staff Forest Management Planning Coordinator Community reps as requested
Areas Adjacent to Surface Waters near Communities	Surface Water near communities	Mistik Standard Operating Procedure EMSOP010_RIPARIAN BUFFERS Operating Plan Public Engagement Process (annually) Visual Resource Management Strategy and Standard Operating Procedure	Buffers have required compliance measures that are checked post-harvest by Mistik and GoS. Communities are contacted regularly Community reps as requested. Monitoring and measurement of VSAs on an annual basis to ensure that visual quality objectives are being met.	Mistik Staff Kevin Gillis GoS staff: Area Forester

Table 17. Indicator #, Description from FMP and a partial listing of HCVs related to the indicator

Indicator # & Indicator Description	HCV related (partial listing)	HCV element
1 Age Class Distribution	Species at Risk - NRV driven species	4
2 Area of old and very old forest	SAR (NRV); Caribou	1; 4; 9
3 Size Class of harvests events	SAR (NRV); Caribou	1; 4; 7;10
4 Tree Retention after harvest	SAR (NRV)	1 ;4
5 Softwood component in hardwood stands	SAR (NRV); Caribou	1; 4

6 Relative abundance of Cover Species Groups	SAR (NRV)	1,5
7 Habitat availability for forest-dwelling species	SAR (NRV); Caribou	1;4;5;19
8 Wild or improved seed sources		7;9
9 Post-harvest areas are successfully regenerated	SAR (NRV); Caribou	1; 4
10 Change in the managed forest landbase area		6
11 Net area disturbed by stand replacing natural events (fire)	Intact Forest Landscape	7
12 Retention in natural disturbance events	Core Forest Area	7
13 Yield curve suitability	5) HCV Large Landscape	10
14 Utilization assumption consistency and implementation		17
15 Operational adherence to the Tactical Plan		10,17
16 Actual harvest volume vs. approved harvest volume		17
17 Crossing activities in compliance with all related requirements		12;13;14;16;19
18 Event Duration		4
19 a Utilization of harvest volume schedule (HVS) 19 b Harvest plans designed to lower wildfire risks to communities		15
20 Stakeholder and public engagement (Public Advisory Group)		18;19
21 Spatially identified non-timber resources and forest use activities		2;16; 17;19
22 Harvest operations are proportionally distributed across the FMA		3;4
23 Percent of 'within-FMA area' Aboriginal communities involved planning processes		17;18;19
24 Spatial Identification and protection of culturally significant Heritage and Aboriginal sites		18;19
25 Protection ecological knowledge of Aboriginal communities – optional/not included	Not Applicable	18; 19
26 Community resiliency a) Contributions to Co-Management Boards b) % of total annual vendor/contractor payments to local communities c) % of “within FMA” communities represented in the workforce		17;18
27 Stakeholder engagement		12;17;18;19

References and Literature

Planning Related – Mistik

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Appendices

Appendix 1. Map information for the Mistik HCV report.

When possible, HCVs should be delineated on maps, except those considered sensitive for ecological or cultural reasons. The links on this page are from the FMP itself and provide general information rather than specific HCV boundaries. These links to map files are contained on the Mistik FMP website For further information contact the forest managers directly.

- FEM Map 5.1 Tactical Plan – download version
- FEM Map 5.2 Mistik FMP Area Old Forest – download version
- FC Map 1-1 Mistik FMA Management Units – download version
- FC Map 4-1 Forest Characterization – download version
- FC Map 4-2 Species Group and Age class Distribution Mistik FMA Net Productive Area – download version
- FD Map 1-1 Mistik FMA Area – download version
- FD Map 2-1 Distribution of Volume Sampling Stands – download version
- FD Map 3-1 Spatial Distribution of Sampled Stands Development Types – download version
- FD Map 3-2 Development Types – download version
- Map 1 Mistik FMP Area Planning Units – download version
- Map 2 Planned Harvest Events (10 Year Periods) – Divide – download version
- Map 3 Planned Harvest Events (10 Year Periods) – L&M – download version
- Map 4 Planned Harvest Events (10 Year Periods) – West – download version
- Map 5 Planned Harvest Events (10 Year Periods) – Central – download version
- Map 6 Planned Harvest Events (10 Year Periods) – North – download version
- Map 7 Merchantable Stands by Forest Development Type from the Net Productive Landbase – Divide – download version
- Map 8 Merchantable Stands by Forest Development Type from the Net Productive Landbase – L&M – download version
- Map 9 Merchantable Stands by Forest Development Type from the Net Productive Landbase – West – download version
- Map 10 Merchantable Stands by Forest Development Type from the Net Productive Landbase – Central – download version
- Map 11 Merchantable Stands by Forest Development Type from the Net Productive Landbase – North – download version
- Map 12 Mistik FMP Area Deferred Old Forest – download version
- Map 13 Previously Harvested Areas and Existing All-Season Roads (Class 1, 2, and 3) – Divide – download version
- Map 14 Previously Harvested Areas and Existing All-Season Roads (Class 1, 2, and 3) – L&M – download version
- Map 15 Previously Harvested Areas and Existing All-Season Roads (Class 1, 2, and 3) – West – download version
- Map 16 Previously Harvested Areas and Existing All-Season Roads (Class 1, 2, and 3) – Central – download version
- Map 17 Previously Harvested Areas and Existing All-Season Roads (Class 1, 2, and 3) – North – download version
- Map 18 Backlog NSR Areas – download version
- Map 19 Planned Roads Including Class 1 and 2 Roads by Ten Year Periods – Divide – download version

- Map 20 Planned Roads Including Class 1 and 2 Roads by Ten Year Periods – L&M – download version
- Map 21 Planned Roads Including Class 1 and 2 Roads by Ten Year Periods – West – download version
- Map 22 Planned Roads Including Class 1 and 2 Roads by Ten Year Periods – Central – download version
- Map 23 Planned Roads Including Class 1 and 2 Roads by Ten Year Periods – North – download version
- Map 24 Permanent and Partial Exclusions – download version
- Map 25 Lakes, Streams, and Wetlands – download version
- Map 26 Significant Features – download version
- Map 27 Visually Sensitive Areas – download version
- Map 28 Moose Year 0 – Critical Habitat and Habitat Features – download version
- Map 29 Moose Year 10 – Critical Habitat and Habitat Features – download version
- Map 30 Moose Year 20 – Critical Habitat and Habitat Features – download version
- Map 31 Moose Year 50 – Critical Habitat and Habitat Features – download version
- Map 32 Moose Year 70 – Critical Habitat and Habitat Features – download version
- Map 33 Fisher Year 0 – Critical Habitat and Habitat Features – download version
- Map 34 Fisher Year 10 – Critical Habitat and Habitat Features – download version
- Map 35 Fisher Year 20 – Critical Habitat and Habitat Features – download version
- Map 36 Fisher Year 50 – Critical Habitat and Habitat Features – download version
- Map 37 Fisher Year 70 – Critical Habitat and Habitat Features – download version
- Map 38 Fire Boundaries Less than 10 Years Old – download version
- Map 39 Mistik Caribou Management Areas – download version

Appendix 2. Forest Management Planning System Overview

The Planning Process

The process for management of values on the Mistik FMA, the 2019 to 2039 Forest Management Plan (FMP) Volume II provides a detailed description. This document demonstrates the input of the public and the requirements of the Forest Management Planning (FMP) Standard, Saskatchewan Environment Code (September 5, 2017). Mistik & L&M have identified twenty-seven quantifiable indicators and targets of sustainable forest management that will be monitored and reported on during the term of Mistik's 2019 20-Year Forest Management Plan.

Several of the indicators are based on the 2007 Forest Management Plan VOITs with a few applicable changes that were required to meet the new FMP provincial standard. The following twenty-seven quantitative indicators and targets define sustainable forest management attributes within the Mistik FMP area. Several of the VOITs from the 2007 FMP that are no longer required under the current provincial FMP standard or which had previously been included to meet other standards (i.e. certification requirements), have been removed from this section of the plan. In Mistik's FMP Annual Report document however, additional sections will continue to be included to provide annual updates related to certification and other monitoring requirements. This additional information in the annual report is not being provided for ministry approval or monitoring, but to have all the information related to Mistik's operations available for the public and other interested parties in a single document.

The figure below is from the Saskatchewan Government Forest Management Planning Standard Saskatchewan Environmental Code. It outlines the overall process for development of the FMP.

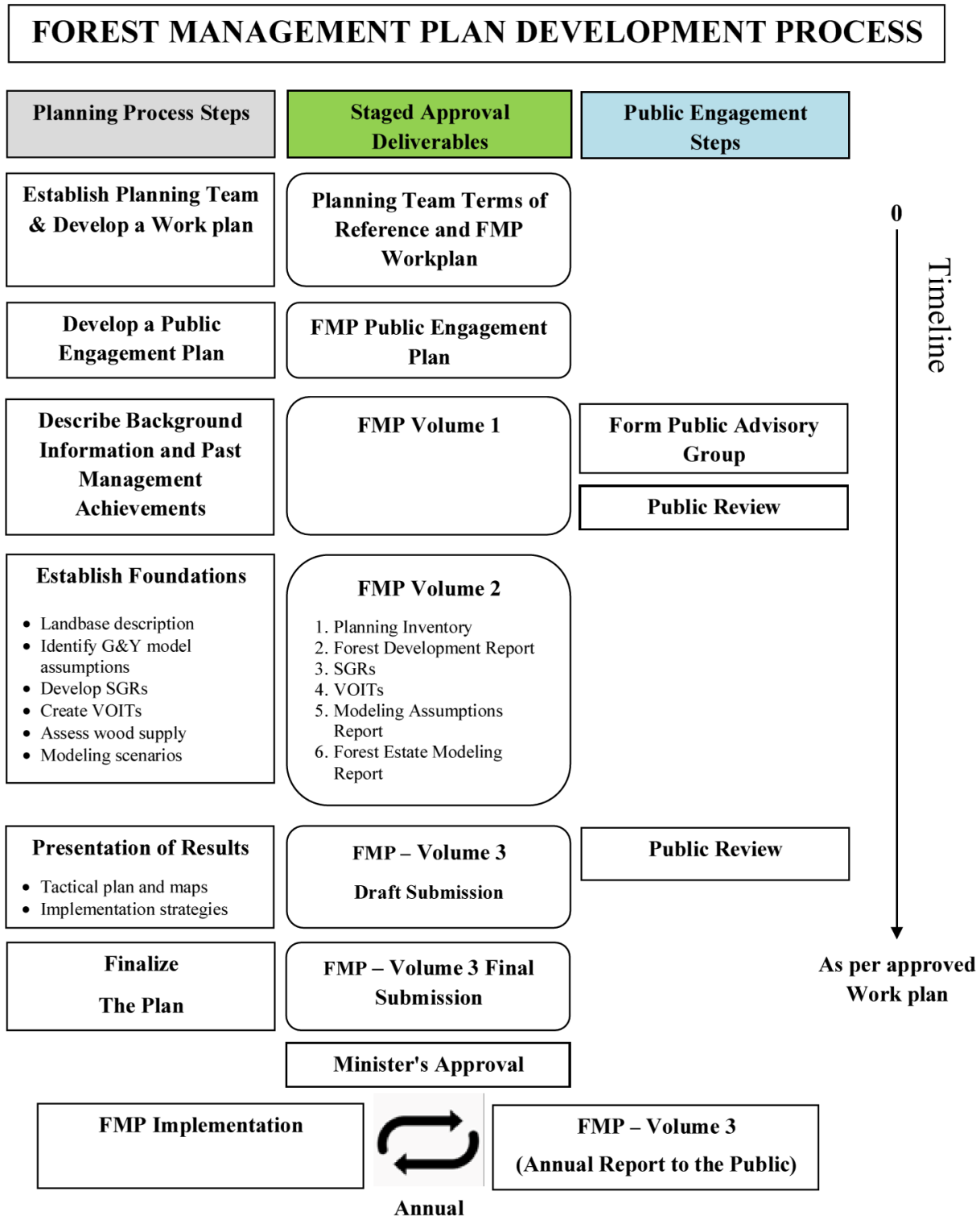


Figure 7. Schematic of the Mistik planning process, from Saskatchewan Planning Standard.

Appendix 3. List of Species Assessed for HCV Status (Saskatchewan Conservation Data Centre).

COSEWIC Common name	Confirmed in FMA	Verification	COSEWIC status	Cree Name *Scientific name*	Date Listed	COSEWIC link
American Badger	COSEWIC	Close to FMA	Special Concern	Mistanâs *Taxidea taxus taxus*	2018-02-02	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_blaireau_am_badger_1113_e.pdf
Baird's Sparrow	Ebird	NOT in FMA	Special Concern	*Ammodramus bairdii*	2017-02-03	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=36
Bank Swallow	Ebird	in FMA	Threatened	Wahskatch micaskosîs *Riparia riparia*	2017-11-02	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_hirondelle_rivage_bank_swallow_1213_e.pdf
Barn Swallow	Ebird	in FMA	Threatened	Micaskosîs *Hirundo rustica*	2017-11-02	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=1147
Bison, Plains	COSEWIC	In FMA	Threatened	Paskwâw moshtosh *Bison bison bison*	Not listed	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Plains%20Bison%20and%20Wood%20Bison_2013_e.pdf
Black-footed Ferret	COSEWIC	NOT in FMA	Extirpated	*Mustela nigripes*	2003-06-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_black_footed_ferret_e.pdf
Black-tailed Prairie Dog	COSEWIC	NOT in FMA	Threatened	*Cynomys ludovicianus*	2003-06-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/mp_blacktailed_prairie_dog_0609_e.pdf
Bobolink	Ebird	in FMA	Threatened	No translation yet *Dolichonyx oryzivorus*	2017-11-02	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Bobolink_0810_e.pdf
Buff-breasted Sandpiper	Ebird	Migrant	Special Concern	*Tryngites subruficollis*	2017-02-03	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_becasseau_roussatre_buffbreasted_sandpiper_1012_e.pdf
Burrowing Owl	Ebird	NOT in FMA	Endangered	*Athene cunicularia*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=20
Canada Warbler	Ebird	in FMA	Threatened	Geesgosees kiskosis *Cardellina canadensis*	2010-02-23	https://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_canada%20warbler_e_proposed.pdf
Cape May Warbler	COSEWIC	In FMA	Not listed	*Setophaga tigrina*		https://wildlife-species.canada.ca/bird-status/oiseau-bird-eng.aspx?sY=2014&sL=e&sM=p1&sB=CMWA
Woodland Caribou	COSEWIC	in FMA	Threatened	Sakâw atihk *Rangifer tarandus*	2003-06-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_caribou_boreal_caribou_0912_e1.pdf
Chestnut-collared Longspur	Ebird	NOT in FMA	Endangered	*Calcarius ornatus*	2012-06-20	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=1064
Chimney Swift	Ebird	NOT in FMA	Threatened	*Chaetura pelagica*	2009-03-05	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_chaetura_pelagica_e.pdf
Common Nighthawk	Ebird	in FMA	Special Concern	Pîshkwa *Chordeiles minor*	2010-02-23	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_common%20nighthawk_e_final.pdf
Eastern Whip-poor-will	Ebird	NOT in FMA	Threatened	*Antrostomus vociferus*	2011-02-04	https://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_eastern_whip_poor_will_e_proposed.pdf
Eastern Wood-pewee	Ebird	NOT in FMA	Special Concern	*Contopus virens*	2017-11-02	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Eastern%20Wood-pewee_2013_e.pdf
Eastern Yellow-bellied Racer	COSEWIC	NOT in FMA	Threatened	*Coluber constrictor flaviventris*	2006-08-15	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=280
Eskimo Curlew	Ebird	NOT in FMA	Endangered	*Numenius borealis*	2003-06-05	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Eskimo%20Curlew_0810_e.pdf

COSEWIC Common name	Confirmed in FMA	Verification	COSEWIC status	Cree Name *Scientific name*	Date Listed	COSEWIC link
Evening Grosbeak	Ebird	in FMA	Special Concern	Otâkosin piponiyis *Coccothraustes vespertinus*	2019-05-22	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Evening%20Grosbeak_2016_e.pdf
Ferruginous Hawk	Ebird	NOT in FMA	Extirpated	*Buteo regalis*	2010-02-23	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=47
Great Plains Toad	COSEWIC	NOT in FMA	Special Concern	*Anaxyrus cognatus*	2005-01-12	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=559
Greater Prairie-Chicken	Ebird	Extirpated in SK	Extirpated	*Tympanuchus cupido*	2003-06-05	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_greater_prairie_chicken_0500_e.pdf
Greater Sage-Grouse urophasianus sub spp.	Ebird	NOT in FMA	Endangered	*Centrocercus urophasianus urophasianus*	2003-06-05	https://www.sararegistry.gc.ca/virtual_sara/files/plans/amended_rs_sage_grouse_e_proposed.pdf
Greater Short-horned Lizard	COSEWIC	NOT in FMA	Special Concern	*Phrynosoma hernandesi*	2009-03-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_greater%20short-horned%20lizard_e_proposed.pdf
Grizzly Bear	COSEWIC	Extirpated in SK	Special Concern	*Ursus arctos*	2018-05-30	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_ours_grizz_bear_1012_e.pdf
Horned Grebe	Ebird	in FMA	Special Concern	Otiskanowo sihkihp *Podiceps auritus*	2017-02-03	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=1045
Lark Bunting	Ebird	NOT in FMA	Threatened	*Calamospiza melanocorys*	2019-05-22	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Lark%20Bunting_2017_e.pdf
Little Brown Myotis	COSEWIC	in FMA	Endangered	L'shakwalâ pahkwâcîs *Myotis lucifugus*	2014-11-26	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=1173
Loggerhead Shrike Prairie subspecies	Ebird	NOT in FMA	Threatened	*Lanius ludovicianus excubitorides*	2005-07-14	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=26
Long-billed Curlew	Ebird	NOT in FMA	Special Concern	*Numenius americanus*	2005-01-12	https://wildlife-species.canada.ca/bird-status/oiseau-bird-eng.aspx?sY=2014&sL=e&sB=LBCU&sM=p1
McCown's Longspur	Ebird	NOT in FMA	Threatened	*Rhynchophanes mccownii*	2007-12-13	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=897
Mountain Plover	Ebird	NOT in FMA	Endangered	*Charadrius montanus*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=27
Northern Leopard Frog	COSEWIC	in FMA	Special Concern	Osaw askîḵish *Lithobates pipiens*	2005-01-12	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=999
Northern Myotis	COSEWIC	in FMA	Endangered	Kîwîtinohk pahkwâcîs *Myotis septentrionalis*	2014-11-26	https://wildlife-species.canada.ca/species-risk-registry/virtual_sara/files/cosewic/sr_Little%20Brown%20Myotis&Northern%20Myotis&Tri-colored%20Bat_2013_e.pdf
Olive-sided Flycatcher	Ebird	in FMA	Special Concern	Pimîmina cîḵâyihk pimiyâ *Contopus cooperi*	2010-02-23	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=999
Ord's Kangaroo Rat	COSEWIC	NOT in FMA	Endangered	*Dipodomys ordii*	2007-12-13	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/ord-kangaroo-rat-2017.html#_02_2
Peregrine Falcon anatum/tundrius	Ebird	NOT in FMA	Not at Risk	*Falco peregrinus*	2012-06-20	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/peregrine-falcon-2017.html

COSEWIC Common name	Confirmed in FMA	Verification	COSEWIC status	Cree Name *Scientific name*	Date Listed	COSEWIC link
Piping Plover circumcinctus sub spp.	Ebird	adjacent FMA (migrant)	Endangered	*Charadrius melodus circumcinctus*	2003-06-05	https://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_piping_plover_melodus_e.pdf
Prairie Rattlesnake	COSEWIC	NOT in FMA	Special Concern	*Crotalus viridis*	2019-02-25	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/prairie-rattlesnake-2014.html
Red Knot rufa subspecies	Ebird	NOT in FMA	Endangered	*Calidris canutus rufa*	2012-06-20	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_mp_red_knot_e_proposed.pdf
Red-headed Woodpecker	Ebird	NOT in FMA or SK	Endangered	*Melanerpes erythrocephalus*	2009-03-05	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_melanerpes_erythrocephalus_e.pdf
Red-necked Phalarope	Ebird	in FMA (migrant)	Special Concern	Mihkwâw piyesis *Phalaropus lobatus*	2019-05-22	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/red-necked-phalarope-2014.html
Rusty Blackbird	Ebird	in FMA	Special Concern	Mîsiyâpiskâk cahcahkayôs *Euphagus carolinus*	2009-03-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Rusty%20Blackbird_2017_e.pdf
Sage Thrasher	Ebird	NOT in FMA	Endangered	*Oreoscoptes montanus*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=32
Short-eared Owl	Ebird	in FMA	Special Concern	Chimchawagas ôhô *Asio flammeus*	2012-06-20	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/short-eared-owl/chapter-2.html
Snapping Turtle	COSEWIC	NOT in FMA	Special Concern	*Chelydra serpentina*	2011-02-04	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/mp_snapping%20turtle_e_proposed.pdf
Sprague's Pipit	Ebird, COSEWIC	Edge of FMA	Threatened	No translation yet *Anthus spragueii*	2003-06-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Sprague%27s%20Pipit_0810_e.pdf
Swift Fox	COSEWIC	NOT in FMA	Threatened	*Vulpes velox*	2003-06-05	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_swiftfox_0108_e.pdf
Western Grebe	Ebird	in FMA	Special Concern	Mistahe Sihkihp *Aechmophorus occidentalis*	2017-11-02	https://wildlife-species.canada.ca/bird-status/oiseau-bird-eng.aspx?sY=2014&sL=e&sM=p1&sB=WEGR
Western Tiger Salamander	COSEWIC	in FMA	Special Concern	Osi ḳiyasis osiḳiyâsis *Ambystoma mavortium*	2018-02-02	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_w_tiger_salaman_tigree_1113_e.pdf
Whooping Crane	Ebird	NOT in FMA (migrant)	Endangered	Ocicahk *Grus americana*	2003-06-05	(Only Migrant)https://wildlife-species.canada.ca/bird-status/oiseau-bird-eng.aspx?sY=2014&sL=e&sB=WHCR&sM=p1
Wolverine	COSEWIC	in FMA	Special Concern	Omiyahcîs *Gulo gulo*	2018-05-30	https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_wolverine_eastern_population_e_final.pdf
Yellow Rail	Ebird	in FMA	Special Concern	Oshâ wisô weekachasihp *Coturnicops noveboracensis*	2003-06-05	https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_yellow_rail_1101_e.pdf
INVERTEBRATES						

COSEWIC Common name	Confirmed in FMA	Verification	COSEWIC status	Cree Name *Scientific name*	Date Listed	COSEWIC link
Yellow-banded Bumble Bee	COSEWIC	in FMA	Special Concern	Opîwâwâmô *Bombus terricola*		https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Yellow-banded%20Bumble%20Bee_2015_e.pdf
PLANTS						
Athabasca Thrift (perennial herb)	COSEWIC	NOT in FMA	Special Concern	*Armeria maritima ssp. interior*	2005-01-12	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=208
Blanket-leaved Willow		NOT in FMA	Special Concern	*Salix silicicola*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=626
Buffalograss		NOT in FMA	Special Concern	*Bouteloua dactyloides*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=534
Dwarf Woolly-heads		NOT in FMA	Special Concern	*Psilocarphus brevissimus*	2007-12-13	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=932
Felt-leaf Willow		NOT in FMA	Special Concern	*Salix silicicola*		https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=626
Floccose Tansy		NOT in FMA	Special Concern	*Tanacetum huronense var. floccosum*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=627
Hairy Prairie-clover		NOT in FMA	Special Concern	*Dalea villosa*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=533
Large-headed Woolly Yarrow		NOT in FMA	Special Concern	*Achillea millefolium var. megacephala*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=626
Mackenzie Hairgrass		NOT in FMA	Special Concern	*Deschampsia mackenzieana*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=580
Sand-dune Short-capsuled Willow		NOT in FMA	Special Concern	*Salix brachycarpa var. psammophila*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=630
Slender Mouse-ear-cress		NOT in FMA	Threatened	*Halimolobos virgata*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=192
Small-flowered Sand-verbena		NOT in FMA	Endangered	*Tripterocalyx micranthus*	2005-01-12	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=230
Smooth Goosefoot		NOT in FMA	Threatened	*Chenopodium subglabrum*	2007-12-13	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=264
Soapweed		NOT in FMA	Threatened	*Yucca glauca*	2003-06-05	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/soapweed-2013/chapter-9.html
Tiny Cryptanthe		NOT in FMA	Threatened	*Cryptantha minima*	2003-06-05	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/tiny-cryptantha-amended-2012.html
Turnor's Willow		NOT in FMA	Special Concern	*Salix turnorii*	2003-06-05	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=634
Western Spiderwort		NOT in FMA	Threatened	*Tradescantia occidentalis*	2005-01-12	https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=236

Appendix 4. Assessment Team, Company and Government Staff related to HCVs

Kevin Gillis

Kevin is the certification coordinator at Mistik Management Ltd and maintains three current registrations for the forest management company (FSC Canadian Boreal Standard, FSC Controlled Wood & Chain of Custody, PEFC:CSA Z809 Sustainable Forest Management). Kevin is a Registered Provincial Forester with the Association of Saskatchewan Forestry Professional since 2007. He is an Integrated Resource Management Diploma graduate (Canadian Institute of Forestry Gold Medal) from the Saskatchewan Institute of Applied Sciences and Technology. He also has a Wildlife Technician Certificate from the North American Wildlife Technology Association. He currently serves as a committee member of FSC Canada's Standards Development Group (since 2013). Kevin has worked in Saskatchewan forests for the past 27 years integrating and implementing forestry activities in socially and environmentally sensitive landscapes. He has led and developed Mistik's species at risk program for the last 13 years. Kevin also participated in the federally developed program, Climate Change and Sustainable Forest Management in Canada: a Guideline for Assessing Vulnerability and Mainstream Adaptation into Decision Making.

Tom Clark

Tom is a consulting ecologist working on wildlife ecology and forest management. Much of his time is spent on forest values, using the High Conservation Values approach of the Forest Stewardship Council. He prepares assessment HCV reports and helps with preparation for audits. This work is informed by his experience as a forest auditor. He is on audit teams using the Independent Forest Audit (IFA) process in Ontario, and with Forest Stewardship Council (FSC) certification process in the U.S. and Canada. Tom has a strong public forest policy background. For 19 years he was a member of the Ontario Deputy Minister's (MNRF) advisory group called the Provincial Forest Policy Committee.

Table 18. List of Staff Involved in HCV Assessment and Management

Organization & Position	Name
Mistik Management Ltd	
General Manager	Robert Follett
Planning Manager	Niska Hodgson
Operations Manager	Steve Hankey
Certification Coordinator	Kevin Gillis
Planning/GIS Supervisor	Cliff Mclauchlan
Forestry Supervisor	Dennis Couillonneur
Operations Forester (L&M)	Sherri Gregoire
Director, Forest Resource Analysis, Silvacom Licensee	Ryan Spooner
Forest Service Ministry of Environment	
Forest Management Planning Coordinator	Mark Doyle
Forest Management Planning Analyst	Nadine Penney
Provincial Silviculture Forester	Holly Aggas
Boreal Landscape Specialist	Melissa Nordin
Area Forester, Meadow Lake	Kathleen Gazey
Forest Ecosystem Protection Technician	Logan McMahon
Biologist, Meadow lake	Katie Rasmussen
Public Advisory Group And Species at Risk	
Member representative	Jack Purves & Tony Leeson
Canoe Lake Co-management	Fernand Bouvier

Appendix 5. Specific Measures to be Implemented by Mistik to Minimize Impact to and Maintain Potentially High Conservation and Non-Timber Values.
From FMP 3.9. Integration of Forest Management Activities with Non-Timber Uses

1. Non-timber forest products: • outfitting/trapping (fur) • cabins • wild rice • traditional use areas/spiritual • tourism/recreation • fishing/hunting • berries/mushrooms • aesthetic qualities	• Evidence of the production and the opportunity for gathering of non-timber forest products (e.g., fur, mushrooms, berries, meat, wild rice, etc.) within the FMP area is maintained • Ensure opportunity for involvement in Public Advisory Group and local advisory group processes and public participation and involvement in ongoing forestry planning and implementation • Update, on an annual basis, relevant data archives (outfitting, trapping, wild rice, cabins, special places, range, etc.) with the most recent data from Saskatchewan Ministry of Environment or other relevant sources • Prior to each operating season, issue a letter to all known stakeholders that may be affected by the operating plan • Follow up with a phone call to each individual stakeholder • Undertake one-on-one consultations- office and/or field visits-with individual stakeholder as needed • Arrive at a workable outcome for the stakeholder and Mistik • Ensure that non-timber values/activities are integrated and accommodated as fully as possible into operational plans and implementation of forest harvesting • In the case that a mutually agreeable solution cannot be reached, refer the matter of Saskatchewan Ministry of Environment
2. Visual resources	• Annual identification of operating areas within which proposed harvesting may occur in visually sensitive areas • Identification of visual quality objectives for proposed harvest areas occurring in visually sensitive areas
3. Watersheds	• Maintenance of a partnership with the Saskatchewan Water Security Agency (and other organizations) that includes periodic assessment of Mistik's forestry activities and potential impacts on the watersheds of the FMP area
4. Lakes and streams	• Compliance with federal and provincial legal requirements and conformance with internal standard operating procedures with respect to the installation, maintenance and reclamation of watercourse crossing structures and erosion control measures • Fish habitat enhancement and fish habitat replacement (as requested by the Department of Fisheries and Oceans) • Retention of regulatory-required riparian no-harvest areas adjacent to water bodies • Non-use of herbicides
5. Wildlife habitat / Species at Risk	• Science-based recommendations are solicited from specialists with respect to planning and implementation of forestry activities • Operational implementation of expert recommendations and Indigenous/public input.
6. Archaeological and cultural resources	• All planned operational activities are screened by Heritage Conservation Branch of the Ministry of Parks, Culture and Sport. • Activities are rated by the branch for heritage potential and indication is given as to the requirement to complete a Heritage Resource Impact Assessment (HRIA). • High heritage potential areas are typically located to larger rivers and creeks. Road construction and site preparation activities are most likely to trigger the requirement to do a heritage assessment. • Mistik uses only scarification for site preparation with a low impact disturbance created, this activity does not typically require an HRIA.

	• For road building, Mistik attempts to design road networks that avoid areas that would require a HRIA and have a high potential for heritage values. • If Mistik is unable to avoid specific areas or uses an alternate site preparation technique, all requirements of the heritage assessment are followed. • Mistik also maintains records of heritage and cultural resource values which have been identified by other forest users, the public and co-management/ advisory boards. Cooperative strategies (such as avoidance or patch retention) often depend on the size of the area affected and the nature of the value identified. Mistik works with the interested party to determine a solution that is most beneficial to both parties.
7. Petroleum and mineral exploration and development	• That opportunities are identified and implemented (i.e., road use agreements) with other industrial users (e.g. petroleum and mining industries) to minimize cumulative environmental impacts
8. Agriculture	• Not applicable - aside from grazing activities, Mistik is unaware of any agricultural activities occurring within the FMA

Appendix 6. Review of Assessment for the license forest area of Mistik Forest Management Inc, Meadow Lake, Saskatchewan, Canada with Mistik responses.

Ann Garibaldi
1765 Haultin St.
Victoria, BC
V8R 2L1, Canada
(250)588-3858
agaribaldi@gmail.com

September 28, 2020

Tom Clark
Bracebridge, ON,
P1L 1W8, Canada
(705) 645-2580
tom@TomClark.ca

RE: Review of High Conservation Values in the Mistik Forest Management Agreement Area

Tom,

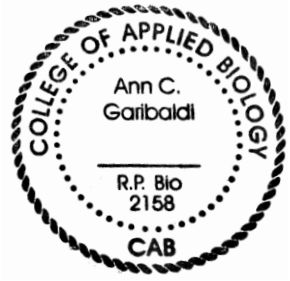
Thank you for the opportunity to undertake this important work. Attached is my CV and the review of the Mistik Forest HCV assessment. I used the HCV Resource Network Guidance for Peer Review of HCV Assessment Reports (Version 2.1 September 2010) as a guide in preparing this review. This review was conducted independently, and the opinions are solely mine.

The review contains primarily minor edits for consistency and readability, and suggestions to address gaps. These should be addressed before finalizing the report. The only major edit suggests adding a basic summary of the company and its operations in the area at the onset of the report to set context. This should include a discussion of the impact and scale of Mistik's operations.

The report is thoroughly researched and demonstrates significant effort in considering the forest values. It is evident that the authors have a sound understanding of boreal ecology and the Indigenous peoples and stakeholders who live there. For reference, I completed the review in 8 hours.

Sincerely,

Ann Garibaldi, M.Sc., R.P.Bio.



Review of Assessment for the license forest area of Mistik Forest Management Inc, Meadow Lake, Saskatchewan, Canada with Mistik FM Responses.

The following forms[22] are based on the Peer Review procedure from the HCV Resource Network. They have been modified by CMC to fit into a form, but otherwise follow all of the requirements[23]. For questions contact Tom Clark (705 645 2580 tom@tomclark.ca). Note these forms are accompanied by a covering letter providing summary findings of the review.

Findings in this review are assessed as either major minor not applicable (N/A) or as suggestions.

- Major findings mean that a key component of the assessment is missing or incorrectly assessed. This will have a potential impact on an actual value. It needs to be corrected immediately before the report is approved.
- Minor findings affect the clarity or usefulness of the assessment. It would be unlikely to have a real impact on the value itself, but may cause planning difficulties.
- Suggestions relate mainly to clarity and possible fixes to problems in the report itself or other sources of information.
- Not applicable means that for some reason that section of the peer review did not apply to the report being reviewed.

Each section of the report may have multiple findings that are either major, minor or suggestions. The findings are the opinion of the peer reviewer and are not binding on the Company, however, the findings need to be addressed in order for the peer review to be considered as evidence in an audit.

Contents

[22] Forms updated September 2020.

[23] This review process is the sole responsibility of Ann Garibaldi. The use of HCV RN procedures does not imply their participation or oversight.

1. Executive summary of the document

In this section the review evaluates:
a) Are the key findings clearly presented and summarized?
b) Does the summary accurately reflect the findings and recommendations of the main document?

NOTE: Company response highlighted in BOLD text below

Findings:

This reviewer considered the information in the following sections as an executive summary: 1) High Conservation Values – Summary, and 2) Overview of HCV Assessment. For archival and future referencing, it is suggested that the authors copy information in the aforementioned sections and create a separate "Executive Summary" for this report. This will allow a simple review of report findings.

Key findings are clearly presented in Table 1 *Identified High Conservation Values.* This table serves as a summary of findings in the report. This information is preceded by a helpful and detailed preamble on pages 2-3 to guide the reviewer. The list below identifies minor issues that should be addressed for clarity, consistency and ease of navigation.

- Authors state that "after clicking a link, return to previous page (PDF or WORD) by pressing ALT left arrow (pg. 2)". This did not work for me, possibly an issue reviewing this document on a Macintosh computer. It would be helpful if this was corrected in future reports for ease of navigation.

Mistik Response: Inserted new instruction

- For all linked documents: It would facilitate identification of specific information if the section or pages of linked documents were noted to easily review the information in question.

Mistik Response: Due to the fluid nature of internet sites and documents, these references become dated quickly. It is challenging to keep links up to date.

- Element 3 – cells in Monitoring and Designation columns are empty. Cells should include notation, details or reference even if duplicative of information in previous cells.

- Element 4 - cells in Management and Monitoring columns are empty. Cells should include notation, details or reference even if duplicative of information in previous cells.

- Element 5 – add "None required" in cells under Management and Monitoring columns.

- Element 8 - add "None required" in cells under Management and Monitoring columns.

- Element 9 - add "None required" in cells under Management and Monitoring columns.

- Element 10 - add "None required" in cells under Management and Monitoring columns.

- Element 11 - add "None required" in cells under Management and Monitoring columns.

- Element 12 - add "None required" in cells under Management and Monitoring columns.

- Element 13 – cell in Monitoring column is empty. Cells should include notation, details or reference.
- Element 14 - add “None required” in cells under Management and Monitoring columns.
- Element 16 - add “None required” in cells under Management and Monitoring columns
- Element 17 - add “None required” in cells under Management and Monitoring columns

Mistik Response: cell text adjusted

Additional general comments: The entire report should be reviewed for typos (for example, see last sentence in the second paragraph on pg12), and the hyperlinks rechecked (for example, the hyperlink to the Saskatchewan FMP process in the second paragraph on pg. 15 is broken). In addition, some of the hyperlinks do not take you to the correct location in the document. All hyperlinks should be checked prior to submission.

Mistik Response: Typos corrected as noted

The summary relays an accurate account of what is in the report. The summary is a helpful reference that provides a quick snapshot of the reporting details. As noted above, there are some missing cells in Table 1 that should be addressed to reflect the findings in the main body of the report prior to finalizing the document.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☒ Create specific Executive Summary section based on existing information in report; Fix broken links; Ensure Table 1 reflects findings in the main body of the report

Mistik Response: The executive summary includes Table 1, which provides a short description of the designated HCVs and their management and monitoring approach. This is done to facilitate links to the description in the body of the document. The Company felt an additional executive summary may be confusing.

2. Scope of the assessment

In this section the review evaluates:
a) Is the assessment area and surrounding landscape clearly defined?
b) Is there a basic summary of the company and its operations in the area?
c) Are the impact and scale of proposed operations adequately described?

Findings:

The Mistik FMA Forest Description includes a regional map (pg. 18) but no accompanying overall summary description of the forest and region. There is a mention of the location of Mistik Management Ltd in the section Overview of HCV Assessment (pg. 11) but the summary is cursory in nature. The report would benefit from a basic summary of the company and its operations in the area. The only summary is a few sentences at the beginning of the Overview of the HCV assessment. This should be enhanced with a discussion of the impact and scale of proposed operations.

This report would benefit and ease readability if cross-referencing in the inline text was enhanced. There is quite a bit of detail regarding boreal forests and their ecological dynamics. Clearly, the author has done extensive research in preparation of the report. For example, the report provides valuable context of the assessment area as well as the surrounding landscape in elements 1, 3, 4, for example. But, as noted above, lacks one introductory summary that would provide a general overview of the landscape and assessment area.

The HCV assessment process including peer review and updates is clearly outlined and detailed.

Issues: None ☐ Minor ☐ Major ☒ N/A ☐ Suggestion ☒

Add a summary of the company and its operations including the impact and scale of proposed operations.

Mistik Response: Added an updated description of the Company and operations.

3. Wider landscape context and significance of the assessed area

In this section the review evaluates:
a) Is the wider landscape convincingly and adequately described?
b) Are the key social and biological features of the wider landscape clearly described?

Findings:

The wider landscape is primarily described in visually in Figure 2. Location of the Mistik Forest on p. 18. The map shows general ecological and infrastructure features. This section would benefit from a brief discussion of the features shown in the map that would provide additional context.

The biological and social research is detailed and thorough. The report provides information on recreational uses as well as social values and Indigenous importance and values.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐ Include a brief description of the features shown in Figure 2.

Mistik Response: Description added.

4. HCV assessment process including consultation processes

4.1 Composition and qualifications of the assessment team

In this section the review evaluates:
a) Was there adequate access to relevant expertise to assess biological and social values?

Findings:

Yes. Provincial guidelines, manuals and legislation that guide sustainable forest management are clearly referenced and identified. Local and provincial experts were consulted and engagement with Indigenous communities was referenced multiple times and summarized in Table 13. In addition, the report contained helpful bios of the Assessment Team, Company and Government Staff related to HCVs, outlining their expertise.

- Pg. 62 – typo (?) in first bullet under the last paragraph “Engagement not Consultation” should be removed or clarified.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐ Review wording in bullets and correct as appropriate.

Mistik Response: Typographical error fixed

4.2. Data sources and data collection methodologies

In this section the review evaluates:
a) Are data sources and data collection methodologies clearly described or referenced and summarized (and presented in annexes if appropriate), and are they adequate to identify HCVs?

b) Were reasonable efforts made to fill gaps in the data, proportionate to the impact and scale of the operations?

Findings:

The data sources and collection methods were thorough, clearly described and follow sound research protocols. Appropriate references were included and discussed as needed providing helpful information to determine assessment methodology and rationale. Each element was reviewed and described, and the identification of HCV's was clear. Live links were quite helpful in reviewing the information provided, however they should all be checked before finalizing this report as some links are broken.

Mistik Response: Links updated. Maintaining links is an ongoing problem to the dynamic nature of the internet.

Yes. A section entitled Keeping HCVs up to date - Process is included and articulates that the HCVs and their management strategies will be reviewed annually. It is also stated that Mistik is open to changes on an ongoing basis is support of their adaptive management approach.

Monitoring and HCVs and ongoing efforts to fills in gaps provide a terrific opportunity for collaboration between biologists and Indigenous monitors.

Issues: None ☐ Minor ☐ Major ☐ N/A ☐ Suggestion ☒

Mistik may wish to consider supporting or continuing to support collaboration between biologists and Indigenous monitors in management of their HCVs.

Mistik Response: Text was added to the document. The most efficient approach to engage both Indigenous Peoples and interested and affected stakeholders is via the Public Advisory Group (PAG), as many participants may have an interest in High Conservation Values. In this forum, discussions involving Indigenous Peoples, scientists, and biologists bring all parties together and cover a broad range of knowledge and informed opinions to seek scientific and traditional knowledge influence decisions on HCVs. Managers also reached out to other stakeholders who may have an interest in HCVs, but who do not participate on the PAG, including municipalities, recreational clubs, outfitters and watershed societies. Table 2 outlines the stakeholders and Indigenous peoples that were engaged.

4.3. Consultation processes

In this section the review evaluates consultation for identification, management and monitoring:

a. Were relevant stakeholders appropriately consulted?

b. Is this documented in a verifiable manner?

c. Were their views or the information they provided incorporated into the relevant process?

Findings:

Mistik's engagement and consultation process plan is described in detail in the report including a section Overview of Engagement and supporting references such as the 2017 FMP. The detailed engagement is summarized in Table 2 List of Groups Engaged in the Designation of HCVs that described the meeting, groups involved and the number of meetings per year according to each group. It is noted that 130-150 meetings per year are scheduled. This is a

significant, and valuable commitment by Mistik to understand and document forest values. There are numerous references in the report highlighting information from consultations that are considered in the HCV management process. This is to be applauded.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

5. Identification, location and status of each HCV

5.1. Addressing all six HCVs

In this section the review evaluates how the report assesses the individual 19 elements

Findings:
Cat 1 (A) Element 1:

For all categories:

- ensure the links are working and take the reviewer to the designated location (for example, see the link to "Table 5" and "Appendix 3" on page 21). It would also be helpful if specific locations (sections or page numbers) within the links were referenced for ease of cross-referencing. The research completed for each category is extensive, which is a good sign of sound research practices. To facilitate identifying the specific locations with the references relevant to the discussion, it would be helpful if the report directed the reader to the appropriate pages.

Mistik Response: The Company agrees this would be helpful, but has found over time that links are difficult to maintain. There are still numerous links in the document. The level of effort is significant and it is appropriate to the readership.

Links fixed.

- assessment methodology could include "consultation" with list the relevant parties. Consultation is a method and provides valuable information what was considered in the determination of an HCV.

Mistik Response: Specific comments by groups would be interesting but would require disclosure agreements which would be difficult to obtain. A list of groups engaged is in several parts of the report.

- apply consistent use of acronyms. For example, pg. 26 identified Ducks Unlimited Canada as (DUC) and spells out Ducks Unlimited Canada rather than DUC on pg. 27.

Mistik Response: The Company acknowledges it is inconsistent. In the case of DUC, the acronym is not used for a long period, it is repeated in full, then goes back to an acronym. The one referred to has been fixed – point taken.

- it would helpful if tables and figures had a short description and title in the inline text. This would help the flow and situate the large volume of research undertaken for this report.

Mistik Response: Agreed, but authors were concerned with too much text making the sentences unreadable. Several references have been extended to include the longer figure and table titles. We will continue to review this as further edits occur.

- consider moving the heading “HCV Designation Decision” to after the “Rationale” and before the “Assessment Methodology”. This would help quick identification of the HCV designation and the reader can then review the methodology for details.

Mistik Response: The Company has considered this in the past and it is an interesting idea. We felt the designation adds closure and a clear summary to the end each of the elements. We have had comments in the past that say the opposite to this reviewer, as auditors wanted more definitive statement.

Environmental/ecological consultation is thorough and appropriate ecological sources are considered such as the Saskatchewan Conservation Data Centre. A list of species at risk is maintained and updated annually.

- Pg. 21 – it is valuable and a sign of good faith that the author listed HCVs for which the company does not have direct responsibility such as species that occur in grasslands or are aquatic species but are species that were identified during research.

- Pg. 22, Table 4 – habitat association for Northern Leopard Frog is missing and should be filled in.

Mistik Response: Habitat association added. Good catch.

Element 2:

The review for element 2 consisted of desktop research of key ecological provincial, federal and international sources. No endemic species were identified in in the Mistik FMA. The information provided is satisfactory.

Element 3:

The report identified that the review for element 3 consisted of stakeholder engagement, discussion with Mistik staff, Mistik’s Forest Management Plans, provincial and international sources.

Identification of what constitutes a critical habitat was clearly spelled out and the report further identified areas that are not considered an HCV but are protected through provincial standards and guidelines. It would helpful to **link to the specific provincial standards and guidelines**. This will help with referencing during future monitoring.

Mistik Response: The Company certainly agrees. However, this would be a considerable level of effort and government sources are not always clear about where a reference is. So, the work would fall to the company. In some cases, the source is not forestry related, which means other Ministries and unstable links. It is mainly a capacity question.

Mistik staff observed large congregations of birds on Peter Pond Lake and Churchill Lake and these areas are considered HCVs. **It would helpful to identify what types of birds, if known, were observed at these lakes,** for monitoring purposes. Figure 3 Important Bird Areas, Bird Colonies and Staging Areas in the Mistik FMA shows the distribution of these elements in the region.

Mistik Response: Species list added.

- Pg. 27 – reference to the “Cold Lake range” should be modified to “Cold Lake Air Weapons Range” if appropriate.

- Pg. 28 – “For example, Caribou migrations in the far north are one of nature’s great migrations”. This would be a good location to reference other discussions about caribou within the report. For example,

caribou are discussed in detail on Page 32-34. These types of linkages would help the reviewer connect the detailed information in the report.

- Pg. 29 – the author included a useful reference to related social values discussion in elements 16-19. This is quite helpful. **Suggest adding in more of these references, as appropriate, in the report.**

- Pg. 29 – "Government maintains strict rules about operations near critical fish habitat because of sedimentation risk." **Suggest adding links to rules and/or regulations referred to in this section.** This will assist quick referencing for monitoring in the future.

- Pg. 29 – the FMP and approved Forest Operations Standard (2019) presents an opportunity to consider involvement with Indigenous environmental monitors.

Mistik Response: The Company made some adjustments. It is beyond capacity to include many additional references. There are no links to government rules and regulations because they change annually.

Element 4:

The report identified that the review for element 4 included, in part, consultation on significant species, habitat models, 2019 Forest Management Plan, a draft provincial range plan and a federal assessment on critical habitat for Woodland Caribou.

Element 4 included an assessment of 1) focal species 2) featured species 3) landscape driven species and 4) regionally represented species. References and a short description of each concept is included. Focal species that are identified in Table 5 and 6.

- Pg. 30 - Focal species are identified in Table 6. Link to Table 6 throughout the report is broken.

Mistik Response: Adjusted

- Pg. 30 – "Species identified as ecologically significant through consultation". Consider identifies which entities were consulted. Where any of these entities Indigenous individuals, groups or organizations? This will help show consultation and collaboration and help support investment in the process by communities.

Mistik Response: Specific references to engagement efforts with communities are confidential. The report obliquely gets at this by listing the communities and the level of effort of engagement twice in the document.

- Pg. 30, Paragraph 3. Consider clarifying the writing of this paragraph. Mentions of "these species", for example, could be more clearly stated "the species in table XX" or a simple listing of the species if the list isn't extensive.

- "If people have identified the species as significant, Mistik accepts that and will do an HCV assessment." This is good practice and should be applauded. (see Garibaldi, A and N Turner. 2004. Cultural keystone species: implications for ecological resilience and restoration. Ecology and Society 9(3): 1. [online] URL: https://www.ecologyandsociety.org/vol9/iss3/art1/inline.html

Mistik Response: Reference included. It would have been helpful to have had a discussion prior to this review. Text was adjusted.

- Pg. 31 – "[Moose and fisher] were not designated as HCV because this is considered normal practices for these species." Clarify sentence. It is considered "normal practice" not to identify moose and fisher as HCV?

Mistik Response: Text clarified to describe rationale more clearly.

- Good discussion regarding the value of moose (shows socio-cultural and environmental linkage which, is great) and the rationale for not designating it as an HCV. A similar discussion was also made for wolverine. This is very clear and helpful. It would helpful if linkage and explanation was included for all focal species discussed, including caribou.

Mistik Response: Agreed, but again there is limited capacity to maintain the linkages.

- Pg. 34 – include discussion and description of **Figure 4 Land-term harvest deferrals within caribou range in the FMA** rather than just placing it in the report without any context.

Element 5:

The report identified that the review for element 5 included range and population estimates, consultation on species that are significant, and existing table of plant species occurrence.

The rationale for not designating HCVs is clear.

Element 6:

- Pg. 37 – review bolding/heading format throughout report before finalizing.

Cat 2 (B) - Element 7

- Pg. 43 – "In Figure 5 is an overview…". I believe this is referring to the Figure on page 44 which is listed as Figure 6. Global Forest Watch IFLs in the Mistik FMA area.
- Pg. 44 – "The challenge is to provide a definition that will be deliverable and measurable by the managers. From Mistik FMP, based on Andison (2007) the possible HCV is to be defined." What are the next steps to define the HCV? Is there a time estimate?

Mistik Response: Next step in this process is clarification of Intact Forests by FSC.

Cat 3 (C) - Element 8:

The report provided a clear explanation of the assessment and HCV designation decision.

Element 9:

- Pg. 46 – "…may be rare to the area due to historic harvest practices…". Clarify if this includes Indigenous harvest practices. Were influences of Indigenous harvesting practices included in this report or discussed during consultation?

Mistik Response: This text is from the rationale provided by the HCV Framework. The Company feels it would not be appropriate to edit. More text is available in the annex for HCV Framework.

Element 10:

- Pg. 47 – "Mistik FMA still contains significant areas of unfragmented forest." While the report references a IFL in the Mistik FMA area, it would be helpful to provide a bit more of a summary of the amount of IFL in the Mistik FMA. What is meant by "significant" in this context?

Mistik Response: The Company added additional information about Intact Forest Landscapes, including areas.

Element 11:

- The report provided a clear explanation of the assessment and HCV designation decision.

Cat 4 (D) - Element 12:

Good Socio-cultural and environmental linkages.

- Pg. 50 - "…and other water source locations would be specifically identified as HCVs[24]." Clarify what is meant by "would be". They will be designated HCV is identified? What is the process under which that would happen?

Mistik Response: Text added – "if they were brought forward by communities." The process would be simply for communities to mention them, as is the case with the source in the document.

Element 13:

- Table 11 is difficult to read. Suggest increasing the size for readability.

Mistik Response: Enlarged.

Element 14:

- The rationale for not designating HCVs is thorough and clear.

Element 15:

- Asterisks do not reference anything.
- This element is designated as a possible HCV. How will its status be reconciled? What is the process? Timeframe?

Mistik Response: Asterisks removed (from original text in the FSC Standard).

Element 16:

- The first sentence in the Rationale for this element is should be rewritten in the active voice. It reads like a sentence fragment.
- There are references to Figures 6.1, 6.2, 6.3 and 6.4. Where are these figures? Why does their referencing convention different that other figures in the report?

Mistik Response: Text is from the Standard – Company feels editing is inappropriate. Table references were removed – left from original text copy.

[24] This designation was reviewed in May 2020, including a review of the web info and source protection plan.

Cat 5 (E) Element 17:

- Follows sound research protocols. It is good to see that Mistik supports local community employment and regional advisory boards.

- Suggestion: Mistik consider supporting existing community monitors or the establishment of community monitors to observe and help identify and track forest management indicators.

Mistik Response: Mistik conducts frequent contacts with 10 communities (see element 18). The large number of staff members from the communities helps to provide eyes and ears on the ground. Having formal community monitors would be ideal, but also costly. Given current economics, and the very high component of community members employed, the Company feels monitoring is appropriate. Good suggestion though.

Cat 6 (F) Element 18:

- This section contains a detailed and thorough summary of engagement with regional Indigenous and non-Indigenous communities. Privacy protocols and implemented and not intellectual property rights or proprietary information is shared in this report.

- Suggestion: It may be helpful for Mistik to consider a discussion on the concept Cultural Keystone Places as they continue their ongoing engagement with local and regional communities on forests critical for cultural identity (Cuerrier, A, N Turner, T Gomes, A Garibaldi and A Downing. 2015. Journal of Ethnobiology 35(3): 427-448).

Mistik Response: Good comment. Paper has been forwarded. Local expertise on keystone species is helpful. Bringing communities together with local experts is always desirable and the Company will seek to improve this activity.

Element 19:

- The rationale for designating HCV is thorough and clear.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐
Review HCV designations for clarity and consistency.

5.2. Data quality

In this section the review evaluates:

a. Whether data is detailed, recent and complete enough to make informed decisions on HCVs.
b. Is the precautionary principle appropriately invoked in the use of data?

Findings:

Yes. The data in the review is thorough, detailed and references multiple external sources to inform the determination of HCVs. Notations have been made in relevant sections regarding minor points of clarification or correction.

Yes. The precautionary principle is defined and invoked throughout the report as appropriate. The report states that HCVs are managed using a precautionary approach and this is referenced various HCV elements. A

precautionary approach is also invoked in managing and monitoring of HCVs. Compliance monitoring is undertaking by Mistik staff and verified by staff with the Government of Saskatchewan.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

5.3. Reference to HCV toolkits

Findings:

The HCV National Framework serves the National Forest Management Standard (https://ca.fsc.org/en-ca/standards/new-national-forest-management-standard). This standard was launched June 3, 2019 following 6 years of consultation industry, environment, social and Indigenous groups.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

5.4. Decision on HCV status

In this section the review evaluates whether the HCV decisions are clear

Findings:

The text is generally clear regarding the HCV decisions, however comments and notes above have been made to facilitate consistency and gaps. Empty cell should be addressed in all tables, particularly Table 1.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐ Complete edits as noted above and address empty cells in Table 1 for report consistency and identified gaps.

Mistik response: Cells populated.

5.5. Mapping decisions

In this section the review evaluates how the report provides maps of HCVs, including the protection of maps for values that are confidential.

Findings:

Maps would be more effective and contribute to the review if: 1) they were consistently referenced in the inline text that included the title of the map 2) included a short description of the map highlighted details that contribute to the inline discussion 3) the resolution of the maps are clearer to facilitate readability (particularly Figure 2).

If would be helpful if linked maps in Appendix 1 were titled according to the HCV they reference. As currently listed, it is difficult to ascertain which maps go with which HCVs.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐ Consistently reference maps and figures in the inline text and include map title.

6. Management of HCVs

6.1. Assessment of threats or risks to each HCV within the landscape context

In this section the review evaluates how the report assesses threats or risks from current or planned management activities to each HCV within the assessment area identified.

Findings:

A risk assessment was completed for each HCV evaluation. It was sufficient in scope and discussed threats due to management activities.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

6.2. Do proposed management plans adequately maintain or enhance HCVs?

Out of the scope of this review.

Issues: None ☐ Minor ☐ Major ☐ N/A ☒ Suggestion ☐

6.3. Protection of HCVs from land use conversion

Issues: None ☐ Minor ☐ Major ☐ N/A ☒ Suggestion ☐

7. Monitoring of HCVs

7.1. Are monitoring plans clearly described?

In this section the review evaluates whether methodologies are clearly described and appropriate to meet stated objectives?

Findings:

Table 16 summarizes the management and monitoring of the HCVs. It is detailed and includes names of current Mistik and GoS staff contacts. The response is not always clear if the management prescription is effective. A discussion regarding the approach that will be if prescription is ineffective prescription would be a valuable addition.

Issues: None ☐ Minor ☒ Major ☐ N/A ☐ Suggestion ☐ Include a description of an approach that will be taken if a prescription is not effective.

Mistik Approach: Good question. Text added to Phase 2 page 70:

"In review, the process for deriving new Management approaches for HCVs for which management does not meet the precautionary principle was raised. The issue of "failed" prescriptions applies to all of the indicators in the Standard. Although HCVs have a particularly high requirement, any inadequate practice must be addressed promptly, as the standard requires. This is basic adaptive management, to which Mistik is committed. The process for addressing each value, each HCV or each management challenge is hard to anticipate (or we would). Therefore, the overall commitment to FSC implies and commits Mistik to immediately addressing inadequate practices of any kind as soon as they are known. In the case of HCVs this is a high standard because of the precautionary principle. Mistik feels they meet the test. "

7.2. Are monitoring plans adequate?

In this section the review evaluates whether monitoring plan adequately deal with significant changes arising from management operations or likely external threats/risks to HCVs

Findings:

An overview of the monitoring plans are described in Table 16. The FMP is referenced and provides additional detail.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

7.3. Are plans for a regular review of data built in to the management and monitoring plan

In this section the review evaluates how the report will be updated in future.

Findings:

The HCVs and their associated management strategies will be reviewed annually and include a check on alignment with the forest management planning process.

Issues: None ☒ Minor ☐ Major ☐ N/A ☐ Suggestion ☐

8. Responsible management of other conservation values

8.1. Conversion of non-HCV ecosystems

Issues: None ☐ Minor ☐ Major ☐ N/A ☒ Suggestion ☐

8.2. Responsible management of other conservation Values

Issues: None ☐ Minor ☐ Major ☐ N/A ☒ Suggestion ☐

Disclaimer:
"This review was conducted by Ann Garibaldi in good faith on the basis of information provided by CMC Ann Garibaldi can take no responsibility for the accuracy of information provided and cannot be held liable in any way for any damage or loss resulting from the use or interpretation of this review by the Company or any third party. "

Acronyms

HCV	High Conservation Value
HCV RN	HCV Resource Network
FMP	Forest Management Plan
FSC	Forest Stewardship Council
SFM	Sustainable Forest Management
DFA	Defined Forest Area
RPF	Registered Professional Forester
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
IUCN	International Union For the Conservation of Nature
LLLF	Large Landscape Level Forests (LLLF