



MISTIK MANAGEMENT LTD.

2019 20-YEAR FOREST MANAGEMENT PLAN

Volume III

Plan Implementation (2019 - 2039)

2019 FOREST MANAGEMENT PLAN – VOLUME III PLAN IMPLEMENTATION DOCUMENT

for the

Mistik and L&M Forest Management Agreement (FMA) Areas



For the 20-year period from April 1, 2019 to March 31, 2039

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I hereby certify that I have prepared this FMP-Volume III document to the best of my professional skill and judgement in accordance with the requirements of the Ministry of Environment, Forest Service Branch

Submitted by:



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March 11, 2019

Date

Plan Author
Planning Manager
Mistik Management Ltd.

I recommend that this FMP – Volume III document be approved for implementation and certify that it has been prepared in accordance with the Ministry of Environment, Forest Service Branch, it's relevant policies and obligations, including any relevant ministry agreements with Indigenous people. I also certify that the Forest Management Plan has been prepared in accordance with the approve standards of other applicable manuals.

Certified and Recommended for Approval By:



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May 8, 2019

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Aaron Kuchirka

May 8, 2019

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Approved By:



**Minister of Environment,
Government of Saskatchewan**

May 23/19

Date

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Mark Johnston	Sherri Andrews-Key	Mark Kornder	Shane Vermette
Tim Wahl	Vicky Pryor	David Andison	Mistik Staff



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EXECUTIVE SUMMARY

On behalf of Mistik Management Ltd. (Mistik) and L&M Forest Products 2018 LP (L&M), I am pleased to present Mistik's 2019 20-Year Forest Management Plan (FMP) Volume III: Plan Implementation. FMP Volume III: Plan Implementation provides both the Province of Saskatchewan and the public with information related to sustainable forest management of Mistik's and L&M's Forest Management Agreements, hereby known as the Mistik FMP Area.

Previously approved FMP documents reference "L&M Wood Products 2011". In 2018, L&M was purchased by the Meadow Lake Tribal Council and the new legal name for L&M is "L&M Wood Products 2018 Limited Partnership". All references to L&M in the forest management plan now apply to this new business entity.

The total Mistik FMP area is 1,878,499 hectares (1,809,288 ha in the Mistik FMA area and 69,211 ha in the L&M FMA area), of which 878,510 ha (817,285 ha in the Mistik FMA area and 61,266 ha in the L&M FMA area) is considered net landbase, which contributes to the timber supply. For the purposes of the FMP, the 13 Management units have been grouped into 5 distinct planning units (Divide, West, Central, North, and L&M) of which details can be found within Volume II.

FMPs in Saskatchewan provide strategic direction for forest resource management over a 20-year timeframe. Preparation of a 20-year FMP requires development of three (3) primary documents:

1. Volume 1 of the FMP provides background and contextual information on the Mistik FMP area and describes historical forest management practices.
2. Volume 2 includes six documents that establish the foundations for the Mistik FMP area, including the following: Planning Inventory, Forest Development Report, Silviculture Ground Rules, Values Objectives Indicators and Targets, Modelling Assumptions Report, and Forest Estate Modelling Report.
3. Volume 3 presents the harvest volume schedule (HVS), which was determined based on the forest estate modeling analysis. It also includes the tactical plan and associated maps along with implementation strategies for the FMP. The specified tactical plan prepared for the 2019 FMP identifies the areas in which harvesting is expected to occur within the next 20 years (T1+T2). Values were identified by forest planners knowledgeable with the landbase to ensure operational feasibility and adjusted with the forest estate modelling procedures. It also identifies caribou, seral stage, old forest, and L&M black spruce constraints. In association with the tactical plan Mistik and L&M have 27 values, objectives, indicators, and targets (VOITs) which define sustainable forest management attributes within the Mistik FMP area. Implementation of the FMP will also be guided by strategies to address natural disturbance (i.e. wildfire, insects and disease) as well as a strategy for management of woodland caribou habitat until a range plan has been developed.

Given the requirements of the FMP Standard, Forest Management Scenario (FMS) 11 is the strategy that has been selected. This FMS was determined to be the selected management strategy (SMS) as it maintained the desired harvest flows while also satisfying the non-timber constraints. The preferred and alternative utilization standards and resulting annual Harvest Volume Schedule (HVS), over the life of this plan (2019-2039) based on the selected management strategy are as follows:

Table E-1: Mistik FMP Area Utilization Standards

UTILIZATION PARAMETER	L&M YIELD CURVE (# 7)		MISTIK + L&M (ALL OTHER YIELD CURVES)	
	Hardwood	Softwood	Hardwood	Softwood
Stump Height (m)	0.3	0.3	0.3	0.3
Minimum Top Diameter Inside Bark (cm)	8	10	7.5	10
Log Length (m)	n/a	n/a	2.6	2.6
Merchantable Min. Bole Length (m)	4.9	5.2	5.2	5.2

Table E-2: Mistik FMP Area Harvest Volume Schedule

Result	Mistik FMA HVS (m ³ /yr)			L&M FMA HVS (m ³ /yr)		
	Softwood Sawlog	Softwood Pulp	Hardwood	Softwood Sawlog	Softwood Pulp	Hardwood
SMS Model Result	549,986	N/A	999,753	79,429	N/A	49,899
Reduction for Insular Retention (4%)	-21,999	N/A	-39,990	-3,177	N/A	-1,996
Weighted Average Degrade (Mistik: 12%, L&M 9%)	-63,358	63,358	N/A	-6,863	6,863	N/A
Tops (10cm to 8cm) and additional merch. trees	N/A	124,920	N/A	N/A	12,077	N/A
Final HVS (m³/yr)	464,628	188,278	959,763	69,389	18,940	47,903

Section 2.3.1 contains an explanation of how the softwood pulp figures (above) were determined, including the weighted average degrade values, which were based on species-specific factors.



1. TACTICAL PLAN

The purpose of the tactical plan is to provide the general public, Saskatchewan Ministry of Environment, Mistik, and L&M with a clear definition of the location, extent and profile of forest stands scheduled for harvest and the location of the supporting access network that is scheduled for construction within the active portion of the 2019 20-Year FMP. The tactical plan also provides a critical linkage between the strategic-level modelled Selected Management Strategy and actual operational plans.

The Mistik FMP area will be managed and will be presented in the 2019 FMP within the context of five planning units, consisting of a total of twelve landscape-level management units ranging in size from 13,706 ha to 355,677 ha. The management units were combined to define the larger planning units (Map 1).

Table 1-1 Planning Unit Area Summary

Planning Unit	Management Unit	Gross Area (ha)	Net Productive Area	% Productive
West	20-Beaver River	13,706	8,044	59%
	03-Big Island Lake	37,926	26,751	71%
	12-Murray Bay	62,412	37,166	60%
	02-Pierceland	119,855	65,597	55%
Subtotal		233,899	137,558	59%
Central	09-Ile-a-la Crosse	112,426	34,464	31%
	10-Buffalo Narrows	125,665	50,060	40%
	07-Beauval	149,212	53,693	36%
	04-Waterhen	186,515	106,428	57%
	08-Canoe Lake	189,585	60,688	32%
Subtotal		763,403	305,333	40%
North	21-Peter Pond	283,956	102,578	36%
	11-Dillon	355,677	172,488	48%
Subtotal		639,633	275,066	43%
Divide	01-Divide	160,128	99,326	62%
Subtotal		160,128	99,326	62%
L&M	85- L&M	69,211	61,226	88%
Subtotal		69,211	61,226	88%
Total		1,866,274	878,510	47%

Mistik and L&M have designed a tactical harvest and access plan (Map 2 through Map 6) for the 2019 FMP comprised of two 10-year harvest pools. For each of the two harvest pools (referred to as 'T1' and 'T2', respectively), Mistik and L&M have planned additional area and volume than will be harvested. The additional area and volume allow for the required flexibility in a selection of harvest locations. Note that although additional area and volume is shown in the tactical plan as well as annual operating plans, Mistik and L&M are still required to harvest within the limits of the approved HVS.

In the wood supply model, priority was given to the T1 harvest pool to be harvested first. Mistik & L&M will strive to keep first 10 years of harvest confined to T1 areas where possible however, there is flexibility to access T2 wood provided it is identified and justified in an operating plan.



Mistik and L&M have also designed and delineated deferral areas for old and very old forest retention (Map 12). In association with the tactical plan, the merchantable stands by forest development type from the net productive landbase can be found in Maps Map 7 through Map 11.

A profile of the tactical plan is presented in Table 1-2 with the volumes, areas, and age class distribution by T1 and T2.

A description of how the Tactical Plan was incorporated into the wood supply modeling is included in Section 2.

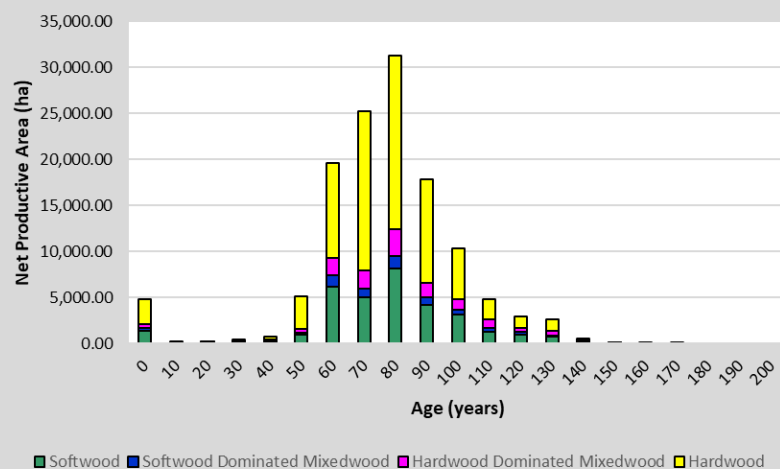


Table 1-2 Tactical Plan Profile

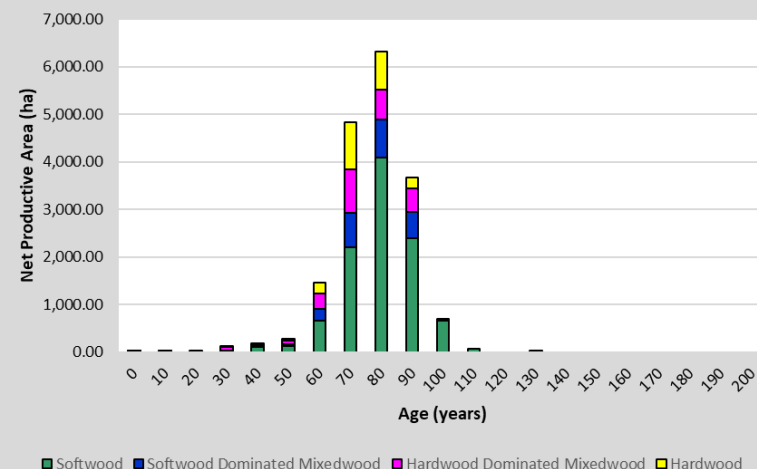
HVS Summary						
	Mistik				L&M	
	T1		T2		T1	T2
Tactical Plan Area (ha)	140,137		78,218		18,497	12,126
Tactical Plan Current Softwood Volume (m³)	5,031,266		3,139,272		1,684,983	931,376
Tactical Plan Current Hardwood Volume (m³)	16,095,854		8,484,641		1,117,522	755,604
Tactical Plan Initial Development Type Distribution						
Development Type	T1 Area (ha)		T2 Area (ha)		Total Area (ha)	
	Mistik	L&M	Mistik	L&M	Mistik	L&M
No Development Type	17,899	849	9,090	1,254	26,989	2,103
1 S-WS-A-A	4,697	1,143	2,436	493	7,159	1,636
2 S-BS-A-A	644	2,533	387	1,804	1,046	4,338
3 S-JP-LD-A-1	4,744	0	3,733	0	8,478	0
4 S-JP-LD-A-2	4,763	0	2,738	0	7,501	0
5 S-JP-HD-A-1	6,469	0	5,784	0	12,254	0
6 S-JP-HD-A-2	9,719	0	6,376	0	16,114	0
7 S-JP-L&M	0	6,681	0	4,046	0	10,726
8 SH-JP-A-A	3,148	1,605	2,100	783	5,253	2,388
9 SH-WS-A-A	3,000	828	1,873	326	4,867	1,154
10 HS-WS-A-A	8,532	1,438	4,091	477	12,653	1,915
11 HS-JP-A-A	3,393	1,128	2,535	422	5,940	1,549
12 H-A-LD-A-1	3,355	41	2,000	259	5,341	301
13 H-A-LD-A-2	8,933	276	3,908	446	12,840	722
14 H-A-HD-A-1	10,736	357	6,489	497	17,199	855
15 H-A-HD-A-2	29,843	898	14,256	523	44,116	1,421
16 H(S)-A-LD-A	7,484	377	3,223	353	10,707	730
17 H(S)-A-HD-A	12,779	342	7,199	443	19,978	785
Total Area (ha)	140,137	18,497	78,218	12,126	218,438	30,622



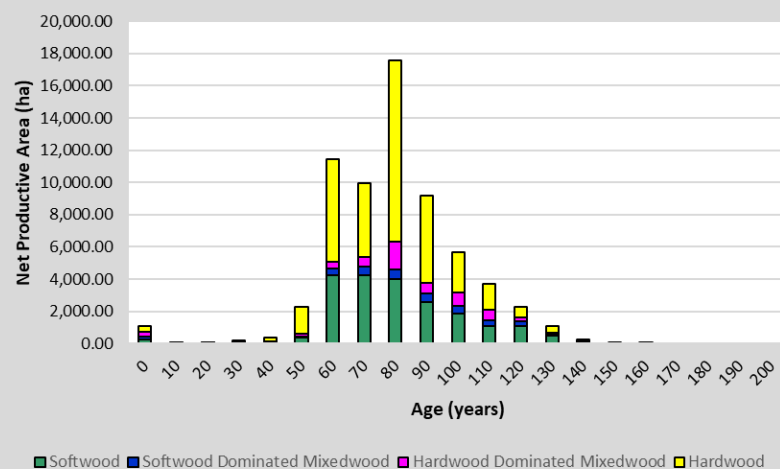
Tactical Plan T1 Initial Age Class Distribution (MISTIK)



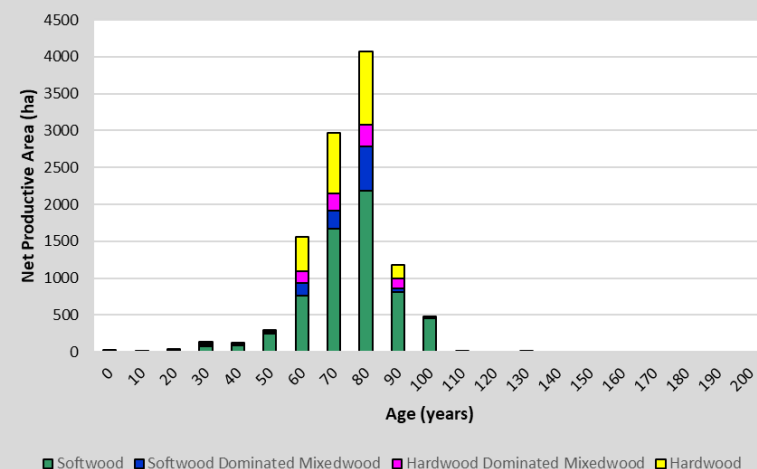
Tactical Plan T2 Initial Age Class Distribution (MISTIK)

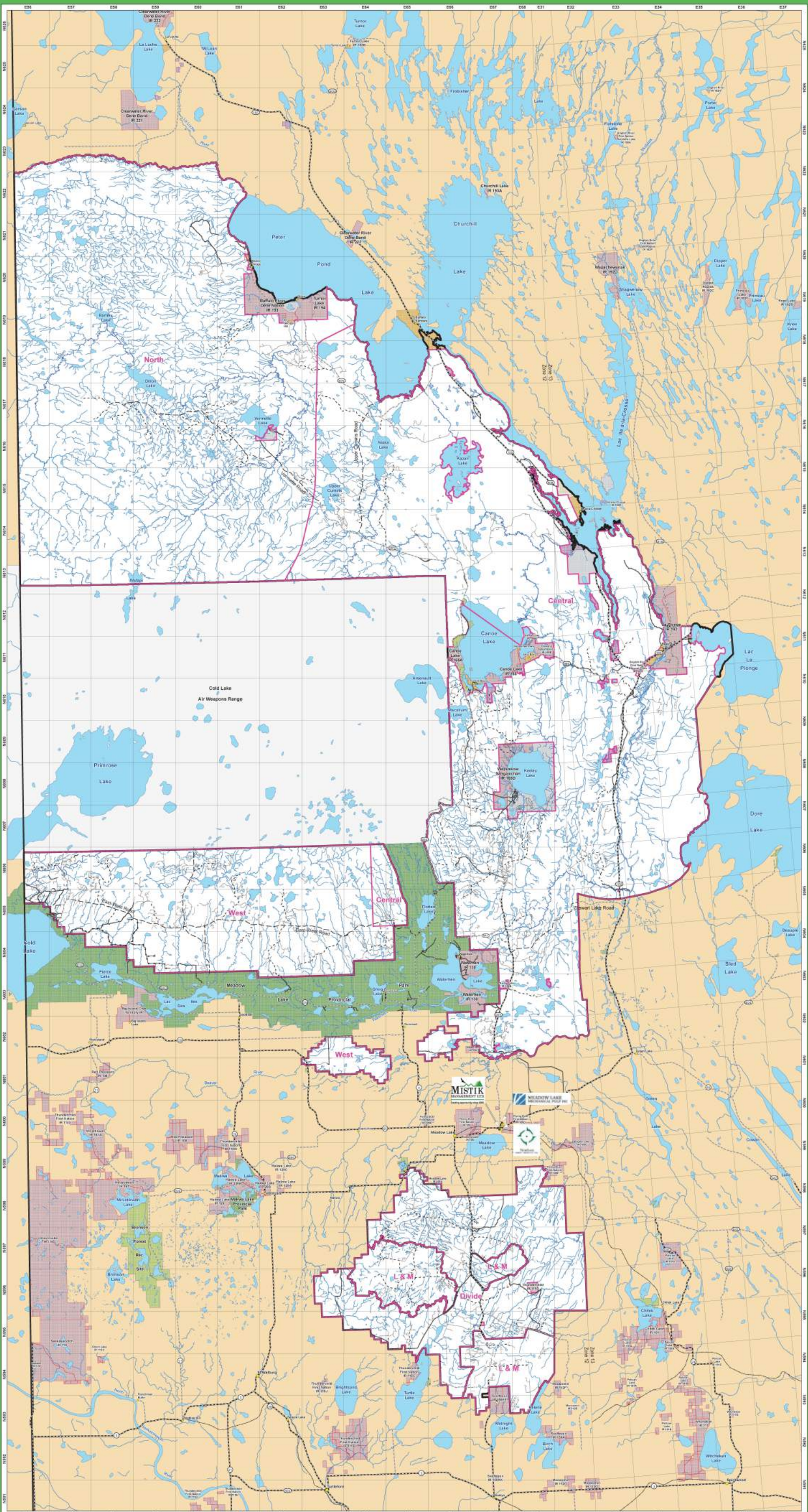


Tactical Plan T1 Initial Age Class Distribution (L&M)



Tactical Plan T2 Initial Age Class Distribution (L&M)







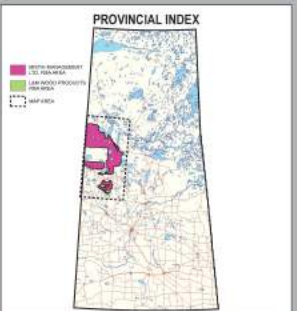
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PLANNING UNITS



0 5 10 20
Kilometers

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Original Map Scale: 1:50,000
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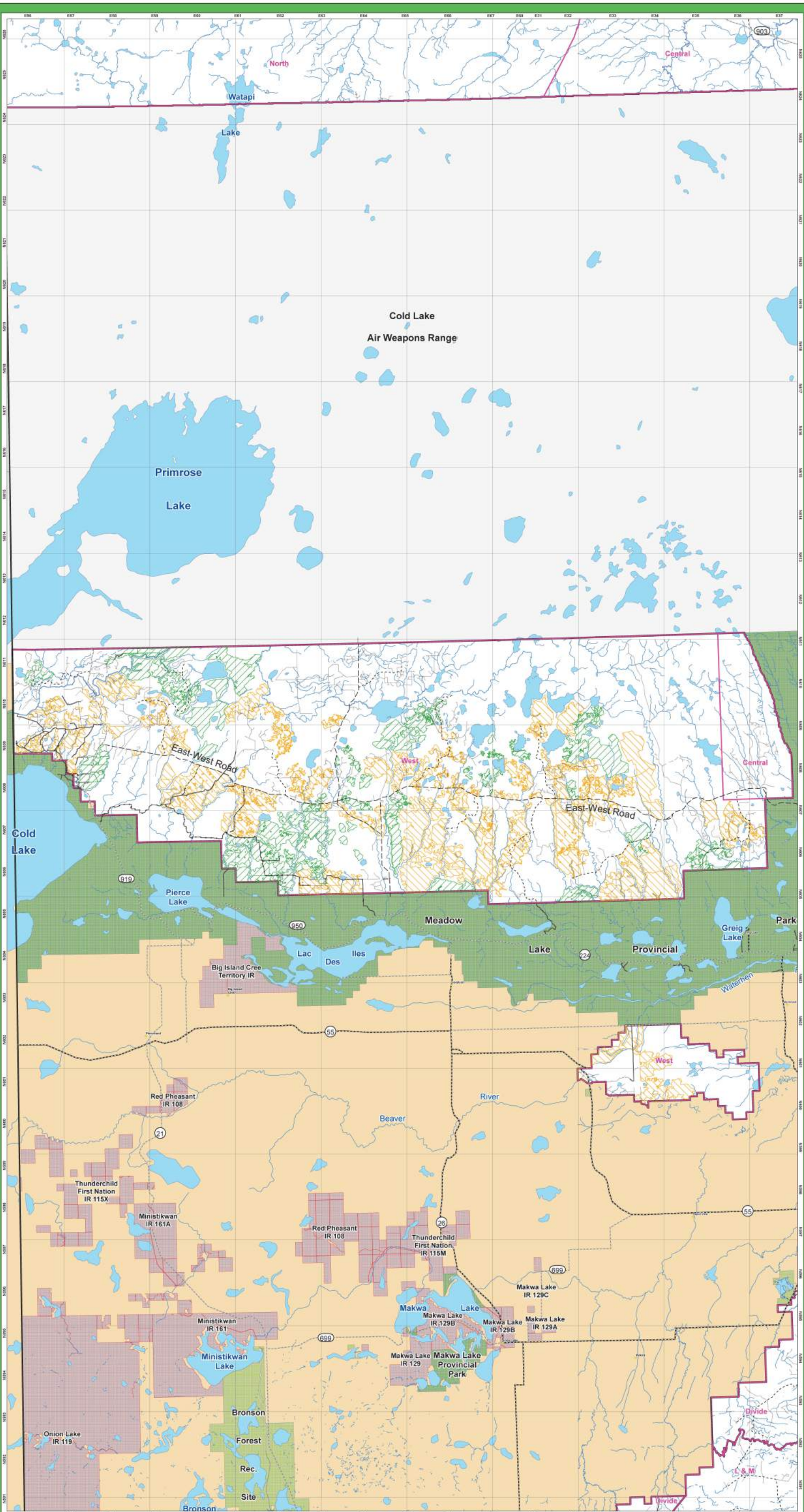


FEATURES OF INTEREST

Planning Unit

PLANIMETRIC LEGEND

Public Road	— Paved Highway	— FMA Boundary
	— Gravel Highway	— FMA Exclusion
	— Non-Motor	— Provincial Park
	— Oil / Gas	— Recreation Site
	— 3rd Party	— Indian Reserve
Provincial Forestry Class Road	— Class 1 (FRR)	— Air Weapons Range
	— Class 2 (RR)	— Settlement
	— Class 3 (Bush Road)	— Timber Reserve
	— Railroad	— Village
— Lake	— Creek	— Town
		— Village / Hamlet
		— Woodlands Office
		— Mill Site
— Provincial Border		
— UTM Tile Boundary		



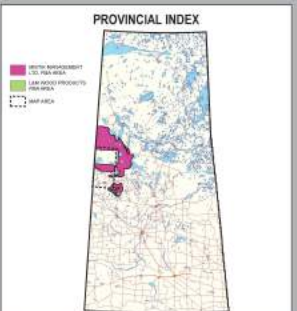


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PLANNED HARVEST EVENTS - WEST



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Map Date: November 18, 2020
Map Author: Silvacom Ltd.
Map File: mapimg_20180604_PHE_West.mxd



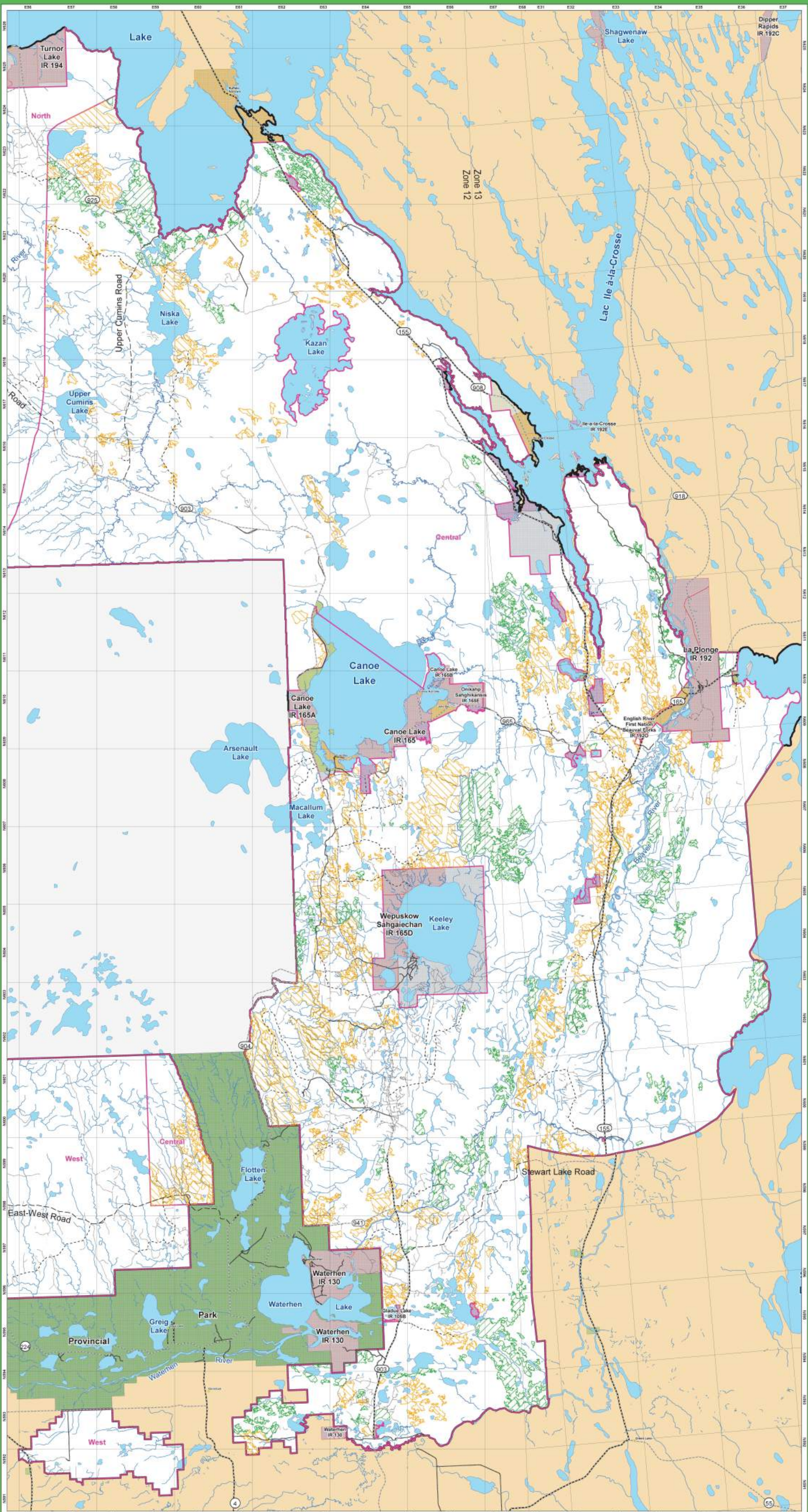
FEATURES OF INTEREST

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road	— Paved Highway	— FMA Boundary
— Gravel Highway	— Provincial Park	— FMA Exclusion
— Non-Mudtk	— Recreation Site	— Provincial Park
— Oil / Gas	— Indian Reserve	— Recreation Site
— 3rd Party	— Air Weapons Range	— Indian Reserve
Provincial Forestry Class Road	— Settlement	— Air Weapons Range
— Class 1 (FRR)	— Timber Reserve	— Settlement
— Class 2 (BR)	— Village	— Timber Reserve
— Class 3 (Bush Road)	— Town	— Village
— Railroad	— Village / Hamlet	— Town
— Lake	— Woodlands Office	— Village / Hamlet
— Creek	— MLI Site	— Woodlands Office
— Provincial Border		— MLI Site
— UTM Tile Boundary		



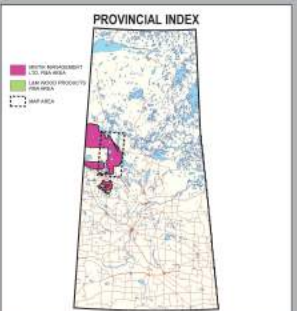


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PLANNED HARVEST EVENTS - CENTRAL



Map Version: 1.02
Original Map Date: 11/20/2009
Map Date: December 19, 2010
Map Author: Silvacom Ltd.
Map Date: 11/20/2009
Map Title: mapmgtg_20100909_PHE_Central.mxd



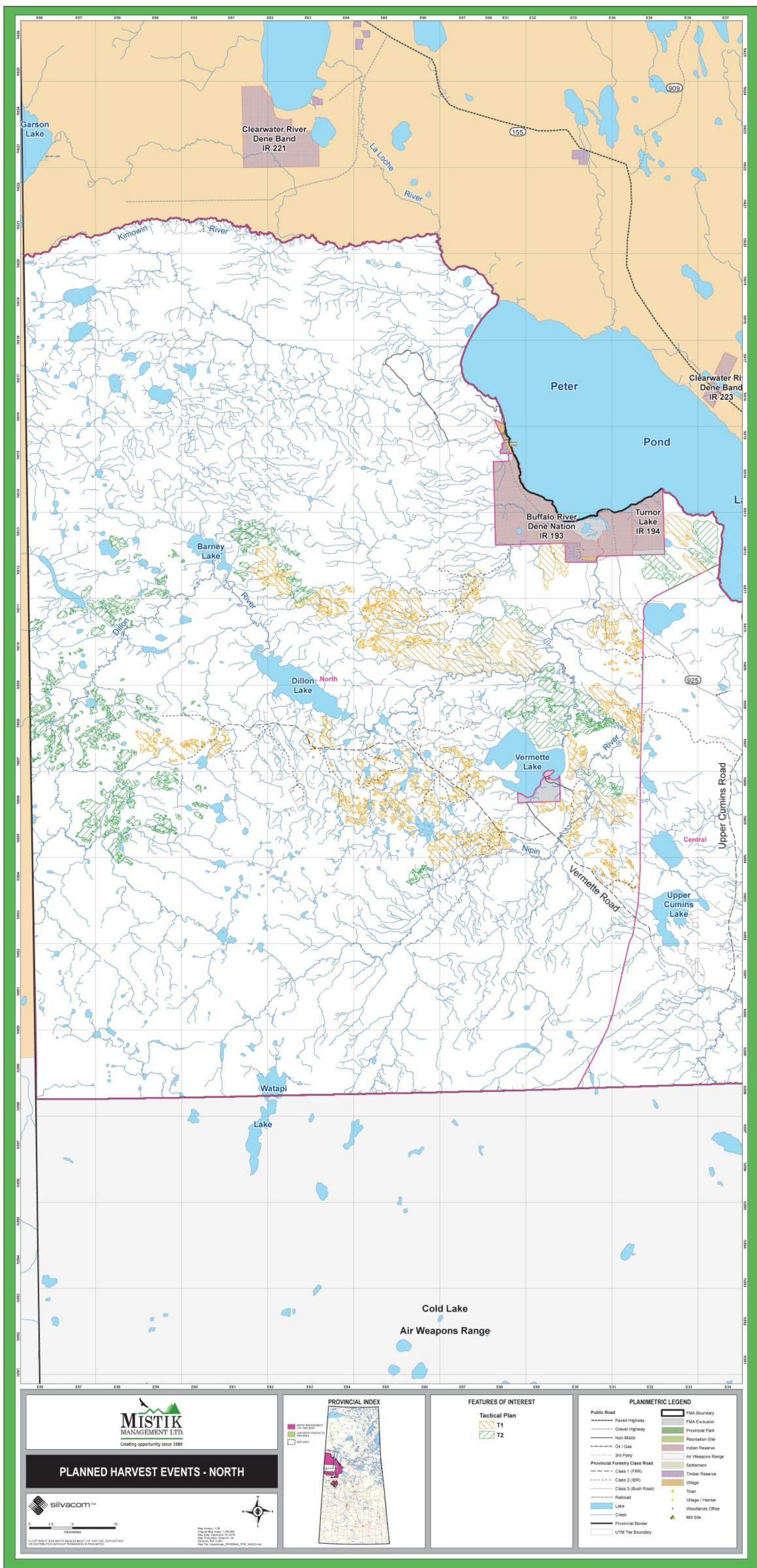
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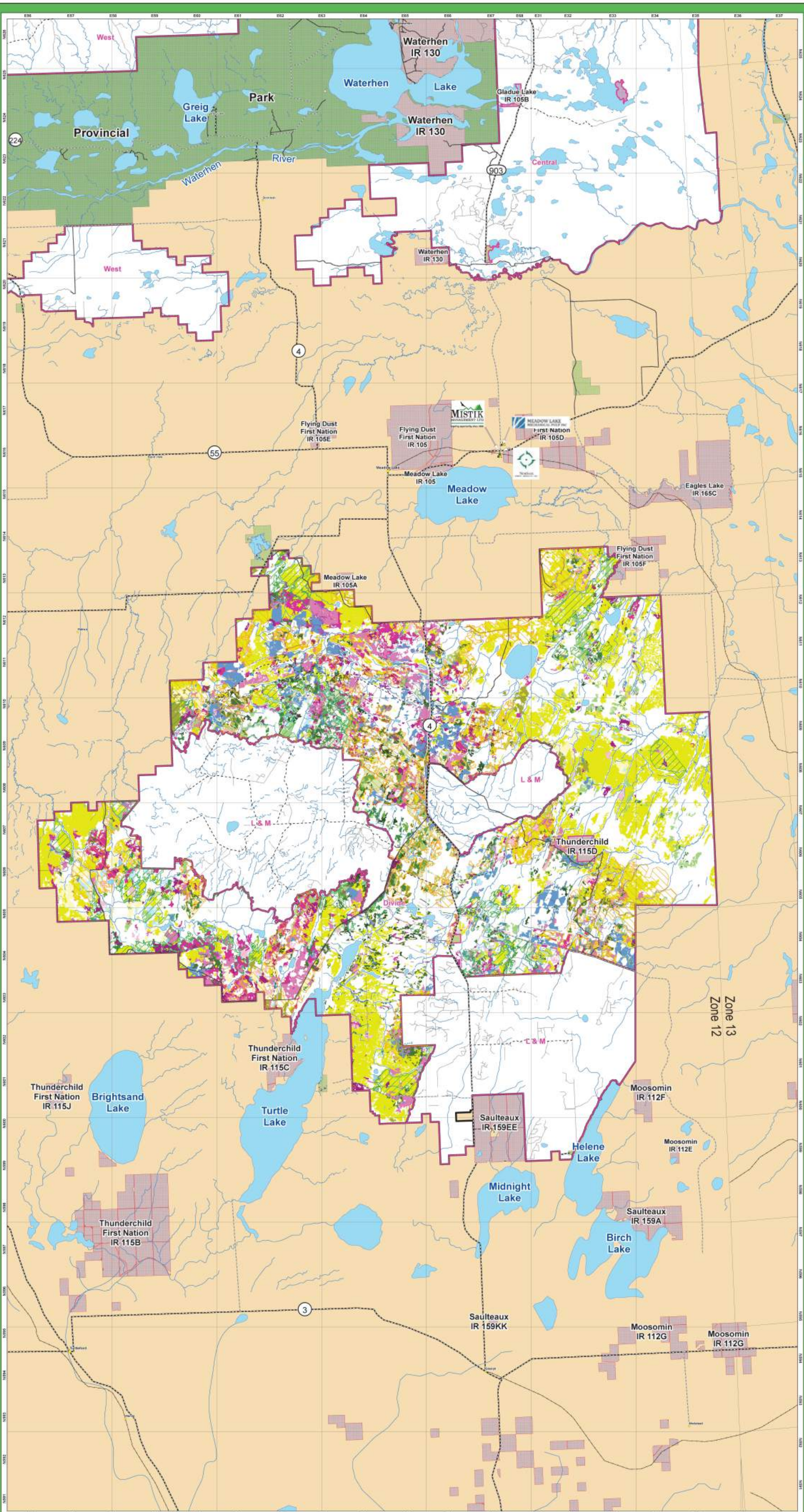
Tactical Plan


- T1
- T2

PLANIMETRIC LEGEND

Public Road	Paved Highway	FMA Boundary
Gravel Highway	FMA Exclusion	
Non-Motor	Provincial Park	
Oil / Gas	Recreation Site	
3rd Party	Indian Reserve	
Provincial Forestry Class Road	Air Weapons Range	
Class 1 (FRR)	Settlement	
Class 2 (BR)	Timber Reserve	
Class 3 (Bush Road)	Village	
Railroad	Town	
Lake	Village / Hamlet	
Creek	Woodlands Office	
Provincial Border	Mill Site	
UTM Tile Boundary		









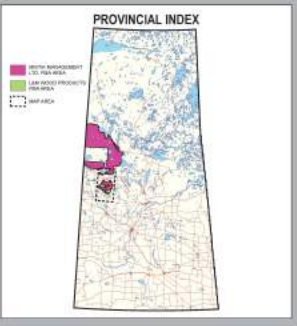
**MISTIK
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**MERCHANTABLE STANDS BY FOREST DEVELOPMENT
TYPE FROM THE NET PRODUCTIVE LANDBASE – DIVIDE**



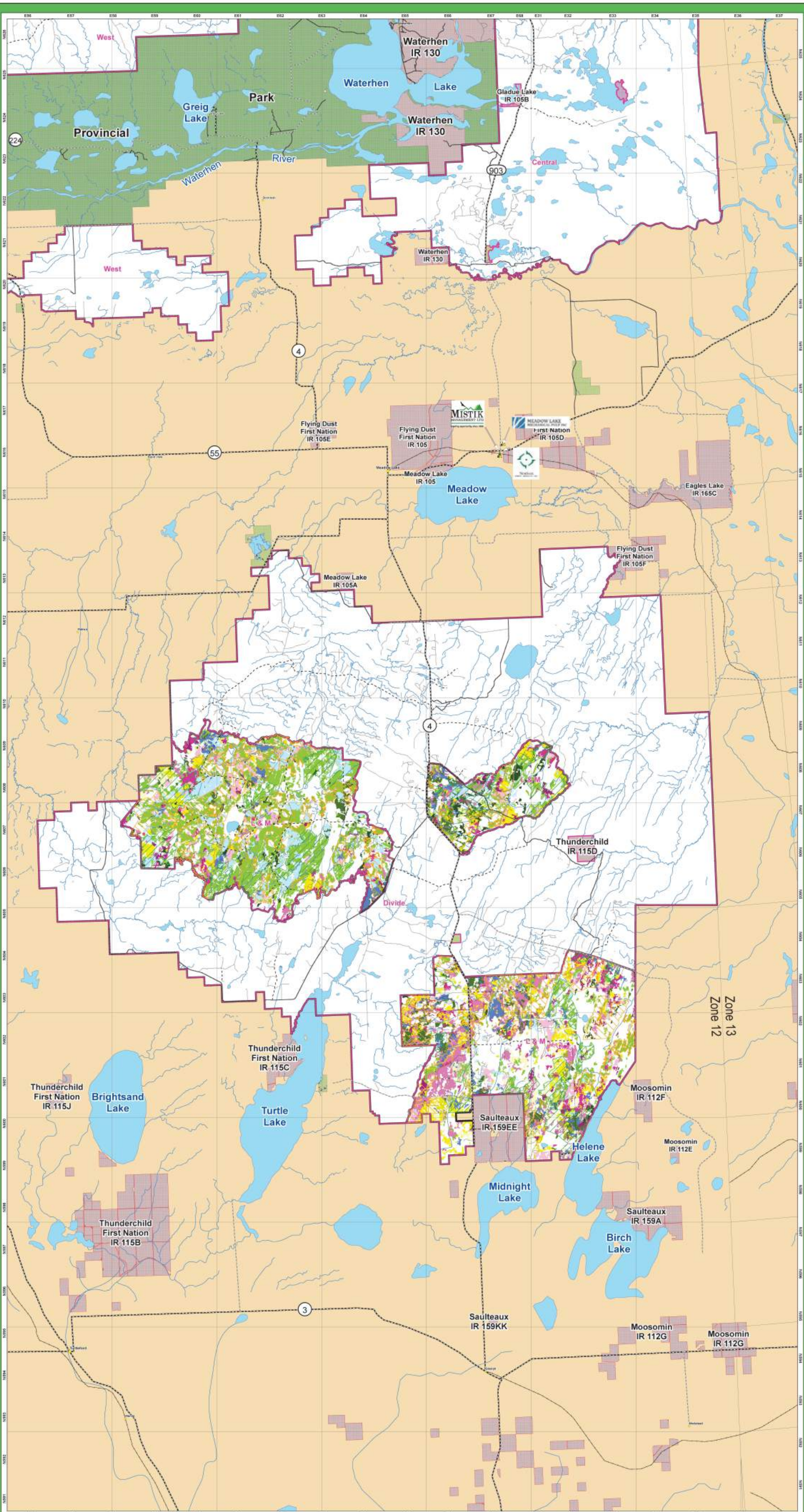
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Kilometres

Original Map Scale: 1:50,000
Map Date: December 16, 2010
Map Authors: Graham Lee
Reviewed By: Leah
Map File: mapmgs_20100606_MerchantStands_Divide.mxd



- FEATURES OF INTEREST**
- Tactical Plan
T1
T2
- Forest Development Type
S-WS-A-A
S-B-A-A
S-IP-LD-A-1
S-IP-LD-A-2
S-IP-HD-A-1
S-IP-HD-A-2
S-IP-LAB
SH-JP-A-A
SH-WS-A-A
HS-WS-A-A
HS-JP-A-A
HA-LD-A-1
HA-LD-A-2
HA-HD-A-1
HA-HD-A-2
HS-A-A-HD-A
HS-A-A-LD-A

- PLANIMETRIC LEGEND**
- Public Road
Paved Highway
Gravel Highway
Non-Matrix
Oil / Gas
3rd Party
Provincial Forestry Class Road
Class 1 (FRP)
Class 2 (BFR)
Class 3 (Bush Road)
Railroad
Lake
Creek
Provincial Border
UTM Tile Boundary
- FMA Boundary
FMA Exclusion
Provincial Park
Recreation Site
Indian Reserve
Air Weapons Range
Settlement
Timber Reserve
Village
Town
Village / Hamlet
Woodlands Office
Mtl Site



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MERCHANTABLE STANDS BY FOREST DEVELOPMENT TYPE FROM THE NET PRODUCTIVE LANDBASE – L&M

0 5 10 20 Kilometers

Original Map Scale: 1:50,000
Map Date: December 16, 2019
Map Authors: Graham Lee, Silvana Pat Lutz
Map File: mapmains_20190604_MapData_ML01.mxd

PROVINCIAL INDEX

FEATURES OF INTEREST

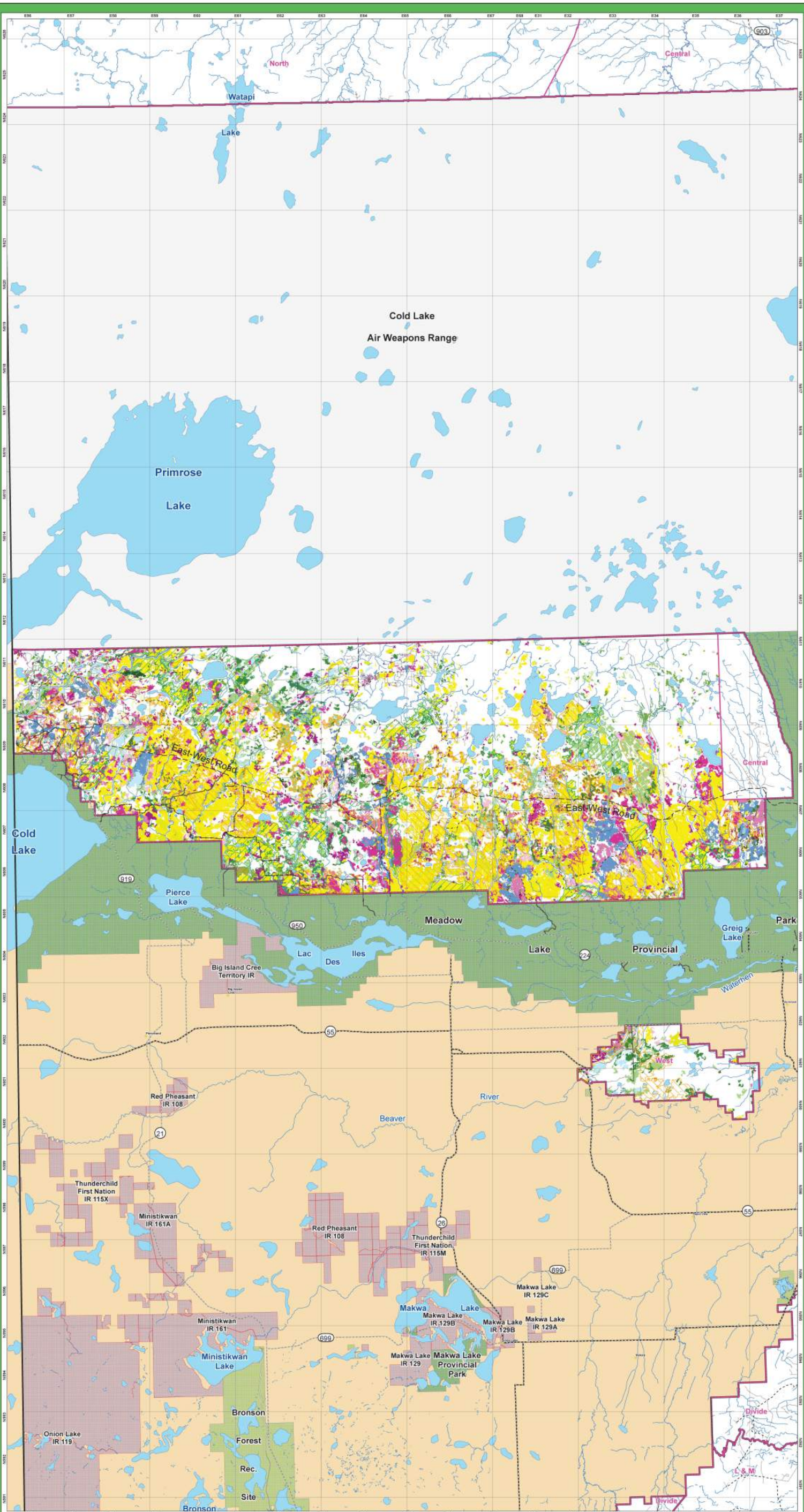
Tactical Plan
T1
T2

Forest Development Type
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S-JP-LD-A-2
S-JP-HD-A-1
S-JP-HD-A-2
S-JP-LAB
SH-JP-A-A
SH-WS-A-A
HS-JP-A-A
HS-WS-A-A
H-A-HD-A-1
H-A-HD-A-2
H-A-LD-A-1
H-A-LD-A-2
HSA-A-CA
HSD-A-LD-A

PLANIMETRIC LEGEND

Public Road
Paved Highway
Gravel Highway
Non-Motd
Oil / Gas
3rd Party
Provincial Forestry Class Road
Class 1 (FR)
Class 2 (RR)
Class 3 (Bush Road)
Railroad
Lake
Creek
Provincial Border
UTM Tile Boundary

FMA Boundary
FMA Exclusion
Provincial Park
Non-Motd
Recreation Site
Indian Reserve
Air Weapons Range
Settlement
Timber Reserve
Village
Town
Village / Hamlet
Woodlands Office
Mtl Site



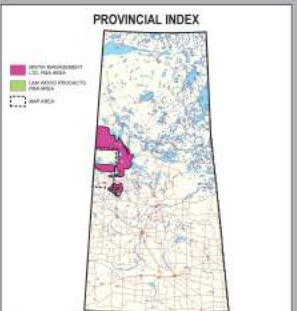


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**MERCHANTABLE STANDS BY FOREST DEVELOPMENT
TYPE FROM THE NET PRODUCTIVE LANDBASE – WEST**

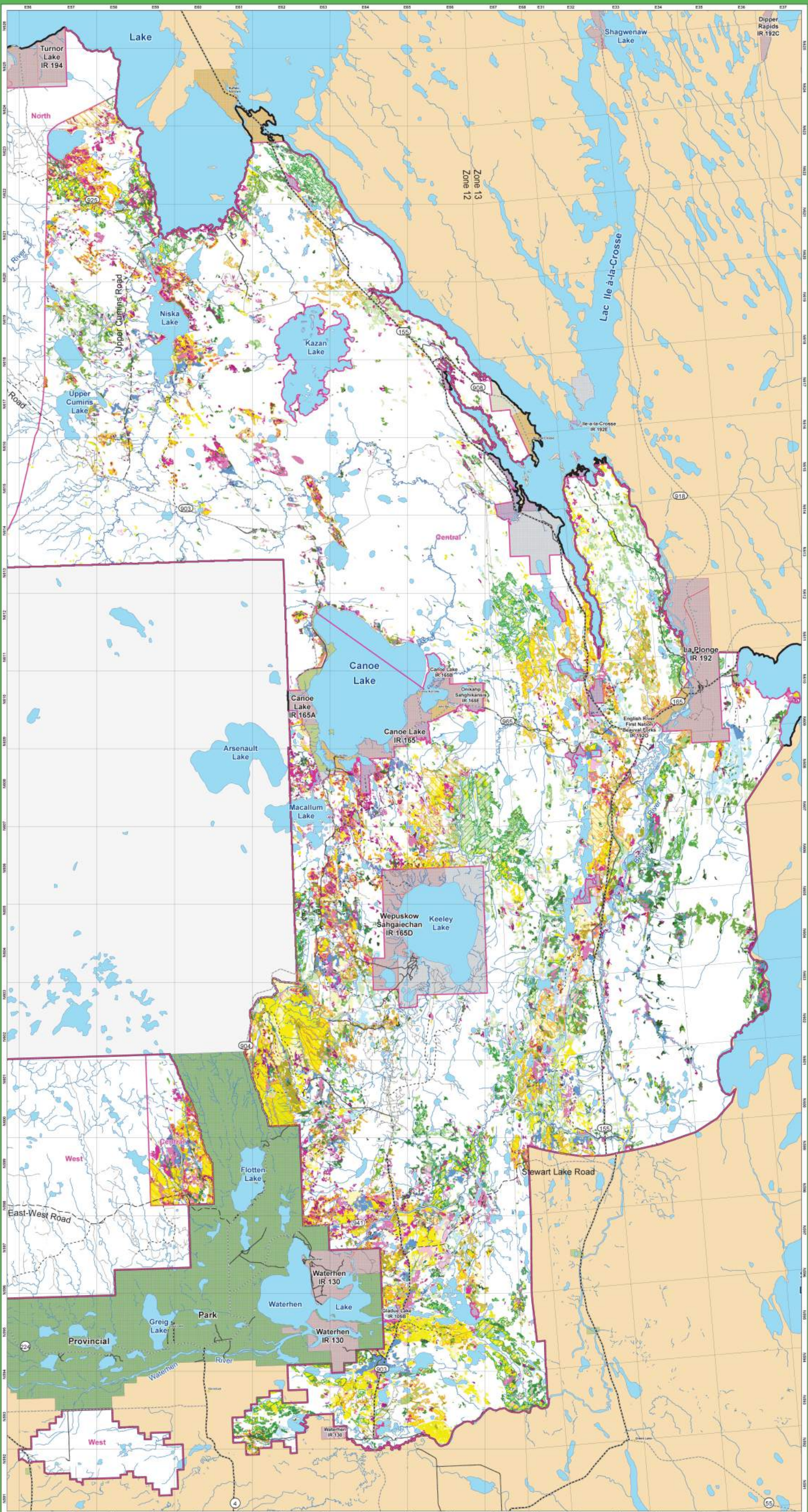


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Original Map Date: 11/15/2020
Map Date: November 18, 2020
Map Scale: 1:50,000 (Scale 1:50,000)
Map File: mapings_20200604_MerchStds_West.mxd



- FEATURES OF INTEREST**
- Tactical Plan
- T1
 - T2
- Forest Development Type
- S-WS-A-A
 - S-B-A-A
 - S-JP-LD-A-1
 - S-JP-LD-A-2
 - S-JP-HD-A-1
 - S-JP-HD-A-2
 - S-JP-LB-A
 - S-JP-A-A
 - SH-WS-A-A
 - HS-JP-A-A
 - HS-WS-A-A
 - HA-HD-A-1
 - HA-HD-A-2
 - HA-LD-A-1
 - HA-LD-A-2
 - HS-A-HD-A
 - HS-A-LD-A

- PLANIMETRIC LEGEND**
- Public Road
- Paved Highway
 - Gravel Highway
 - Non-Motor
 - Oil / Gas
 - 3rd Party
 - Provincial Forestry Class Road
 - Class 1 (FRR)
 - Class 2 (RR)
 - Class 3 (Bush Road)
 - Railroad
 - Creek
 - Provincial Border
 - UTM Tile Boundary
- FMA Boundary
- FMA Exclusion
 - Provincial Park
 - Recreation Site
 - Indian Reserve
 - Air Weapons Range
 - Settlement
 - Timber Reserve
 - Village
 - Town
 - Village / Hamlet
 - Woodlands Office
 - Mit Site



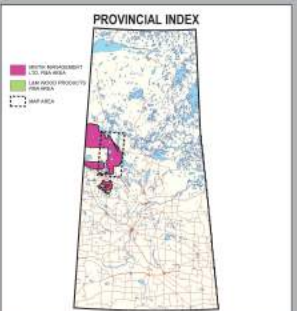


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**MERCHANTABLE STANDS BY FOREST DEVELOPMENT
TYPE FROM THE NET PRODUCTIVE LANDBASE – CENTRAL**



Map Version: 1.02
Original Map Date: 1/22/2020
Map Date: 12/15/2020
Map Author: Silvacom Ltd.
Map Date: 12/15/2020
Map Title: merchantable_stands_central_2020.mxd



FEATURES OF INTEREST

Tactical Plan
T1
T2

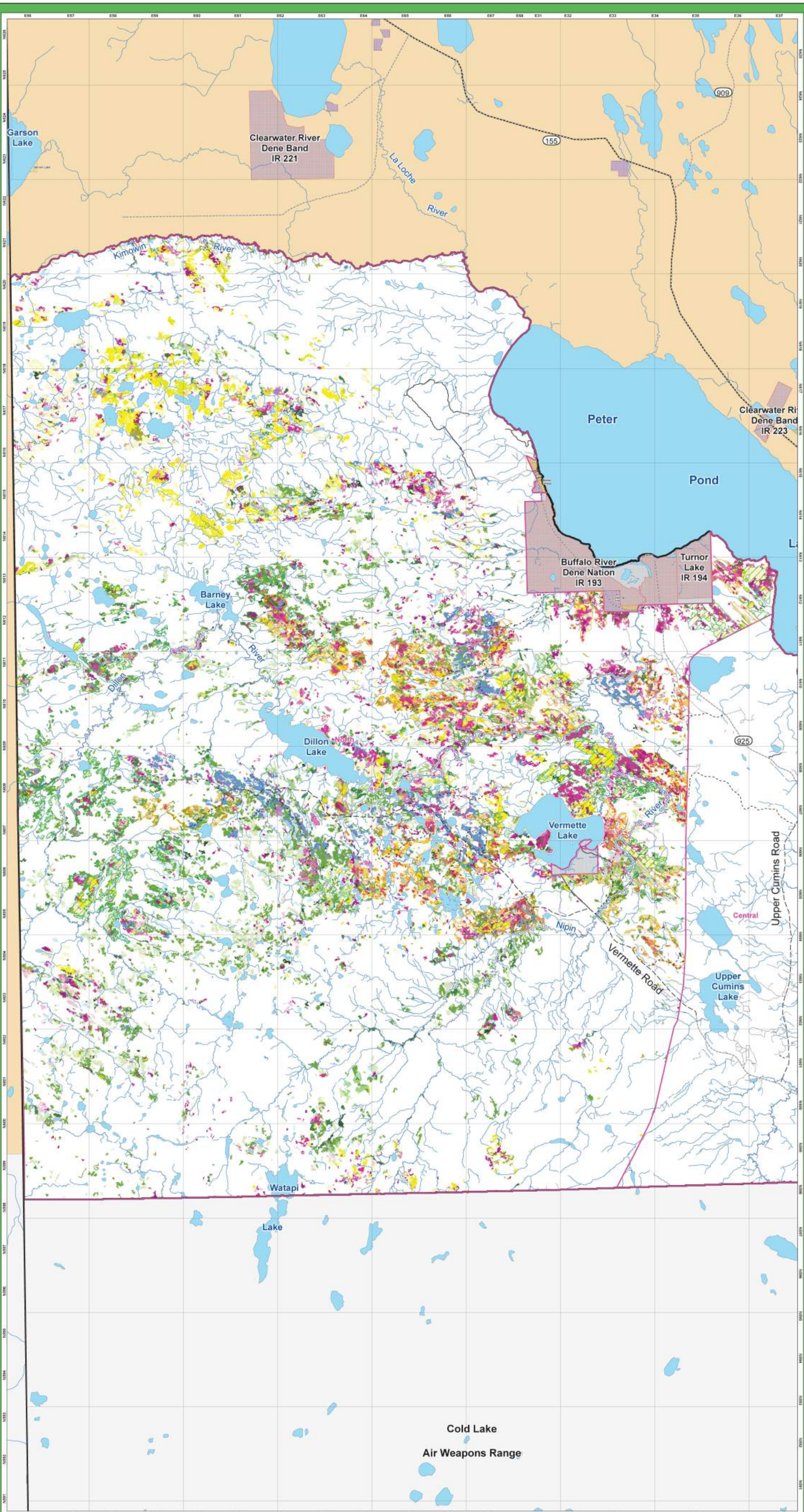
Forest Development Type

- S-RS-A-A
- S-RS-A-B
- S-RS-A-C
- S-RS-A-D
- S-RS-A-E
- S-RS-A-F
- S-RS-A-G
- S-RS-A-H
- S-RS-A-I
- S-RS-A-J
- S-RS-A-K
- S-RS-A-L
- S-RS-A-M
- S-RS-A-N
- S-RS-A-O
- S-RS-A-P
- S-RS-A-Q
- S-RS-A-R
- S-RS-A-S
- S-RS-A-T
- S-RS-A-U
- S-RS-A-V
- S-RS-A-W
- S-RS-A-X
- S-RS-A-Y
- S-RS-A-Z

PLANIMETRIC LEGEND

Public Road
Paved Highway
Gravel Highway
Non-Motor
Oil / Gas
3rd Party
Provincial Forestry Class Road
Class 1 (FRR)
Class 2 (BTR)
Class 3 (Bush Road)
Railroad
Lake
Creek
Provincial Border
UTM Tile Boundary

FMA Boundary
FMA Exclusion
Provincial Park
Recreation Site
Indian Reserve
Air Weapons Range
Settlement
Timber Reserve
Village
Town
Village / Hamlet
Woodlands Office
MNI Site



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MERCHANTABLE STANDS BY FOREST DEVELOPMENT TYPE FROM THE NET PRODUCTIVE LANDBASE – NORTH

0 5 10 20 Kilometers

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PROVINCIAL INDEX

FEATURES OF INTEREST

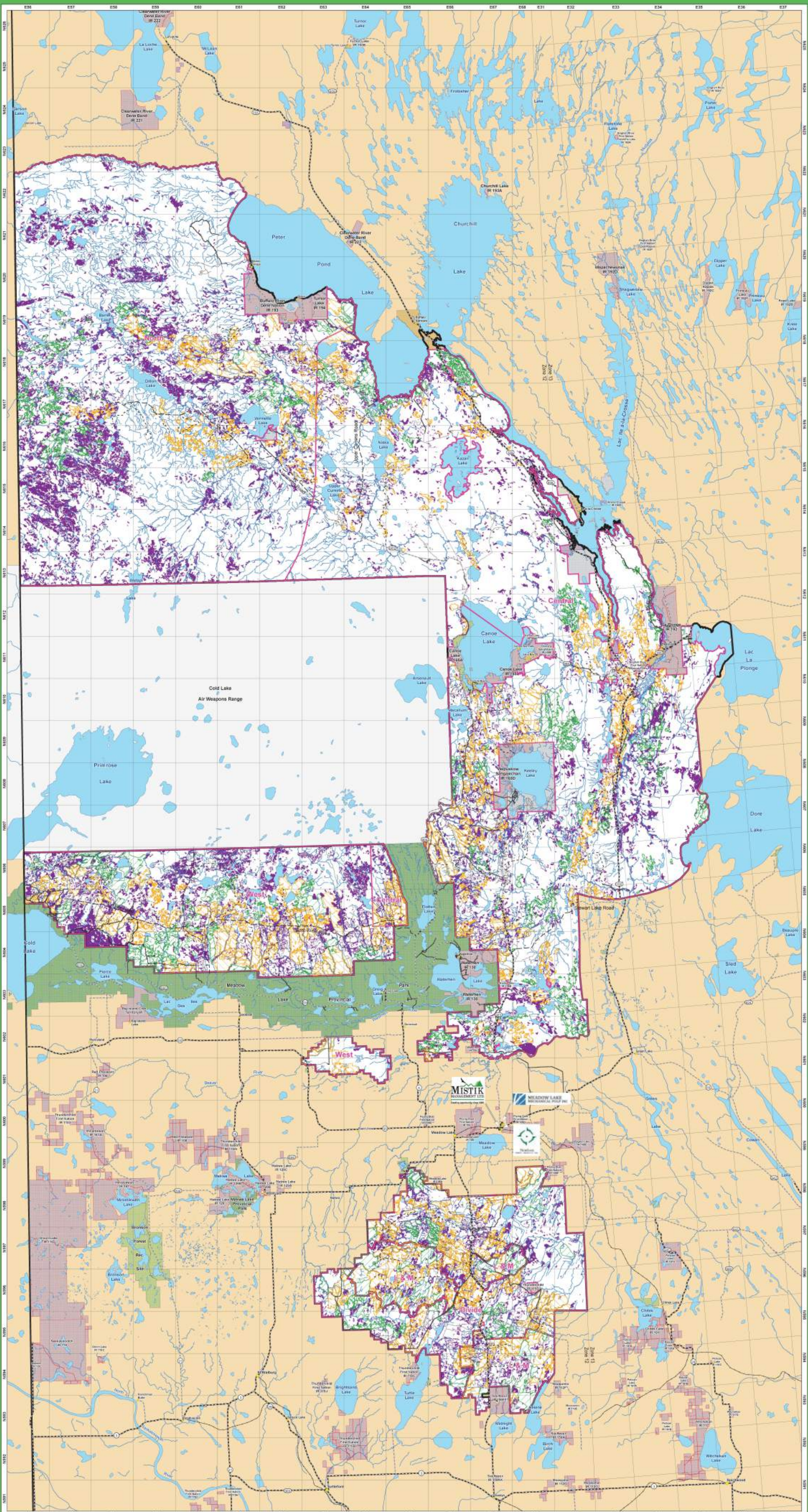
Tactical Plan
T1
T2

Forest Development Type
S-WB-A-A
S-WB-A-A
S-JP-LD-A-1
S-JP-LD-A-2
S-JP-HD-A-1
S-JP-HD-A-2
S-JP-LAM
S-JP-A-A
S-H-WB-A-A
S-H-JP-A-A
S-H-WB-A-A
S-H-WB-A-1
S-H-WB-A-2
S-H-WB-A-1
S-H-WB-A-2
S-H-WB-A-1
S-H-WB-A-2

PLANIMETRIC LEGEND

Public Road
Paved Highway
Gravel Highway
Non-Motor
Oil / Gas
3rd Party
Provincial Forestry Class Road
Class 1 (FRR)
Class 2 (BTR)
Class 3 (Bush Road)
Railroad
Lake
Creek
Provincial Border
UTM Tile Boundary

FMA Boundary
FMA Exclusion
Provincial Park
Recreation Site
Indian Reserve
Air Weapons Range
Settlement
Timber Reserve
Village
Town
Village / Hamlet
Woodlands Office
Mill Site





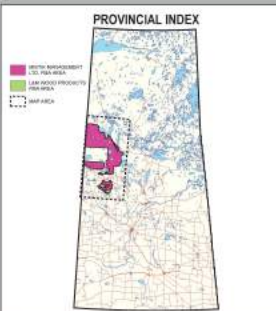
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MISTIK FMP AREA DEFERRED OLD FOREST



0 10 20
Kilometers

Map Version: 1.02
Original Map Date: 12/28/2005
Map Date: 08/04/2010
Map Date: 08/04/2010
Map Date: 08/04/2010
Map Date: 08/04/2010



FEATURES OF INTEREST

- Deferred Old Forest
- Tactical Plan
- T1
- T2

PLANIMETRIC LEGEND

- Public Road
 - Paved Highway
 - Gravel Highway
 - Non-Motor
 - Oil / Gas
 - 3rd Party
- Provincial Forestry Class Road
 - Class 1 (FRP)
 - Class 2 (BR)
 - Class 3 (Bush Road)
- Railroad
- Lake
- Creek
- Provincial Border
- UTM Tile Boundary

- FMA Boundary
- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- MIL Site



2. SELECTED MANAGEMENT STRATEGY

The Forest Management Scenario (FMS) that has been identified as the Selected Management Strategy (SMS) for the Mistik FMP area was chosen based on its ability to achieve specific goals and objectives. This section displays how the SMS (FMS 11) harvest sequence and modeled management actions fulfill these goals and objectives as well as the required outputs described in the 2017 Forest Management Planning Standard.

2.1. SPATIAL PARAMETERS

The FMS that was selected as the SMS by the planning team was FMS 11. However, Woodstock provides the optimal solution by analyzing a complex set of problems directed towards achieving the desired future forest conditions; Woodstock solutions are aspatial. Stanley on the other hand, implements Woodstock solutions spatially, subject to any additional spatial constraints that are applied. As it was necessary for the Natural Forest Patterns to have a spatial assignment of the harvest schedule it was necessary to implement the Woodstock solution within Stanley.

The harvest sequence was constrained in Stanley by several factors outlined in Table 2-1.

Table 2-1 Spatial Rules for Stanley Run

HARVEST SEQUENCE ASSUMPTIONS	
Goal:	Assess the spatial harvesting sequence of the timber supply model
SMS Scenario Description	<i>FMS 11 – Maximize Total Volume, Even Flow Harvest, Non-Declining Growing Stock (GS), Force Planned and Tactical Blocks, Seral Stage, Caribou, and Old Forest, and Black Spruce Constraints</i>
Spatial Simulation length	70 year
Minimum block size	NONE*
Target block size	50 ha
Maximum block size	1,000 ha

*As the tactical plan was already incorporated within the model a minimum block size was not assigned.

Following the assignment of the harvest schedule to polygons using Stanley, it was necessary to run the results back through Woodstock to update the harvest profiles. The following model parameters (Section 2.2) were the settings used in Woodstock to produce the final harvest profiles (Figure 2-1 and Figure 2-2).

2.2. MODEL PARAMETERS

The parameter settings used in the analysis of this scenario are displayed in Table 2-3. The utilization standards used for the SMS model run are presented in Table 2-2.



Table 2-2 Utilization Standards (10 cm) – Selected Management Strategy

UTILIZATION PARAMETER	MISTIK + L&M (all other Yield Curves)		L&M Yield Curve # 7	
	Hardwood	Softwood	Hardwood	Softwood
Stump Height (m)	0.3	0.3	0.3	0.3
Minimum Top Diameter Inside Bark (cm)	7.5	10	8	10
Log Length (m)	2.6	2.6	n/a	n/a
Merchantable Minimum Bole Length (m)	5.2	5.2	4.9	5.2

Table 2-3 Control Parameters - SMS Total Volume with Caribou, Seral Stage, Old Forest Constraints and the Planned/Tactical Blocks

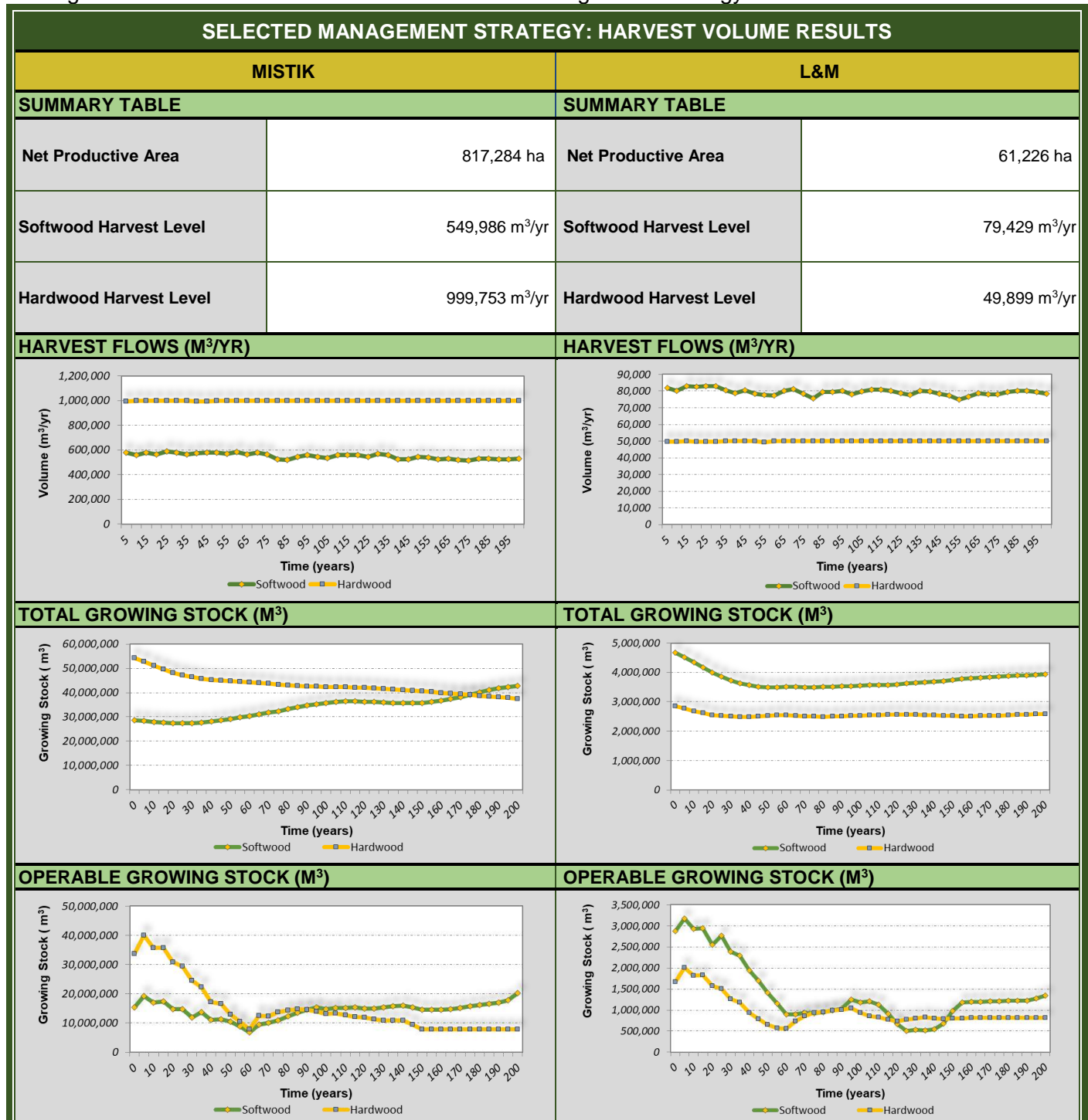
SMS: MAXIMIZE TOTAL VOLUME WITH CARIBOU, SERAL STAGE, OLD FOREST AND PLANNED/TACTICAL BLOCKS	
CONTROL PARAMETER	PARAMETER SETTING
Objective:	Maximize total volume harvested over the planning horizon
Model constraints:	<ol style="list-style-type: none"> 1) Even flow softwood and hardwood volume harvest for the Mistik FMA area 2) Even flow softwood and hardwood volume harvest for the L&M FMA area 3) Non-declining softwood and hardwood operable growing stock in the last 50 years in both the Mistik and L&M FMA areas 4) ≤3% of the 2006 caribou range can be harvested per decade 5) Old and Very old seral stage constraints applied based on targets in VOITs 2a and 2b 6) No identified old forest will be harvested in years 1-20 7) Limit black spruce harvest to ≤ 30,000 m³/yr. in L&M
Effective Date	2017
Harvest unit:	Mistik and L&M FMA areas
Planning horizon:	200 yrs
Minimum harvest age:	100 Years- Black and White Spruce Softwood 70 Years- Jack Pine Softwood 80 Years- Jack Pine Leading Softwood Mixed wood (SH) 90 Years- Spruce Leading Softwood Mixed wood (SH) 80 Years- Jack Pine and Spruce Deciduous Mixed wood (HS) 70 Years- Hardwood
Landbase:	2016 submitted landbase which includes both Mistik and L&M FMA areas
Yield curves:	Yield curves (17 yield curves/development types) based on 10 cm top diameter utilization standards
Cull deductions:	Applied to yield curves (1.5% Softwood, 7.4% Hardwood)
Regeneration transition:	SGR transition rules
Regeneration lag:	Not applied
Introduce harvest plans:	Planned and tactical blocks applied



2.3. HARVEST PROFILE

The spatial harvest volume results of the SMS for both Mistik and L&M are displayed in Figure 2-1 below.

Figure 2-1 Harvest Volume Results – Selected Management Strategy



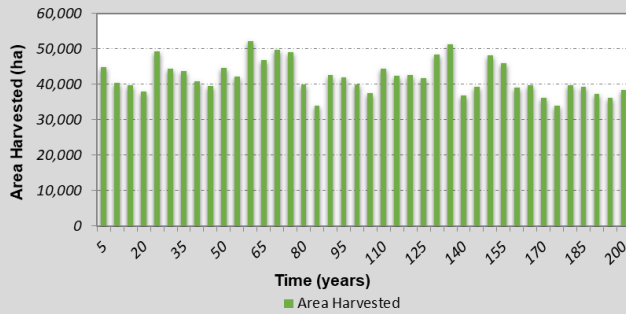


SELECTED MANAGEMENT STRATEGY: HARVEST VOLUME RESULTS

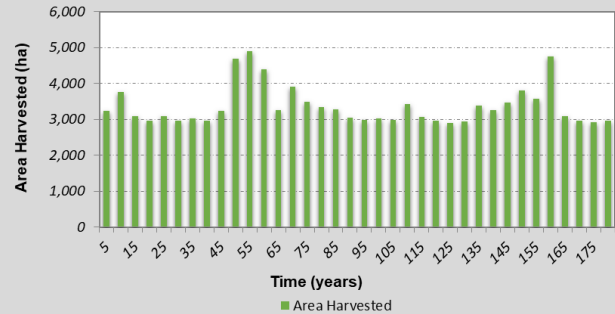
MISTIK

L&M

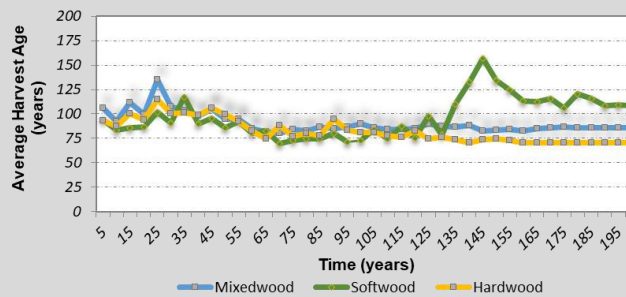
AREA HARVESTED



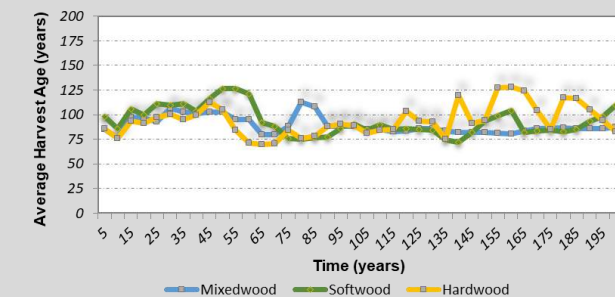
AREA HARVESTED



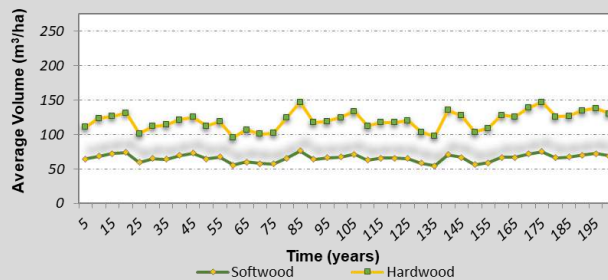
AVERAGE HARVEST AGE



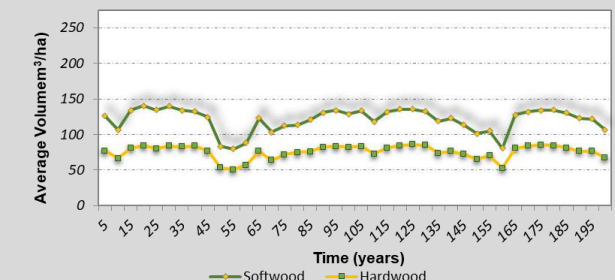
AVERAGE HARVEST AGE



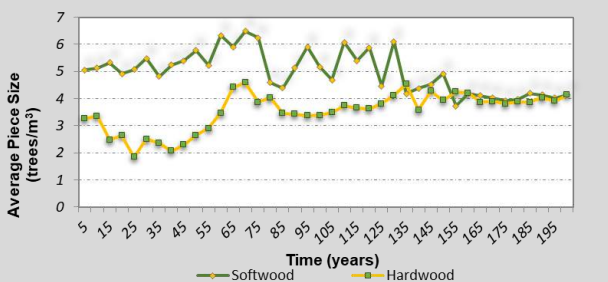
AVERAGE VOLUME (M³/HA)



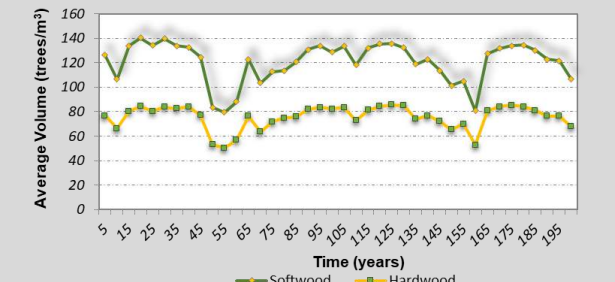
AVERAGE VOLUME (M³/HA)



AVERAGE PIECE SIZE (TREES/M³)



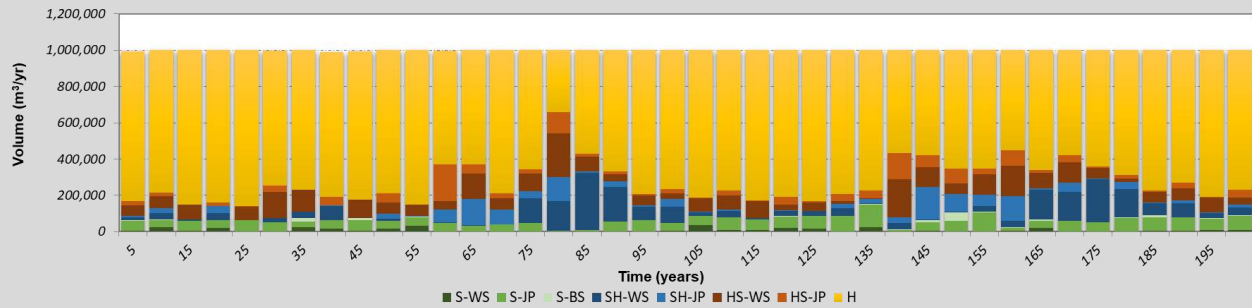
AVERAGE PIECE SIZE (TREES/M³)



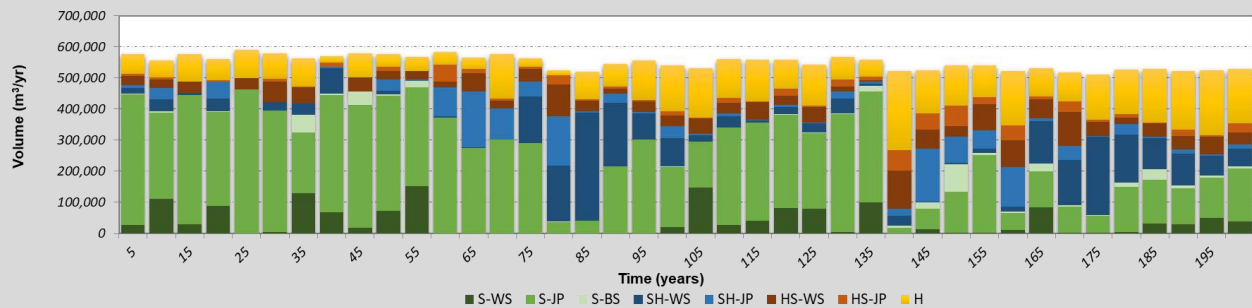


SELECTED MANAGEMENT STRATEGY: HARVEST VOLUME RESULTS Continued

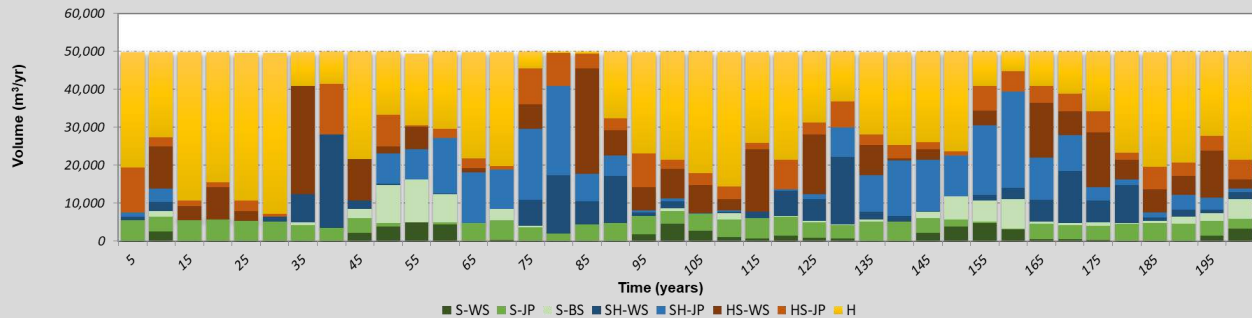
MISTIK HARDWOOD HVS VOLUME CONTRIBUTION BY SGR TYPE



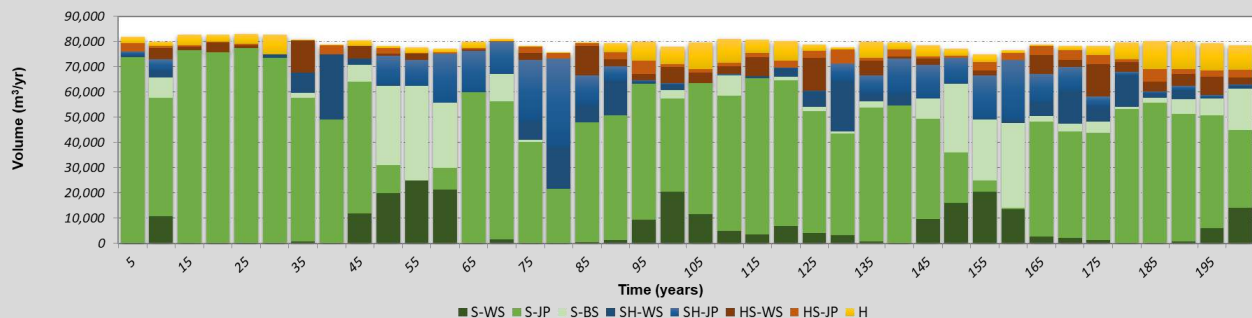
MISTIK SOFTWOOD HVS VOLUME CONTRIBUTION BY SGR TYPE



L & M HARDWOOD HVS VOLUME CONTRIBUTION BY SGR TYPE



L & M SOFTWOOD HVS VOLUME CONTRIBUTION BY SGR TYPE





2.3.1. HVS AND HVS PULP SUMMARY

As requested by the MOE, the following summary outlines the saw log, pulp, and total volumes for both hardwood and softwood for each company based on the selected management strategy. The final softwood saw log HVS is calculated from reducing the retention and then applying the factor for softwood degrade (Table 2-4). The process used to determine the weighted average softwood saw log degrade is shown in Table 2-5. The final softwood pulp HVS is calculated from the combination of the volume removed from the softwood degrade and tops/additional merchantable trees (Table 2-4). The tops / additional merchantable trees volume was calculated using a ratio based on the softwood HVS of Scenario 2 (7.5 cm top) versus the softwood HVS of Scenario 1 (10 cm top). The ratio between the Mistik softwood HVS of the two scenarios is 26.89% and between the L&M softwood HVS is 17.41%.

Table 2-4 Saw log and Pulp HVS Breakdown

Result	Mistik FMA HVS (m ³ /yr)			L&M FMA HVS (m ³ /yr)		
	Softwood Sawlog	Softwood Pulp	Hardwood	Softwood Sawlog	Softwood Pulp	Hardwood
SMS Model Result	549,986	N/A	999,753	79,429	N/A	49,899
Reduction for Insular Retention (4%)	-21,999	N/A	-39,990	-3,177	N/A	-1,996
Weighted Average Degrade (Mistik: 12%, L&M: 9%)	-63,358	63,358	N/A	-6,863	6,863	N/A
Tops (10cm to 8cm) and additional merch. trees	N/A	124,920	N/A	N/A	12,077	N/A
Final HVS (m³/yr)	464,628	188,278	959,763	69,389	18,940	47,903

Species-specific factors for softwood sawlog degrade were provided by MOE (white spruce 5%, Jack pine 18%, black spruce 8%). Because the L&M FMA is known to have considerably better quality pine, 10% was used as the degrade factor for L&M Jack pine. These species-based factors were applied to the Tactical Plan softwood volumes to calculate a weighted average degrade value.

Table 2-5 Volume-Weighted Average Degrade Calculation

FMA	Softwood Species	Tactical Plan (T1+T2) Softwood Volume (m ³)	Degrade Factor	Degrade Volume (m ³)	Volume Weighted Average Degrade (Rounded)
Mistik	White Spruce	3,848,349	5%	192,417	
	Jack Pine	4,277,713	18%	769,988	
	Black Spruce	44,476	8%	3,558	
	Total	8,170,538		965,964	12%
L&M	White Spruce	559,995	5%	28,000	
	Jack Pine	1,892,956	10%	189,296	
	Black Spruce	163,408	8%	13,073	
	Total	2,616,359		230,368	9%



2.3.2. HARVEST PROFILE BY PLANNING UNIT

The following figure displays the harvest profile (HVS) for each planning unit within the plan area. The following SMS harvest volume results are averages of what the model chose and are not to be used as annual targets or commitments. The harvest volumes also do not include the reduction for retention or degrade. Mistik and L&M are required to follow their tactical plan, not the harvest areas by planning unit summarized here. Mistik Target #22 (See VOIT document in Volume II) outlines the reporting requirements for harvest levels by planning unit which are based on a five-year assessment cycle.

Figure 2-2 SMS Harvest Volume Results by Planning Unit

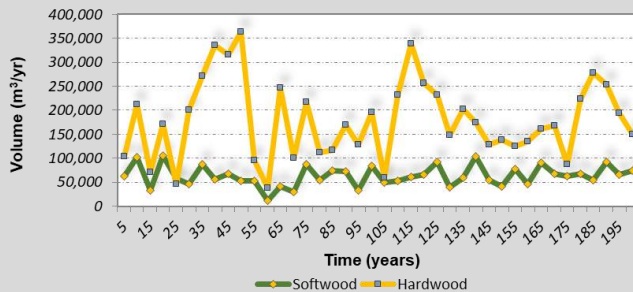
SELECTED MANAGEMENT STRATEGY		
PLANNING UNIT SUMMARY		
PLANNING UNIT	METRIC	
DIVIDE	Net Productive Area	99,326 ha
	Average SWD HVS Level	63,198 m ³ /yr
	Average HWD HVS Level	179,921 m ³ /yr
WEST	Net Productive Area	137,558 ha
	Average SWD HVS Level	90,024 m ³ /yr
	Average HWD HVS Level	222,096 m ³ /yr
CENTRAL	Net Productive Area	305,333 ha
	Average SWD HVS Level	218,605 m ³ /yr
	Average HWD HVS Level	355,533 m ³ /yr
NORTH	Net Productive Area	275,066 ha
	Average SWD HVS Level	178,141 m ³ /yr
	Average HWD HVS Level	242,203 m ³ /yr
L & M	Net Productive Area	61,226 ha
	Average SWD HVS Level	79,429 m ³ /yr
	Average HWD HVS Level	49,899 m ³ /yr



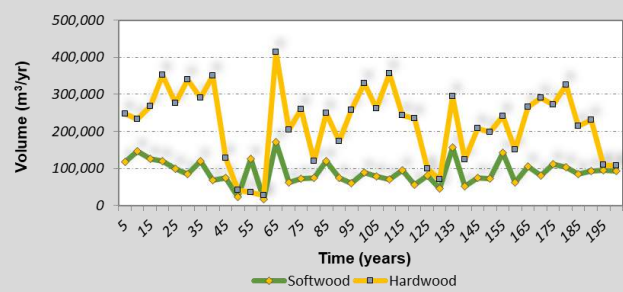
SELECTED MANAGEMENT STRATEGY

PLANNING UNIT SUMMARY

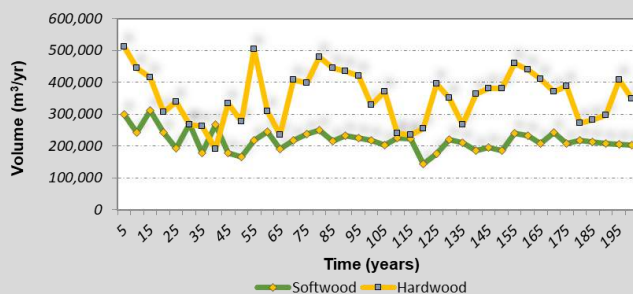
DIVIDE HARVEST FLOWS (M³/YR)



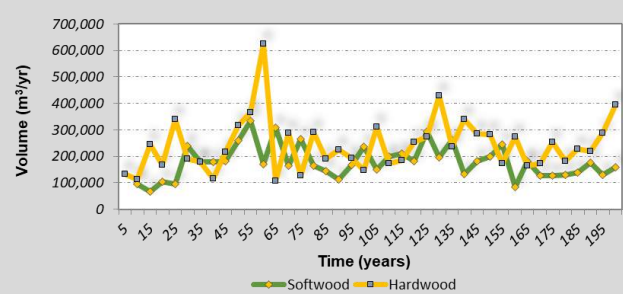
WEST HARVEST FLOWS (M³/YR)



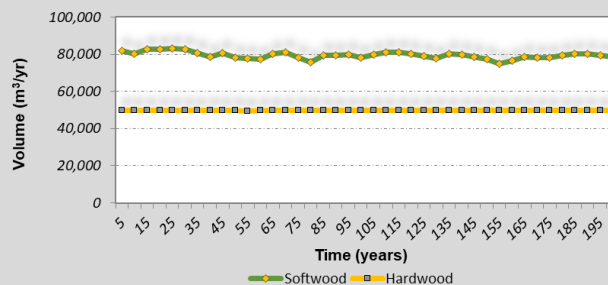
CENTRAL HARVEST FLOWS (M³/YR)



NORTH HARVEST FLOWS (M³/YR)



L&M HARVEST FLOWS (M³/YR)

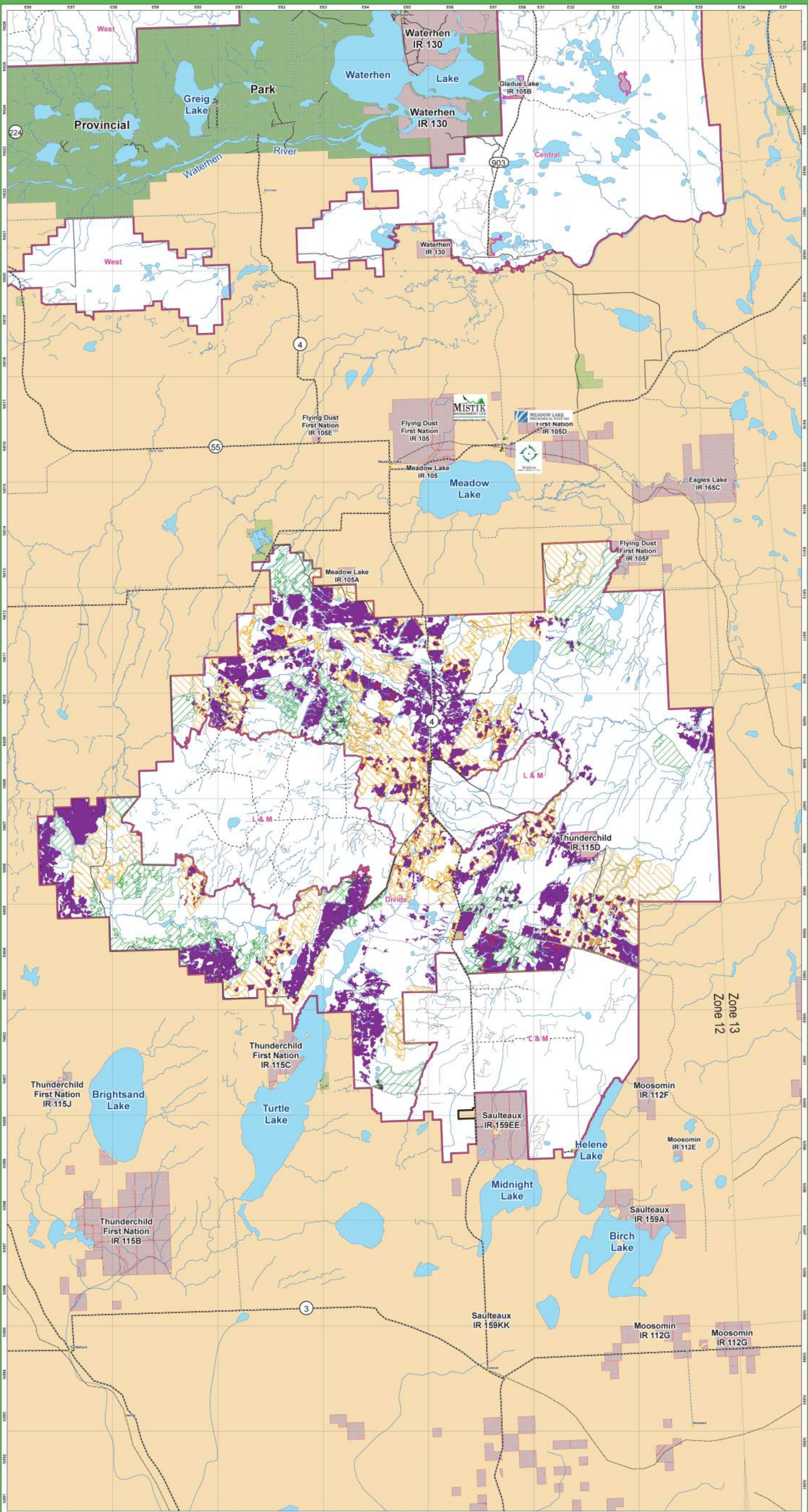


2.4. FOREST RENEWAL

The following section outlines the previously harvested areas and all-season roads, as well as the reforestation of the backlog of not sufficiently regenerating (NSR) areas within the Mistik FMP area.

2.4.1. PREVIOUSLY HARVESTED AREAS AND EXISTING ALL-SEASON ROADS

Map 13 through Map 17 demonstrate the previously harvested areas and existing all-season roads within the Mistik FMP area. It should be noted that the previously harvested areas and roads are up to the landbase year of 2016.





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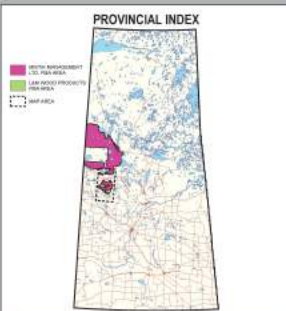
PREVIOUSLY HARVESTED AREAS AND EXISTING ALL-SEASON ROADS (CLASS 1, 2, AND 3) – DIVIDE



0 2.5 5 10
Kilometres



Map Version: 1.02
Original Map Date: 12/05/2020
Map Date: 12/05/2020
Map Date: 12/05/2020
Map Date: 12/05/2020
Map Date: 12/05/2020



FEATURES OF INTEREST

Existing All-Season Roads

- Class 1
- Class 2
- Class 3

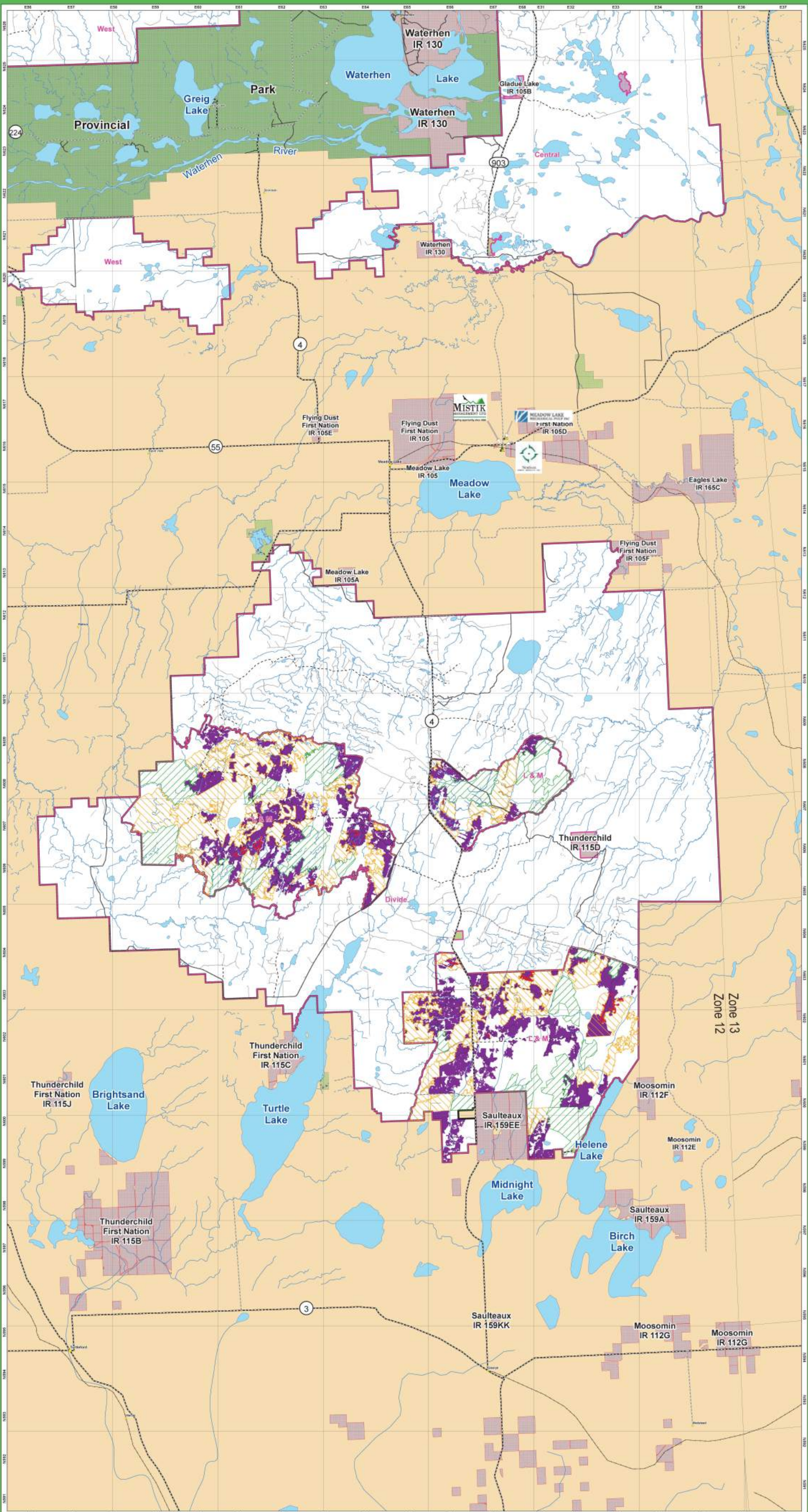
Tactical Plan

- T1
- T2

Previously Harvested Area

PLANIMETRIC LEGEND

Public Road	Paved Highway	FMA Boundary
	Gravel Highway	FMA Exclusion
	Non-Motor	Provincial Park
	Oil / Gas	Recreation Site
	3rd Party	Indian Reserve
	Provincial Forestry Class Road	Air Weapons Range
	Class 1 (FR)	Settlement
	Class 2 (BR)	Timber Reserve
	Class 3 (Bush Road)	Village
	Railroad	Town
	Lake	Village / Hamlet
	Creek	Woodlands Office
	Provincial Border	Mill Site
	UTM Tile Boundary	



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PREVIOUSLY HARVESTED AREAS AND EXISTING ALL-SEASON ROADS (CLASS 1, 2, AND 3) – LM

0 2.5 5 10 Kilometres

Map Version: 1.02
Original Map Date: 12/05/2020
Map Date: 12/05/2020
Map Author: Silvacom Ltd.
Map Title: mapimgaps_20240604_JubileeForest_LM.mxd

PROVINCIAL INDEX

FEATURES OF INTEREST

Existing All-Season Roads

- Class 1
- Class 2
- Class 3

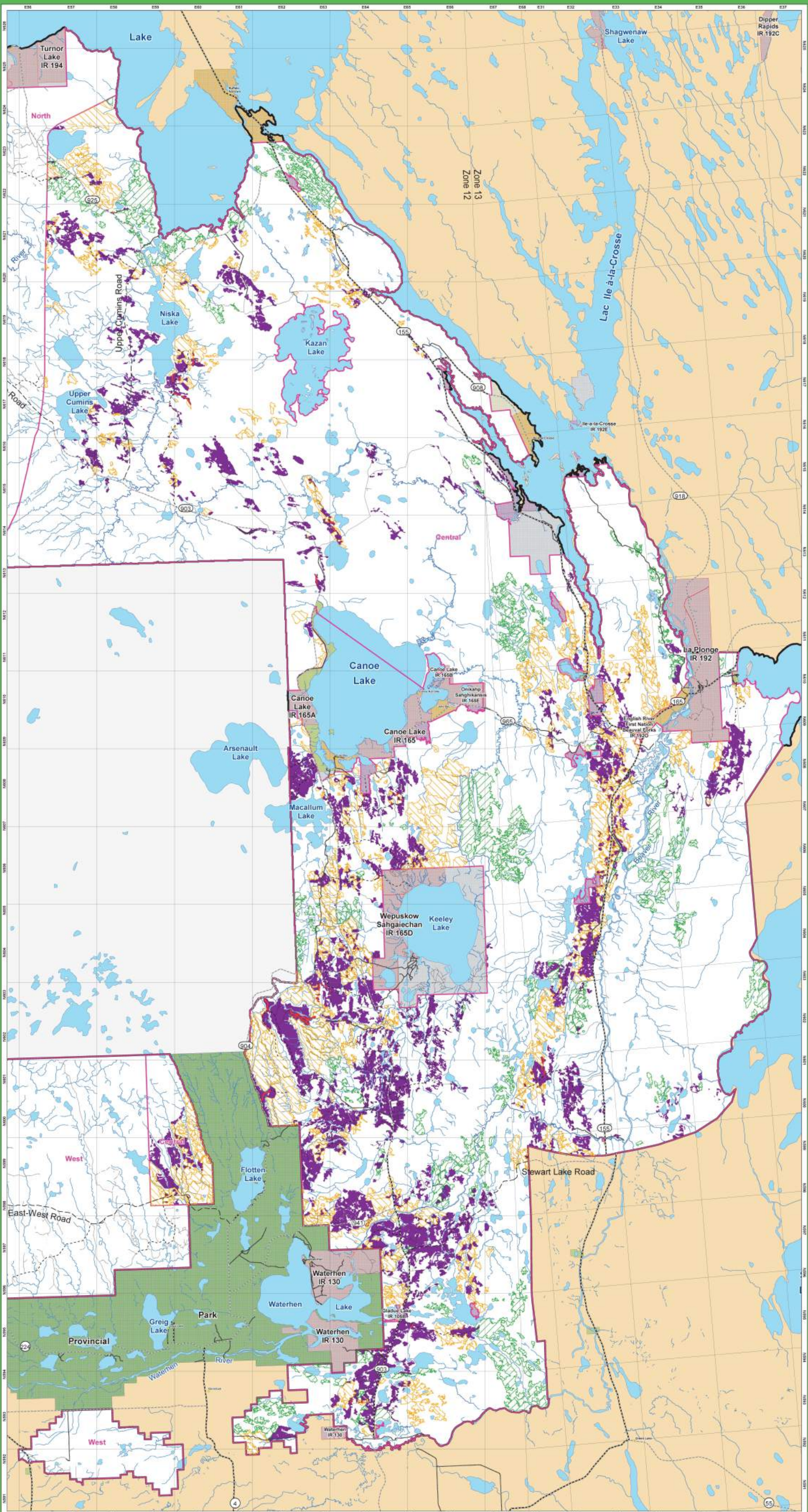
Tactical Plan

- T1
- T2

Previously Harvested Area

PLANIMETRIC LEGEND

Public Road	Paved Highway	FMA Boundary
	Gravel Highway	FMA Exclusion
	Non-Mutk	Provincial Park
	Oil / Gas	Recreation Site
	3rd Party	Indian Reserve
	Provincial Forestry Class Road	Settlement
	Class 1 (FRR)	Timber Reserve
	Class 2 (BRR)	Village
	Class 3 (Bush Road)	Town
	Railroad	Village / Hamlet
	Lake	Woodlands Office
	Creek	Mit Site
	Provincial Border	
	UTM Tile Boundary	



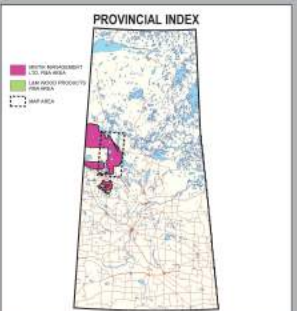


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PREVIOUSLY HARVESTED AREAS AND EXISTING ALL-SEASON ROADS (CLASS 1, 2, AND 3) – CENTRAL

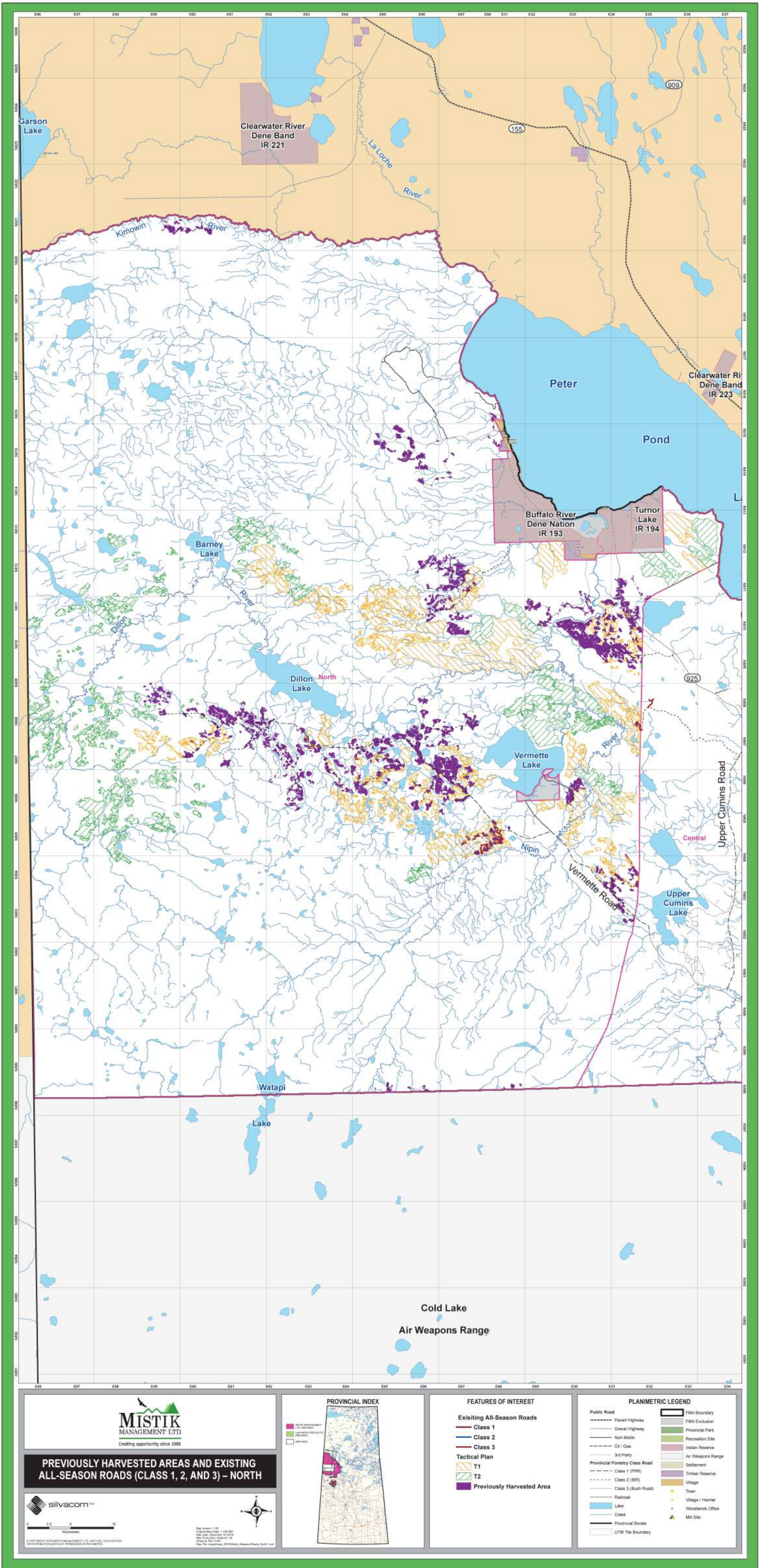


Map Version: 1.02
Original Map Date: 11/20/2009
Map Date: December 19, 2010
Map Author: Silvacom Ltd.
Map Title: Mapings, 2010/06/04, Silvacom/Forest/Central



- FEATURES OF INTEREST**
- Existing All-Season Roads**
- Class 1
 - Class 2
 - Class 3
- Tactical Plan**
- T1
 - T2
- Previously Harvested Area**

- PLANIMETRIC LEGEND**
- | | | |
|----------------------------------|---------------------|---------------------|
| Public Road | — Paved Highway | — FMA Boundary |
| — Gravel Highway | — Provincial Park | — FMA Exclusion |
| — Non-Motor | — Recreation Site | — Provincial Park |
| — Oil / Gas | — Indian Reserve | — Recreation Site |
| — 3rd Party | — Air Weapons Range | — Indian Reserve |
| — Provincial Forestry Class Road | — Settlement | — Air Weapons Range |
| — Class 1 (FRR) | — Timber Reserve | — Settlement |
| — Class 2 (BIR) | — Village | — Timber Reserve |
| — Class 3 (Bush Road) | — Town | — Village |
| — Railroad | — Village / Hamlet | — Town |
| — Lake | — Woodlands Office | — Village / Hamlet |
| — Creek | — Mill Site | — Woodlands Office |
| — Provincial Border | | — Mill Site |
| — UTM Tile Boundary | | |





2.4.2. STRATEGY FOR HARVEST AREAS WHICH ARE NOT SUFFICIENTLY REGENERATING

Not sufficiently regenerated (NSR) area within the harvested land base is unacceptable. Monitoring and implementing plans to address all NSR areas is an important forest management process. It is Mistik's goal to ensure that all harvested areas are fully stocked with acceptable tree species according to provincial standards. Current backlog NSR areas can be found in Map 18. The following table summarizes the current and historic NSR on the Mistik FMP area:

Table 2-6 NSR Summary for the Mistik FMP Area (includes Mistik & L&M)

Summary of NSR areas- Establishment Surveys	Area (ha)
Total amount of all NSR (all years)	2,040
Total amount of NSR that is now Sufficiently Regenerated (confirmed by resurvey result)	1,712
Total amount of existing NSR that is "Pre-Standard" (i.e. current provincial standard does not apply as blocks were harvested before 2004/05)	318
Total amount of NSR under current provincial Regeneration Assessment Standard	10

The action plan for the outstanding NSR areas is as follows:

For "pre-standard" NSR:

Voluntarily monitor the areas over time and re-survey if any significant changes occur. These areas are typically flooded, heavily grazed by cattle, or are severely impacted by Dwarf Mistletoe. Most have shown slight improvement in stocking in subsequent surveys that have been done.

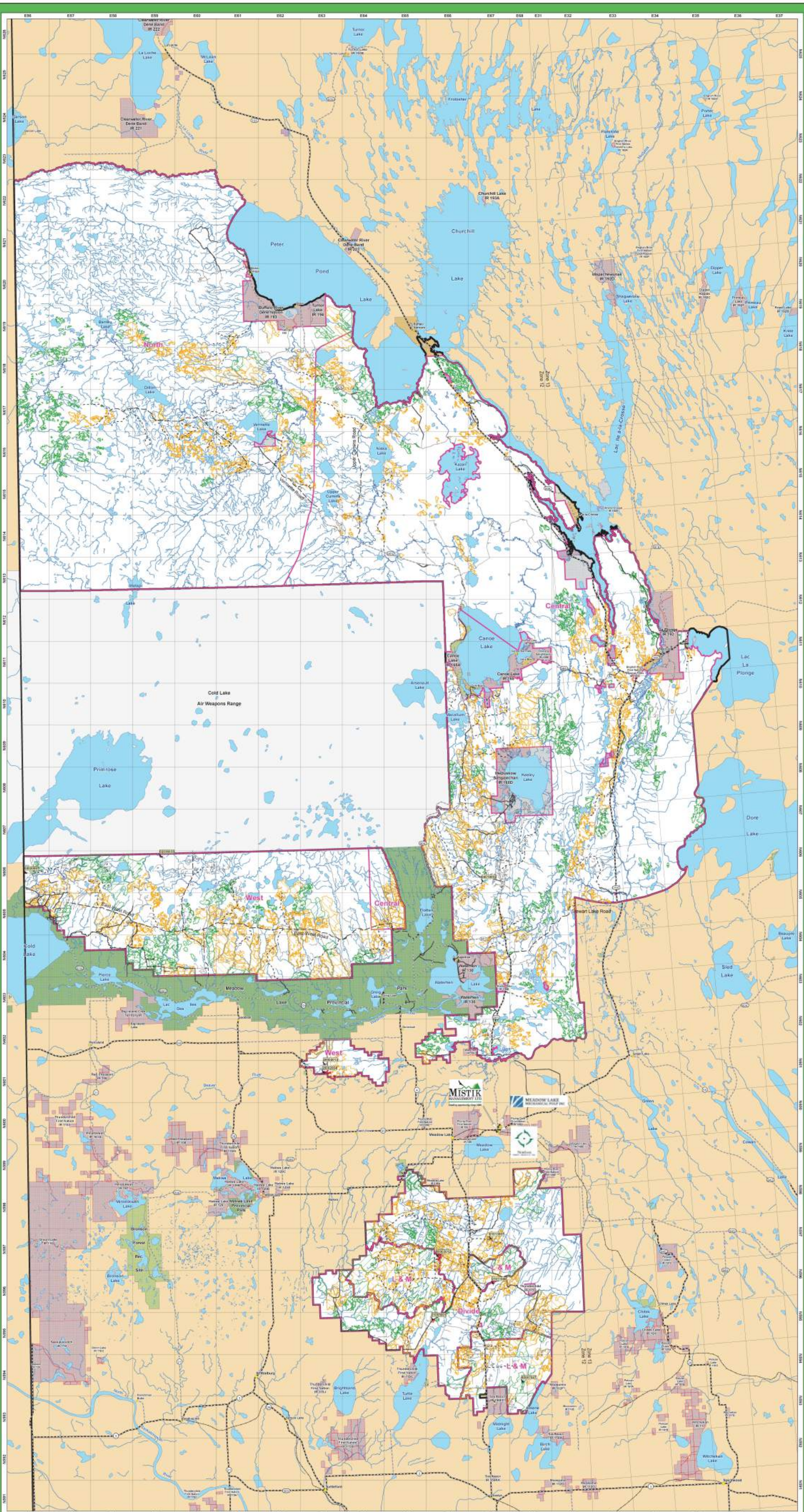
For blocks that are NSR under the current Regeneration Assessment Standard:

There is currently only one block that does not meet the current standard requirement for stocking. A 2015 survey shows the current stocking of this block is 75%. A re-survey is planned for 2019.

Any additional NSR areas that are identified through the survey process will either be fill-planted and/or re-surveyed approximately every 2 years depending on the circumstances causing the low stocking percentage.

Under the current standard, Free-to-Grow surveys (done at year 14 post-harvest) will commence in the 2018/19 operating year.

VOIT #9 addresses regeneration of post-harvest areas. Please refer to Volume II (VOIT document) and associated Mistik Annual Reports.





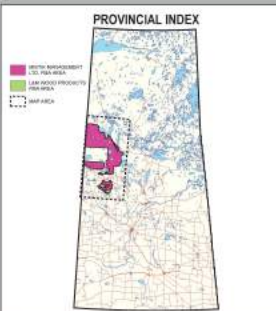
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BACKLOG NSR



0 5 10 20
Kilometers

Map Version: 1.02
Original Map Date: 12/28/2000
Map Date: 08/06/2008
Map Date: 08/06/2008
Map Date: 08/06/2008
Map Date: 08/06/2008



FEATURES OF INTEREST

NSR Area

Red Pre-Standard

Purple Current Provincial Standard

Tactical Plan

T1

T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party
- Provincial Forestry Class Road
- Class 1 (FR)
- Class 2 (BR)
- Class 3 (Bush Road)
- Railroad
- Lake
- Creek
- Provincial Border
- UTM Tile Boundary

FMA Boundary

- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- MS Site



2.5. ROADS

Mistik's intent regarding road access planning, construction and reclamation is to establish a road network using the following guiding principles:

- roads are safe, built and maintained to regulatory standards and based on public and relevant government agency involvement;
- road work is completed in a manner that minimizes impacts to water courses and the environment;
- road construction incorporates cost-effective approaches based on knowledge of landform, surficial sediments and seasonality constraints;
- long-term disturbance is minimal in terms of the amount of area affected, and the length of time in which roads are operational (non-reclaimed) to minimize impacts on wildlife;
- access planning considers additional non-timber forest values

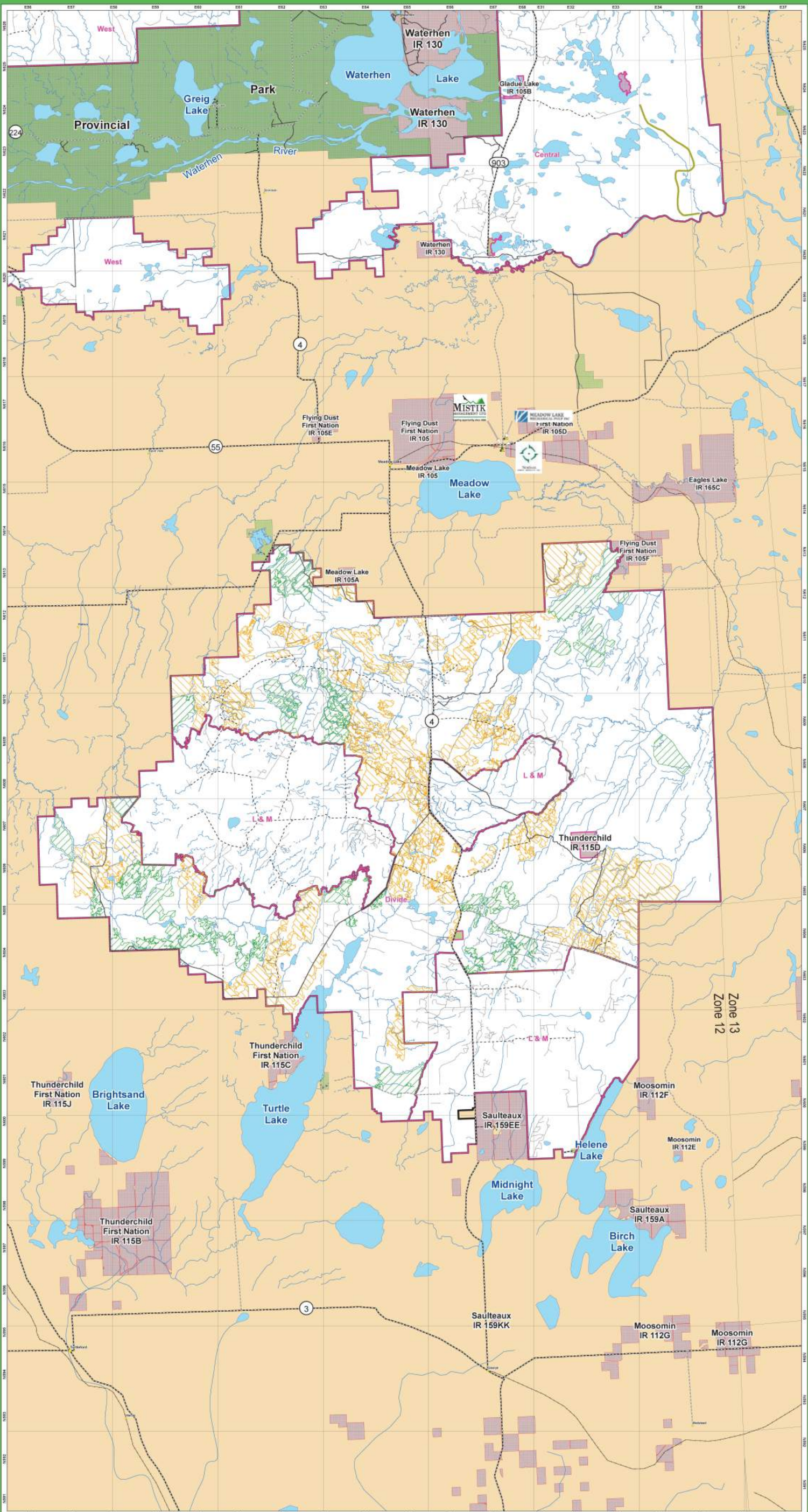
Mistik currently uses several major road classes, built by various agencies, to support its timber harvest and delivery system. Map 19 through Map 23 demonstrate the tactical plan maps for the Mistik FMP area for the potential spatial locations of planned roads by planning unit.

VOITs #16 and #17 provide for reporting on compliance regarding harvesting and watercourse crossing activities.

Table 2-7 Tactical Road Class by Tactical Plan Period

Road Class ¹	T1(0-10) (km)	T2 (10-20) (km)
1	0	0
2	176.19	196.27
Total	176.19	196.27

¹ Road classes are defined through the Saskatchewan Forest Operating Plan Code Standard





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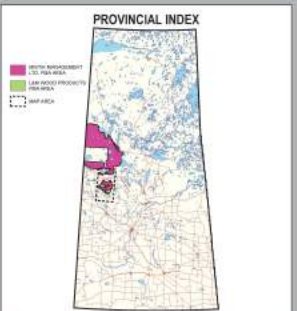
**PLANNED ROADS
INCLUDING CLASS 1 AND 2 ROADS – DIVIDE**



0 2.5 5 10
Kilometres

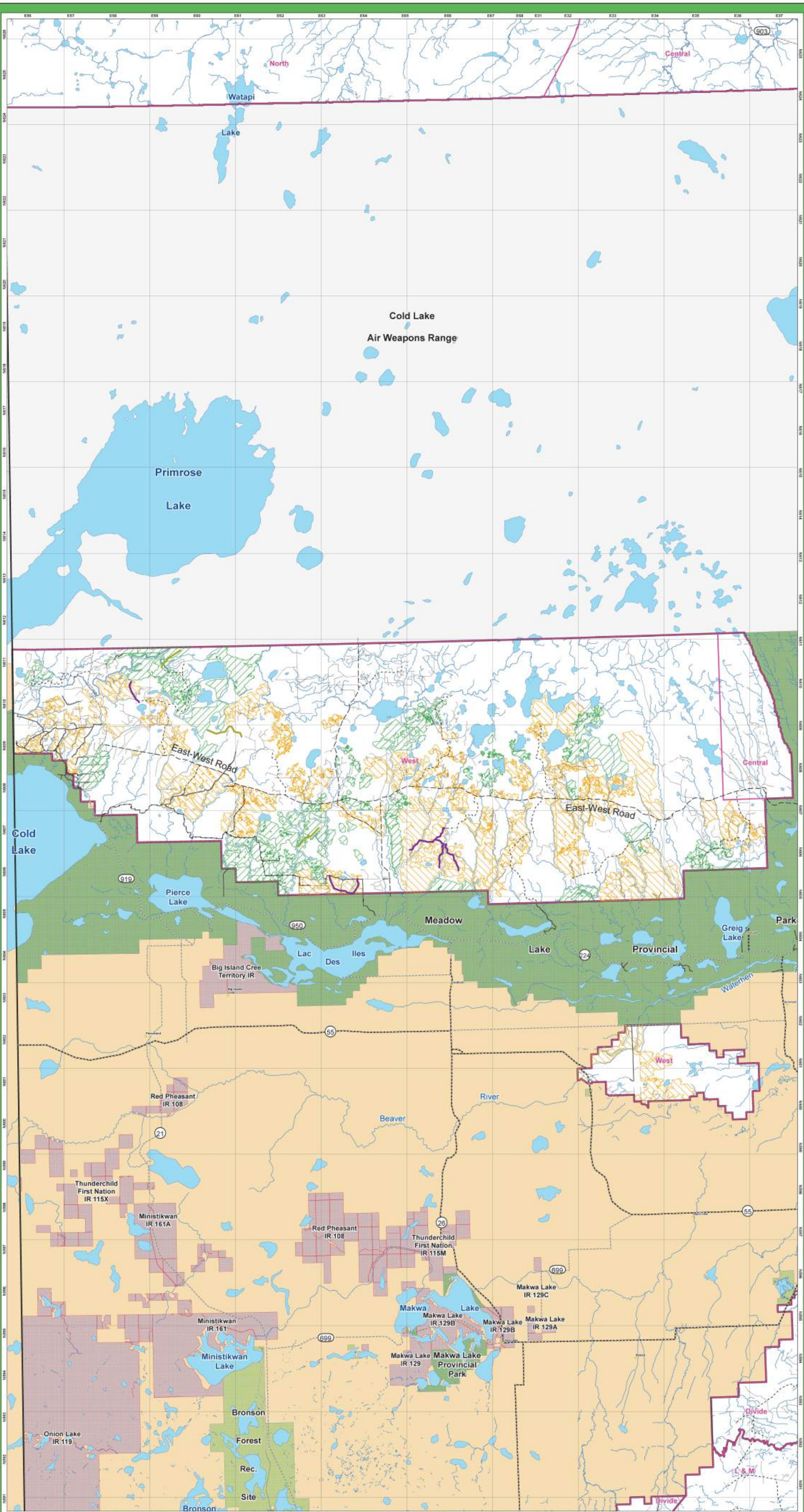


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Map Date: 1/30/2020 to 1/30/2020
Map Author: Silvacom Ltd.
Map Date: 1/30/2020
Map File: maproads_20200102_Terrace_Divide.mxd



- FEATURES OF INTEREST**
- Planned Roads (T1)**
- Class 1 (None Present)
 - Class 2
- Planned Roads (T2)**
- Class 1 (None Present)
 - Class 2
- Tactical Plan**
- T1
 - T2

- PLANIMETRIC LEGEND**
- | | | |
|--------------------------------|---------------------|-------------------|
| Public Road | Paved Highway | FMA Boundary |
| | Gravel Highway | FMA Exclusion |
| | Non-Motor | Provincial Park |
| | Oil / Gas | Recreation Site |
| | 3rd Party | Indian Reserve |
| Provincial Forestry Class Road | Class 1 (FR) | Air Weapons Range |
| | Class 2 (BR) | Settlement |
| | Class 3 (Bush Road) | Village |
| Railroad | | Town |
| Lake | | Village / Hamlet |
| Creek | | Woodlands Office |
| Provincial Border | | Mill Site |
| UTM Tile Boundary | | |



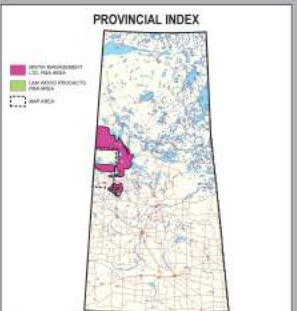


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**PLANNED ROADS
INCLUDING CLASS 1 AND 2 ROADS - WEST**



Map Version: 1.02
Original Map Date: 1/11/2020
Map Date: November 18, 2020
Map Drawn by: Graham L. St.
Shoreline File: LAKES
Map File: maproads_20180804_1000000_1000000.mxd



FEATURES OF INTEREST

Planned Roads (T1)

- Class 1 (None Present)
- Class 2

Planned Roads (T2)

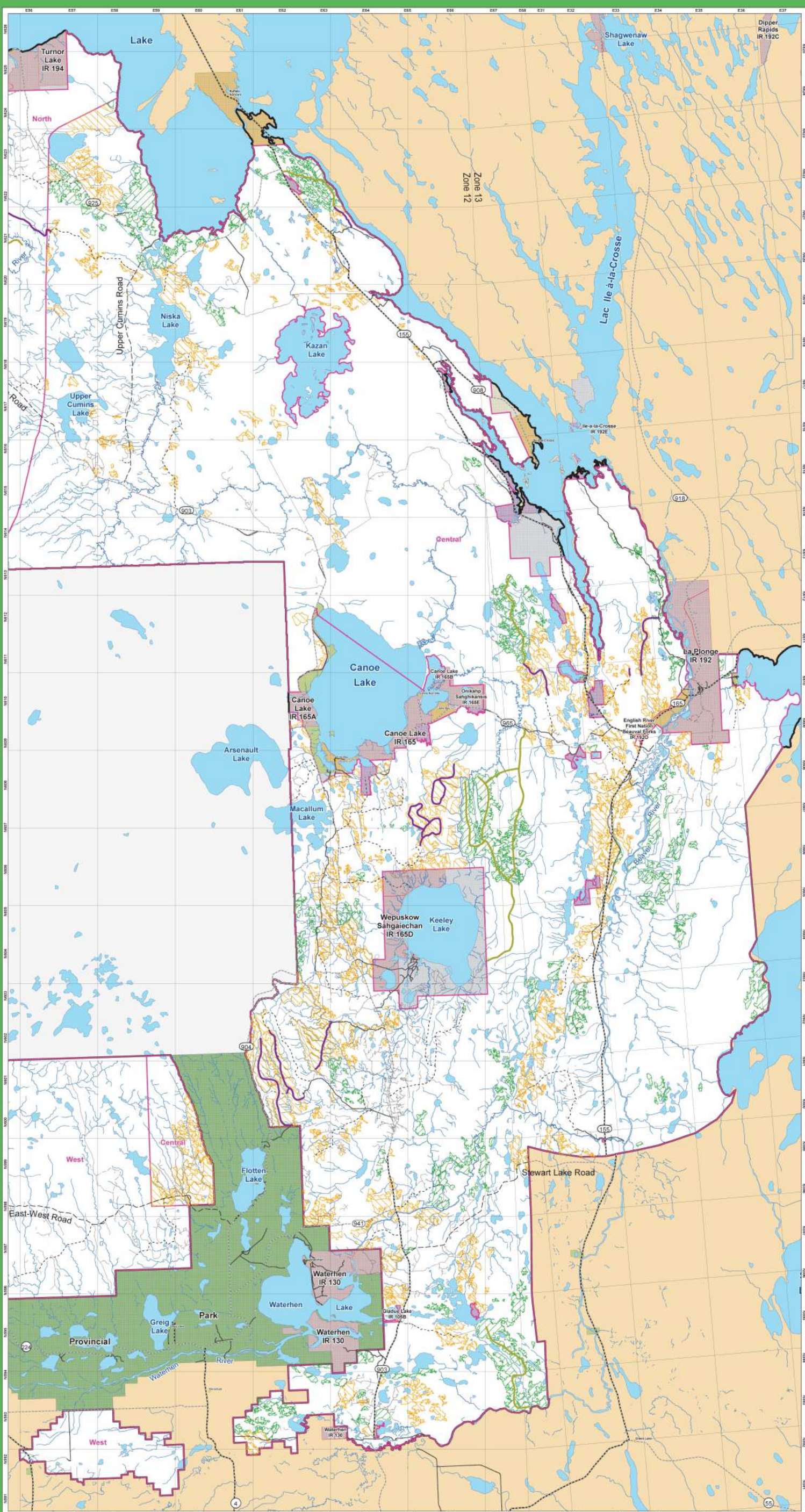
- Class 1 (None Present)

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road	Paved Highway	FMA Boundary
	Gravel Highway	FMA Exclusion
	Non-Motor	Provincial Park
	Oil / Gas	Recreation Site
	3rd Party	Indian Reserve
Provincial Forestry Class Road	Class 1 (FRR)	Air Weapons Range
	Class 2 (BIR)	Settlement
	Class 3 (Bush Road)	Timber Reserve
Railroad		Village
Lake		Town
Creek		Village / Hamlet
		Woodlands Office
Provincial Border		Mill Site
UTM Tile Boundary		




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PLANNED ROADS INCLUDING CLASS 1 AND 2 ROADS – CENTRAL



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PROVINCIAL INDEX

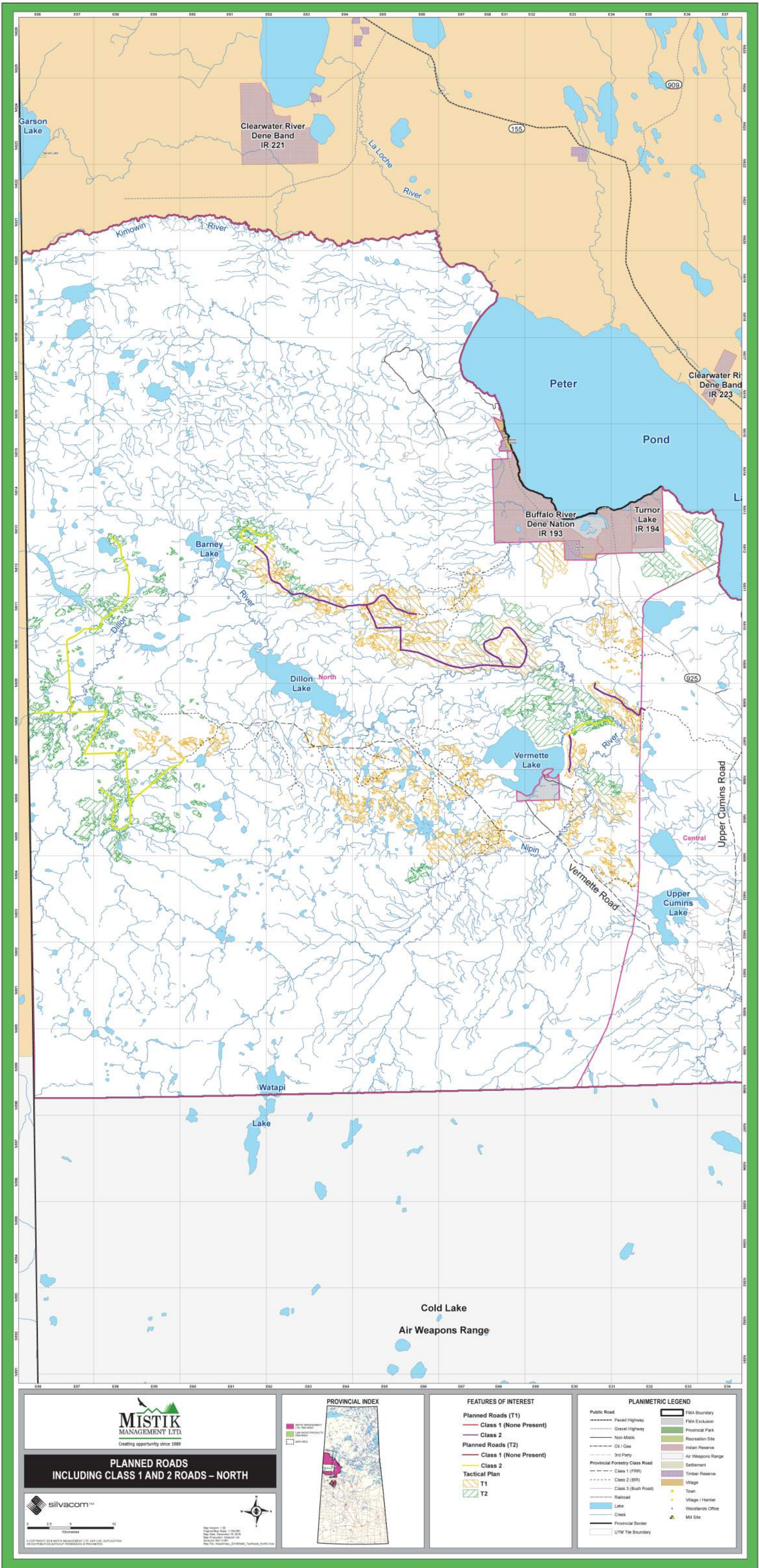


FEATURES OF INTEREST

- Planned Roads (T1)
 — Class 1 (None Present)
 — Class 2
 Planned Roads (T2)
 — Class 1 (None Present)
 — Class 2
 Tactical Plan
 T1
 T2

PLANIMETRIC LEGEND

- | | | | |
|--------------------------------|---------------------|------------------|--|
| Public Road | | FMA Boundary | |
| | Paved Highway | FMA Exclusion | |
| | Gravel Highway | Provincial Park | |
| | Non-Motd | Recreation Site | |
| | Oil / Gas | Indian Reserve | |
| | 3rd Party | Ar Weapons Rang | |
| Provincial Forestry Class Road | | Settlement | |
| | Class 1 (FRR) | Timber Reserve | |
| | Class 2 (BRR) | Village | |
| | Class 3 (Bush Road) | Town | |
| | Railroad | Village / Hamlet | |
| | Lake | Woodlands Office | |
| | Creek | Mt Site | |
| | Provincial Border | | |
| | UTM Tie Boundary | | |

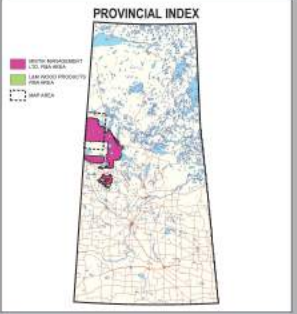


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**PLANNED ROADS
INCLUDING CLASS 1 AND 2 ROADS – NORTH**



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FEATURES OF INTEREST

Planned Roads (T1)

- Class 1 (None Present)
- Class 2

Planned Roads (T2)

- Class 1 (None Present)
- Class 2

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party
- Provincial Forestry Class Road
- Class 1 (FRR)
- Class 2 (BRR)
- Class 3 (Bush Road)
- Railroad
- Lake
- Creek
- Provincial Border
- UTM Tile Boundary

FMA Boundary

- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Village
- Town
- Village / Hamlet
- Woodlands Office
- Mill Site



2.6. FOREST MANAGEMENT

Mistik's and L&M's overall management objectives are to supply wood fibre to the mills through sustainable harvesting on the FMP area. This is done while protecting environmental values, traditional and cultural land uses, and other non-timber values (wildlife habitat, visual aesthetics, etc.) through collaboration with First Nation and Metis people, stakeholders and other individuals who use the forest.

Spatial identification of eligible exclusions, lake and stream buffers, heritage resources, and visually sensitive areas have been implemented by Mistik as the first step of protection. Once identified, operational plans can be created and implemented with consideration of the identified values and stakeholder impacts in mind.

Identification of sites and activities will be completed by soliciting input from Mistik staff, ministry staff and advisory/co-management boards through Mistik's planning and ongoing engagement processes. Field visits with the interested party and/or verification by Mistik staff may be required for verification of the value identified. Mistik considers it very important that all known traditional Aboriginal forest values are spatially identified, and a level of protection implemented that is agreeable to affected Aboriginal forest users.

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.

See also Mistik VOIT details which can be found in FMP Volume II - Values Objectives Indicators & Targets

Mistik Indicator #21 relates to spatially identified non-timber resources and forest use activities
Mistik Indicator #24 relates to spatial identification and protection of culturally significant heritage and aboriginal sites. See FMP Volume II - Values, Objectives, Indicators & Targets (VOIT) document.

2.6.1. ELIGIBLE EXCLUSIONS

The working forest includes forested areas deemed capable of supporting reasonable rates of tree growth and merchantable yields at rotation. It excludes all areas deemed unsuitable or not operable for forestry activities based on environmental protection concerns, inaccessibility, very low productivity and/or timber size (below economically-viable timber utilization thresholds). Of the total area of 1,878,499 ha comprising the Mistik FMP area, only ~ 878,000 ha (47%) of forest land contributes to the determination of sustainable timber harvest levels. However, an amount totalling 138,766 ha of forest area contained in the permanent and partial exclusion land base is eligible for contribution to late seral retention in the forest estate modeling. These are forested areas that contribute ecological values (late seral) but have been removed from the 'working forest' area for reasons related to environmental or operational constraints. See the Forest Characterization Document under section 4.0 for further detail (Map 24).



2.6.2. LAKE AND STREAM BUFFERS

Protection of water resources (quality and quantity) is a critical forest management objective. A provincial standard has been established to ensure that forest harvesting impacts adjacent to water bodies are minimized. Buffers (no harvest areas) are required adjacent to all water bodies. A 15, 30 or 90 m buffer is used depending on the size of the water body and known fisheries values. In some instances, seepage areas (including seasonal intermittent / ephemeral watercourses) and areas adjacent to stands with forest health issues, buffers may not be required.

In some instances, Mistik has agreed to protect values specifically identified by other forest users. One example of this is the 200m buffer around Niska Lake, Niska Channel and the McCusker River. In April 2007, the Buffalo Narrows Co-management Board identified these areas as high-conservation/special places, having important spawning, aesthetic, cultural/heritage, trapping, biodiversity, flora & fauna values. Through its consultation process, Mistik agreed that the co-management board would be consulted if any forestry activities are planned for within the 200m special management consideration zone. To date, no activities have been planned within these areas.

Map 25 demonstrates the current lakes, streams, and wetlands within the Mistik FMP area.



2.6.3. HERITAGE RESOURCES

Cabins, sweat-lodges, hunting, fishing, berry-picking, mushroom-picking, nature appreciation, medicinal-plant use and wild rice harvesting are common ‘traditional forest use’ values and activities in the Mistik FMP area. Many of these ‘traditional use’ activities have developed, to some extent, into commercial or semi-industrial enterprises. In the recent past, significant industries have grown (and in some cases waned) around commercial freshwater fisheries, mink-ranching, blueberry picking, and guided outfitting for deer and bear. Recently, ecotourism has become a business opportunity for several northern communities. Wild rice harvesting has become the most significant non-timber forest use industry in the Mistik FMP area. A number of the small lakes and waterways in the Waterhen, Canoe Lake, Beauval, Ile-a-la Crosse, Buffalo Narrows and Dillon Management Units are actively seeded and harvested on an annual basis.

Annually, through the operating plan process, locations of known heritage sites are considered when designing harvest blocks, events and road networks. 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). In most cases, high heritage potential areas are located next to larger rivers and creeks. Road construction and site preparation activities are most likely to trigger the requirement to do a heritage assessment. Since Mistik uses only scarification for site preparation with a low-impact disturbance created, this activity does not typically require a 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.

Indicator #24 in the VOIT document (FMP Volume II) addresses mapping of heritage values.

Map 26 demonstrates the significant features within the Mistik FMP area. Examples shown on the map include historical access routes (“Keeley Portage” in the Central Planning Unit for example), unique landforms, visually sensitive areas, rare wildlife sightings, wildlife features such as nests, and public concern areas of historical value. Mistik maintains a database with the location and details around each identified feature for planning purposes.



2.6.4. VISUALLY SENSITIVE AREAS

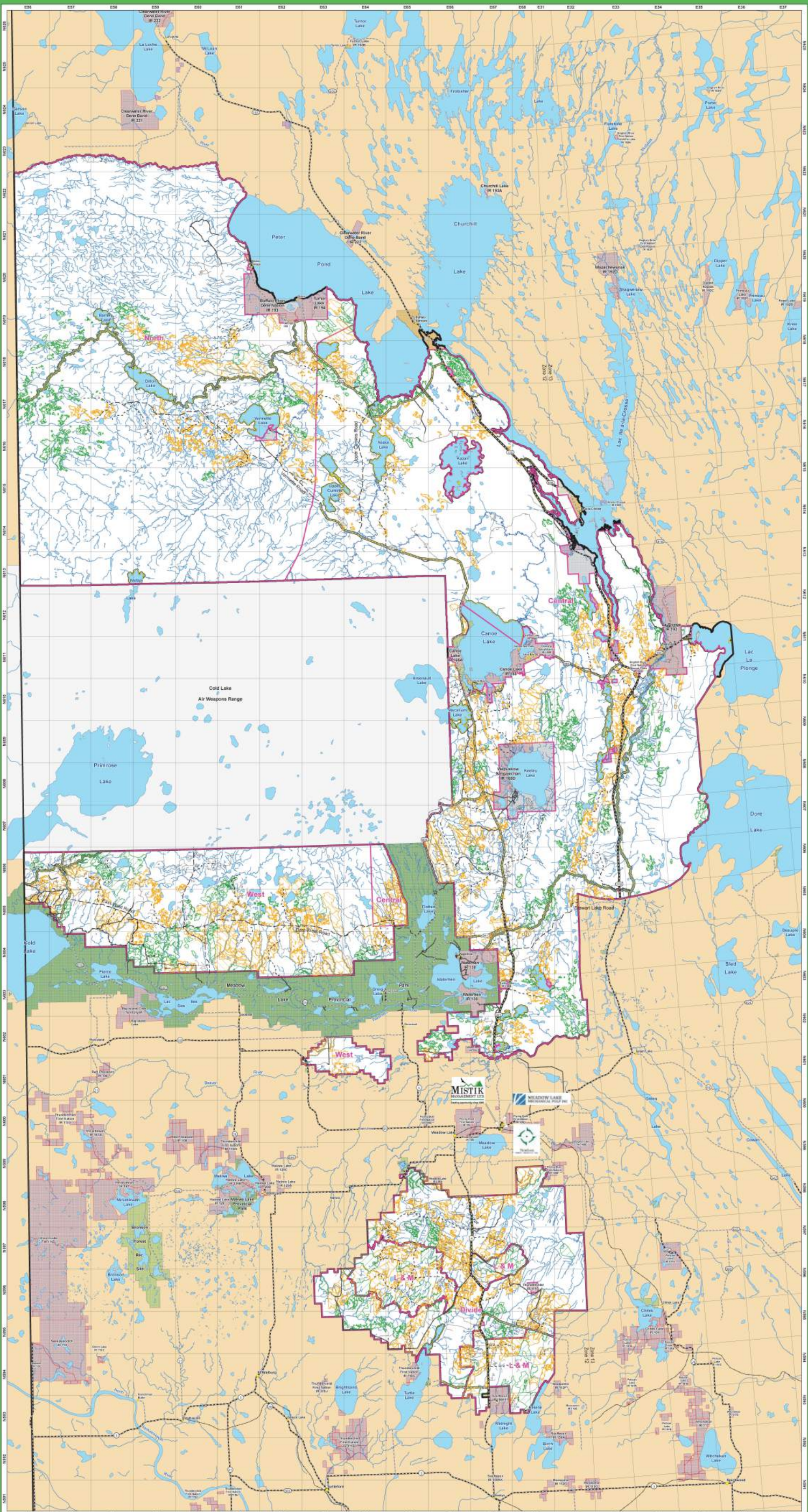
Areas that have been designated as visually sensitive areas (VSA's) include major highways and roads, and high recreation-use lakes and rivers as well as other areas identified based on input from the public (Map 27).

Mistik and L&M have several visual quality objectives (VQOs) when conducting harvesting activities within visually sensitive areas. Operations with respect to VQO's are guided by provincial standards and internal standard operating procedures. In general, VQO's are addressed with the following in mind:

- Harvest impact may be visually dominant in the local landscape;
- Harvest impact may allow for significant visibility directly into the local harvest area;
- Harvest impact will maintain scenic diversity;
- Retention of vertical structure (patches) will be maintained in harvest areas in patterns that minimize line of sight into VSA's

Operating plans identify and describe the objectives for VQO's associated with planned operations. Harvesting and other forest management activities will be implemented consistent with those objectives.

With the exception of jack pine forest types where Dwarf Mistletoe is present, VQOs will be achieved by strategic placement of variable size retention patches and single trees. Riparian buffers and retention levels along roads often exceed the provincial standards in visually sensitive areas. Local topography and existing forest structural diversity within and adjacent to the harvest blocks will be used to maintain scenic diversity. In some cases, required buffer widths for riparian areas may also be exceeded upon the request of stakeholders who identify visually sensitive areas along rivers or lakes.





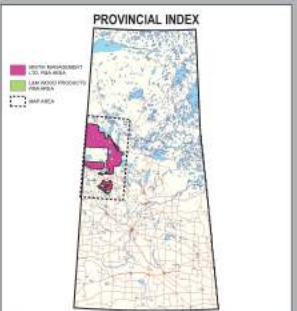
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VISUALLY SENSITIVE AREAS



0 5 10 20
Kilometers

Map Version: 1.02
Original Map Date: 1/28/2009
Map Date: 08/04/2010
Map Author: Silvacom Ltd.
Map Date: 08/04/2010
Map Title: mapsmgmt_20100804_VisuallySensitiveAreas.mxd



FEATURES OF INTEREST

Visually Sensitive Area

Tactical Plan

T1

T2

PLANIMETRIC LEGEND

Public Road	Paved Highway	FMA Boundary
	Gravel Highway	FMA Exclusion
	Non-Motor	Provincial Park
	Oil / Gas	Recreation Site
	3rd Party	Indian Reserve
Provincial Forestry Class Road	Class 1 (FR)	Air Weapons Range
	Class 2 (BR)	Settlement
	Class 3 (Bush Road)	Timber Reserve
Railroad		Village
Lake		Town
Creek		Village / Hamlet
Provincial Border		Woodlands Office
UTM Tile Boundary		Mit Site



2.7. WILDLIFE

Wildlife is abundant within the Mistik FMP area. The most common large mammals within the FMP area include white-tailed deer, moose and lesser numbers of black bear, elk and woodland caribou.

Saskatchewan Ministry of Environment undertakes periodic surveys of population trends for select wildlife. Mistik summarized this data for the FMP area in section 6.6 of Volume 1.

Caribou, Moose and Fisher have been selected as indicator species for habitat monitoring as part of the FMP process. Caribou have been designated as a species at risk and are now protected under the federal *Species at Risk Act* (SARA). Moose and Fisher are locally important species for sustenance and trapping respectively and are frequently identified by First Nation, Metis and other stakeholders on the FMP area as important to their livelihood.

A quantitative analysis of the current habitat supply for moose, fisher, and caribou was reported by Alpha Wildlife in “Development of Queries and Predictive Distribution Maps for Wildlife Indicator Species, Species of Concern, and Species at Risk for the Current Forest Condition (2006) in the Mistik FMP Area”. Habitat supply was determined based on stand structural characteristics for each species.

Many of these structural characteristics used to define habitat quality can be difficult to incorporate into a wood supply analysis through time. A forest model can predict with reasonable certainty a stand’s future development type and future age for any given point in time but cannot with certainty predict how a stand’s crown closure or vertical structure, for example, will change.

This section briefly details the procedures developed in consultation with Dr. Gilbert Proulx of Alpha Wildlife to revise the predictive criteria for use in the analysis of the future habitat supply for the three species selected for the FMP area: Woodland Caribou, Fisher, and Moose.

2.7.1. MOOSE

Potential winter moose habitat is based on many stand characteristics including stand type (species group), vertical structure, canopy closure, tree height, basal area and adjacency to early seral stage blocks and/or aquatic vegetation and/or streams as outlined in the report by Alpha Wildlife. As an important note Mistik is not actively managing for moose habitat. Proulx’s work is used to identify and monitor the maintenance of moose habitat in the annual report.

The following methodology for assessing moose habitat was based on work by Dr. Gilbert Proulx of Alpha Wildlife aimed at developing predictive criteria for use in the analysis of the current and future habitat supply for moose. This is the same approach that was used in the 2007 Mistik FMP.



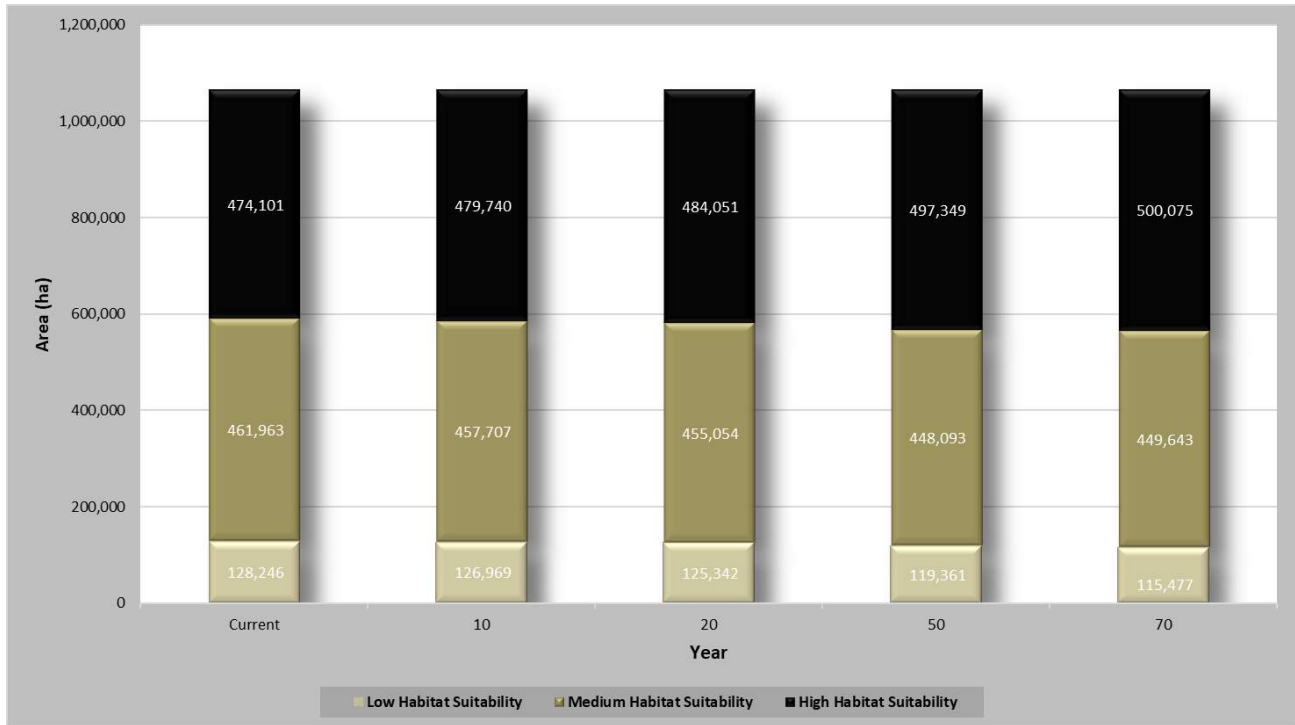
Table 2-8 Moose Habitat Methodology

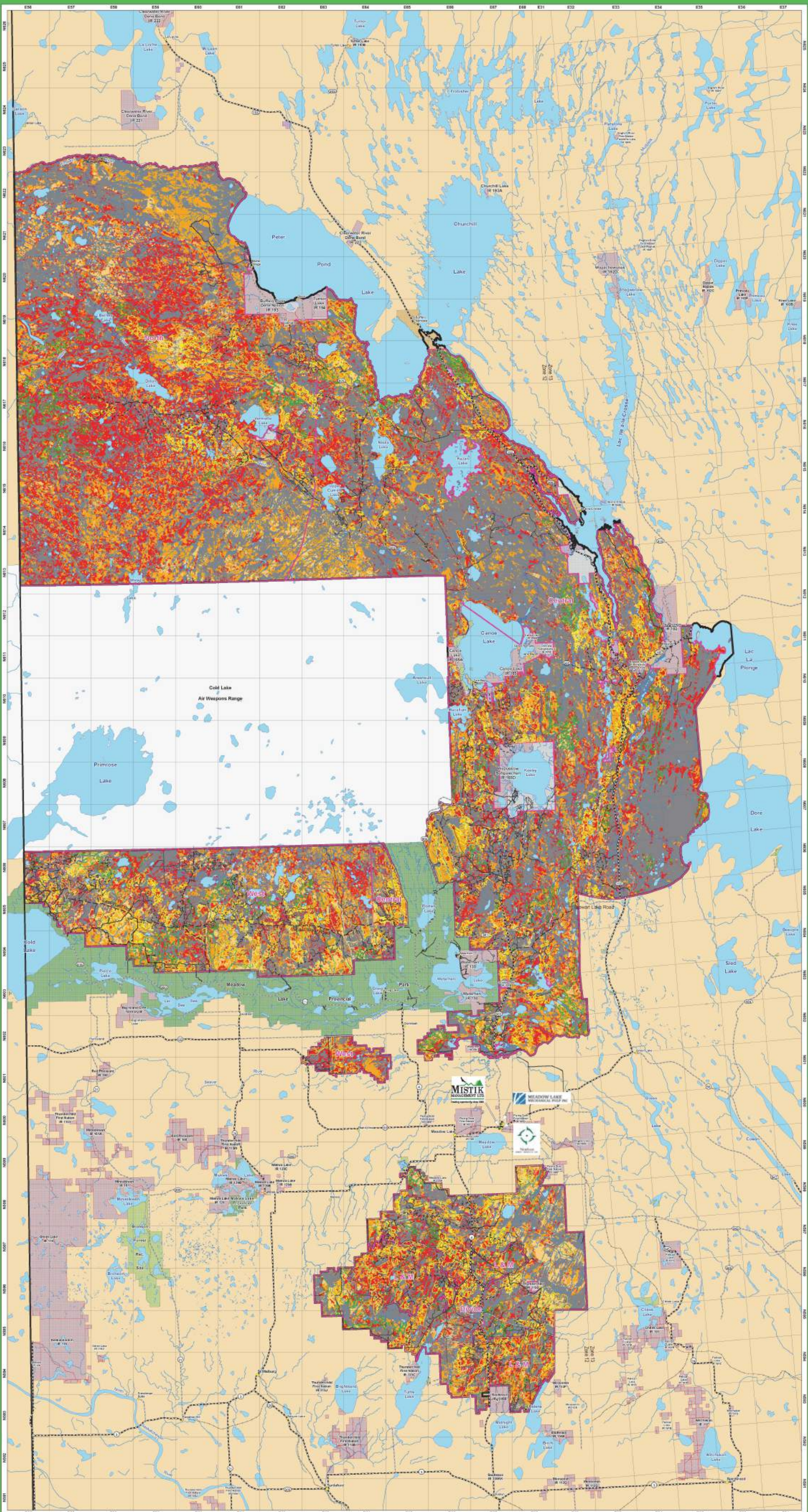
Scoring Category	Methodology
Adjacency	A spatial analysis was conducted at each time interval to test the adjacency to early seral stage blocks, aquatic vegetation and streams. Aquatic vegetation and the location of streams are assumed to remain constant throughout the planning horizon. Early seral stage blocks were queried at each interval based on the wood supply model output. Stands being tested for their adjacency to early seral stage blocks, aquatic vegetation and streams were queried at each time interval based on species group and age, both of which are determined based on the wood supply model output, and then tested for adjacency. Stands are assigned points based on their adjacency.
Stand Type	Stand type was then given a score with stands of a species group of softwood or softwood dominated mixed wood were given a stand type score of 2. Hardwood dominated mixed wood and hardwood stands that also had a conifer percentage of over 18 than a stand type score was given of 1.
Structure Score	Multi stands were present than a structure score of 1 was given.
Canopy Score	If the cruz flag (see forest characterization document for further details) equaled 0 and the total crown was greater than 40 a canopy score of 1. If the cruz flag equaled 1 and the crown closure was greater than 40 than a canopy score of 1 was given.
Total Score	The total score was the summation of the stand type, structure, canopy, and the adjacency score. If the total score was greater or equal to 4 it was considered "High Quality", if it was greater or equal to 2 but less than 4 it was considered "Medium Quality", and if it was greater or equal to 1 but less than 2 it was considered "Low Quality".

The future habitat suitability was calculated based on the same principles above and adjusting for age. As shown in Figure 2-3, total Moose habitat is projected to remain relatively constant over the next 70 years, with slight increases projected for High and Medium habitat suitability. For spatial distribution of moose habitat, now and projected into the future, please refer to Map 28 through Map 32.



Figure 2-3 Moose Habitat Features







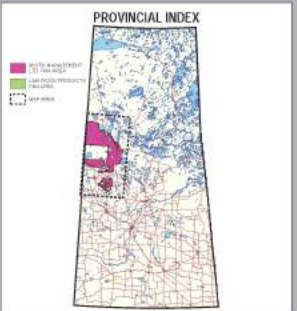
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MOOSE YEAR 50 – CRITICAL HABITAT AND HABITAT FEATURES



0 5 10 20
Kilometres

Map Source: LSR
Highway Data: LSR, 2018
Map Date: December 2018
Map Scale: 1:50,000
Map Projection: UTM
Map Author: MML
Map Reviewer: MML
Map Date: November 1, 2018



FEATURES OF INTEREST

Moose Habitat

- High
- Medium
- Low
- Unsuitable Habitat

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party

Provincial Forestry Class Road

- Class 1 (FRR)
- Class 2 (BFR)
- Class 3 (Bush Road)

Railroad

- Lake
- Creek
- Provincial Border
- UTM Tie Boundary

FMA Boundary

- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- MML Site



2.7.2. CARIBOU

See Appendix A for Mistik's woodland caribou habitat mitigation strategy. A draft range plan for the provincial SK2 West caribou administrative unit (which overlaps the FMP area) has not been completed to date. The mitigation strategy presented, and specific targets related to caribou were under development during the timeframe when an initial review of Volume III was being undertaken by the ministry (excluding the caribou strategy). For clarity, a separate appendix has been used to present the strategy which was completed based on new data related to spatial boundaries of the SK2 West area provided by the Ministry of Environment, Fish, Wildlife and Lands branch. It is possible that the Appendix may have to be amended pending the outcome and completion of the provincial draft range plan for the SK2 West area.

2.7.3. FISHER

Fisher winter habitat quality is determined by a variety of stand structure characteristics. Many of these characteristics cannot be directly derived from the wood supply model. As an important note Mistik is not actively managing for fisher habitat. This work is used to identify and monitor the maintenance of fisher habitat in the annual report.

The following methodology for assessing fisher habitat was based on work by Dr. Gilbert Proulx of Alpha Wildlife aimed at developing predictive criteria for use in the analysis of the current and future habitat supply for fisher. This is the same approach that was used in the 2007 Mistik FMP.

Table 2-9 Fisher Habitat Methodology

Scoring Category	Methodology
Absence of Disturbance	Stands with a development type of S, SH, or HS with a cut flag of 0 and an anthropogenic disturbance value of 0 were given an absence of disturbance score of 4. Stands with an anthropogenic or natural disturbance value were given a absence of disturbance score of 0. Stands identified as water were also given a value of 0.
Age Score	Stands aged less than 60 were given an age score of 0. Stands aged between 60 and 80 were given an age score of 1. Stands aged between 80 and 100 were given an age score of 2. Stands aged between 100 and 120 were given an age score of 3. Stands aged greater than 120 were given an age score of 5. Hardwood dominated stands were given an age score was given of 0.
Shrub Score	No development type and a shrub crown score greater than 5 but less than 20 were given a shrub score of 1. No development type and a shrub crown score greater than 20 but less than 40 were given a shrub score of 2. No development type and a shrub crown score greater than 40 were given a shrub score of 3.
Canopy Score	If the cruz flag (see forest characterization document for further details) equaled 0 and the total crown was greater than 50 a canopy score of 1 was given. If the cruz flag equaled 1 and the

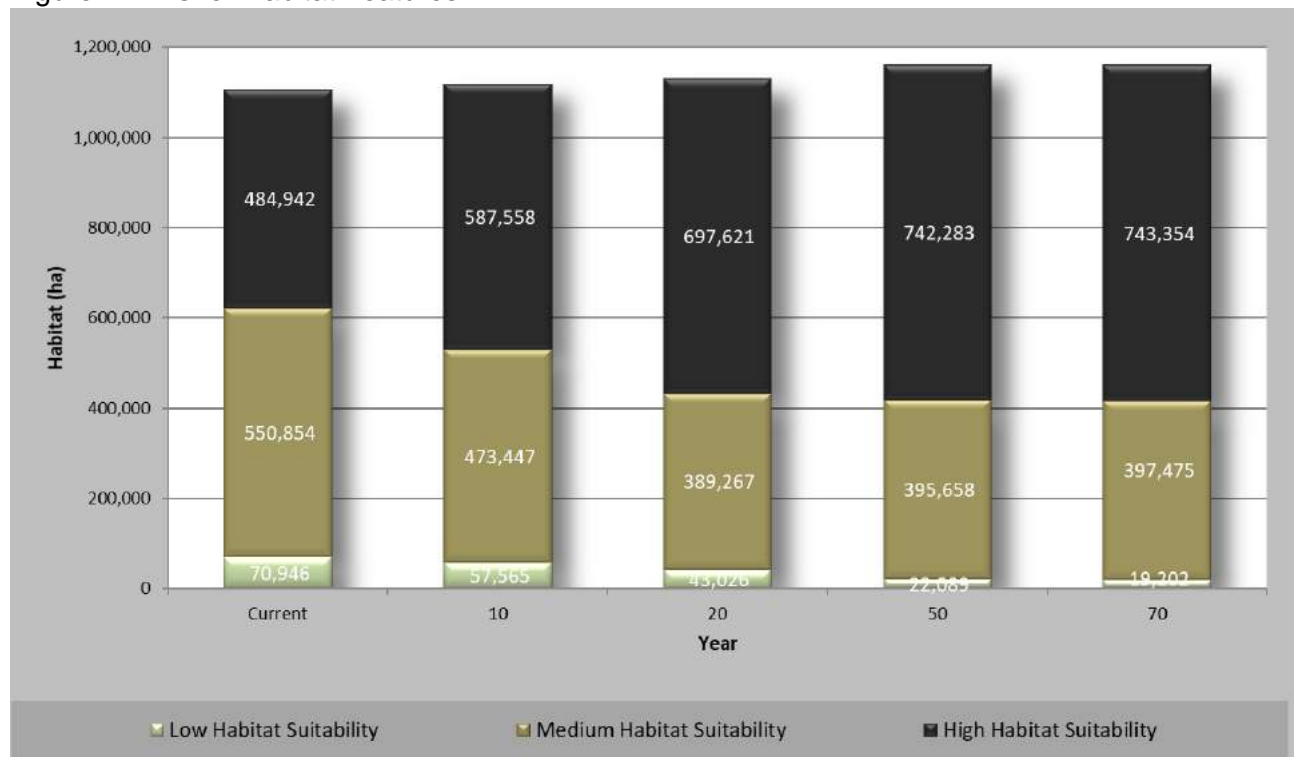


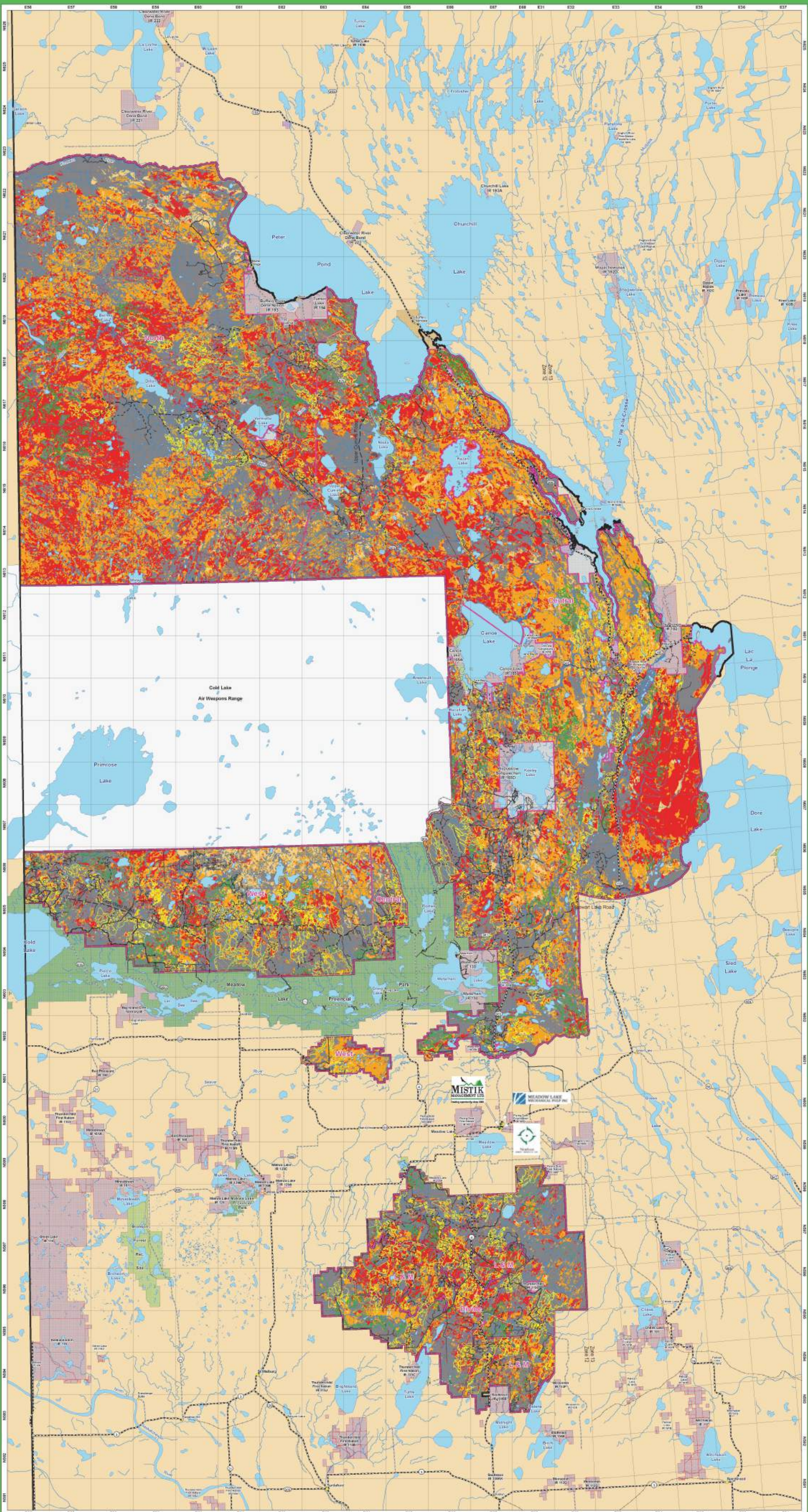
	crown closure was greater than 50 than a canopy score of 2 was given.
Total Score	The total score was the summation of the absence of disturbance, age, shrub, and canopy score. If the total score was greater or equal to 8 it was considered "High Quality", if it was greater or equal to 6 but less than 8 it was considered "Medium Quality", and if it was greater or equal to 1 but less than 6 it was considered "Low Quality".

Following Mistik VOIT indicator 7b the fisher habitat should meet the 10-year projection based on the output from the forest estate modeling. This value is a summation of the low, medium, and high-quality habitat. While high quality habitat is better suited for fisher, it is not given a weighted value, as both medium and low quality still count towards total fisher habitat.

Total Fisher habitat is projected to increase by 53,288 ha due over the next 70 years. High quality habitat is projected to increase by 258,412 ha over that same period (Figure 2-4). For spatial distribution of fisher habitat, now at projected into the future, please refer to Map 33 through Map 37.

Figure 2-4 Fisher Habitat Features







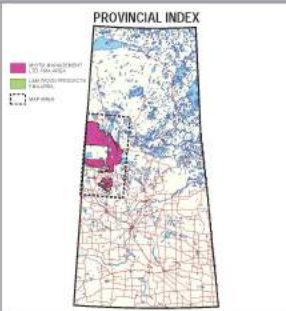
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**FISHER YEAR 0 – CRITICAL HABITAT
AND HABITAT FEATURES**



0 5 10 20
Kilometres

Map Source: LSR
Highway Data: LSR, 2010
Provincial Data: Government of Ontario
Map Projection: UTM Zone 18N
Data Date: 2010
Map Date: 2010
Map Scale: 1:50,000
Map Author: MISTIK MANAGEMENT LTD.
Map Reviewer: MISTIK MANAGEMENT LTD.



FEATURES OF INTEREST

Fisher Habitat

- High
- Medium
- Low
- Unsuitable Habitat

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party

Provincial Forestry Class Road

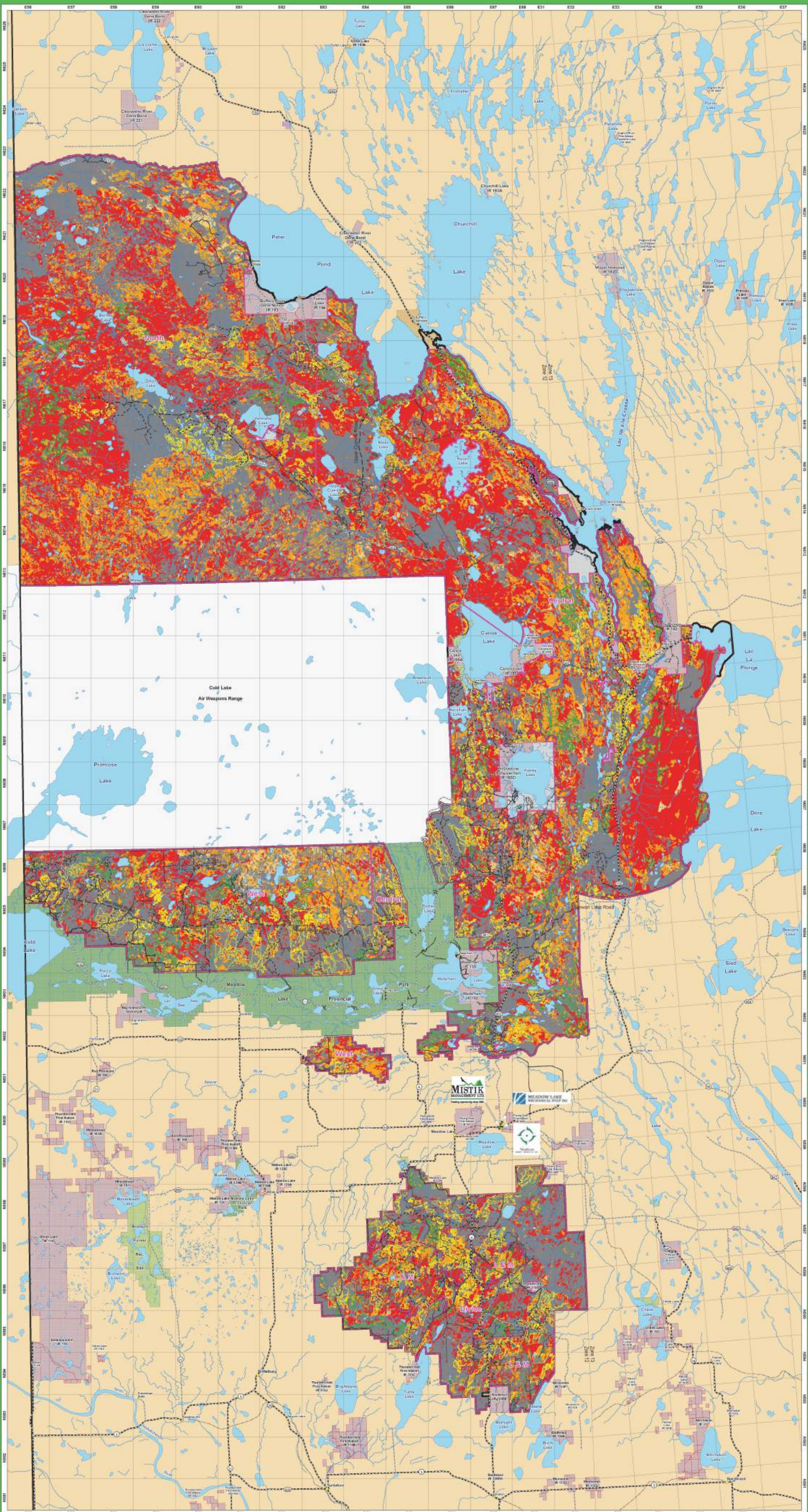
- Class 1 (FRR)
- Class 2 (BFR)
- Class 3 (Bush Road)

Railroad

- Lake
- Creek
- Provincial Border
- UTM Tie Boundary

FMA Boundary

- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- Mill Site





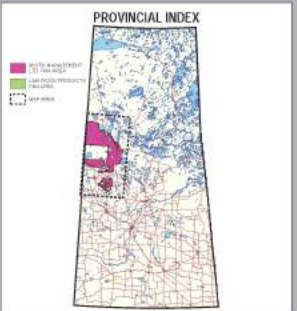
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**FISHER YEAR 20 – CRITICAL HABITAT
AND HABITAT FEATURES**



0 5 10 20
Kilometres

Map Source: 1:50,000
Map Date: December 2019
Map Projection: UTM
Data Source: Various
Map Scale: 1:50,000
Map Date: December 2019
Map Projection: UTM
Data Source: Various



FEATURES OF INTEREST

Fisher Habitat

- High
- Medium
- Low
- Unsuitable Habitat

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party

Provincial Forestry Class Road

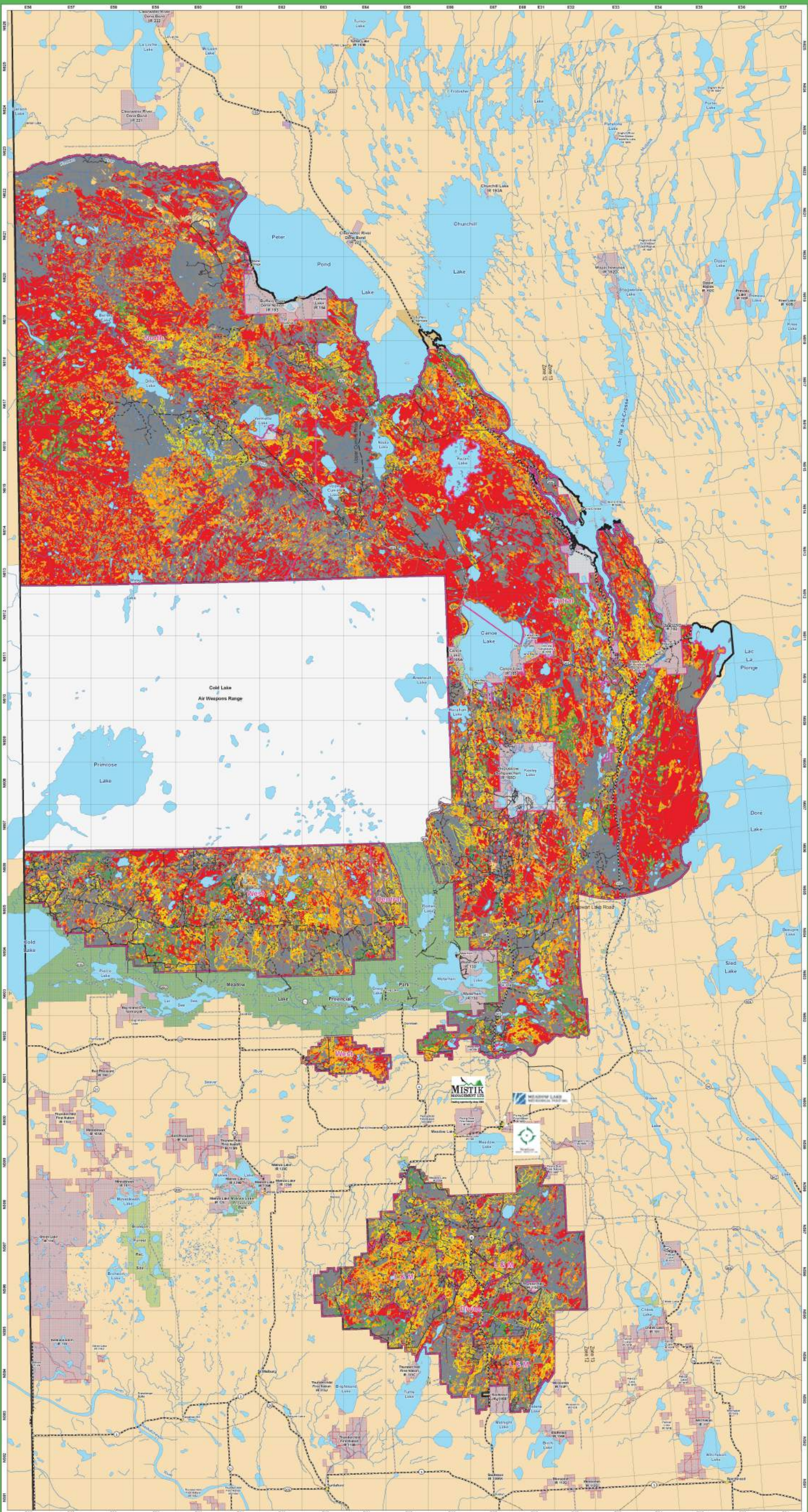
- Class 1 (FRR)
- Class 2 (BFR)
- Class 3 (Bush Road)

Railroad

- Lake
- Creek
- Provincial Border
- UTM Tie Boundary

FMA Boundary

- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- MS Site





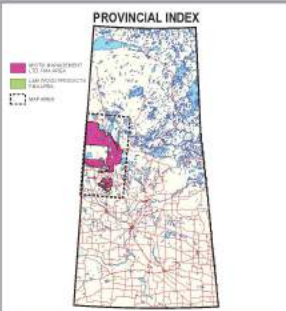
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FISHER YEAR 50 – CRITICAL HABITAT AND HABITAT FEATURES



0 5 10 20
Kilometres

Map Source: 1:50,000
Map Date: December 2019
Map Scale: 1:50,000
Map Projection: UTM
Map Datum: NAD 83
Map Contour Interval: 10m



FEATURES OF INTEREST

Fisher Habitat

- High
- Medium
- Low
- Unsuitable Habitat

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- OK / Gas
- 3rd Party

Provincial Forestry Class Road

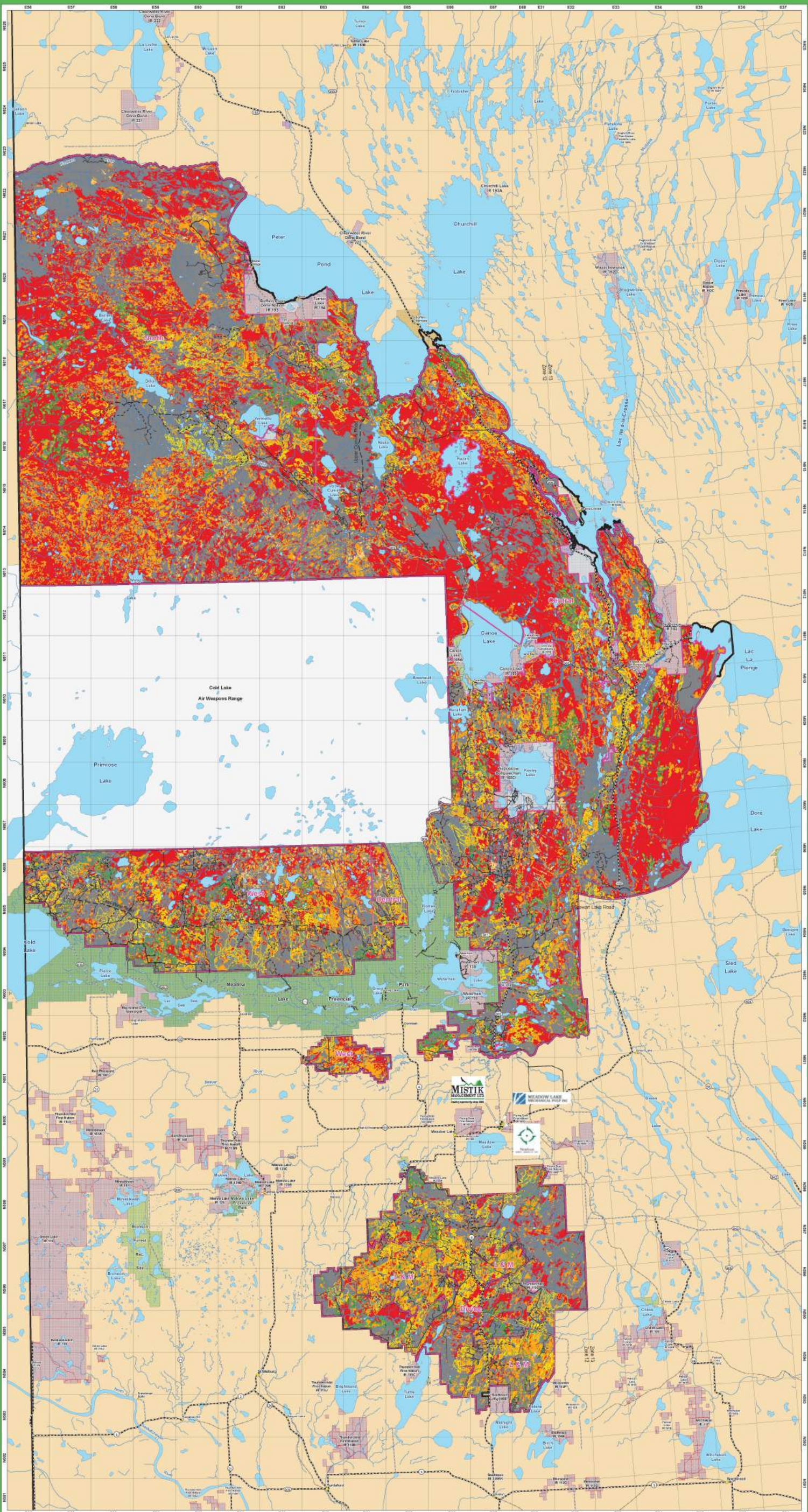
- Class 1 (FRR)
- Class 2 (BFR)
- Class 3 (Bush Road)

Other Features

- Railroad
- Lake
- Creek
- Provincial Border
- UTM Tie Boundary

Other Features

- FMA Boundary
- FMA Exclusion
- Provincial Park
- Recreation Site
- Indian Reserve
- Air Weapons Range
- Settlement
- Timber Reserve
- Village
- Town
- Village / Hamlet
- Woodlands Office
- MIL Site





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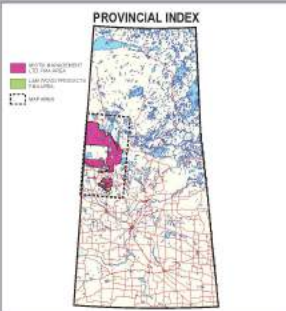
**FISHER YEAR 70 – CRITICAL HABITAT
AND HABITAT FEATURES**



0 5 10 20
Kilometres



Map Source: LSR
Highway Data: 1:250,000
Map Date: December 20, 2019
Map Projection: Canadian NAD 83
Data Source: Natural Resources Canada
Map Scale: 1:250,000
Map Date: December 20, 2019



FEATURES OF INTEREST

Fisher Habitat

- High
- Medium
- Low
- Unsuitable Habitat

Tactical Plan

- T1
- T2

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Metric
- OK / Gas
- 3rd Party

Provincial Forestry Class Road

- Class 1 (FRR)
- Class 2 (BFR)
- Class 3 (Bush Road)

Railroad

- Railroad

Lake

- Lake

Creek

- Creek

Provincial Border

- Provincial Border

UTM Tie Boundary

- UTM Tie Boundary

FMA Boundary

- FMA Boundary

FMA Exclusion

- FMA Exclusion

Provincial Park

- Provincial Park

Recreation Site

- Recreation Site

Indian Reserve

- Indian Reserve

Air Weapons Range

- Air Weapons Range

Settlement

- Settlement

Timber Reserve

- Timber Reserve

Village

- Village

Town

- Town

Village / Hamlet

- Village / Hamlet

Woodlands Office

- Woodlands Office

Mill Site

- Mill Site



2.7.4. SPECIES AT RISK

Some species are naturally rare, have a restricted distribution or are associated with specific environmental conditions making them vulnerable to extinction. Others were once widespread or common, but now occur over a much smaller area. Collectively these species are known as “species at risk”. Successfully managing species at risk depends largely on the ability of industry and the public to recognize these species.

It is therefore necessary to understand the habitat and seasonal requirements of wildlife inhabiting the Mistik’s FMP area in order to develop a management program that will ensure biodiversity conservation. Location and timing of operations take these requirements into consideration.

Mistik & L&M have operating procedures that require annual review and monitoring of Species at Risk in Saskatchewan (High Conservation Value Areas Planning and Implementation EMSOP17). Any new species or changes in status ranking are documented and included in the annual Species at Risk training and the field guide given to Mistik & L&M staff, contractors and contractor’s employees.

Species at risk on the Mistik FMP area are chosen based on the Species at Risk Act (SARA) and the Saskatchewan Conservation Data Centre (SKCDC) and the natural ranges of species listed.

Table 2-10 Mistik FMP Area Species at Risk/Study Species

CLASS	COMMON NAME	SCIENTIFIC NAME	SPECIES STATUS
PLANT	ARCTIC EYEBRIGHT	<i>Euphrasia subarctica</i>	Threatened
	BEAR SEDGE	<i>Carex arcta</i>	Threatened
	BLUNT-LEAVED PONDWEED	<i>Potamogeton obtusifolius</i>	Threatened
	CLINTON'S BULRUSH	<i>Trichophprum clintonii</i> ; <i>Scirpus clintonii</i>	Endangered
	ELEPHANT'S-HEAD	<i>Pedicularis groenlandica</i>	Threatened
	FOX SEDGE	<i>Carex vulpinoidea</i>	Vulnerable
	HAIRY WOODRUSH	<i>Luzula acuminata</i>	Threatened
	HOOD'S SEDGE	<i>Carex hoodii</i>	Threatened
	LABRADOR LOUSEWORT	<i>Pedicularis labradorica</i>	Threatened
	LARGE ROUNDLEAF ORCHID	<i>Platanthera orbiculata</i>	Threatened
	LESSER BLADDERWORT	<i>Utricularia minor</i>	Threatened
	MAY-FLOWERED WOODRUSH	<i>luzula multiflora</i>	Vulnerable
	PURPLE PAINTBRUSH	<i>Castilleja raupii</i>	Threatened
	SELKIRK'S VIOLET	<i>Viola selkirkii</i>	Vulnerable
	STRIPED CORAL-ROOT	<i>Corallorhiza striata</i> var. <i>striata</i>	Vulnerable
	WHITE ADDER'S MOUTH	<i>Malaxis monophylla</i> ssp. <i>Brachypoda</i>	Vulnerable
	YELLOW-RATTLE	<i>Rhinanthus minor</i>	Threatened
BIRD	BANK SWALLOW	<i>Riparia riparia</i>	Threatened



CLASS	COMMON NAME	SCIENTIFIC NAME	SPECIES STATUS
	BARN SWALLOW	<i>Hirundo rustica</i>	Threatened
	BARRED OWL	<i>Strix varia</i>	Mistik Study Species
	BLACK THROATED BLUE WARBLER	<i>Dendroica caerulescens</i>	Mistik Study Species
	BOBOLINK	<i>Dolichonyx oryzivorus</i>	Threatened
	BOREAL OWL	<i>Aegolius funereus</i>	Mistik Study Species
	CANADA WARBLER	<i>Wilsonia canadensis</i>	Threatened
	COMMON NIGHTHAWK	<i>Chordeiles minor</i>	Threatened
	CONNECTICUT WARBLER	<i>Oporornis agilis</i>	Mistik Study Species
	EVENING GROSBEAK	<i>Coccothraustes vespertinus</i>	Special Concern
	GREAT GREY OWL	<i>Strix nebulosa</i>	Mistik Study Species
	HORNED GREBE	<i>Podiceps auritus</i>	Special Concern
	LOGGERHEAD SHRIKE	<i>Lanius ludovicianus</i>	Threatened
	OLIVE-SIDED FLYCATCHER	<i>Contopus cooperi</i>	Threatened
	PIPING PLOVER	<i>Charadrius melodus</i>	Endangered
	RUSTY BLACKBIRD	<i>Euphagus carolinus</i>	Special Concern
	SHORT EARED OWL	<i>Asio flammeus</i>	Special Concern
	SPRAGUE'S PIPIT	<i>Anthus spragueii</i>	Threatened
	WESTERN GREBE	<i>Aechmophorus occidentalis</i>	Special Concern
	WHOOPING CRANE	<i>Grus americana</i>	Endangered
	YELLOW RAIL	<i>Coturnicops noveboracensis</i>	Special Concern
MAMMAL	AMERICAN BADGER	<i>Taxidea taxus</i>	Special Concern
	BISON	<i>Bos bison bison</i>	Threatened
	LITTLE BROWN MYOTIS	<i>Myotis lucifugus</i>	Endangered
	NORTHERN MYOTIS	<i>Myotis septentrionalis</i>	Endangered
	WOLVERINE	<i>Gulo gulo</i>	Special Concern
	WOODLAND CARIBOU	<i>Rangifer tarandus</i>	Threatened
INVERTEBRATE	MONARCH BUTTERFLY	<i>Danaus plexippus</i>	Special Concern
AMPHIBIAN	NORTHERN LEOPARD FROG	<i>Rana pipiens</i>	Special Concern



3. FMP IMPLEMENTATION STRATEGIES

3.1. FMP IMPLEMENTATION STRATEGIES

3.1.1. RESOURCES

The implementation of Mistik's 2019 20-Year Forest Management Plan will require a variety of fiscal, human and technical support resources. In association with the 20-Year Forest Management Plan Mistik employs many qualified professionals to complete planning, harvesting and silviculture activities.

3.1.1.1. ADMINISTRATION AND SUPERVISION

Mistik undertakes the delivery of its core services with a professional staff that fluctuates between 13 to 15 individuals. Mistik's General Manager provides top management direction for the company and reports directly to a board of directors comprised of individuals designated by NorSask Forest Products and Meadow Lake Mechanical Pulp. Additional senior management support is provided by Mistik's Operations and Administration managers. Several forest management and administration staff fulfill various key support roles. Operations supervisory staff manages the implementation of silviculture, harvest, and haul-related field activities.

Whereas Mistik is a forest management entity and is the FMA licensee, L&M is a producer of forest products (posts, rails and solid wood dimensional lumber) and an FMA licensee. L&M's General Manager oversees L&M's production facilities and FMA agreement responsibilities and obligations. Mistik, via a Tenure Management Agreement, provides and oversees all of L&M's required operational forest management activities (planning, harvesting, hauling and silviculture).

3.1.2. INFORMATION SYSTEMS

Mistik utilizes several information management systems to assist in efficient delivery of its core services including:

- Mistik's Financial Management System (Contractor and vendor payroll);
- Silvacom's FMS harvest planner, silviculture planner, and maps online.
- Mistik's LOG and Inventory Management System (LIMS) (wood deliveries);
- Log haul and load scaling and tracking system (chain of custody); and
- Truck and loader GPS systems (chain of custody).

L&M utilizes several information management systems to assist in efficient delivery of its core services including:

- L&M's Financial Management System (Contractor and vendor payroll);
- Silvacom's FMS harvest planner, silviculture planner, and maps online.
- Log haul and load scaling and tracking system (chain of custody); and
- Truck and loader GPS systems (chain of custody).



3.1.3. CERTIFICATION SYSTEMS

Mistik's forestry operations are currently certified to the:

- CSA Z809 Sustainable Forest Management Standard; and
- FSC National Boreal Standard

L&M's forestry operations are currently certified to the:

- CSA Z809 Sustainable Forest Management Standard.

Voluntary certification to international environmental and sustainable forestry standards is an integral component of Mistik's/L&M's overall approach to demonstrating sustainable forest management in northwest Saskatchewan. A valuable component of voluntary certification programs is the annual verification audits by third party auditors of company compliance with provincial, national and international legal requirements and standards. The third-party audits are significant contributions to ensuring annual monitoring and accountability.

3.1.4. ENVIRONMENTAL MANAGEMENT SYSTEMS

In order to effectively implement Mistik & L&M's unique internal Environmental Management Systems and Sustainable Forest Management standards, Mistik & L&M have established a formal training needs analysis which is reviewed annually. All Mistik & L&M staff and contractors are required to attend a formal Environmental and Sustainable Forest Management Awareness Training seminar that addresses environmental and forest management awareness topics and job-specific/regulatory training annually. Additional regulatory required training (TDG, WHMIS etc.) is conducted on an as-needed basis to ensure that all applicable staff and contractors are current with respect to regulatory training.

3.1.5. ANNUAL PERFORMANCE TRACKING AND REPORTING

Evaluation of operational implementation of the plan in relation to plan assumptions and commitments is a regulatory requirement and will contribute to improved forest management over time. The timelines and details of the annual reporting process will be handled through the MIT process.

The annual report will address the following items:

- A cumulative assessment of Mistik targets/VOITs;
- Silviculture effectiveness;
- Forest estate modeling assumptions and tactical plan implementation;
- Compliance reporting;
- A summary of variances from targets including reasons for variance and action plan to address the variance;
- Tracking of FMP registry items and approval conditions

These processes reveal actual forest management outcomes based on operational implementation of the FMP. The reporting process provides interpretive commentary (particularly in the case of



deviations from planned outcomes). The annual report and associated maps will be available to the public.

The annual report will also contain data related to reporting/monitoring updates that are not required under the Forest Management Planning Standard. This data is included to facilitate various processes (like forest certification auditing) where annual updates related to Mistik's operations can be presented in a single document. The annual report will clearly identify which sections pertain to the requirements of the Forest Management Planning Standard.

Due to the need for acquiring satellite imagery of harvested areas, Mistik and L&M will require 17 months from the completion of the operating year (March 31) to final report (August 31 of the next calendar year) for all spatial-related performance indicators.

3.1.6. PUBLIC ENGAGEMENT

Mistik has established and implemented a public engagement process for the 2019 FMP by building on an existing process. 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 (outfitters, trappers, traditional use, grazing licensees, wild rice growers, cabin owners, etc.) in, and immediately surrounding, the Mistik FMP area.

In October 2004, as part of its CAN/CSA Z809-08 SFM public participation process, Mistik facilitated the formation of a single Public Advisory Group (PAG) with representation solicited from all the major stakeholder groups associated with, or who have an interest in, the Mistik FMP area. At the first meeting of the Public Advisory Group in October 2004, the group was asked to identify any missing stakeholders.

L&M Wood Products was not a part of Mistik's 2007 FMP; however, they are part of the 2019 FMP and attend all PAG meetings. Stakeholder groups from the L&M FMA area broadly overlap the Mistik FMA area so current membership provides adequate representation for the L&M FMA area as well. Additional communities adjacent to the L&M FMA who had not previously been included in the 2007 FMP process, have been included in invitations to participate in the 2019 FMP development process as well as recent Public Advisory Group meetings.

The PAG is intended to be an evolving, dynamic group where membership is not always static. The overall composition of the group will be dictated by the interested public as its purpose 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. Mistik has requested that only one or two individuals from each stakeholder group attend each meeting. Table 3-1 identifies the current composition of Mistik's Public Advisory Group.

A listing of all public stakeholder groups, local First Nations and communities within and adjacent to the Mistik FMP area who were sent a letter of invitation to participate in Mistik's 2019 FMP process can be found in Table 2 of the FMP Public Engagement Plan. Ongoing review of these tables by the Planning Team and the Public Advisory Group will identify any additional stakeholder groups or communities that may need to be invited to participate. Mistik encourages members of the public to participate in one of the local advisory/co-management boards or the PAG group if they indicate



a desire to do so.

Mistik held a final round of public engagement in the fall of 2018 where FMP updates and changes were reviewed with the co-management/advisory boards listed below. Table 3-2 is an outline of the meetings held. An update was also given at the PAG meeting on November 21st, 2018. Details of consultation held during the FMP development can be found in Appendix B.

Table 3-1 Mistik FMP Area PAG/Stakeholder Groups and Description

Stakeholder Group	Stakeholder Group Description
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 government officials, wild rice growers, municipalities and traditional resource users. 1. Divide Forest Advisory Council Corporation (DFACC) 2. Waterhen Lake Land and Resources Board (currently represented by Chief and Council) 3. Buffalo Narrows Co-Management Board (currently represented by Mayor and Council) 4. Sakitawak Resource Management Inc. (Ile-a-la Crosse) 5. DeneSuline Co-Management Board (Dillon) 6. Canoe Lake Traditional Resources Users Board 7. Beauval Co-Management Board Inc. 8. Big Island Lake Cree Nation (formal co-management board is under development - currently periodic meetings are held with the band)
2. Trapping	Zone 8 trappers- northern trappers are represented on each of the co-management boards.
3. Outfitting	A large, loosely organized group (Saskatchewan Outfitters Assoc.) with interest in the provincial forests of Saskatchewan-they have a designated 'forestry' representative.
4. Commercial fishing	There are several commercial fishing co-operatives within the Mistik FMP area. Commercial fishing is a significant economic activity in the local area.
5. Independent Operators	Individual representation on advisory boards but no official or organized representative body.
6. Meadow Lake Mechanical Pulp (MLMP)	All clerical, management, and operations staff at MLMP
7. NorSask Forest Products	All clerical, management, and operations staff at NorSask
8. L&M Wood Products	All clerical, management, and operations staff at L&M
9. Meadow Lake Tribal Council	Represents the leadership of nine of the First Nations in northwest Saskatchewan (in and around the FMP Area).



Stakeholder Group	Stakeholder Group Description
10. Regulatory agency ¹	Represents the local regulatory (provincial government) agencies responsible for administering forestry and other activities on behalf of the province of Saskatchewan
11. Urban municipality	Meadow Lake is the primary service center in northwest Saskatchewan and home to most of the employees of Meadow Lake Mechanical Pulp, NorSask, and Mistik
12. Rural municipality	Rural Municipality (RM) of Meadow Lake #588 has some overlap with the FMP area (Divide and Beaver River MUs).
13. Environmental non-governmental organizations	Represent the interests of the hunting, fishing, and trapping public as well as environmental sustainability issues-habitat protection, conservation, and environmental quality enhancement.
14. Snowmobile association (recreation)	The Northern Lights Snowmobile Club has an extensive network of trails throughout portions of the Mistik FMP Area.
15. Grazing licensees	Portions of the Mistik FMP Area are allocated to individuals that are granted grazing permits by Saskatchewan Ministry of Environment.
16. Forest Workers	Mistik undertakes its activities through a significant # of local contractors.
17. Interested communities	On February 23 rd , 2015 Mistik extended a general invitation to all communities within and adjacent to the Mistik FMP area in northwest Saskatchewan (Table 3) to participate in the 2019 20-Year FMP process. Communities who expressed their interest in participating have been included in PAG meeting invitations.

¹Invitation to participate only required for Mistik's CAN/CSA Z809-02 Public Advisory Group process. The role of regulatory agencies during the development of Mistik's 2019 20-Year FMP will be strictly review and approval of the FMP.

Table 3-2 Fall 2018 Mistik FMP Update Meetings

Stakeholder Group	Date of update meeting and noted concerns
1. Divide Forest Advisory Council Corporation (DFACC)	October 23, 2018 No concerns were noted.
2. Waterhen Lake Land and Resources Board (currently represented by Chief and Council)	November 29, 2019
3. Buffalo Narrows Co-Management Board	November 28, 2019 No real concerns at this time. The co-management board recently reactivated and has taken back consultation "duties" from mayor and council.
4. Sakitawak Resource Management Inc. (Ile-a-la Crosse)	Several attempts were made to schedule a meeting. Mistik will contact the group in January to see if a meeting is possible.



Stakeholder Group	Date of update meeting and noted concerns
5. DeneSuline Co-Management Board (Dillon)	Several attempts were made to schedule a meeting. Mistik will contact the group in January to see if a meeting is possible.
6. Canoe Lake Traditional Resources Users Board	November 7, 2018 Discussion around inventory, fire protection on federal lands and renewal. No significant concerns.
7. Beauval Co-Management Board Inc.	November 5, 2018 Discussion around buffer widths, Caribou, and the change in ownership of L&M. There were no significant concerns, however, Mistik did provide some additional information/feedback to the group after the meeting related to options for communicating the importance of caribou habitat and population management to the public.
8. Big Island Lake Cree Nation (formal co-management board is under development)	Several attempts were made to schedule a meeting. Mistik will contact the group in January to see if a meeting is possible.

3.2. APPOINTMENT OF A MANAGEMENT IMPLEMENTATION TEAM

The Management Implementation Team (MIT) will be formed upon approval of the FMP. The purpose of a MIT is to monitor and guide the implementation of the FMP according to the Terms of Reference which will be established upon formation of the team. Membership on the MIT will consist of:

- Mistik and L&M general managers and other relevant staff members;
- Ministry of Environment (Forest Service Branch; Fish, Wildlife & Lands Branch; etc.)
- Public Advisory Group; and
- FMP Advisors as necessary

The Mistik Planning Manager will serve as the chair and primary contact with the Forest Service.

3.3. FMP REGISTRY

A summary of 2019 FMP commitments can be found in Table 3-3. The 'measurement criteria' describes the measure that will be used to assess successful completion of the commitment. The 'schedule for completion' describes the completion date for each commitment. The completion dates may change as directed by Saskatchewan Ministry of Environment. Commitments that are required under legislation, provincial codes or standards, or other sections of the FMP are not included in this summary.



Table 3-3 Summary of Mistik's 2019 20-Year FMP Commitments

Commitment	Measurement Criteria	Schedule for Completion
Public Involvement (Public Consultation Process)		
Mistik will update the Mistik Register of Public Issues and Concerns on an annual basis	Evidence of the review process and publicly available Register	Annual implementation and reporting (August 31)
Non-Timber Values		
Identify visually sensitive areas and maintain specified visual quality objectives.	Evidence in the annual report of the identification of visually sensitive areas and specified visual quality objectives	Annual implementation and reporting (August 31)
Maintain database of watercourse crossings	Mistik/L&M GIS layer and operating plans maps to illustrate location, type and size of crossing	GIS layer and maps to be updated annually.
Natural Disturbance		
With respect to an incipient outbreak of an invasive insect, Mistik will collaborate with the Ministry of Environment in mapping, monitoring, and assisting in facilitating a control program	Resources allocated to mapping, monitoring and assisting with a control program	As required.
Conformance with Tactical Plan		
With respect to independent operators, Mistik will collaborate with Saskatchewan Ministry of Environment to obtain annual records.	Independent operator "report" (geospatial and attribute data) provided to Mistik by MoE on an annual basis. Independent operator harvest area records retained in Mistik's GIS system.	Annual implementation and reporting (August 31).

3.4. TACTICAL PLAN LINKAGE TO OPERATING PLANS

Through the 20-Yr FMP process this is the second FMP tactical plan developed by Mistik. The original 2007 FMP tactical plan was manually derived to be fully consistent with operational implementation. In excess of 50% of the 2007 tactical plan area remained unharvested and formed the basis for the development of the 2019 tactical plan. As per the original tactical plan, the emphasis for the 2019 tactical plan was operational feasibility based on the experience and landbase knowledge of Mistik personnel and various data sources.



The implementation of Mistik's 2019 20-Yr Forest Management Plan will demonstrate linkage of the tactical plan to the operating plan via the following mechanisms:

- conducting forestry activities within the parameters of the selected management strategy (SMS);
- undertaking road and harvest activities within the context of the tactical plan;
- undertaking public consultation to identify any new values associated with proposed operations (visually sensitive areas, heritage resources, etc.);
- integrating and maintaining non-timber values;
- adhering to access management strategies as outlined in the tactical plan;
- responding to natural disturbances (adjusting harvest plans to include salvage areas where possible);
- implementing/maintaining sustainable forest management indicators
- identifying deviations from FMP commitments, where allowed, for approval where necessary

Mistik's operating season commences April 1 and ends March 31 annually. Prior to the commencement of operational activities Mistik will submit and receive operating plan approval from the Saskatchewan Ministry of Environment. The harvest and road construction proposed for implementation in any annual operating year will be consistent with the tactical plan associated with the 2019 20-Yr Forest Management Plan. Under the provincial forest management planning standard, a deviation of no more than 15% of area (ha) outside of the tactical plan is allowed (refer to *FMP Volume II, VOIT section, Mistik Indicator #15*). Such deviations must be identified and approved in an operating plan.

3.5. STRATEGY FOR WILDFIRE MANAGEMENT

Natural disturbances, as described by Natural Resources Canada, are an important feature of Canada's forests²:

'Forests are complex systems of plants and animals that are shaped by physical features such as soil type, altitude, and aspect and through the effects of "disturbance events". These may be caused by environmental factors such as fire, wind, or snow damage or the activity of living agents such as insects or fungi. Disturbances are a natural and necessary part of forest ecosystem development and contribute to the maintenance of what most consider healthy forests. When, however, insect or fungal population levels are very high, or when prolonged or catastrophic environmental events like major fires or extreme weather events occur, forests can be altered in ways that affect their resource value (e.g. fibre, wildlife, or recreation). Similarly, when alien insect, fungal, or plant species establish in Canada's forests significant ecological and economic damage can result.'

² <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/17598>



Saskatchewan Ministry of Environment has the legislative authority for protection of forest resources³. Through cooperative agreements, other legislation and policies, there is additional collaborative interaction between forest licensees and the ministry with respect to forest protection efforts. Natural disturbance is an ongoing and frequent process on the Mistik FMP area⁴. Mistik recognizes that natural disturbances are a fundamentally important and integral component of the boreal forest ecosystems in which forestry activities are carried out. Mistik has designed its forestry operations to be flexible in the face of large-scale disturbance patterns (particularly wildfire). Mistik has demonstrated its ability to deviate quickly and efficiently from planned harvest operations, incorporate new equipment/technology into harvest systems and adjust its contractor workforce to undertake economically-viable salvage operations. Mistik seeks to be proactive and responsive to changing environmental conditions related to natural disturbances. The following documentation describes Mistik's planned response, in collaboration with Saskatchewan Ministry of Environment, to the dominant natural disturbances occurring within the FMP area.

3.5.1. WILDFIRE

3.5.1.1. DESCRIPTION

The Wildfire Act, The Forest Resources Management Act and Mistik's and L&M's Forest Management Agreements reiterate the key responsibilities of the Province and a forest licensee with respect to wildfires. The Saskatchewan Ministry of Environment's Wildfire Management Branch is responsible for wildfire suppression on Crown Land, rural municipal lands within 4.5 km of the provincial Forest, Provincial Park Lands, and DIAND Agreement First Nations Lands.

3.5.1.2. CURRENT EXTENT OF INCIDENCE

Wildfires have been common and extensive within the Mistik FMP area⁵. Mistik anticipates that wildfire will continue to have a significance impact on wood supply within the FMP area during the term of the 2019 20-Year FMP. Due to climate change, the boreal forests of Saskatchewan are forecasted to experience one of the highest increases in extreme fire weather conditions (

Figure 3-1) in North America⁶. In an attempt to anticipate the potential changes in wildfire behaviour within the Mistik FMP area under various climate change scenarios, Mistik solicited the input of the Saskatchewan Research Council to address this topic⁷. A key finding of these reports is that the area of the Mistik FMP area occupied by high Head Fire Intensity (HFI) indices (10,000 to 30,000 kW m⁻¹) shows a significant increase for the period 2040 to 2049 compared to existing conditions.

³ Refer to the *Forest Resources Management Act* (1999)

⁴ Refer to Mistik's 2019 20-Year FMP Vol.I- Section 14.0

⁵ Refer to Mistik's 2019 20-Year FMP Vol.I -Section 14 (natural disturbance emulation)

⁶ <http://cnfjfs.cfs.nrcan.gc.ca/home>

⁷ Johnston, M. and N. Nicolichuk. 2007. *Assessing future landscape fire behavior potential in the Mistik Management Ltd. Forest Management Agreement Area, Saskatchewan Research Council, Saskatoon, Saskatchewan. 20pp.*

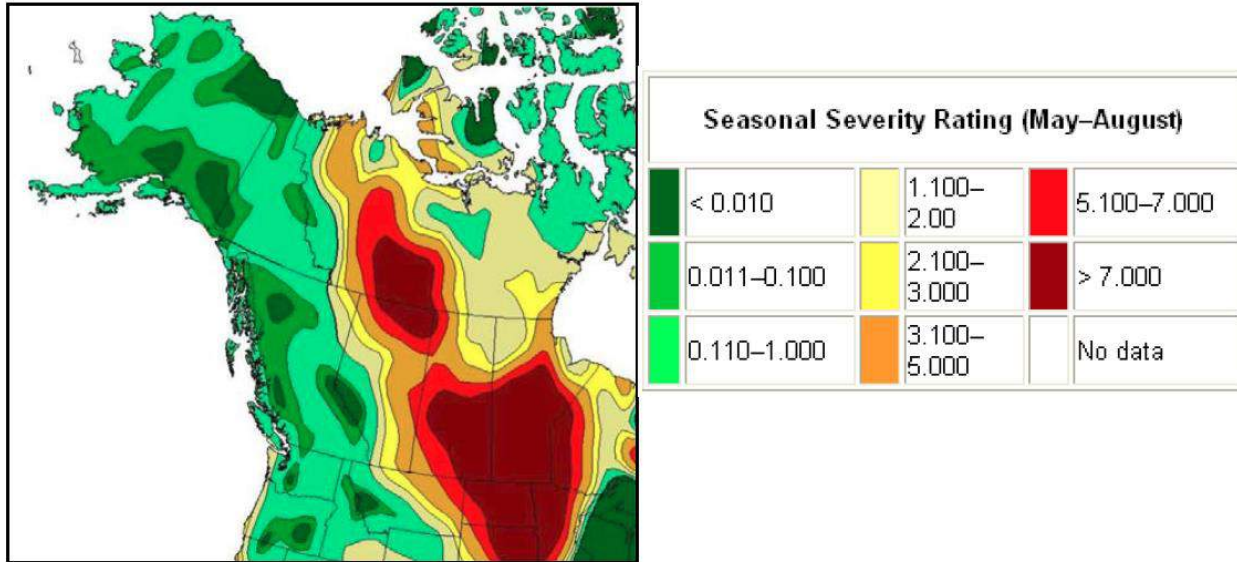


Figure 3-1 Predicted Seasonal Fire Severity Map for Western Canada for 2040 to 2049 (2X CO₂)⁸

⁸ <http://cnfvs.cfs.nrcan.gc.ca/home>



3.5.1.3. DETECTION, RISK ASSESSMENT AND MONITORING

Saskatchewan Ministry of Environment undertakes routine wildfire detection surveys within the provincial forest during the wildfire season (April 1 to October 31) as well as receives assistance from all members of the general public.

3.5.1.4. CONTROL AND TREATMENT OPTIONS

In response to the ongoing presence of wildfire, Mistik will ensure that:

- An annual wildfire prevention and preparedness plan is submitted to the ministry;
- All forestry contractors will be adequately trained and aware of their responsibilities related to control of wildfire and have prescribed firefighting equipment readily available;
- All fire bans and restricted or prohibited forestry operations' directives issued by Saskatchewan Ministry of Environment are respected;
- Forestry-related slash management is conducted according to provincial standards;
- Through regulatory approval of salvage plans, harvesting of burned wood occurs on a priority basis and according to provincial or FMA Standards and Guidelines.

3.5.1.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT (WILDFIRE MANAGEMENT BRANCH)

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment related to:

- Ensuring ongoing maintenance and update Fire Suppression Priority Area map that is based on commercial timber values and submitted to the province annually. The map will assist Saskatchewan Ministry of Environment in the efficient allocation of resources with respect to fire suppression and timber values at risk. The suppression priority areas depict four categories:
 1. Critical: the most important, currently merchantable timber for the next 20 years - this area consists of the tactical harvest plan areas - a major fire within these areas will have serious impacts to wood availability for the mills.
 2. High: Potentially important (contingency) merchantable timber within the next 20 years and including areas with silviculture-related investments (regenerating planted areas);
 3. Moderate: Area consisting of forests 30 to 60 years of age;
 4. Low: Area consisting of young forests and inoperable area (treed peat lands, etc.).
- In the event of multiple fires occurring simultaneously within the FMP area, it is Mistik's & L&M's desire that areas identified as 'critical' or 'high' be prioritized.



3.5.1.6. FUTURE ACTION ITEMS(S)

- Assist with the implementation of Community Wildfire Protection Plans (based on the provincial Community Wildfire Risk Assessment Program). This program is a provincial initiative by the Ministry of Environment. In collaboration with the community(s), the ministry will lead the development of community protection plans. Mistik will participate as a key stakeholder and primary contractor (insofar as there are cost-effective benefits realized by Mistik) in the implementation of forest harvesting activities. Undertaking tree removal and fuel reduction in the creation of fire breaks adjacent to communities deemed “at risk” from wildfire will be the focus of Mistik’s involvement.
- Participate in workshops and meetings related to fire management, particularly landscape level fuel management⁹, within the provincial forest.

3.6. STRATEGY FOR MANAGEMENT OF FOREST INSECT AND DISEASE DISTURBANCES

A healthy forest has been defined as¹⁰:

‘...one that maintains and sustains desirable ecosystem functions and processes. Indicators of healthy forests include ones related to biodiversity change, resilience, wildlife habitat, aesthetic appeal, and resource sustainability. Both natural and human influences can impact on forests in positive and negative ways. In fact, natural influences, such as fire, insects, and disease are essential for the regeneration and succession of forests.’

Most perceived forest health issues in the boreal forest are generally naturally-occurring dynamic components of forest ecosystems. However, when the perceived loss of timber volume or tree mortality exceeds an economic or aesthetic threshold, society describes the impact as a forest health issue. The relative rate, extent and severity of impact results in some forest organisms being identified as forest ‘diseases’ or ‘pests’. The Forest Resources Management Act (1999) and the Pest Control Act (1978) provide the regulatory context for the control of pests in the provincial forests of Saskatchewan. The following documentation describes a few of the key damaging-causing organisms potentially affecting tree growth in the Mistik FMP area and Mistik’s planned response, in collaboration with Saskatchewan Ministry of Environment, to outbreak conditions occurring within the FMP area.

⁹ Only 45% of the Mistik FMP area is considered suitable for undertaking commercial forestry activities (the ‘working forest’). The dominant landscape matrix of the Mistik FMP area is the remaining 55% of the landscape where no forest management activities are scheduled to occur. Decreasing fire risk in the forest landscape through preventative landscape fuels management on the Mistik FMP area is a significant challenge given the extensive nature of the non-operational forest land base (which is dominantly controlled by surficial sediments), the dominant occurrence of high fire-hazard fuel types (conifer-dominated) within the non-operational land base, the lack of access infrastructure to a significant portion of the FMP area, high cost of implementation and the uncontrollable randomness of lightning strikes (ignition).

¹⁰ <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/pest-management/13361>



3.6.1. DWARF MISTLETOE

3.6.1.1. DESCRIPTION

Dwarf Mistletoe (*Arceuthobium americanum* Nutt. Ex Engelm) is a naturally-occurring parasitic flowering plant that impacts jack pine within the Mistik FMP area (Figure 3-2). The most conspicuous feature of dwarf mistletoe infection is the formation of 'witches brooms'. Dwarf mistletoe causes the most amount of annual loss in merchantable volume in lodgepole and jackpine in the Prairie provinces¹¹.



Figure 3-2 Dwarf Mistletoe Plant (Left Panel) and Characteristic 'Witches Broom' Caused by Dwarf Mistletoe (Right Panel)

3.6.1.2. CURRENT EXTENT OF INCIDENCE

The incidence of dwarf mistletoe is widespread in the Mistik FMP area with over 43,000 ha identified as being severely impacted¹².

3.6.1.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Due to the widespread distribution and relatively slow infection rate of dwarf mistletoe within the Mistik FMP area, ongoing routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry operations will keep Mistik staff aware of dwarf mistletoe impact. Mistik is committed to:

- The detection of severe dwarf mistletoe incidence by photo-interpreters through implementation of the Saskatchewan Forest Vegetation Inventory (SFVI);
- Undertaking risk assessments when assessing dwarf mistletoe-infected jack pine stands for harvest opportunity;

¹¹ Hiratsuka, Y. 1987. *Forest tree diseases of the prairie provinces. Information Report NOR-X-286. Northern Forestry Centre, Canadian Forestry Service, Edmonton, Alberta. 142pp.*

¹² Refer to Mistik's 2019 20-Year FMP Vol. I – Section 12.40



- Assessing for dwarf mistletoe infection in regenerating post-harvest areas through implementation of the provincial Regeneration Assessment Standards.

3.6.1.4. TREATMENT OPTIONS

No commercially viable preventative or ameliorative treatment options exist for dwarf mistletoe impacts on jack pine. The most common control treatment is eradication of the infected host jack pine tree¹³. Mistik will continue to harvest dwarf mistletoe-infected jack pine stands and undertake sanitation treatments within harvested areas to encourage the renewal of forest stands that are free from dwarf mistletoe.

3.6.1.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment related to:

- Ongoing harvest and sanitization of commercially-viable infected jack pine stands through approval and implementation of normal forestry operations.

3.6.2. INSECT DISTURBANCES

The interaction of insects and forests is described by Natural Resources Canada¹⁴.

‘In a balanced forest ecosystem, many insects feed on living trees. Some can also speed up the death and decomposition of injured, sick or aging trees. Insects thus participate in the forest’s renewal, which is part of the natural succession process in forest ecosystems. Under certain conditions, insects may attack a very large number of trees over a wide area. This is known as an outbreak. An outbreak often occurs in a vulnerable species when populations of insect predators are too small or when forest and environmental conditions favour population growth. Outbreaks are natural, normal disturbances. They initiate secondary successions and help to rejuvenate stands. However, because of the economic losses caused by the death or weakness of trees during an outbreak, insects are then considered pests.’ Mountain pine beetle, spruce budworm, gypsy moth and Dutch elm disease are all examples of well-known forest pests that have led to significant losses in value of Canadian forests

The following documentation provides a brief description of several of the naturally-occurring insect species found in the Mistik FMP area which may have some amount of measurable impact over the term of Mistik’s 2019 20-Year FMP some of which (e.g. MPB) have a substantial impact. The documentation also describes Mistik’s response in the case of an outbreak of these insect species.

¹³ <http://publications.gov.sk.ca/documents/66/86285-English.pdf>

¹⁴ <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/pest-management/13361>



3.6.2.1. EASTERN SPRUCE BUDWORM

3.6.2.1.1. DESCRIPTION

Eastern spruce budworm (*Choristoneura fumiferana* Clem.) is a naturally-occurring insect (moth) that primarily impacts white spruce and balsam fir within the Mistik FMP area. The dominant impact during an outbreak is defoliation caused by the larval stage (Figure 3-3) of the moth which feeds voraciously on the young needles and buds of white spruce and balsam fir in the spring and early summer. Significant growth reduction and mortality can occur if trees are repeatedly attacked overall several years¹⁵.



Figure 3-3 Eastern Spruce Budworm Larvae

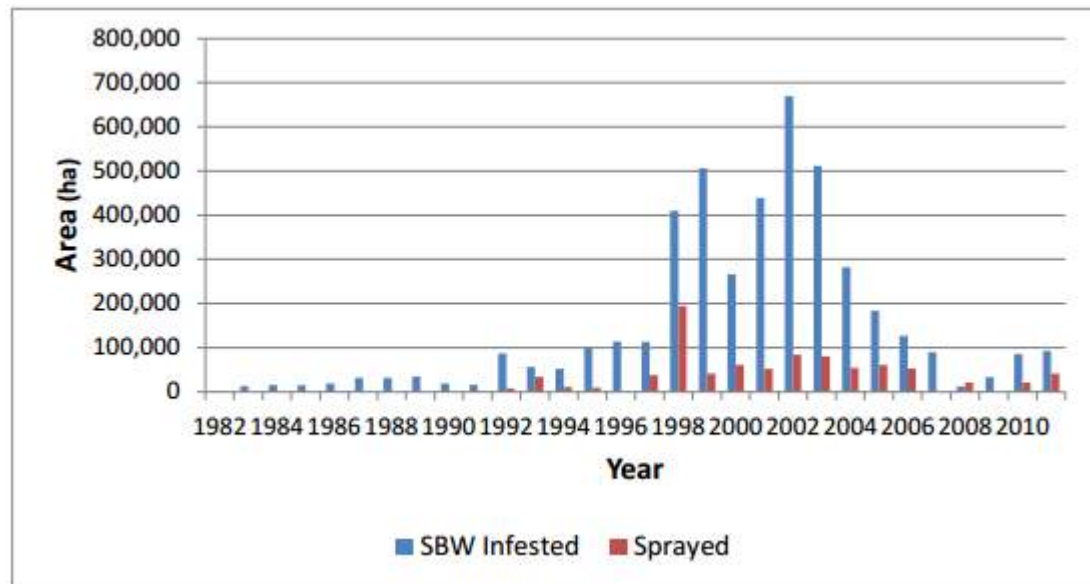
3.6.2.1.2. CURRENT EXTENT OF INCIDENCE

An extensive area (Figure 3-4) was impacted in the central and eastern portions of the provincial forest from 1982 to 2011. Very few white spruce and balsam fir stands were impacted in the Mistik FMP area during the outbreak.

Figure 3-4 Eastern Spruce Budworm Impact in Saskatchewan from 1982 to 2011¹⁶

¹⁵ <http://publications.gov.sk.ca/documents/66/86287-English.pdf>

¹⁶ 2012 Report on Saskatchewan Forests



3.6.2.1.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Mistik will not conduct any formal detection surveys for Eastern spruce budworm. Routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry operations will suffice to provide early indications of Eastern spruce budworm outbreak. In the case of an incipient outbreak, Mistik will collaborate with Saskatchewan Ministry of Environment specialists in the mapping and monitoring of the outbreak.

3.6.2.1.4. TREATMENT OPTIONS

The biological control agent *Bacillus thuringiensis var. kurstaki* (btk) (a naturally-occurring soil bacterium used as a 'microbial insecticide') is registered for use in the control of Eastern spruce budworm and has been used in controlling the current outbreak in Saskatchewan. Mistik will assist in facilitating a Btk-based pesticide control program under the direction of Saskatchewan Ministry of Environment specialists. Other treatment options that may assist in minimizing the magnitude of an outbreak of Eastern spruce budworm include reduction (forest thinning) or removal (harvesting) of host species (mature white spruce and balsam fir)¹⁷.

3.6.2.1.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment on the basis of an 'early intervention' approach, related to:

- Assisting in the monitoring of incipient outbreaks of Eastern spruce budworm;
- Assisting in the undertaking of a Btk-based pesticide control program.

¹⁷ <http://publications.gov.sk.ca/documents/66/86287-English.pdf>



- Assisting with mitigating impacts of SBW with directing harvesting to reduce mortality

3.6.2.2. JACK PINE BUDWORM

3.6.2.2.1. DESCRIPTION

Jack pine budworm (*Choristoneura pinus* Free.) is a naturally-occurring insect (moth and very closely related to the Eastern spruce budworm) that primarily impacts jack pine (and other pine species if present). The dominant impact during an outbreak is defoliation caused by the larval stage (Figure 3-5) of the moth which feeds voraciously on the young needles and buds of jack pine in the spring and early summer. Significant growth reduction and mortality can occur if trees are repeatedly attacked over several years¹⁸. Outbreaks typically last two to three years with an average recurrence cycle of eight to ten years.



Figure 3-5 Jack Pine Budworm Larvae

3.6.2.2.2. CURRENT EXTENT OF INCIDENCE

There has been no reported incidence or outbreak of Jack pine budworm within the Mistik FMP area. The majority of the major outbreaks of Jack pine budworm in Canada have occurred in provinces to the east of Saskatchewan¹⁹.

3.6.2.2.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Mistik will not conduct any formal detection surveys for Jack pine budworm. Routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry

¹⁸ http://sopfm.gc.ca/admin/datas/pdf/PDF_13_EN.pdf

¹⁹ [http://web.forestry.nbc.ca/fetch21/Z-PDF-pest-info-folder/Jack%20pine%20budworm%20\(1\).pdf](http://web.forestry.nbc.ca/fetch21/Z-PDF-pest-info-folder/Jack%20pine%20budworm%20(1).pdf)



operations will suffice to provide early indications of Jack pine budworm outbreak. In the case of a perceived incipient outbreak, Mistik will collaborate with Saskatchewan Ministry of Environment specialists in the mapping and monitoring of the outbreak.

3.6.2.2.4. TREATMENT OPTIONS

The biological control agent *Bacillus thuringiensis* var. *kurstaki* (Btk) (a naturally-occurring soil bacterium used as a 'microbial insecticide') is registered for use in the control of Jack pine budworm²⁰. Mistik will assist in facilitating a Btk-based or 'reduced risk' pesticide control program under the direction of Saskatchewan Ministry of Environment specialists.

3.6.2.2.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment on the basis of an 'early intervention' approach, related to:

- Assisting in the monitoring of incipient outbreaks of Jack pine budworm;
- Assisting in the undertaking of a Btk-based or 'reduced risk' pesticide control program.
- Assisting with mitigating impacts of SBW with directing harvesting to reduce mortality

3.6.2.3. FOREST TENT CATERPILLAR

3.6.2.3.1. DESCRIPTION

Forest tent caterpillar (*Malacosoma disstria* Hbn.) is the most common of the insect pests affecting hardwood forests (particularly aspen)²¹. The primary impact is caused by voracious feeding of the larval stage (Figure 3-6) on aspen foliage which can result in complete defoliation of the tree. Outbreaks are transient, not lasting more than three or four years. Outbreak periodicity is approximately every ten to twelve years on average. Tree mortality rarely occurs as a direct result of an outbreak but repeated defoliation can result in cumulative impacts contributing to the phenomenon of 'aspen decline' and eventual mortality²².

²⁰ [http://web.forestry.ubc.ca/fetch21/Z-PDF-pest-info-folder/Jack%20pine%20budworm%20\(1\).pdf](http://web.forestry.ubc.ca/fetch21/Z-PDF-pest-info-folder/Jack%20pine%20budworm%20(1).pdf)

²¹ <http://publications.gov.sk.ca/documents/66/86290-English.pdf>

²² Personal communication with Rory McIntosh, Provincial Forest Entomologist.



Figure 3-6 Forest tent caterpillar larva



3.6.2.3.2. CURRENT EXTENT OF INCIDENCE

Forest tent caterpillar likely occurs throughout the Mistik FMP area. Well-documented outbreaks have occurred in the recent past (late 1980s and early 1990s) in the Meadow Lake area²³.

3.6.2.3.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Due to the widespread distribution of tree host and relatively transient impacts of forest tent caterpillar²⁴, Mistik will not undertake any formal detection or monitoring of forest tent caterpillar within the FMP area. Routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry operations will suffice to provide early indications of forest tent caterpillar outbreak. If incipient populations are encountered Mistik will collaborate with Saskatchewan Ministry of Environment specialists in the mapping and monitoring of the outbreak.

3.6.2.3.4. TREATMENT OPTIONS

Several chemical agents and one biological control agent (*Bacillus thuringiensis* var. *kurstaki* (Btk) – a naturally-occurring soil bacterium used as a ‘microbial insecticide’) are registered for use in the control of forest tent caterpillar²⁵. Chemical control is not recommended due to the negative impact on natural parasitoids²⁶. Mistik will assist in facilitating a Btk-based or ‘reduced risk’ pesticide control program under the direction Saskatchewan Ministry of Environment specialists.

²³ Mistik Management Ltd. 1997. *The NorSask Forest Management Project, Volume VI, the Present Environment (Part B), Appendix E. Meadow Lake, Saskatchewan.* ~200 pp.

²⁴ <http://publications.gov.sk.ca/documents/66/86290-English.pdf>

²⁵ <http://publications.gov.sk.ca/documents/66/86290-English.pdf>

²⁶ <http://publications.gov.sk.ca/documents/66/86290-English.pdf>



3.6.2.3.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment on the basis of an 'early intervention' approach, related to:

- Assisting in the monitoring of incipient outbreaks of Forest tent caterpillar;
- Assisting in the undertaking of a Btk-based or 'reduced risk' pesticide control program

3.6.2.4. LARGE ASPEN TORTRIX

3.6.2.4.1. DESCRIPTION

Large aspen tortrix (*Choristoneua conflictana* [Walker]) is one of the most common of the insect pests affecting hardwood forests (particularly aspen)²⁷. The primary impact is caused by voracious feeding of the larval stage (Figure 3-7) on aspen leaf buds and foliage which can result in complete defoliation of the tree. Outbreaks are transient, not lasting more than two or three years. Outbreak periodicity is approximately every ten to twelve years on average. Tree mortality rarely occurs as a direct result of an outbreak but repeated defoliation can contribute to the phenomenon of 'aspen decline' and eventual mortality²⁸. Outbreaks of large aspen tortrix often coincided with outbreaks of Forest tent caterpillar.

Figure 3-7 Large Aspen Tortrix Larva



²⁷ <http://publications.gov.sk.ca/documents/66/86294-English.pdf>

²⁸ Personal communication with Rory McIntosh, Provincial Forest Entomologist.



3.6.2.4.2. CURRENT EXTENT OF INCIDENCE

Large aspen tortrix likely occurs throughout the Mistik FMP area. There have been no reported outbreaks or Large aspen tortrix in the Mistik FMP area.

3.6.2.4.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Due to the widespread distribution of tree host and relatively transient impacts of Large aspen tortrix²⁹, Mistik will not undertake any formal detection or monitoring of Large aspen tortrix within the FMP area. Routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry operations will suffice to provide early indications of Large aspen tortrix outbreak. If incipient populations are encountered Mistik will collaborate with Saskatchewan Ministry of Environment specialists in the mapping and monitoring of the outbreak.

3.6.2.4.4. TREATMENT OPTIONS

Several chemical agents and one biological control agent (*Bacillus thuringiensis var. kurstaki* (Btk)- a naturally- occurring soil bacterium used as a 'microbial insecticide') are registered for use in the control of Large aspen tortrix³⁰. Chemical control is not recommended due to the negative impact on natural parasitoids³¹. Mistik will assist in facilitating a Btk-based or 'reduced risk' pesticide control program under the direction Saskatchewan Ministry of Environment specialists.

3.6.2.4.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment on the basis of an 'early intervention' approach, related to:

- Assisting in the monitoring of incipient outbreaks of Large aspen tortrix;
- Assisting in the undertaking of a Btk-based or 'reduced risk' pesticide control program.

3.6.2.5. TERMINAL WEEVILS (WHITE PINE AND LODGEPOLE PINE)

3.6.2.5.1. DESCRIPTION

White pine (or 'spruce') weevil (*Pissodes strobi* Peck) is considered the most serious pest of young conifers (particularly white spruce in Saskatchewan) in Canada³². Lodgepole terminal weevil (*Pissodes terminalis* Hopping) impacts young pines and occurs throughout the range of pine from

²⁹ <http://publications.gov.sk.ca/documents/66/86294-English.pdf>

³⁰ <http://publications.gov.sk.ca/documents/66/86294-English.pdf>

³¹ <http://publications.gov.sk.ca/documents/66/86294-English.pdf>

³² <http://www.environment.gov.sk.ca/adx/asp/adxGetMedia.aspx?DocID=3630,184,121,104,81,1,Documents&MediaID=4179&Filename=Terminal+weevil.pdf>



British Columbia to Manitoba³³. The most conspicuous feature of terminal weevil impact is the dead leader of pine or spruce trees caused by the feeding of the larval stage on the inner bark and vascular tissue of the most recent year's growth (Figure 3-8). Repeated attacks may kill a tree but generally the effects are transient causing only growth reduction and potential stem deformities.

Figure 3-8 Terminal weevil larva (left panel) feeding on the stem of a tree and characteristic damage (right panel) to a spruce tree caused by terminal weevils



3.6.2.5.2. CURRENT EXTENT OF INCIDENCE AND SEVERITY

White pine weevil impact on white spruce has been observed sporadically throughout the Mistik FMP area. The most seriously impacted trees are open-growing white spruce. Lodgepole terminal weevil, although likely present, has not been observed in the Mistik FMP area.

3.6.2.5.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

Mistik conducts forest renewal surveys of all harvest blocks, typically at five and fourteen years' post-harvest. Significant incidence of terminal weevil impacts on conifer trees is noted during the surveys.

3.6.2.5.4. TREATMENT OPTIONS

Many of Mistik's regenerating conifer plantations occur in a mixedwood context with over storey aspen. The aspen over storey has been identified as a key factor in reducing the impact of terminal weevils on conifer trees³⁴. Under high incidence conditions, pruning and removal of dead tree parts

³³ <http://www.environment.gov.sk.ca/adx/asp/adxGetMedia.aspx?DocID=3630,184,121,104,81,1,Documents&MediaID=4179&Filename=Terminal+weevil.pdf>

³⁴ http://nofc.cfs.nrcan.gc.ca/publications/leaflets/white_pine_weevil_e.html



is recommended. Although chemical treatments have been demonstrated to be effective, the cost of implementing a chemical control program is difficult to justify.

3.6.2.5.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment related to:

- Ongoing assessment of young conifers regenerating in post-harvest areas through implementation of forest regeneration surveys.

3.6.2.6. MOUNTAIN PINE BEETLE

3.6.2.6.1. DESCRIPTION

In the last several years, the mountain pine beetle (*Dendroctonus ponderosae* Hopkins) (Figure 3-9) has become the most important pest of pine trees in western Canada³⁵. The mountain pine beetle has destroyed millions of hectares of lodgepole pine in western Canada. Mountain pine beetle has not been observed on the Mistik FMP Area to date, however, its eastward expansion is a concern.

Figure 3-9 Adult Mountain Pine Beetle



Evidence of mountain pine beetle attack (Figure 3-10) includes mass attack of pine trees, production of pitch tubes from beetle entry holes in the bark, egg galleries above the entry holes and reddish brown needles. The key damage to attacked trees is the combined action of the larval feeding on the tree phloem and blue-stain fungus which can result in tree mortality within one month of initial attack³⁶. Normally, the mountain pine beetle attacks old or weakened lodgepole pine trees.

³⁵ <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/top-insects/13397>

³⁶ <http://www.nrcan.gc.ca/forests/fire-insects-disturbances/top-insects/13397>



Figure 3-10 Evidence of mountain pine beetle attack of a pine tree showing pitch tubes (lower panel) and egg galleries under the bark (upper panel) [William M. Ciesla, Forest Health Management International, Bugwood.org]



3.6.2.6.2. CURRENT EXTENT OF INCIDENCE AND SEVERITY

Unusually hot, dry summers and mild winters in central British Columbia during the 1990s, along with forests filled with mature lodgepole pine, have led to an epidemic. The outbreak in British Columbia spread to Alberta into the hybrid zone (the area in Alberta where the natural range of lodgepole pine overlaps that of jack pine. Reports³⁷ from Alberta indicated that an unprecedented

³⁷ <http://forestinvasives.ca/Meet-the-Species/Insects/Mountain-Pine-Beetle#6984-distribution>



flight of beetles occurred in July 2006 and again in 2009 into Alberta. Both British Columbia and Alberta³⁸ have enacted major mountain pine beetle management and recovery programs.

3.6.2.6.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

During the 2019, and in subsequent field seasons (June to August) Mistik will maintain periodic contact with forestry staff at Alberta Pacific (AlPac), Alberta Agriculture and Forestry, and the SK Ministry of Environment as to the incidence of Mountain pine beetle in area immediately to the west of the Mistik FMP area. Routine assessment of forest condition by Mistik staff via aerial or ground access in the course of viewing forestry operations will continue. In the case of detection, Mistik will notify Saskatchewan Ministry of Environment specialists and collaborate in mapping and monitoring the outbreak.

3.6.2.6.4. TREATMENT OPTIONS

Scientists examining the mountain pine beetle control program in Alberta (and numerous associated publications) have provided the evidence that early and aggressive control action can be cost effective and can significantly reduce the spread, extent and severity of MPB in lodgepole and lodgepole hybrid forests in western and central Alberta³⁹. Although there is still uncertainty around how quickly MPB will spread through the boreal jack pine environment, there are clear indications that spread will not be the same as was experienced in the BC interior (pers. Comm. Rory McIntosh). In fragmented boreal forests characteristic of boreal forest landscapes in the leading edge, MPB spread is believed to occur much more gradually⁴⁰. Indeed, Alberta and Saskatchewan's early detection grid shows that beetles were found inside the Cold Lake Air Weapons Range (within 38 kilometers of the AB/SK border) in 2017. However, no beetles were detected in any of the baited trees deployed throughout the Athabasca Forest Region in Alberta or in Western Saskatchewan. Although "absence of presence" does not necessarily mean beetles are not there, but it is fairly strong evidence that the beetles are having difficulty becoming established in pure Jack pine forest.

3.6.2.6.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

In the event that mountain pine beetle should spread into the FMP area, Mistik will collaborate with Saskatchewan Ministry of Environment's broader strategic response plan. Specific actions may include:

- initiatives for early detection;
- 'contain and control' methods that may include the use of pheromones to contain the beetle populations;

³⁸ <http://forestinvasives.ca/Meet-the-Species/Insects/Mountain-Pine-Beetle#6984-distribution>

³⁹ Hodge et al, 2017 <https://www.ccfm.org/pdf/2017-MPBStrategicContainmentApproach.pdf>,
Cooke and Carroll, 2017. <https://www.sciencedirect.com/science/article/pii/S0378112716312543>

⁴⁰ Pokorny, S., and Carroll, A. 2018. Persistence or extinction? Quantifying the fate of an eruptive herbivore in novel habitats following climate change-induced range expansion. Abstract for a presentation at the Joint Meeting of the Entomological Societies of America, Canada, and British Columbia. 11-14 November 2018, Vancouver, British Columbia, Canada. <https://esa.confex.com/esa/2018/meetingapp.cgi/Paper/132842>



- undertaking strategic harvesting to slow the spread;
- sanitation and salvage harvesting to remove infested trees and forest stands.

It is recognized that changes in harvest patterns may require flexibility in the Forest Management Planning Process.

3.6.2.7. FUNGAL DAMAGE

3.6.2.7.1. DESCRIPTION

A variety of fungal organisms (generically referred to as root rots, casts, rusts, and blights) impact the roots, foliage, twigs, stems, and cones of coniferous and deciduous trees in the Mistik FMP area on an ongoing basis. Symptoms of fungal impact include wilting of foliage, discoloration of foliage, premature shedding of foliage, blackening and death of twigs and foliage and the presence of cankers, galls, or conks on the stem of trees⁴¹. In most cases, the impact of fungi on tree growth and wood quality is transient and relatively minor in the Mistik FMP area. Internal stem decay caused by fungi, of both coniferous and deciduous trees, generally increases with stand age.

Armillaria root rot (*Armillaria mellea complexe*) is cited as the most destructive and widespread fungal disease affecting the base and roots of trees in Canada⁴². Armillaria damage is caused by fungal filaments (found in dead organic material) invading living root tissue of trees. The fungus spreads to the root base and into the base of the tree. The fungus induces sapwood decay and eventual death of the tree.

3.6.2.7.2. CURRENT EXTENT OF INCIDENCE AND SEVERITY

Fungi are a key component of natural ecosystems. Tree-associated fungi are found throughout all the forest ecosystems within the Mistik FMP area. Fungal impacts can be identified on virtually every tree within the forest. The severity of impact increases with stand age. Armillaria root rot, although known to be present, has not been noted as a serious impact to forest health in the Mistik FMP area.

3.6.2.7.3. FUTURE DETECTION, RISK ASSESSMENT AND MONITORING

The collection of tree metrics, across a variety of forest stands within the FMP area, through Mistik's temporary sample plot program allows for characterization of tree health and form. Additionally, Mistik's sample scaling program provides a measure of stem decay. Due to the widespread distribution, relatively slow infection rates and slow rate of decay caused by fungi, Mistik will not undertake any formal detection or monitoring of fungal impacts within the FMP area.

⁴¹ Hiratsuka, Y. 1987. Forest tree diseases of the prairie provinces. Information Report NOR-X-286. Northern Forestry Centre, Canadian Forestry Service, Edmonton, Alberta. 142pp.

⁴² http://cfs.nrcan.gc.ca/bookstore_pdfs/11927.pdf



3.6.2.7.4. TREATMENT OPTIONS

No commercially viable preventative, treatment or control options exist for most fungal-related impacts. Mistik will continue to harvest fungi-infected trees within the FMP area and ensure forest renewal.

3.6.2.7.5. COLLABORATION WITH SASKATCHEWAN MINISTRY OF ENVIRONMENT

Mistik anticipates future collaboration with Saskatchewan Ministry of Environment related to:

Ongoing harvest of commercially-viable fungal-infected stands throughout the Mistik FMP area through approval and implementation of normal forestry operations

3.7. MANAGEMENT CHALLENGES ON THE LICENCE AREAS

Key forest management challenges within the Mistik FMP area are summarized in Table 3-4.

Table 3-4 Key Forest Management Challenges

Challenges	Indicator-related	Source	Mitigation
1. Demonstrating future softwood growth/yield based on early successional mixed wood conditions.	Mistik Indicator #6 (VOIT document)	Saskatchewan Ministry of Environment	In the 2007 FMP, establishment survey data was used to demonstrate this relationship. In the 2019 FMP, free-to-grow (FTG) survey data will be used. The results of the FTG surveys are more closely refined in terms of capturing stand type variability within harvest blocks. This level of detail will result in more accurate results with regard to SGR transitions when compared to the pre-harvest condition.
2. Woodland Caribou Habitat Mitigation Plan	Mistik Indicator #7 (VOIT doc.) & Vol III Appendix A	Mistik / L&M	Mistik's Caribou habitat mitigation plan may require an amendment pending the development / finalization of the SK2 West provincial caribou range planning process.
3. Accommodating and working within the context of complex and overlapping Aboriginal traditional territory land claims and associated disputes with regulatory agencies.	No	Mistik Management Ltd.	Continue to work cooperatively with Aboriginal groups with regard to overlapping traditional territories. Communicate with the ministry with regard to the location and status of outstanding TLE claims.



Challenges	Indicator-related	Source	Mitigation
4. Maintenance of equitable distribution of forestry employment and economic benefits.	Mistik Indicator #26 (VOIT document)	Northern communities	Adhere to the terms of the co-management agreements (payments to co-management boards); maintain 60% or greater payments to local vendors; and maintain 100% representation from local communities in the workforce.
5. Inventory and Growth and Yield Programs	No	Mistik and L&M	The inventory and growth and yield will need to be updated according to provincial standards or approved alternatives. Mistik anticipates that this process will start around 2023.
6. Maintenance of the diversity of non-timber and traditional use values.	Mistik Indicator #21 and #24 (VOIT document)	Public (all those involved in non-timber use activities within the FMP area)	Continue to solicit input through relationships with the public and other forest users. It is Mistik's intent to "grow the dataset" over time with regard to non-timber and traditional use values.

3.8. VULNERABILITY ASSESSMENT TO ADDRESS CLIMATE CHANGE

Climate change is predicted to have significant impacts on sustainable forest management (SFM) in the Boreal Forest. Some examples of these impacts are changes to tree growth and survival rates, increased drought, fire, and severe storms, all of which contribute to losses in forest productivity and biomass. It is important to develop tools and strategies that will help manage these changes. One of these tools is the ability to adapt current practices to account for climate change through technology, government policy and collaboration among academia, government and other stakeholders.

Mistik has participated in a study that focused on the impacts of climate change on sustainable forest management on the Mistik FMP area⁴³. The study was based on the conceptual framework developed by the Canadian Council of Forest Ministers (CCFM), and involved:

- describing the current climate and forest condition on the Mistik FMP area;
- developing scenarios of future climate and forest conditions;
- assessing the vulnerability of SFM to current and future climate;
- and developing and refining options for adaptation.

Approximately 160 CCFM SFM objectives were assessed for specific impacts of climate change, adaptation options, a feasibility ranking and any potential challenges or barriers to the options. For

⁴³ Andrews-Key, S.A. (2018). *Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest Industry in Saskatchewan*. (Unpublished doctoral dissertation). University of Saskatchewan, Saskatoon, Saskatchewan, Canada.



the purposes of the FMP, two indicators have been chosen to monitor and report on annually. The two indicators are:

1. The number of “days frozen” annually for three important lakes in the FMP area and
2. Operational days lost due to “abnormal” weather/environmental conditions.

The three lakes chosen for monitoring are Peter Pond Lake, Canoe Lake and Turtle Lake which are all locally important for fishing/sustenance and recreation within the FMP area. For each lake, the number of “frozen days” will be reported annually and be based on the date when the lake became frozen (no longer thawing) for the winter and the date when the lake was completely thawed in the spring. Local people near each lake will be involved to assist Mistik with monitoring ice conditions. The trend over time may show a decline in each lake’s total number of “frozen days” per year which has impacts to the local people.

For operational days lost due to weather/environmental conditions, Mistik and L&M are interested in how many days are lost during “normal” operations (excluding all other factors) due to weather related conditions. Often in the summer months, shut downs occur due to ground conditions being too wet or forest fire hazard being too high to safely operate. In winter, harvesting or hauling operations may be shut down due to temperatures being too warm. Hauling under full permit weights during the winter season is dependent on temperatures staying cold. When the temperature gets too high, trucks are not permitted to haul full weights, resulting in lower productivity. The following metrics will be monitored:

- In summer (spring start-up until October 31st):
 - Harvesting shut down for x days due to high fire hazard
 - Number of times a harvesting operation is moved to an alternate area due to wet conditions.
- In winter (November 1st until March 31st):
 - Harvesting shut down for x days due to warm temperatures (non-frozen/warm conditions that present risks normally related to all season/summer harvesting)
 - Haul reverts to non-permit weights for x days between winter permit start and end dates due to warm temperatures

In addition to the indicators chosen, Mistik and L&M are committed to working on the implementation of some of the tools and adaptation options identified in the vulnerability assessment project.

3.9. INTEGRATION OF FOREST MANAGEMENT ACTIVITIES WITH NON-TIMBER USES

3.9.1. STRATEGIES TO INTEGRATE FORESTRY ACTIVITIES AND NON-TIMBER VALUES

Mistik strives to maintain the diversity of boreal forest values and uses throughout its forestry operations in the FMP area through several processes. On an annual basis, Mistik will follow the



approaches identified in Table 3-5 in an attempt to ensure that the broadest suite of non-timber and potentially high conservation values is maintained.

Table 3-5 Specific Measures to be Implemented by Mistik to Minimize Impact to and Maintain Potentially High Conservation and Non-Timber Values

Non-Timber Value	Mistik Approach to Maintain Value
1. Non-timber forest products: <ul style="list-style-type: none"> • outfitting/trapping (fur) • cabins • wild rice • traditional use areas/spiritual • tourism/recreation • fishing/hunting • berries/mushrooms • aesthetic qualities 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 • 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	<ul style="list-style-type: none"> • Science-based recommendations are solicited from specialists with respect to planning and implementation of forestry activities • Operational implementation of expert recommendations



Non-Timber Value	Mistik Approach to Maintain Value
6. Archaeological and cultural resources	<ul style="list-style-type: none"> 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. 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/development	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Not applicable - aside from grazing activities, Mistik is unaware of any agricultural activities occurring within the FMP area



4. FMP AMENDMENT PROCESS

Mistik has developed this FMP using the best information that is currently available. However, it is not possible to cover every eventuality when developing a FMP due to the natural variability of forest ecosystems and the unpredictability of natural events. It is often impossible to account for changing and evolving social values and changing market conditions.

Although Mistik does not anticipate that the FMP will require amendments or revisions before the 10-year timeframe is complete, the FMP will be amended should any of the following circumstances take place:

- Catastrophic events (e.g. mill closures, government changes to or removal of the FMP area) or natural disturbance events (large scale wildfire, wind-throw or mortality due to insect or disease infestations) affecting the forest resource exceeding the re-planning threshold;
- Regulatory changes to Caribou management that severely impact or limit harvesting;
- Utilization standards changing significantly from those used to calculate HVS;
- Deviations to the tactical plan are required beyond the acceptable allowance;
- Unexpected circumstances arising that render the current plan at risk of not meeting the public interest on the FMP area;
- Operational planning or practices significantly deviate from the strategies/assumptions used to determine the HVS and a negative impact on the HVS is expected.

Mistik will maintain a FMP Amendment Log for the duration of the FMP. All amendments, as well as the results of stakeholder consultation associated with the amendments, will be documented in the log.

If consultation on a FMP amendment is required, a work plan and public engagement plan will be developed for approval by the ministry.



APPENDIX A: WOODLAND CARIBOU HABITAT MITIGATION PLAN

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1 EXECUTIVE SUMMARY

Woodland caribou (*Rangifer tarandus caribou*) are one of Canada's most widely distributed large mammals with boreal ecotype populations occurring in seven provinces and one territory. Populations of boreal ecotype woodland caribou have declined significantly over time and are now protected under the federal Species at Risk Act (SARA) as a threatened species. In conducting its forestry activities, Mistik must consider wildlife and other values. This document describes steps that will be taken to minimize the impact of forestry activities occurring within Caribou habitat.

This habitat mitigation plan will be implemented within the context of the *Draft Range Plan for Woodland Caribou in Saskatchewan* (2017), and the 2019 Mistik FMP.



2 WOODLAND CARIBOU BACKGROUND INFORMATION

2.1 WOODLAND CARIBOU BIOLOGY, POPULATION DYNAMICS AND LANDSCAPE MOVEMENTS (ARSENAULT 2003, ARSENAULT ET AL. 2006, PROULX 2013, PROULX ET AL. 2017)

Adult woodland caribou are moderately-sized ungulates that are typically brown with cream-colored neck, mane, tail and rump. The species is anatomically adapted to withstand harsh winter conditions with a compact body, well-insulated coat, furred extremities, long legs and large, soft-centered, crescent-shaped hooves to facilitate movement on ice, snow and peatlands. Woodland caribou are uniquely adapted to survive during the winter months on terrestrial and arboreal lichens but thrive on a variety of browse food sources if available. Woodland caribou breed in October and calves are typically born in early May. The species occurs naturally in very low population densities as an adaptive response to predator avoidance. Boreal caribou tend to gather in small bands (likely distinct social units within a larger population). Local bands are generally sedentary (i.e., no seasonal mass migrations over long distances) with movements of only 15 to 80 km that often overlap with the range of adjacent bands or populations. Usage and movements of and between high-quality seasonal habitats remains relatively static from year to year.

2.2 WOODLAND CARIBOU ECOLOGY AND HIGH-QUALITY HABITAT REQUIREMENTS (ARSENAULT 2003, ARSENAULT ET AL. 2006, ENVIRONMENT CANADA 2005, PROULX 2006, 2013, PROULX ET AL. 2017);

High-quality habitat of woodland caribou is a mosaic of mature upland coniferous boreal forest and treed peatland complexes. Specifically, lichen-rich treed fens and bogs dominated by black spruce and larch with adjacent mature upland coniferous forests of black and jack pine between the ages of 40 to 100 years and less than 70% crown closure is reported to be the optimum habitat for woodland caribou. Treed peatlands, at both the stand and landscape level, appear to be very strongly correlated with high-quality habitat usage and are significant determinants of critical habitat. Woodland caribou avoid shrub-rich habitat and aspen-dominated sites. Within the habitat mosaic, high-quality habitat needs to be functionally connected and buffered from population limiting factors. Forest ecosystem types that are not considered high-quality habitat function as habitat buffers between other ungulates (moose, white-tailed deer) and predator species (wolves). Boreal caribou require large contiguous tracts of high-quality habitat in order to maintain their unique predator avoidance behavior and associated low population densities. Calving sites are critical in population maintenance. Features of calving sites likely include isolated, raised stands of spruce and pine in treed peatlands and peninsulas and islands in lakes and rivers in high-quality caribou habitat.

2.3 FOREST ACTIVITIES AFFECTING WOODLAND CARIBOU HABITAT (ARSENAULT 2003, ARSENAULT ET AL. 2006).

The size and distribution of woodland caribou populations may be affected specifically by habitat change (natural or human-caused), predation, subsistence hunting and vehicle collisions (and other disturbance). Mistik's forest-use activities modify woodland caribou habitat and may affect usage patterns. Primary forestry-related impacts to woodland caribou habitat in the Mistik FMP area are access development (road construction), access use (amount of vehicular traffic), and



forest harvesting (change in age class structure).

Access development and ongoing usage of roads has been shown to result in a significant reduction in usage of high-quality habitat in the proximity of the access feature and as a barrier to movement between seasonal use areas. Woodland caribou may be displaced by 0.25 km to 1.2 km from seismic lines, well sites, roads, harvested areas and other industrial activities. Roads may facilitate human access for Aboriginal subsistence hunting of woodland caribou.

Forest harvesting results in abrupt habitat change. While harvesting occurs exclusively in upland coniferous and deciduous forest types, these habitat types may be in association with peatlands occupied by woodland caribou. However, high-quality woodland caribou habitat consists of a mosaic of mature upland coniferous forest types and peatland complexes. Harvested upland forest may result in barriers to movement between seasonal use areas, reduction in dispersal areas and concentration of caribou populations which may result in increased mortality due to predation.

Indirect impacts of forest harvesting and associated access may include increased cervid and predator densities (due to enhanced habitat for other ungulates sought by wolves) and increased mobility of predators adjacent to high-quality woodland caribou habitat types that can result in increased mortality of woodland caribou.

2.4 PROVINCIAL OR NATIONALLY PROTECTED WILDLIFE REFUGE AND ECOLOGICAL RESERVES WITHIN OR ADJACENT TO THE MISTIK FMP AREA

Provincially or nationally protected wildlife refuge and ecological reserve areas (Table A-1) within or immediately adjacent to the Mistik FMP area provide core areas of low anthropogenic disturbance. Maintenance of connectivity between woodland caribou ranges within the Mistik FMP area and protected areas is considered valuable for the purpose of facilitating woodland caribou movement between habitat areas in Mistik FMP area and adjacent protected wilderness areas.



Table A-1: Protected and de facto protected wildlife refuge and ecological reserve areas adjacent to the Mistik FMP area

Protected area	Total area (ha)
1. Cold Lake Air Weapons Range (CLAWR) ⁴⁴	635,894
2. McCusker River Ecological Reserve within the CLAWR	139,392
3. Primrose Lake Ecological Reserve within the CLAWR	19,487
4. Primrose Lake Wildlife Refuge within the CLAWR	11,746
5. Caribou Flats Ecological Reserve immediately north of Dore Lake	9,603
Note: Total (excludes #s 2 to 4 above)	645,497

⁴⁴ Not an officially designated protected area- but serves as a de facto protected area – encompassing approximately 636,000 ha



3 CARIBOU HABITAT WITHIN THE MISTIK FMP AREA

3.1 IDENTIFICATION OF WOODLAND CARIBOU HABITAT WITHIN THE MISTIK FMP AREA

A detailed assessment using the Saskatchewan Forest Vegetation Inventory (SFVI) data identified landscape-level areas within the Mistik FMP area with a high proportion of contiguous, high-quality woodland caribou winter habitat (Proulx 2006). Contiguous, high-quality woodland caribou habitat queries were defined based on telemetry data collected in the Cold Lake Air Weapons Range (Arsenault 2005), expert opinion (Proulx, Alpha Wildlife Research and Management Ltd.) and guidance from Saskatchewan Ministry of Environment wildlife habitat experts (Arsenault et al. 2006). Due to the timing of plan development, this data was used for the 2019 FMP modelling process.

In 2013 and 2017, additional field studies were undertaken on the Mistik FMP area with the intent of refining these queries based on observed habitat use and thus identifying stands to protect (Proulx 2013, Proulx 2017). The results indicated that late-winter habitat varies according to differing regional conditions such as vegetative characteristics and disturbance type. Large-scale disturbance such as fire may either create favorable habitat or reduce it, depending on the mosaic of stand types and conditions that remain post-disturbance. Prior to the development of the next tactical plan and FMP, and using an updated vegetation inventory, these new criteria will be used to identify contiguous, high-quality woodland caribou habitat within the Mistik FMP area.

3.2 WOODLAND CARIBOU HABITAT AREAS IDENTIFIED IN THE DRAFT RANGE PLAN FOR WOODLAND CARIBOU IN SASKATCHEWAN

The following table outlines the three distinct types of caribou habitat management areas (CHMA) identified in the provincial draft range plan.

Table A-2: Caribou habitat management areas on the Mistik FMP area

CHMA Tier	Criteria for Selection	Total area (ha) occurring on the Mistik FMP Area
Tier 1	Areas of high-moderate caribou habitat potential with high levels of observed caribou use and low levels of human-caused disturbance	392,733
Tier 2	Areas of high-moderate caribou potential with observed caribou use and higher levels of wildfire and human-caused disturbance	312,032
Tier 3	Areas of general caribou habitat between Tier 1 and Tier 2 areas. Tier 3 areas provide general habitat and connectivity between Tier 1 and Tier 2 areas	970,601

The three CHMAs cover a total of 85% of the Mistik FMP area. The provincial SK2 West caribou administrative unit is approximately 4,353,891 ha in size, of which 1,675,367 ha (38%) overlaps with the Mistik FMP area.



In general, there is reasonably good correlation between the general extent of woodland caribou ranges defined by Saskatchewan Ministry of Environment and the general extent of areas indicated as contiguous, high-quality winter habitat. The opportunity exists, through ongoing fieldwork and research, to refine both the high-quality habitat query and the woodland caribou habitat Mitigation area boundaries within the FMP area.



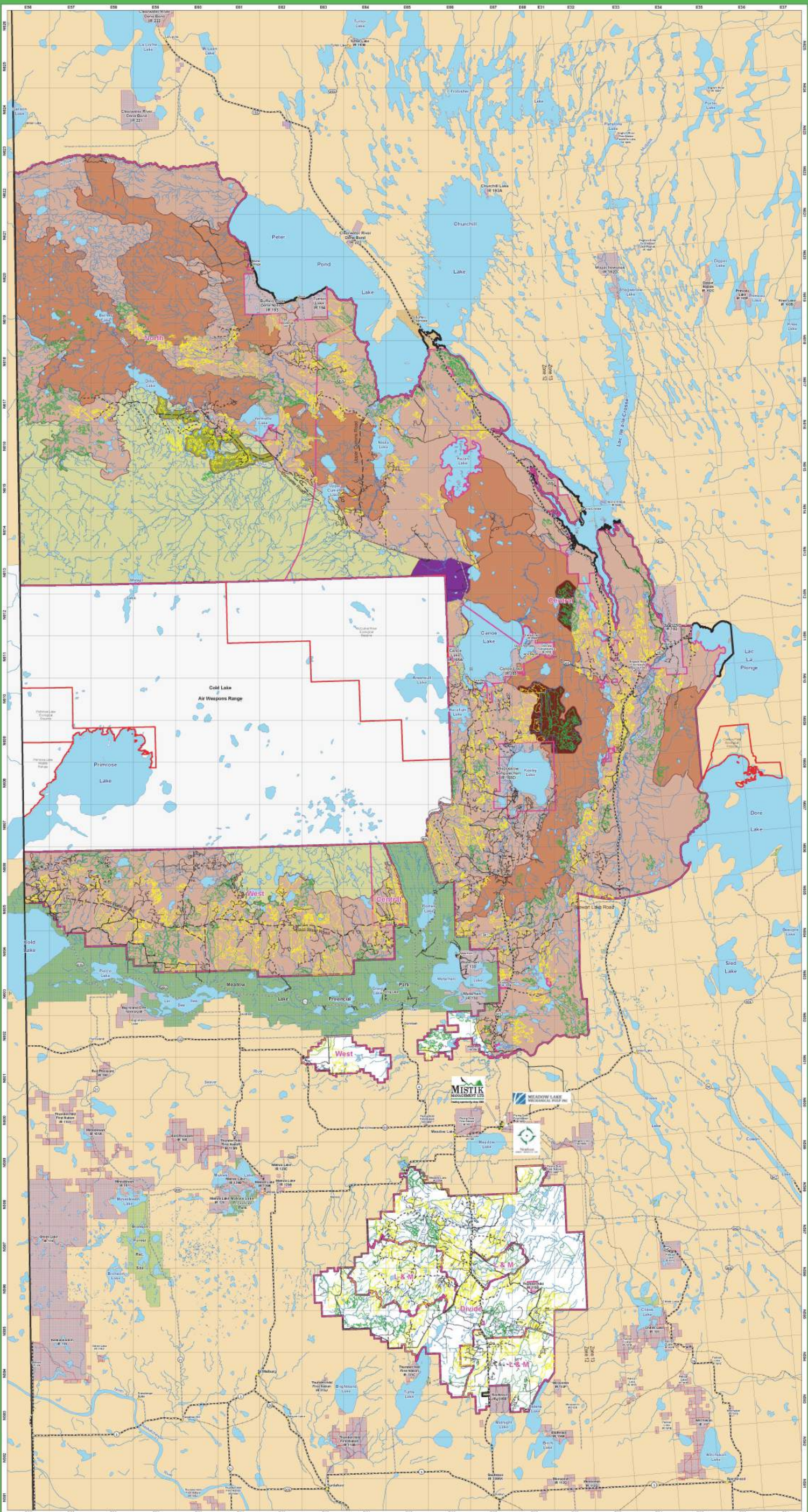
4 CARIBOU HABITAT MITIGATION PLAN

Development of recovery programs and habitat management planning requires a good understanding of caribou habitat use, particularly in late-winter when weather conditions are harsher (Proulx 2013). This plan is based on Mistik's knowledge of caribou habitat on the Mistik FMP area and the Draft Range Plan for Woodland Caribou in Saskatchewan.

4.1 MISTIK WOODLAND CARIBOU HABITAT MANAGEMENT AREAS (CM)

Provincial woodland caribou habitat areas cover a large percentage of the Mistik FMP area (85%). For the purposes of managing caribou habitat within the FMP area, Mistik has defined six distinct caribou management (CM) areas. These areas were created based on the three provincial caribou habitat tier areas, with a few small changes to accommodate for approved tactical plan harvest blocks. Map 39 displays the Mistik CM areas. Table A-3 outlines each CM, the criteria that describes it, as well as the percent overlap with the associated provincial tier area and that CM's current disturbance level. Table A-4 outlines the criteria used to calculate disturbance on the Mistik FMP area.

Once all forestry activities have been completed in CM-1a and CM-2a, it is Mistik's intention to amalgamate these areas back into their respective provincial CHMA's. Due to the location of caribou habitat areas within Mistik's "core" harvesting areas, new CM-1a/2a-type areas may be created in subsequent FMP tactical plans as younger stands of timber reach maturity. Attempts to minimize harvest activities in high-quality habitat areas (Tier 1 and 2) will be a priority during the development of the next tactical plan.





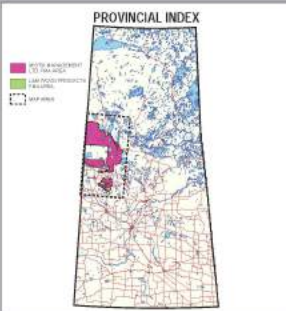
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MISTIK CARIBOU MANAGEMENT AREAS



0 5 10 20
Kilometres

Map Source: LSR
Map Date: 1/28/2010
Map Date: 1/28/2010
Map Date: 1/28/2010
Map Date: 1/28/2010



FEATURES OF INTEREST

Mistik Caribou Management Areas

- CM1
- CM1a
- CM2
- CM2a
- CM3
- CM4

Tactical Plan

- T1
- T2

Protected Area

- Protected Area

PLANIMETRIC LEGEND

Public Road

- Paved Highway
- Gravel Highway
- Non-Motor
- Oil / Gas
- 3rd Party

Provincial Forestry Class Road

- Class 1 (FRR)
- Class 2 (FRR)
- Class 3 (Bush Road)

Railroad

- Railroad

Lake

- Lake

Creek

- Creek

Provincial Border

- Provincial Border

UTM Tie Boundary

- UTM Tie Boundary

FMA Boundary

- FMA Boundary

FMA Exclusion

- FMA Exclusion

Provincial Park

- Provincial Park

Recreation Site

- Recreation Site

Indian Reserve

- Indian Reserve

Air Weapons Range

- Air Weapons Range

Settlement

- Settlement

Timber Reserve

- Timber Reserve

Village

- Village

Town

- Town

Village / Hamlet

- Village / Hamlet

Woodlands Office

- Woodlands Office

Mill Site

- Mill Site



Table A-3: Mistik caribou habitat management areas

Mistik (CM) Area	Criteria for Selection	Area (ha)	SK CHMA Tier overlap	Overlap* %	Current % disturbance
CM-1	Areas of high-moderate caribou habitat potential with high levels of observed caribou use and low levels of human-caused disturbance	374,402	Tier 1	95%	35%
CM-1a	Areas of high-moderate caribou habitat potential with moderate levels of observed caribou use and low levels of human-caused disturbance. Provincial Tier 1 areas that overlap with approved Mistik tactical plan. Critical/core harvest areas for the next 20 years.	18,331	Tier 1	5%	7%
CM-2	Areas of high-moderate caribou potential with observed caribou use and higher levels of wildfire and human-caused disturbance.	298,128	Tier 2	96%	90%
CM-2a	Areas of high-moderate caribou potential with observed caribou use and higher levels of wildfire and human-caused disturbance. Provincial Tier 2 areas that overlap with approved Mistik tactical plan. Critical/core harvest areas for the next 20 years.	13,902	Tier 2	4%	97%
CM-3	Areas of general caribou habitat between Tier 1 and Tier 2 areas. Tier 3 areas provide general habitat and connectivity between Tier 1 and Tier 2 areas.	962,631	Tier 3	99%	46%
CM-4	Connectivity area currently identified as Tier 3. This area is being identified by Mistik as a deferral area to enhance connectivity between Tier 1 and Tier 2.	7,972	Tier 3	1%	42%
Overall Disturbance		864,860	All	100%	52%

*Overlap % is the proportion of the area of the provincial CHMA Tier within the Mistik FMP area that is covered by that specific CM.



Table A-4: Disturbance calculation criteria

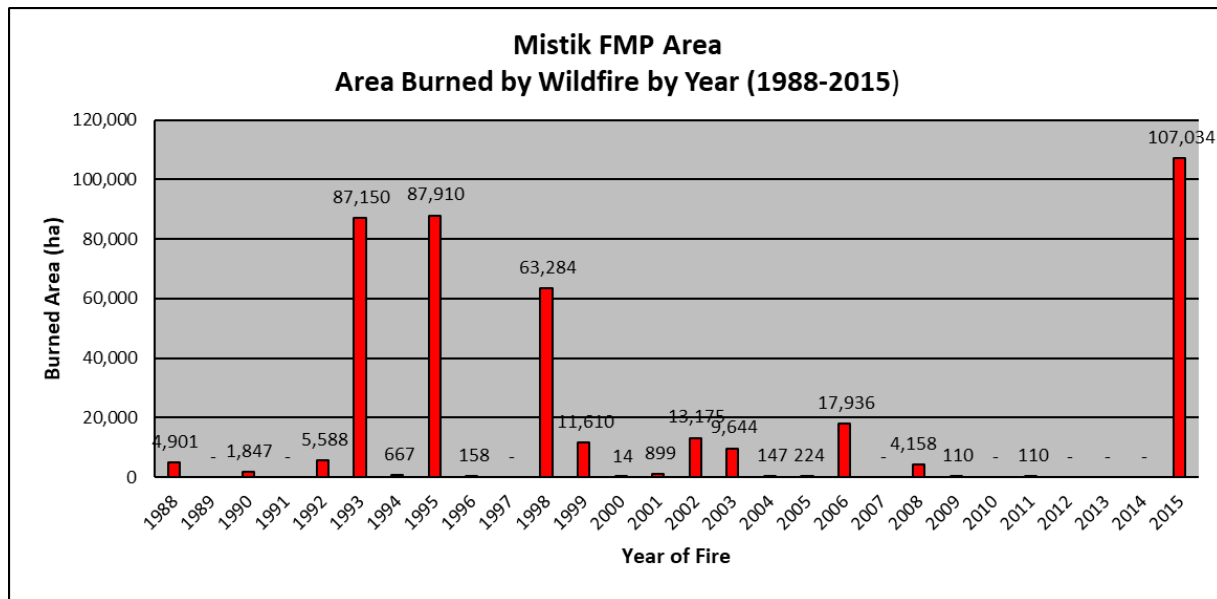
Feature	Feature Considered Disturbance	Feature width (m)	Disturbance Buffer applied
Class 1 road (Paved Highway)	Yes	60m	500m
Class 2 road (Gravel Highway)	Yes	60m	500m
Class 1 (FRR) road	Yes	45m	500m
Class 2 (IBR) road	Yes	30m	500m
Class 3 (Bush) road	Yes	20m	0m
Class 4 (Bush) road	Yes	20m	0m
Class 6 road (Spur)	No	N/A	N/A
Class 7 road (Seismic)	No	N/A	N/A
Class 8 road (Trail)	No	N/A	N/A
Class 9 road (Non-Mistik)	Yes	5m	500m
Class 10 road (N/A)	No	N/A	N/A
Class 11 road (Oil/Gas)	Yes	5m	500m
Class 12 road (3rd Party)	Yes	5m	500m
Fires 40 years and Younger	Yes	Varies – from SFVI/Planning Inventory	0m
Fires over 40 years old	No	Varies – from SFVI/Planning Inventory	N/A
Cutblocks 40 years and Younger	Yes	Varies – from SFVI/Planning Inventory	500m
Other anthropogenic polygons (e.g. powerline)	Yes	Varies – from SFVI/Planning Inventory	500m

4.2 PLANNING AND OPERATIONAL ‘LEAST-IMPACT’ FORESTRY PRACTICES

Mistik conducts its forest-use activities within the context of ecosystem-based management. A primary tenet of ecosystem-based management is that because the naturally existing flora and fauna have adapted and thrived within the prevailing natural biotic and abiotic disturbance regimes of the local environment, forestry impacts should as closely as possible emulate the prevailing natural disturbance regimes. The primary natural agent of disturbance in the boreal forest is fire (Figure A-1 and Table A-5). The extent of wildfire over the last sixty years on the Mistik FMP area has been highly variable and extensive.



Figure A-1: Area burned on the Mistik FMP area



Where possible, Mistik plans harvest areas as 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 vertical structure and immature canopies in a natural MOSAIC harvest pattern. By implementing these techniques, Mistik is attempting to emulate the natural, fire-origin patterns and habitats found in the boreal forest landscape.

The following table outlines forestry practices which will be implemented in each caribou management area to minimize impacts to caribou habitat:



Table A-5: Least-impact forestry practices in Mistik CM areas

Mistik (CM) Area	Deferral timeframe	Harvest event design/sizes follow NFP* principles	Season of harvest	New access construction	Timeframe for road reclamation	Timeframe for renewal activities**
CM-1	10 years	n/a	n/a	None	n/a	n/a
CM-1a, 2a	None	Yes	Winter	Minimal – temporary	Within 1 year of harvest/haul completion	Within 1 yr. of harvest, no activity March 1- June 1.
CM-2	10 years	n/a	n/a	None	n/a	n/a
CM-3	None	Where possible	All seasons	Yes	Per current standards	Per current standards
CM-4	10 years	n/a	n/a	None	n/a	n/a

*NFP = Natural Forest Patterns

**Site preparation (mechanical) and tree planting. Does not apply to regeneration assessments which are typically done on existing blocks at year 7 and 14. Aerial regeneration assessments will not be conducted between March 1 - June 1 (calving season).

Mistik will work with the Ministry of Environment to implement any mitigative offsets that are identified through the development of the SK 2 West range plan development.



5 MISTIK VOITS FOR WOODLAND CARIBOU HABITAT AREAS

Criterion 1 – Biological Diversity
Element 1.2 – Species Diversity
Value 1.2.1- Quantity & Quality of Forest Habitat
Objective 1.2.1.1- Maintain Habitat for Forest Dwelling Species

Mistik Indicator #7b - Part 1: Habitat availability for Caribou – CM-1, CM-2, & CM-4

Descriptor	Details								
Target	<p>No new timber harvesting or related activities will be planned for Mistik Caribou Habitat Management (CM) areas CM-1, CM-2, or CM-4 in the next 10 years.</p> <p>Mistik-caused disturbance in each CM area will be less-than or equal to the current disturbance percentage.</p>								
Acceptable Variance	2%								
Current Status	<p>Current percent disturbances are as follows:</p> <table> <tr> <th>Mistik (CM) Area</th><th>Current % disturbance</th></tr> <tr> <td>CM-1</td><td>35%</td></tr> <tr> <td>CM-2</td><td>90%</td></tr> <tr> <td>CM-4</td><td>42%</td></tr> </table>	Mistik (CM) Area	Current % disturbance	CM-1	35%	CM-2	90%	CM-4	42%
Mistik (CM) Area	Current % disturbance								
CM-1	35%								
CM-2	90%								
CM-4	42%								
Most Recent Assessment	n/a new indicator								
Source of Measurement Data	Mistik GIS								
Implementation Requirements	Assess location of harvest areas annually in Mistik operating plan, assess disturbance percentages by CM area								
Strategy to Achieve	Follow approved tactical plan								
Monitoring and Reporting Schedule	Annually by CM area								
Reporting Scale	% disturbance in each CM area								
Rationale for Indicator	CM-1 and CM-2 are identified as having high quality habitat potential for woodland caribou. CM-4 is known to have extensive caribou use and is vital for connectivity between the Tier 1 & Tier 2 areas that exist on the Mistik FMP area.								
Rationale for Target and Variance	Small variances may be required for completing outstanding work related to previous harvesting activity in these areas or for addressing forest health, fire salvage, safety or other non-timber values.								



Criterion 1 – Biological Diversity
Element 1.2 – Species Diversity
Value 1.2.1- Quantity & Quality of Forest Habitat
Objective 1.2.1.1- Maintain Habitat for Forest Dwelling Species

Mistik Indicator #7b – Part 2: Habitat availability for Caribou – CM-1a, CM-2a

Descriptor	Details
Target	No new CM-1a, CM-2a areas will be planned for the next 10 years. All harvest-related activities in CM-1a and CM-2a areas will follow “least-impact” forestry practices identified in the Woodland Caribou Habitat Mitigation Plan (Table A-5)
Acceptable Variance	2%
Current Status	n/a new indicator
Most Recent Assessment	n/a new indicator
Source of Measurement Data	Mistik GIS
Implementation Requirements	Implement the practices outlined in Table 4-2 when operating in CM-1a or CM-2a areas
Strategy to Achieve	Follow least-impact practices as identified
Monitoring and Reporting Schedule	Annually
Reporting Scale	Compliance by practice/CM area
Rationale for Indicator	CM-1a and CM-2a have been identified as having high quality habitat potential for woodland caribou. These areas are also part of Mistik’s “core” FMP area and have approved tactical plan harvest blocks. The intent is to minimize disturbance to these areas while still accessing timber. Mistik recognizes the importance in maintaining intentional, well-planned but limited forestry activities within the Tier 1 and Tier 2 areas. Entirely deferring forestry activities in these areas may increase the risk of catastrophic wildfire. Mistik and the ministry would be missing an opportunity to continue to improve the sustainable practice of forestry and promote healthy ecosystems within key caribou habitat areas.
Rationale for Target and Variance	Harvesting activity impacts can be minimized by following least-impact practices. Roads can be closed (if required for future access) or reclaimed within 1 year of harvest. It is Mistik’s intent to reclaim roads as soon as possible (within 1 year of harvesting completion). Renewal activities (tree planting aerial surveys, and site preparation) will not occur between March 1 and June 1 annually (calving season). Small variances may be required for completing outstanding work related to previous harvesting activity in these areas or for addressing forest health, fire salvage, safety or other non-timber values.



6 KNOWN SIGHTINGS OF WOODLAND CARIBOU WITHIN THE MISTIK FMP AREA

Mistik has established a GIS-based map product that depicts all sightings based on input from staff, contractors, local community members and reports of Aboriginal subsistence hunting of woodland caribou in the Mistik FMP area. The location of sightings will provide useful context for a variety of purposes. 'High use' forest stands are those identified by a wildlife expert as being of critical value to woodland caribou as evidenced by sightings or sign of high use by woodland caribou.



7 CONTRIBUTION TO PROVINCIAL EFFORTS RELATED TO WOODLAND CARIBOU

Mistik is committed to the following regarding the field monitoring of caribou populations in the Mistik FMP area:

1. Maintain a map depicting woodland caribou sightings by Mistik staff, contractors and the general public;
2. Participate in provincial efforts of information gathering and field monitoring of caribou populations within the Mistik FMP area;
3. Supply maps to provincial biologists for use during field surveys.

Mistik is also committed to working with the Ministry of Environment during the development of the range plan for the SK 2 West administrative area and will revisit the commitments made in this caribou habitat mitigation plan as needed. Extensive work has been done on the Mistik FMP area regarding woodland caribou habitat and the ability to use predictive queries to determine the location of high-value late-winter habitat (Proulx 2013, Proulx 2017). An opportunity now exists to revisit and refine the CHMA boundaries in the provincial SK2 West caribou administrative unit as the development process unfolds.



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APPENDIX B: SUMMARY OF PUBLIC ENGAGEMENT

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1 EXECUTIVE SUMMARY

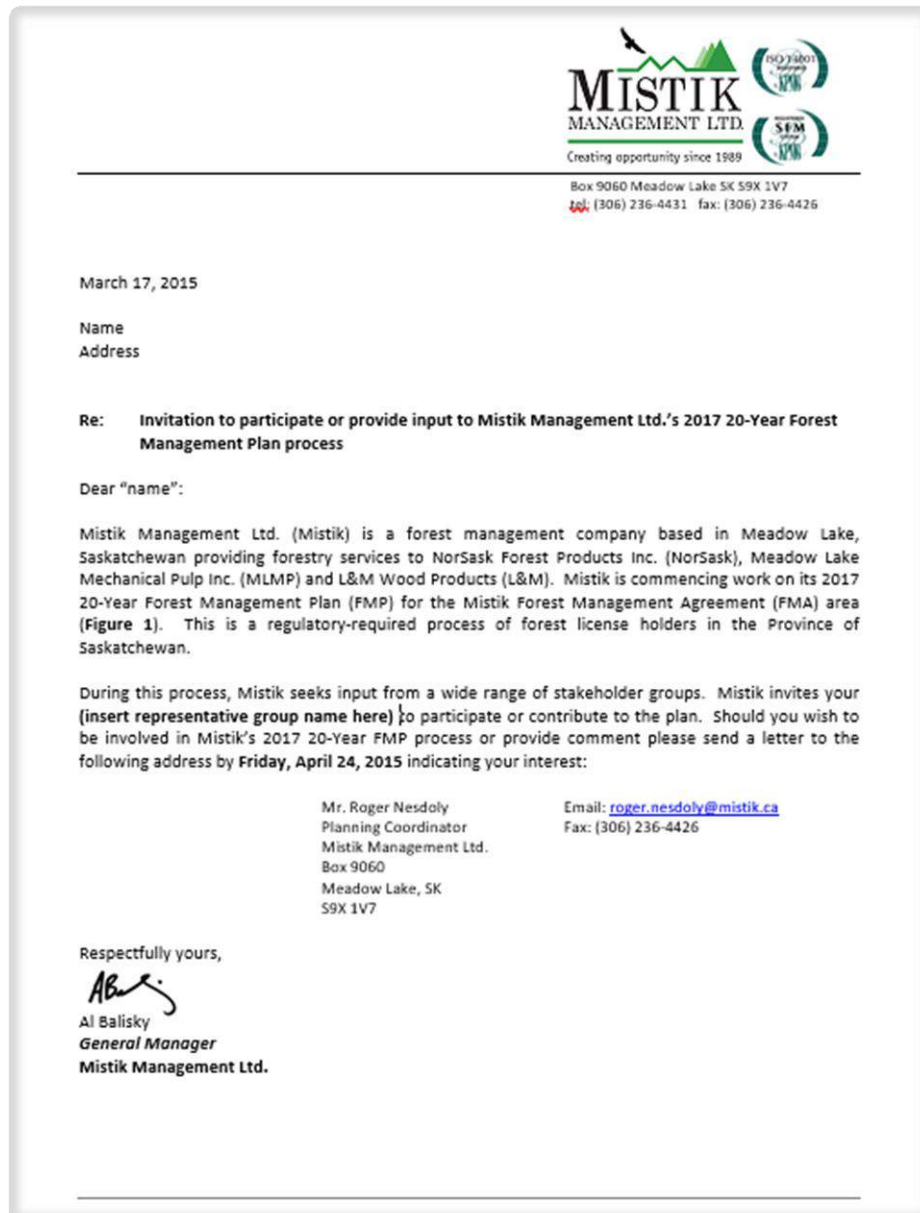
The Public Engagement plan for the 2019 FMP was approved on March 17, 2015. It outlined that Mistik would provide three opportunities (open house sessions held in FMP area communities) throughout the development of the plan. Under the new forest management planning standard (2017), only two such opportunities are required, the first for Volume I and an outline of the FMP process, the second to discuss Volume III and the tactical plan. Mistik also held two public advisory group meetings per year during the development of the plan. This appendix provides the documentation from the open house sessions and PAG meetings.




2 INITIAL CONTACT INFORMATION

2.1 LETTER OF INVITATION

On March 17th a letter and FMP area map were sent to 97 interest groups inviting them to participate in the development of the FMP. The groups included advisory boards, co-management boards, First Nations, Metis locals, tribal councils, communities, rural municipalities, provincial and local interest groups, ministries, agencies and mills.



 
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Box 9060 Meadow Lake SK S9X 1V7
☎ (306) 236-4431 fax: (306) 236-4426

March 17, 2015

Name _____
Address _____

Re: Invitation to participate or provide input to Mistik Management Ltd.'s 2017 20-Year Forest Management Plan process

Dear "name":


Mistik Management Ltd. (Mistik) is a forest management company based in Meadow Lake, Saskatchewan providing forestry services to NorSask Forest Products Inc. (NorSask), Meadow Lake Mechanical Pulp Inc. (MLMP) and L&M Wood Products (L&M). Mistik is commencing work on its 2017 20-Year Forest Management Plan (FMP) for the Mistik Forest Management Agreement (FMA) area (Figure 1). This is a regulatory-required process of forest license holders in the Province of Saskatchewan.

During this process, Mistik seeks input from a wide range of stakeholder groups. Mistik invites your (insert representative group name here) to participate or contribute to the plan. Should you wish to be involved in Mistik's 2017 20-Year FMP process or provide comment please send a letter to the following address by **Friday, April 24, 2015** indicating your interest:

Mr. Roger Nesdoly
Planning Coordinator
Mistik Management Ltd.
Box 9060
Meadow Lake, SK
S9X 1V7

Email: roger.nesdoly@mistik.ca
Fax: (306) 236-4426

Respectfully yours,


Al Balisky
General Manager
Mistik Management Ltd.



2.2 PUBLIC NOTICE FOR PLAN INITIATION AND COMMUNITY OPEN HOUSE SESSIONS

On a monthly basis, Mistik placed a notice in two local papers (Northern Pride and the Beaver River Banner) indicating that Mistik was in the process of developing its 2017 20-Year FMP. The notice invited the general public to contact Mistik if they had questions or wished to participate in the FMP process. The schedule of open houses was advertised in two local papers (Northern Pride and the Beaver River Banner) for three weeks prior to the commencement of the open houses.

Invitations to participate in the open houses were faxed/emailed to all co-management & advisory groups and local communities within the FMP area three weeks prior to the commencement of the open houses. Local radio stations were made aware of the open houses.



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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., Meadow Lake Mechanical Pulp Inc. and L&M Wood Products. Mistik is dedicated to the sustainable use and stewardship of 1.9 million hectares of boreal forest in northwest Saskatchewan.

**NOTICE OF FOREST MANAGEMENT
PLAN PREPARATION**

Mistik is currently in the process of developing its next 20-Year Forest Management Plan. The new management plan is due for implementation by April 1, 2017. The public is invited to contribute to the development of this plan. If you would like to learn more about the plan, contribute to the development of the plan or provide comment to Mistik regarding the plan or about forestry matters please contact Roger Nездoly, Planning Coordinator at (306) 236-4431 or roger.nesdoly@mistik.ca or visit Mistik's website at www.mistik.ca.

Mistik currently consults with the general public through its co-management / advisory boards and Public Advisory Group. If you would like more information regarding participating in any of these groups please contact Roger Nездoly, Planning Coordinator at (306) 236-4431 or roger.nesdoly@mistik.ca or visit Mistik's website at www.mistik.ca.

Public information sessions related to key stages in the development of Mistik's 20-Year Forest Management Plan will be held in September 2015, March 2016 and October 2016 in the following communities:

- Meadow Lake
- Buffalo Narrows
- Glaslyn
- Big Island Lake
- Waterhen Lake
- Canoe Narrows
- Beauval
- Ile a la Crosse
- Dillon

Specific dates, times and locations of the information sessions will be advertised in the local media several weeks in advance of the event.



3 OPEN HOUSE SESSIONS FOR VOLUME I / FMP PROCESS

3.1 FIRST OPEN HOUSE SESSIONS – INVITATIONS AND NOTICES

Notices were placed in local papers and in local communities inviting the public to attend an open house session where Mistik would give an overview of the forest management planning process and Mistik FMP Volume I.



COME OUT AND TELL US WHAT YOU THINK ABOUT THE FOREST...

Mistik invites you to a community event to learn more about Mistik's 2017 20-Year Forest Management Plan. Please join us for doughnuts and coffee at one of the meetings.

Date of Meeting	Stakeholder Community(s)	Location and Time
Tuesday January 19, 2016	Glaslyn and area L&M Wood Products employees, First Nations and general public are invited to attend and provide input.	Glaslyn Legion Hall 5 to 7 PM
Wednesday January 20, 2016	Meadow Lake Area and area The general public is invited to attend and provide input.	Meadow Lake United Church 5 to 7 PM
Tuesday January 21, 2016	Buffalo Narrows and area The general public is invited to attend and provide input.	Buffalo Narrows Friendship Centre 5 to 7 PM
Wednesday January 27, 2016	Beauval and area The general public is invited to attend and provide input.	Beauval Community Hall 5 to 7 PM
Monday February 1, 2016	Cole Bay / Jans Bay / Canoe Narrows and area The general public is invited to attend and provide input.	Canoe Narrows Band Hall 5 to 7 PM
Tuesday February 2, 2016	Waterhen Lake and area The general public is invited to attend and provide input.	Waterhen Lake First Nation School Gym 5 to 7 PM
Wednesday February 3, 2016	Ile a la Crosse and area The general public is invited to attend and provide input.	Ile A La Crosse Recreation Centre 5 to 7 PM
Monday February 8, 2016	Dillon / St. George's Hill / Michel Village and area The general public is invited to attend and provide input.	Dillon Band Hall 5 to 7 PM
Thursday February 11, 2016	Big Island Lake Cree Nation / Goodsoil / Pierceland and area The general public is invited to attend and provide input.	Big Island Lake Cree Nation Band office 5 to 7 PM

3.2 FIRST OPEN HOUSE SESSIONS – ATTENDANCE

The following table outlines the attendance at the open house sessions



Table B-1: Attendance at first open house sessions held in January/February 2016

Date of Meeting	Individual Name	Group Represented
January 19, 2016 Glaslyn Elks Hall	Roger Nездoly Zane Delaine Travis Hagel	Mistik Management Ltd. L&M Wood Products L&M Wood Products
January 20, 2016 Meadow Lake United Church	Roger Nездoly Bernice Alger Brenda Nightingale Jeremy Nightingale Mark Doyle Niska Hodgson Russ Jones	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Self Forest Service, Ministry of Environment Mistik Management Ltd. RM 588
January 21, 2016 Buffalo Narrows Friendship Centre	Roger Nездoly Bill Murray Mark Doyle Claude Hanson Leon McCallum Ken Larson Nap Chartier Leon Thompson Joey Thompson	Mistik Management Ltd. Mistik Management Ltd. Forest Service, Ministry of Environment Contractor Trapper Commercial Fisherman Bear Outfitter Trapping Assistant Trapping Assistant
January 26, 2016 Divide Forest Advisory Council Cor. Dexter Hall (Turtle Lake)	Clifford Mclauchlan Larry Anderson Alden Halseth Marge Cross Paul Hamm Barry Frisk Cordell Cross Wilfred Hamm Roger Nездoly	Mistik Management Ltd. DFACC DFACC Visitor DFACC DFACC DFACC DFACC Mistik Management Ltd.
January 27, 2016 Beauval Community Hall	Roger Nездoly Narayan Dhital Kevin Gillis	Mistik Management Ltd. Forest Service, Ministry of Environment Mistik Management Ltd.
February 1, 2016 Canoe Narrows Band Hall	Roger Nездoly Vivian West Janine Leach Kathleen Gazey Barry Opikokew Leslie Opikokew David Opikokew Ron Bouvier Kevin Gillis	Mistik Management Ltd. Canoe Lake Co-Management Forest Service, Ministry of Environment Forest Service, Ministry of Environment Canoe Lake Co-Management Canoe Lake Co-Management Canoe Lake Co-Management Canoe Lake Co-Management Mistik Management Ltd.
February 2, 2016 Waterhen Lake FN School Gym	Roger Nездoly Dennis Martell Tyrell Martell Chris Morin Kevin Gillis Karl Schulz Michael Ernest Richard Fiddler Ernest Fiddler Jasmine Martell D. Vincent Bobby Martell Steven Lasas Norma Martell William Hill	Mistik Management Ltd. Waterhen Lake First Nation Waterhen Lake First Nation MLTC Mistik Management Ltd. Mistik Management Ltd. Waterhen Lake First Nation Waterhen Lake First Nation Waterhen Lake First Nation Waterhen Lake First Nation Waterhen Lake First Nation Waterhen Lake First Nation LRO Waterhen Waterhen Forestry



Date of Meeting	Individual Name	Group Represented
	Daniel Ratfoot	Waterhen Lake First Nation
February 3, 2016 Ile a-la-Crosse Recreation Centre	Roger Nesdoly Karl Schulz Ivan Ayotte Edna Daigneault Vince Ahenakew Beverly McLean Vye Bouvier Marius Paul Fred B Nap Gardiner Ralph Morin Kevin Gillis	Mistik Management Ltd. Mistik Management Ltd. A La Bois Local 21 Ile a-la-Crosse Metis Group Ile a-la-Crosse Village Council Ile a-la-Crosse Village Council Village Resident La Plonge Reserve Ile a-la-Crosse Ile a-la-Crosse Mistik Management Ltd.
February 8, 2016 Dillon Band Hall	Roger Nesdoly Bill Murray Karl Schulz Joe Billette Don & Kayla Desjarlais Emillion Desjarlais	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Buffalo River Dene Nation St Georges Hill Buffalo River Dene Nation
February 11, 2016 (rescheduled) Big Island Lake Cree Nation Band Office	Roger Nesdoly James Daigneault Kevin Gillis Bill Murray Cliff McLauchlan Karl Schulz Mark Doyle Janine Leach Kathleen Gazey	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Forest Service, Ministry of Environment Forest Service, Ministry of Environment Forest Service, Ministry of Environment

3.3 FIRST OPEN HOUSE SESSIONS – RELATED CONCERNS AND ISSUES RAISED

The following is a summary of the questions and concerns that were raised which are related to the forest management plan. Questions that were not FMP-related have not been included (i.e. “What is the process for getting a contract to do work with Mistik”).

Q = Question; A = Answer; C=Comment

Glaslyn

No members of the public attended

Meadow Lake

One member of the public attended, no FMP-related questions were asked.

Buffalo Narrows

One concern raised related to fire salvage operation adjacent to the Upper Cummins Road which overlapped with a trapping area. The trapper is elderly and Mistik was of the understanding that he was no longer using his area. Maps were reviewed and no other concerns were raised. Mistik has had ongoing communications with the trapper who raised the concern.

DFACC/Turtle Lake



Discussion around tactical plan concept, extent and rationale. Also, around inventory and the concept of “growing” the forest/inventory for planning purposes. No concerns were raised.

Beauval

No community members were in attendance.

Canoe Narrows

Q – Does the excluded landbase include water? A – Yes, it is included in the 55% excluded landbase and there will be a slight adjustment to the excluded landbase coming from MoE Forestry Branch.

Q – Has Mistik thought about the small dimension products like what Beauval is currently accessing? A – A better opportunity for these types of products will be when the PA pulp mill starts up again.

Q – How many sawmills are in the area? A – 3- in Meadow Lake, Glaslyn and Big River.

Q – Who owns the pulp mill? A – The mill is owned by a foreign company. Q – So the money is leaving the country then? A – Yes, they are the ones who took the risk to buy it.

Q – Do the targets remain the same after a big fire? A – The numbers are sometimes adjusted.

C – Canoe Lake has participated in Caribou studies with the federal government in the past (2007 & 2008)

C – Grassy Narrows/court cases across Canada including BC re. traditional lands, trapping, hunting, and history of people of the area. Hudson Bay area was left, and people came this way.

C – Roadblock in 1992, then co-management was created with a broad representation of the communities. Now changes have been made (with the 3 communities in the Canoe Lake area). Hunting isn't good anymore, now we have to travel to get our moose.

C – Cabins are being built on Canoe Lake, Fur Block boundaries need to be re-visited, they haven't been updated for more than 20 years.

C – There are less trappers in Canoe Lake due to the price of fur.

Waterhen Lake

C – L&M focuses on posts and rails and smaller materials. Roger commented that their market has shrunk due to the oil patch slowdown.

Q – What about the level of pollution from the smoke stacks at the pulp mill? A – It's mostly water vapor, heat and small amount of pulp particulate

Q – Who is your biggest customer? A – MLMP – Asia; NorSask – USA, Canada (9-foot stud market).

Q – Can you comment on amount of money that is spent on government dues and fees, the wealth is not shared. A – dues and fees are paid to the government based on volume harvested. Co-management fees are paid by Mistik based on volume harvested.

C – Selective cutting was the way logging used to be done. Divide isn't cut the same way Waterhen is. Provincial highways are different from the mill road (like the old buffer system that was in place – i.e. when you couldn't see logging), there are bigger openings in Waterhen and not in Divide.

Q – There is no harvesting in Dillon. What effect does that have on Waterhen and Canoe Lake?

A – It's about 2/3 of the annual cut.

Q – How long can we keep harvesting? A – Perpetually.



Q – Are the spruce numbers down? A – Yes, harvest is down for softwood.

Q – Fur Block boundaries are an issue for most of the units in the north. Can these issues be resolved? A – Mistik is trying to help with resolving these issues.

C – Overlapping traditional territory, it must be respected, overlap does happen. Roger – Mistik is trying to be fair about how it's determined (i.e. for payment of co-management fees).

C – Waterhen territory cannot be respected, are our concerns being respected? We need to get more out of this. We are not consulted with, government has the duty to consult. Who looks after the co-management board process? Sometimes criticism is taken the wrong way. We are supposed to be the owners, but they make a good living. The system is the same old thing, opened cutting is a concern and we need to be listened to. Where there is no national law, the government makes the law. There are no jobs if the law is not followed, you get shut down.

Q – How many trees are being planted and why are they being planted by other contractors (Canoe, Flying Dust)? A – There have been issues in the past with the Waterhen contractors.

Q – Why is there a gate on our traditional area? There was no community involvement in this.

A – MoE put it there.

Q – Can we make suggestions on the 20-year plan? A – Yes.

C – MoE government is supposed to be here today.

C – Statistics are not recorded correctly about trapping, traditional uses and users and don't support Waterhen activities. Waterhen should be involved in a study about the true usage of the land. Our forefathers lived on the trapline. Consultation was side-swept and it's time for direct consultation. Trappers are lost, there's no money in it and you can't make a living that way anymore.

Q – Is any part of the air weapons range in the plan? A – No it is not. Some access is granted to groups for traditional uses.

Ile a-la-Crosse

Q – Supply for the mills, is that what Mistik does? A – Yes, hardwood goes to MLMP, and softwood goes to NorSask and L&M. L&M has their own FMA area.

Q – How does ML OSB fit in? A – they are a separate company with their own wood supply areas (not associated with Mistik or the plan).

Q – What happens in drought? A – can influence how trees grow and make it harder to operate (i.e. shut down due to fire hazard).

Q – Do the bands benefit directly? A – NorSask pays dividends to MLTC's 9 member nations.

C – We get money from the logging, it's in a trust.

C – ICS4 will be looking after this.

Q – What about economic opportunities? A – The economic downturn has caused much to shrink in the way of opportunities. The mills have reduced volumes.

Q – How was the amount paid for co-management determined? A- it was based on the volume of timber cut in the Ile a-la-Crosse management unit by Niska Lake last year. Roger also outlined the change in co-management fee structure that was implemented by the mills.

Q – Fire kills trees, are they worth less? A – Roger explained burn coding and what the mills can use.

Q- Where does the co-management fee payment go for the Jayleen Fire? A – to Buffalo Narrows.

Q – Can we have input in the plan? A – Yes, at local meetings and the PAG.



Q – What if we had our own plan for the other products? A – Roger outlined the structure/process for 3rd party harvest volumes.

C – We need context for the meeting. Roger – Mistik has a license for 20-years which is renewable (ongoing). We have the FMA area, public advisory group, operating plan (year-to-year strategy). The FMP is renewed every 10 years. Both the plan and the FMA agreement are renewed and amended as part of the cycle. Carrier (mentioned earlier) is a different company.

C – A fundamental piece is gathering values and organizing it, so it's understood. We need to own this and have context. May want to request assistance to aid in accumulating values and putting them together. A system of information is required. Consistent conversation regarding habitat, cultural and ecological knowledge. Pinehouse has a written record of historical areas. (Pinehouse dipper land use planning).

Q – How many jobs in forestry and at the mills? A – Mills are about 400, trucking 175, harvesting and road building 150.

Q – How can we have input in the cutting plan? A – We will bring the plan out in the spring for review.

C – Volume would be better explained using an illustration (truck loads).

Q – How will cutting plans be communicated? A – In the operating plan that's presented in the spring.

Q – How about a helicopter tour? A – It's possible, we did three last year.

C – We had a biologist visit from U of S last spring about Caribou. We don't necessarily agree with where they should be.

Dillon

No questions were asked by the four participants in attendance. Interesting reminiscence about trapping, hunting, youth, commercial fishing, etc.

Big Island Lake

No members of the public attended.



3.4 FIRST OPEN HOUSE SESSIONS – PRESENTATION GIVEN





Mistik Management Ltd.



Created September 2013

7

Forestry overview

~ Pre-1970
Widespread, small-scale 'mom and pop' logging of large spruce and pine

~ early 1970s - 1992
Start of larger scale forestry operations ~ 100 to 200,000 m³/yr
Softwood sawlogs and softwood pulplogs targeted for harvest

1992 to present
Full utilization of the timber resource both softwood and hardwood

Created September 2013

8

Mistik's mandate



Created September 2013

9

Mistik Management Ltd.

NorSask - a world-class facility
The largest First Nation-owned sawmill in Canada



Created September 2013

10

Mistik Management Ltd.

MLMP - a world-class facility
The highest production BCTMP mill in the world



Created Sept 2013

11

Mistik Management Ltd.

L. & M Wood Products 2011 Ltd. - Glaslyn based



Created Sept 2013

12

Mistik Management Ltd.

- Forestry company
- Formed in 1990
- Meadow Lake, Saskatchewan
- 10 staff
- 1.8 million ha license area
- With L&M - 1.9 million license ha

Created September 2013

13

Mistik Management Ltd.

- Welcome L&M Wood Products Ltd. into the Mistik 2017 20-Yr FMP 'Fold'
- Long term family based business - Glaslyn
- Niche market oriented - treated wood products (fence post and timbers)
- MU 85 - L&M
- 3 spatially separated land areas embedded within the greater Divide Forest

Created September 2013

14

Mistik Management Ltd.

- ~ 65,000 ha harvested (tenure term)
- Softwood AAC
 - 2000 to 2009 - 125,100 m³
 - 2009 to 2019 - 82,240 m³
 - Avg harvest (2000-2011) - 79,248 m³
- Hardwood AAC
 - 2000 to 2019 - 42,620
 - Avg harvest (2000-2014) - 38,607m³

Created September 2013

15

Mistik Management Ltd.

FMA land area = 1,831,964 ha Mistik
69,197 ha L & M
1,901,161 ha Combined

'Excluded land base' area = 1,013,964 ha
'Working forest' area = 818,000 ha
MISTIK ONLY



Created September 2013

16

Mistik Management Ltd.

Long-term sustainable harvest levels



Created September 2013

17

Mistik Management Ltd.



Created September 2013

18

Mistik Management Ltd.



Created September 2013

19

Mistik Management Ltd.

~ 33 communities within and adjacent to the Mistik FMA area (~ 20,000 people)

- 14 First Nation (4)
- 7 Métis (5)
- 12 Agricultural (7)

Created September 2013

20

Mistik Management Ltd.

7 co-management / advisory boards
1 AOP and Special Meetings Only

10 'community forests'



Created September 2013

21



22

Mistik Management Ltd.

Active Trapsnet* (from Ministry of Environment)

Year/Week	7/9/95	7/9/95/5a	10/9/95/1	2/9/95/9	10/9/95/9	3/9/95/11	10/95/12	10/95/12	10/95/12	10/95/12
7/9/95	2	0	2	1	2	1	2	1	2	1
8/9/95	0	12	0	13	29	19	0	0	27	22
9/9/95	1	1	1	1	1	1	1	1	1	1
10/9/95	2	0	0	0	0	0	0	0	0	0
11/9/95	1	0	0	0	0	0	0	0	0	0
12/9/95	0	0	0	0	0	0	0	0	0	0
1/9/96	0	0	0	0	0	0	0	0	0	0
2/9/96	0	0	0	0	0	0	0	0	0	0
3/9/96	0	0	0	0	0	0	0	0	0	0
4/9/96	0	0	0	0	0	0	0	0	0	0
5/9/96	0	0	0	0	0	0	0	0	0	0
6/9/96	0	0	0	0	0	0	0	0	0	0
7/9/96	0	0	0	0	0	0	0	0	0	0
8/9/96	0	0	0	0	0	0	0	0	0	0
9/9/96	0	0	0	0	0	0	0	0	0	0
10/9/96	0	0	0	0	0	0	0	0	0	0
11/9/96	0	0	0	0	0	0	0	0	0	0
12/9/96	0	0	0	0	0	0	0	0	0	0
1/9/97	0	0	0	0	0	0	0	0	0	0
2/9/97	0	0	0	0	0	0	0	0	0	0
3/9/97	0	0	0	0	0	0	0	0	0	0
4/9/97	0	0	0	0	0	0	0	0	0	0
5/9/97	0	0	0	0	0	0	0	0	0	0
6/9/97	0	0	0	0	0	0	0	0	0	0
7/9/97	0	0	0	0	0	0	0	0	0	0
8/9/97	0	0	0	0	0	0	0	0	0	0
9/9/97	0	0	0	0	0	0	0	0	0	0
10/9/97	0	0	0	0	0	0	0	0	0	0
11/9/97	0	0	0	0	0	0	0	0	0	0
12/9/97	0	0	0	0	0	0	0	0	0	0
1/9/98	0	0	0	0	0	0	0	0	0	0
2/9/98	0	0	0	0	0	0	0	0	0	0
3/9/98	0	0	0	0	0	0	0	0	0	0
4/9/98	0	0	0	0	0	0	0	0	0	0
5/9/98	0	0	0	0	0	0	0	0	0	0
6/9/98	0	0	0	0	0	0	0	0	0	0
7/9/98	0	0	0	0	0	0	0	0	0	0
8/9/98	0	0	0	0	0	0	0	0	0	0
9/9/98	0	0	0	0	0	0	0	0	0	0
10/9/98	0	0	0	0	0	0	0	0	0	0
11/9/98	0	0	0	0	0	0	0	0	0	0
12/9/98	0	0	0	0	0	0	0	0	0	0
1/9/99	0	0	0	0	0	0	0	0	0	0
2/9/99	0	0	0	0	0	0	0	0	0	0

*management-trapsnet.com recorded up to 1998

Environet September 2012

Environet

23

- ## Mistik Management Ltd.
- *Number of trappers up*
 - *Number of pelts sold trending down*
 - *Value of pelt annual sales down*
 - *Number of trapper regarding maintenance of 'culture values' unknown*
- October, September 2012
- 

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4 OPEN HOUSE SESSIONS FOR VOLUME III / TACTICAL PLAN

4.1 SECOND OPEN HOUSE SESSIONS – INVITATIONS AND NOTICES

Notices were placed in local papers and in local communities inviting the public to attend an open house session where Mistik would give an overview of the tactical plan and Mistik FMP Volume III.



Creating opportunity since 1989

Come out and tell us what YOU think about the forest...

Mistik invites you to a community event to learn more about **Mistik's 2017 20-Year Forest Management Plan**. Please join us for doughnuts and coffee at one of the meetings.

Date of Meeting	Stakeholder Community(s)	Location and Time
Thursday October 6, 2016	Meadow Lake Area and area The general public is invited to attend and provide input.	Catholic Church Hall 5 to 7 PM
Tuesday October 11, 2016	Buffalo Narrows and area The general public is invited to attend and provide input.	Buffalo Narrows Friendship Centre 5 to 7 PM
Wednesday October 12, 2016	Glaslyn and area L&M Wood Products employees, First Nations and general public are invited to attend and provide input.	Glaslyn Legion Hall 5 to 7 PM
Thursday October 13, 2016	Big Island Lake Cree Nation / Goodsoil / Pierceland and area The general public is invited to attend and provide input.	Big Island Lake Cree Nation Band office 5 to 7 PM
Monday October 17, 2016	Beauval and area The general public is invited to attend and provide input.	Beauval Community Hall 5 to 7 PM
Tuesday October 18, 2016	Cole Bay / Jans Bay / Canoe Narrows and area The general public is invited to attend and provide input.	Canoe Narrows Band Hall 5 to 7 PM
Wednesday October 19, 2016	Waterhen Lake and area The general public is invited to attend and provide input.	Waterhen Lake First Nation School Gym 5 to 7 PM
Thursday October 20, 2016	Ile-a-la Crosse and area The general public is invited to attend and provide input.	Ile A La Crosse Recreation Centre 5 to 7 PM
Monday October 24, 2016	Dillon / St. George's Hill / Michel Village and area The general public is invited to attend and provide input.	Dillon Band Hall 5 to 7 PM



4.2 SECOND OPEN HOUSE SESSIONS – ATTENDANCE

The following table outlines the attendance at the open house sessions

Table B-2: Attendance at first open house sessions held in October 2016

Date of Meeting	Individual Name	Group Representing
October 6, 2016 Meadow Lake Catholic Church Hall	Roger Nesdoly Bernice Alger Brenda Nightingale Jeremy Nightingale Kathleen Gazey	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Self Forest Service, Ministry of Environment
October 11, 2016 Buffalo Narrows Friendship Centre	Roger Nesdoly Karl Schulz Bill Murray Kevin Gillis Nap Chartier Leon McCallum Ron Pederson Brent Caissy	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. BNS L26 Trapper Self Trapper
October 12, 2016 Glaslyn Legion Hall	Roger Nesdoly Bernice Alger Shawn Delainey Zane Delainey Terry Edwards	Mistik Management Ltd. Mistik Management Ltd. L&M Wood Products L&M Wood Products Trapper
October 13, 2016 Big Island Lake CN Band Office	Roger Nesdoly Cliff McLauchlan Karl Schulz Mark Doyle	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Forest Service, Ministry of Environment
October 17, 2016 Beauval Community Hall	Roger Nesdoly Bill Murray Karl Schulz	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd.
October 18, 2016 Canoe Narrows Band Hall	Roger Nesdoly Bill Murray Karl Schulz Russell Iron	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Canoe Lake
October 19, 2016 Waterhen Lake FN School Gym	Roger Nesdoly Bill Murray Karl Schulz	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd.
October 20, 2016 Ile a-la-Crosse Recreation Centre	Roger Nesdoly Bill Murray Karl Schulz Kevin Gillis Mark Doyle Louis Gardiner	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Forest Service, Ministry of Environment Ile a-la-Crosse
October 24, 2016 Dillon Band Hall	Roger Nesdoly Bill Murray Kevin Gillis Tammy Sylvestre Raymond Billette James Sylvestre Joe Billette Arsene Nezcroche	Mistik Management Ltd. Mistik Management Ltd. Mistik Management Ltd. Buffalo River Dene Nation Buffalo River Dene Nation Buffalo River Dene Nation Buffalo River Dene Nation Buffalo River Dene Nation



4.3 SECOND OPEN HOUSE SESSIONS – RELATED CONCERNS AND ISSUES RAISED

The following is a summary of the questions and concerns that were raised which are related to the forest management plan. Questions that were not FMP-related have not been included (i.e. “What is the process for getting a contract to do work with Mistik”).

Q = Question; A = Answer; C=Comment

Meadow Lake

Q – Where are the wood chips coming from? A – Chips come from Carrier, L&M and NorSask.

Buffalo Narrows

Q – What about consultation with Metis Locals? A – Metis Locals are invited to participate.

C – Trapper still upset regarding activity on trapline. Mistik committed to continue to communicate with him.

Most discussion was business related and about contract opportunities.

Glaslyn

Trapper mistakenly thought this was an operating plan meeting. He had no concerns.

Big Island Lake

No members of the public attended

Beauval

No members of the public attended. Mistik noted that the meeting advertisement was on the “rolling screen” on the local TV channel.

Canoe Narrows

General discussion & viewing of tactical plan maps. No concerns noted.

Waterhen

Due to a power outage in Waterhen the venue was not available for use. Mistik was not notified of this until staff arrived on site.

Ile a-la-Crosse

Maps reviewed, no comments or concerns noted.

Dillon

Q – Who owns NorSask? A – MLTC/9 member nations.

Q – Where does your product go? A – MLMP 100% to China, NorSask ~75% to US

Q – Where do chips come from and how are they generated? A – chips are a byproduct of making lumber, they come from NorSask, Carrier and L&M.

General discussion around the requirement to reclaim roads, residents want access for traditional uses.



C – Only now are animals returning to the forest. Roger – the healthiest forest for wildlife is one that provides habitat for all types of animals. Too much of one age class or another may limit the number of animals that can use that area.

Q – What is the benefit from forestry and roads for the community? A – Co-management fees, roads (i.e. Vermette, UCR – long term access).

4.4 SECOND OPEN HOUSE SESSIONS – PRESENTATION GIVEN

2017 20-Year Forest Management Plan

"The Plan"

Volumes II and III

October 2016

1

Mistik Management Ltd.

Forest Management Planning Standard (July 2016 draft)

"The Plan"

is composed of

- Volumes II and III

2

Mistik Management Ltd.



3

Mistik Management Ltd.



4

Mistik Management Ltd.

We (Mistik) are going into our 27th Year

5

Mistik Management Ltd.



6

Mistik Management Ltd.



7

Mistik Management Ltd.

- Welcome L&M Wood Products Ltd. into the Mistik 2017 20-Yr FMP 'Fold'
- Long term family based business - Glaslyn
- Niche market oriented – treated wood products (fence post and timbers)
- MU 85 – L&M
- 3 spatially separated land areas embedded within the greater Divide Forest

8

Forestry overview

~ Pre-1970
Widespread, small-scale 'mom and pop' logging of large spruce and pine

~ early 1970s - 1992
Start of larger scale forestry operations ~ 100 to 200,000 m²/yr
Softwood sawlogs and softwood pulplogs targeted for harvest

1992 to present
Increased utilization of the timber resource both softwood and hardwood

9

Mistik's mandate



10

Mistik Management Ltd.

NorSask – a world-class facility
The largest First Nation-owned sawmill in Canada



11

Mistik Management Ltd.

MLMP – a world-class facility
The highest production BCTMP mill in the world



12



<p>Mistik Management Ltd. L & M Wood Products 2011 Ltd. – Glaslyn based</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <ul style="list-style-type: none"> Forestry company) provides logs to mills) Formed in 1990 Meadow Lake, Saskatchewan 12 staff 1.8 million ha license area With L&M – 1.9 million license ha <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>FMA land area = 1,831,964 ha Mistik 69,197 ha L & M 1,901,161 ha Combined</p> <p>'Excluded land base' area = 1,013,964 ha 'Working forest' area = 818,000 ha MISTIK ONLY</p>  <p>Updated: October 2018</p>
<p>Mistik Management Ltd.</p> <p>Long-term sustainable harvest levels</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>Total harvest since 1988 133,172 Ha</p> <p>Average 4,758 Ha/Year</p> <p>Average yearly harvest = 0.6% of the productive land base</p> <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>
<p>Mistik Management Ltd.</p> <p>Average Harvest Volume 1993-2015</p> <p>Softwood 262,000 m3/year</p> <p>Recent trend decreasing</p> <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>Average Harvest Volume 1993-2015</p> <p>Hardwood 589,000 m3/year</p> <p>Recent trend decreasing</p> <p>Updated: October 2018</p>
<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> Tactical Plan 2007 tactical plan update/revised entire landbase assessed/quantified as to potentially merchantable timber <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>
<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> Tactical Plan 2007 tactical plan update/revised Implementation Strategies Business AS usual (BAU) Management Implementation Team from 2007 FMP – established/functions FMP Registry to track commitments (formalize) <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> Tactical Plan Linkage to Ops Plan done via wood supply analysis Management Strategy of Forest Insect & Disease Disturbance wood supply analysis monitoring and awareness harvest (e.g. dwarf mistletoe infected jack pine) targeted 'program/actions' <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> Management Challenges on the License Area natural disturbance(s) <p>Updated: October 2018</p>



<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Management Challenges on the License Area - natural disturbance(s) - structure retention <p>Updated: October 2018</p>
28	29	30
<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Management Challenges on the License Area - natural disturbance(s) - structure retention - access <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>
31	32	33
<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Management Challenges on the License Area - natural disturbance(s) - structure retention - access - species at risk <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <ul style="list-style-type: none"> • Species at Risk  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Management Challenges on the License Area - natural disturbance(s) - structure retention - access - species at risk - other forest uses/users <p>Updated: October 2018</p>
34	35	36
<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p>  <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Management Challenges on the License Area - natural disturbance(s) - structure retention - access - species at risk - other forest uses/users - "uncertainty" (markets, fibre procurement & flow, etc.) <p>Updated: October 2018</p>
37	38	39
<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Vulnerability Assessment to Climate Change - ongoing work with Sask. Research Council and Univ. of Sask. Graduate student project - Integration of Forest Management Activities with Non-Timber Uses - ongoing, basis for public engagement (e.g. co-mgt, outfitters, cabin, etc.) <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Amendments to FMP - trigger defined by catastrophic volume loss - Revisions to Tactical Plan - trigger defined by catastrophic volume loss or significant change to baseline (e.g. Business AS Usual) conditions <p>Updated: October 2018</p>	<p>Mistik Management Ltd.</p> <p>"The Plan" – Volume III</p> <ul style="list-style-type: none"> - Utilization Standards - defined in plan - Catastrophic Natural Disturbance Events - response in context of economic and ecologic variables <p>Updated: October 2018</p>
40	41	42



<p>Mistik Management Ltd. "The Plan" – Volume II</p> <ul style="list-style-type: none"> - Planning Inventory - defined in plan, spatial in Geographic Information System (GIS) - Saskatchewan Forest Vegetation Inventory for entire Mistik and L&M FMA's <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd.</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd. "The Plan" – Volume II</p> <ul style="list-style-type: none"> - Forest Development - entire forest categorized into 17 similar growth types - growth/successional <p><small>Revised: October 2014</small></p>
43	44	45
<p>Mistik Management Ltd.</p> <p>Mixedwoods tA/wS</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd.</p> <p>Mixedwoods tA/jP</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd.</p> <p>Jack pine</p>  <p><small>Revised: October 2014</small></p>
46	47	48
<p>Mistik Management Ltd.</p> <p>Black spruce</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd. "The Plan" – Volume II</p> <ul style="list-style-type: none"> - Silvicultural Ground Rules (SGRs) and Transitional Assumptions - defines Mistik's strategy and methods of forest renewal - plant white spruce - leave for natural trembling aspen - scarify and leave for natural jack pine <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd.</p> <p>White spruce trees planted 2007 to 2015 – 13.6 million</p>  <p><small>Revised: October 2014</small></p>
49	50	51
<p>Mistik Management Ltd. "The Plan" – Volume II</p> <ul style="list-style-type: none"> - Values, Objectives, Indicators and Targets (VOITs) - must be measurable - in place re 2007 FMP, need only minor 'tweaking' for 2017 FMP - Mistik reports all results annually in it's Annual Report - 8 Annual Reports (2007 to 2014) - VOITs serve for regulatory and voluntary certification purposes <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd. 2013 Annual Report</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd</p> <p>~ 33 communities within and adjacent to the Mistik FMA area (~ 20,000 people)</p> <ul style="list-style-type: none"> • 14 First Nation (4) • 7 Métis (5) • 12 Agricultural (7) <p><small>Revised: October 2014</small></p>
52	53	54
<p>Mistik Management Ltd.</p> <ul style="list-style-type: none"> 7 co-management / advisory boards 1 AOP and Special Meetings Only 10 'community forests'  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd.</p>  <p><small>Revised: October 2014</small></p>	<p>Mistik Management Ltd</p> <p>ISO 14001</p>  <p>CSA Z809-08 (PEFC)</p>  <p>FSC</p>  <p><small>Revised: October 2014</small></p>
55	56	57



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5 ADDITIONAL PLAN REVIEW SESSIONS HELD WITH CO-MANAGEMENT/ADVISORY GROUPS

The second round of open house events (where volume III and the tactical plan were presented) were held early in the plan development process. Updating sections of the plan to be more in line with requirements in the new FMP planning standard (2017) resulted in additional review and delayed plan completion. Mistik agreed to give an additional overview/presentation at regular co-management / advisory board (community) and the November 2018 public advisory group (PAG) meetings.

5.1 ADDITIONAL FMP UPDATE – LIST OF COMMUNITIES/PARTICIPANTS

The FMP update presentation was given at the following meetings:

Divide Forest Advisory Council Corporation	October 23, 2018
Beauval Co-management Board	November 5, 2018
Canoe Co-management Board	November 7, 2018
Public Advisory Group Meeting	November 21, 2018
Buffalo Narrows	November 27, 2018
Waterhen Chief & Council	November 28, 2018
Goodsoil & Area (open house)	January 10, 2019
Big Island Lake Cree Nation	January 18, 2019

Note: a meeting was scheduled for Buffalo River Dene Nation (Dillon) for January 11, 2019 but was cancelled at the group's request. Representatives from the DeneSuline Co-Management Board attended the PAG meeting in November 2018 where the update presentation was given. Attempts have been made to schedule a meeting in Ile-a-la Crosse, but the group has not responded to date.

5.2 ADDITIONAL FMP UPDATE – RELATED CONCERNS AND ISSUES RAISED

Divide Forest Advisory Council Corporation

Presentation was given, no questions related to the FMP were asked.

Beauval Co-management Board

Q. – Was an extension given on the FMP deadline and if so, why was consultation not done?

A – the FMP follows a workplan, which is revised and approved as needed. It is not uncommon for FMPs to take longer than anticipated (this has happened with other license holders in the province). It's partly due to the new standard that came into effect "mid-process".

Q – What are Caribou migration patterns according to you guys? A – We do ongoing research (3-year project) with Alpha Wildlife to help us better understand this.

Q – Is the annual report available to the co-management board? A – Yes, one can be made available to you. It's also posted on the Mistik website.

Q. – Is Mistik willing to do a video about Caribou and hunting/preservation? A – Mistik can work with the community to get something in place. (Note: Niska followed up by providing the board



with information from the Ministry of Environment. There were suggestions for working with local papers, using social media and contacting the FWL branch for more information as to any input they may be able to provide).

Canoe Co-management Board

Q – When will Mistik start a new forest inventory? A – In approximately 3-4 years.

Q – Can fire breaks be done on reserve land? A – Yes, if the wood is suitable for the mills Mistik would be interested. Additional approvals would be required.

Q – What site prep is done after harvesting for reforestation? A – We used to do disk trenching, but we've found now that it's unnecessary and we are able to meet the standards for regeneration. We still do some scarification in pure pine stands.

Public Advisory Group Meeting

See meeting minutes from November 21st, 2018 PAG meeting (section 6.2 of this appendix)

Buffalo Narrows

The plan was discussed with the new co-management (not officially formed yet) group. Most of their current concerns are around employment and contracts for Buffalo Narrows. There were no FMP-related questions.

Waterhen Chief & Council

Q – You changed the softwood top size from 5” to 4”? A – Yes, we did, at the mills request.

Q – Are there other species at risk besides Caribou? A – Yes, Mistik has an extensive species at risk program through our certification program. Some of the other species were discussed.

Q – So the idea with Caribou is helping the population with minimal impact to our operations?

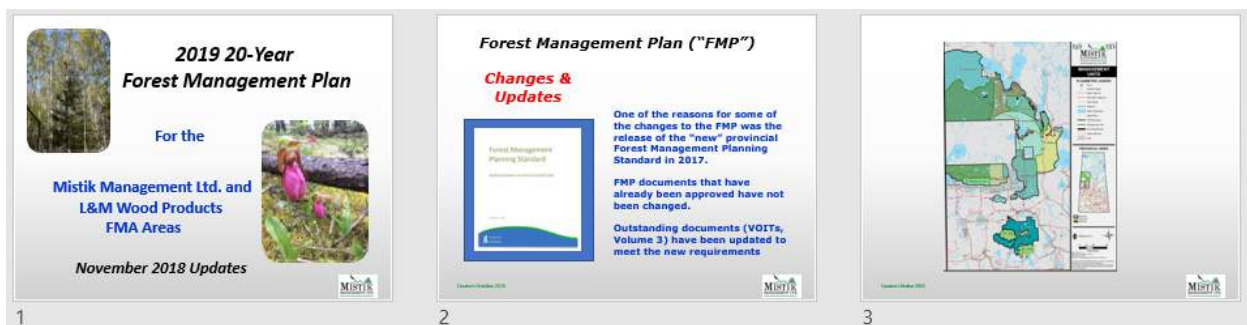
Goodsoil & Area (open house)

No FMP-specific questions were asked. There was some discussion about Caribou in the north.


Big Island Lake Cree Nation

The plan was discussed with the chief and representatives from council. BILCN is in the process of forming a new co-management board. There were no questions related to the plan at this time. Much of the discussion was around business opportunities for their community.


5.3 ADDITIONAL FMP UPDATE – PRESENTATION GIVEN








4



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6

What's changed since the last time we talked about the FMP?

- Mistik staff changes
- Documents updated to more closely meet new standards
- Addition of "new" information related to Caribou and how it's applied to planning
- Strategies to address species at risk and climate change
- Annual report "structure"
- Plan effective dates

7

Volume II (Document 4) – Values, Objectives, Indicators & Targets (VOITs)

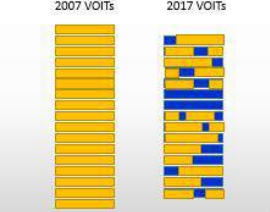
VOITs in place from the 2007 FMP should only need "tweaking"

The forest doesn't grow any different and really isn't managed any differently from 2007 but...

- Provincial standards have changed
- In some cases, "old" VOITs did not fully meet the new requirements
- Some requirements are brand new

8

2007 VOITs **2017 VOITs**



9

Some Targets that have changed:

1. Harvest Events
2. Measurement of Retention
3. Old and Very old Forest
4. Distribution of Harvest Activity

Targets that are new

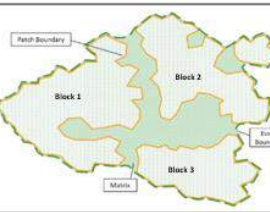
1. Softwood in Hardwood Stands
2. Harvest Event Duration
3. Strategy to lower Wild Fire Risk

10

Harvest Events


- Old concept – new requirements
- Traditionally many targets were measured at the block level
- A "Harvest Event" is a group of blocks that are located within 500m of one another and are harvested within a 10-year period
- Some old targets are now measured at the harvest event level

11



12

Mistohay Tower Area – 2001/02 Harvest




13

Targets that have changed in the way we measure them:

1. **Measurement of block retention**
Now measured by block and by harvest event (9% overall retention, min. 4% "in block")
2. **Protection of Old and Very Old Forest**
Will be measured over the entire FMP Area. Old and very old forest moves around over space and time
3. **Distribution of Harvest Activity**
Harvest levels are tracked and measured based on "Planning Units"

14




15

Targets that are New:

The softwood component in pure hardwood stands is maintained

- This is not pertaining to mixedwood stands, only small amounts of softwood found in hardwood stands
- Usually done by leaving patch retention

16




17

Targets that are New:






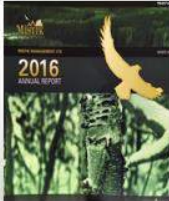

Strategy to lower wild fire risk to communities

Mistik will continue to work with communities to create fire breaks where it is feasible



18



<p>Volume 3 – Plan Implementation</p> <p>What's been added/changed:</p> <ol style="list-style-type: none"> 1. Updated Plan Effective Date 2. Species at Risk 3. Vulnerability Assessment to address Climate Change 4. Strategy for Management of Woodland Caribou – in development 	<p>Volume 3 – Plan Implementation</p> <p>1. Plan Effective Date</p> <ul style="list-style-type: none"> o The 2007 plan has essentially been extended to cover the time period over which the new plan was being developed o 2019 – 2038 will be the effective date of the FMP. o The anticipated approval date is April 1, 2019. 	<p>Volume 3 – Plan Implementation</p> <p>2007 FMP Effective Dates</p> <p>2007 2008 2009 2010 2011 2012 2013 2014 2015 2016</p> <p>2007 FMP Start 2019 FMP Start</p> <p>2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038</p>
19	20	21
<p>Volume 3 – Plan Implementation</p> <p>2. Species at Risk (SAR)</p> <ul style="list-style-type: none"> o Both Mistik and L&M have extensive Species at Risk programs o Volume 3 has been expanded to include details around these programs o Designations are based on federal and provincial Species at Risk found in the FMA area 	   	<p>Volume 3 – Plan Implementation</p> <p>3. Vulnerability Assessment to address Climate Change</p> <ul style="list-style-type: none"> o Mistik has participated in a study that focused on the impacts of climate change and how they effect sustainable forest management on the Mistik FMP area
22	23	24
<p>3. Vulnerability Assessment to address Climate Change</p> <p>For the purposes of the FMP, two targets have been chosen to monitor and report on annually. The two targets are:</p> <ol style="list-style-type: none"> 1. The number of "days frozen" annually for three important lakes in the FMA area (Peter Pond, Keeley & Turtle) 2. Operational days lost due to "abnormal" weather/environmental conditions 	<p>Volume 3 – Plan Implementation</p> <p>4. Strategy for Management of Woodland Caribou</p> <ul style="list-style-type: none"> o Under development... 	<p>Volume 3 – Plan Implementation</p> <p>4. Strategy for Management of Woodland Caribou</p> <ul style="list-style-type: none"> o Based on federal and provincial range planning processes o Knowing where Caribou habitat is o Determining how it affects our wood supply o Will likely result in changing plans and deferring harvest in some areas
25	26	27
<p>4. Strategy for Management of Woodland Caribou</p> <ul style="list-style-type: none"> o How do we manage for Caribou? o Limiting or deferring harvesting in higher value habitat areas o Follow "event" type harvesting (larger blocks, get in-get out, close roads sooner, etc.) o Reclaim "older" roads where possible 	<p>4. Strategy for Management of Woodland Caribou</p> <ul style="list-style-type: none"> o Working with the Ministry of Environment o Province has maps of known Caribou areas o Mistik also has really good information about known Caribou areas o These areas generally overlap but the plan has to be "tweaked" to account for the differences 	<p>4. Strategy for Management of Woodland Caribou</p> <ul style="list-style-type: none"> o What does the ministry expect? o There are designated Tier 1, 2 & 3 areas (highest to lowest habitat value) o Higher value = more restrictive o Commitment by industry to follow provincial habitat management planning processes
28	29	30
<p>Annual Report</p> 	<p>Annual Report</p> <ul style="list-style-type: none"> o Will contain a section specifically to report on FMP provincial requirements o Will still contain most "left over" targets o Will be reporting on Certification targets o Single document reporting 	<p>Thank You!</p> 
31	32	33



6 PUBLIC ADVISORY GROUP (PAG) MEETINGS

6.1 SUMMARY OF PUBLIC ADVISORY GROUP MEETINGS HELD DURING THE 2019 FMP DEVELOPMENT

Development of the FMP was discussed at the following PAG meetings:

Table B-3: PAG Meetings with Discussion on FMP Development

Meeting Date	General Areas of Discussion
October 16, 2014	2019 FMP mentioned as an upcoming project
March 19, 2015	Planning team terms of reference, workplan & consultation plan
October 1, 2015	Volume I
March 31, 2016	Volume I, VOITs
October 27, 2016	Volume III
April 6, 2017	Volume III, wood supply analysis, tactical plan
November 23, 2017	Volume III
May 15, 2018	FMP highlights
November 21, 2018	VOIT changes, volume III and Caribou plan

6.2 PAG MEETING MINUTES

PAG meeting minutes capture questions that were raised related to the general operation of Mistik and L&M and development of plans including the FMP. Invitation and attendance lists are included in the minutes.



Topic:

Minutes of the March 19, 2015 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
Alpha Wildlife Management	Gilbert Proulx
Bandaloop Landscape Ecosystem Services	David Andison
Buffalo River Dene First Nation	Terrence Byhette, Fred Byhette & Allan Noltcho
Canoe Lake Co-management Board	Richard Bouvier & Vivian West
Divide Forest Advisory Council Corporation	Barry Frisk & Harold Kimivaa
Ducks Unlimited Canada	Mark Kornder
Environment Canada – CWS	Steve Van Wilgenburg
Forestry Contractors	Tim Wall & Vicky Pryor
Ile-A-La-Crosse Metis Local #21	Gabriel Daigneault & Brennan Merasty
L&M Wood Products Ltd.	Zane Delainey & Travis Hagel
Meadow Lake & Area Residents	Rosemary Bouzan, Monty Samson, Gladys & George Wood & Jeremy Nightingale
Meadow Lake Mechanical Pulp Inc.	Paula Currie & Dwayne Mysko
MN-S Meadow Lake Local #31	Guy Tourond & Gwen King
MN-S Northern Region #2 (Bear Creek)	Dean Herman
MN-S Northern Region #2 (Buffalo Narrows)	Senator Johnny Woodward
MoE Fish & Wildlife Br.	Gigi Pitoello
Ministry of Environment Forest Service (ML)	Kathleen Gazey, N Caissy
Ministry of Environment Forest Service (PA)	Dwayne Dye & Rory MacIntosh
MoE Parks, Sport & Culture Branch	Bob Wilson
Ministry of Environment Wildfire Management	Landon Parenteau



Interested Party	Participant Name
Mistik Board of Directors	Chairperson Brenda Nightingale
Mistik FMA West District Stakeholder	John (Jack) Purves
NorSask Forest Products Inc. (MLTCRDI)	Erin Duff
NorSask Unionized Employees	Steven Soare
Northwest Communities Wood Prod./Beauval	Jamie Laliberte
Saskatchewan Environmental Society	Allyson Brady
Saskatchewan Trappers Association (Zone 8)	Leonard Greenhough
Saskatchewan Water Security Agency	Abul Kashem
Saulteaux First nation	Walter Lewis
Silvacom	Ryan Spooner
Third Party Softwood Quota Holders	Dean Millard
Tourism Saskatchewan	Tim Ouellette
Town of St. Walburg	Tony & Merrill Leeson
University of Saskatchewan, Department of Soil Science	Professor Ken Van Rees & visiting Prof. Ocan Turgay (U of Ankara, Turkey)
Village of Loon Lake	Ron Waugh
Waterhen Lake First nation	Chief Carol Bernard
Meeting Facilitator	Terry Lamon
Mistik Management Ltd.	Bernice Alger, Al Balisky, James Daigneault, Kevin Gillis, Niska Hodgson, Cliff McLauchlan, Bill Murray, Roger Nesdoly & Wendy Soulsby
Regrets	
Beauval Co-Mgt Board & Commercial Fishers	Participant did not attend
Buffalo Narrows Co-management Board	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
City of Meadow Lake	Participant did not attend
Northern Village of Green Lake	Participant did not attend
Rural Municipality of Meadow Lake #588	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the March 19, 2015 PAG meeting.

1. Public Advisory Group Meeting Agenda, Thursday March 19, 2015.
2. Minutes of the October 16 & 17, 2014 Meeting of Mistik's Public Advisory Group.
3. Mistik Management Ltd. 2017 Forest Management Plan, Planning Team Terms of Reference, December 2014 (Rev. #1 March 17, 2015)



4. Mistik Management Ltd. 2017 Forest Management Plan, Workplan, December 2014 (Rev. #1 March 17, 2015)
5. Mistik Management Ltd. 2017 Forest Management Plan, Public Consultation Plan, December 2014 (Rev. #1 March 17, 2015)
6. PP presentation – Climate Variability, Mark Johnston, SRC (Mark was absent due to illness thus Balisky and Nesdoly of Mistik gave Mark's presentation)
7. PP presentation – Boreal Avian Communities, Steve Van Wilgenburg, CWS, EnvCan
8. PP presentation – Ungulates, Furbearers and the Coarse Scale Habitat Mgt Paradigm, Gilbert Proulx, Alpha Wildlife Management
9. PP presentation – Site/Forest Productivity, Ken Van Rees, U of S
10. PP presentation – Pest Management Implications Related to Climate Variability, Rory MacIntosh, MoE FSB
11. PP presentation – "Biodiversity" and "Anthropogenic" Natural Forest Patterns, David Andison, Bandaloo
12. PP presentation – SK Response to the Federal Boreal Caribou Recovery Strategy, Gigi Pitoello, MoE, Fish and Wildlife Branch
13. PP presentation – Plausible Forest Futures 2090 Workshop Outcomes, Dwayne Dye, MoE, FSB

Proceedings of the March 19, 2015 Mistik Public Advisory Group 'meeting:

- 1. Facilitator Terry Lamon commenced the March 19, 2015 Public Advisory Group (PAG) Meeting at 10:00 a.m. with a welcome, 'round the table introductions' and introduction of the agenda.**
- 2. Facilitator Terry Lamon initiated discussion of the meeting minutes from the October 16 and 17, 2014 Public Advisory Group (PAG) Meeting. A motion by Jack Purves and seconded by Tony Leeson to accept the minutes as presented was passed.**

3. Housekeeping, Roger Nesdoly

Washrooms, exits, mileage, accommodation, meals and other miscellaneous items.
Reviewed Mistik's current 11 staff members.

4. PAG Business 2017-2017 20-Yr FMP Document Review of Planning Team Terms of Reference, Work Plan and Public Consultation Plan, Al Balisky

Mistik provides services to three mills: L&M Wood Products, Meadow Lake Mechanical Pulp and NorSask Forest Products. This process we are embarking upon is a function of a regulatory requirement which occurs every 10 years. The Forest Management Plan (FMP) was been initiated with the three documents we are to review.

The Planning Team Terms of Reference document was reviewed/discussed.

The Work Plan document was reviewed/discussed. The work plan identifies all known concerns and/or issues. Five 'generic' issues and/or concerns were presented to the PAG. From PAG – concern as to variance re hydrologic impacts/effects regarding the forest age class and cover types.



The Public Consultation Plan document was reviewed/discussed.

Q: What is the responsibility to the 'greater' PAG group of PAG members serving on the Planning Team?

A: Oversight and communication to the greater PAG group.

Observation: Planning Team PAG members, as required or deemed necessary, to ensure adequate communication with the greater PAG group as needed between meetings. How the PAG Planning Team representatives chose to communicate among/with the greater PAG group is their choice. Mistik may endeavor to help facilitate where possible.

5. Mill Updates and Projections for the Next decade.

L&M Wood Products – Zane Delainey

- is a privately-owned family company
- focus is on value added niche market products
- concentrate on complete use of the wood fibre at their disposal
- wood treatment called is CCA (copper, chromium and arsenic) for agricultural and industrial market and treatment plant has the capacity for 1.8 million posts
- sawmill is a headrig configuration (installed 2008) with an optimized canter line with 20 million board feet capacity
- L&M produces 144 different products
- is the 4th or 5th largest sawmill in Sask.
- post plant built in 2008 and can produce 750,000 posts/year with a single shift
- upgrades projected within 5 years
 - upgrading the headrig saw decks and adding a scanning component to the trim saws which is projected to increase sawmill capacity from 20 to 30 million board feet
 - improve post plant efficiency from 500,000 to 750,000 posts per year
 - double rail production from 40,000 to 80,000 per year
 - replace treatment plant natural gas boilers with wood fired boilers
 - double to triple firewood production
 - current wood consumption is 115,000 m3 of available 161,000 m3, want to achieve full consumption of 161,000 within 5 years
- upgrades projected within 7 years
 - rebuild planer and remanufacturing area
 - establish a new wood treatment plant in tandem with the existing one
- with all planned modernization/improvements by years 7 to 10 L&M may be able to consume 300,000 m3 of wood which would necessitate accessing additional fibre
- current market area is Manitoba to British Columbia, with all planned modernization/improvements by years 7 to 10 L&M hopes to expand its market reach from coast to coast (east-west) and into the United States (south)

Meadow Lake Mechanical Pulp (MLMP) – Dwayne Mysko

-MLMP production is market driven and thus production for the last several years has been hardwood/softwood blended pulp



- MLMP, beyond several months of 'orders', does not have a longer-term production and marketing strategy
- current log and chip inventory are excellent
- MLMP targets 400,000 ADMT (air dried metric tonnes) annual production, this target has not been hit but it is hoped to be achievable in the near future
- pulp prices have been flat to declining over the past year, but the current value of the Canadian dollar has definitely helped MLMP bottom line
- this winter was a production challenge as one (of three) concentrators failed thus limiting the ability to recycle water and thus reducing pulp production. The evaporator was repaired and running within two months (would have taken 8 months to get replaced new)
- softwood chip usage has decreased hardwood consumption/deliveries
- power cogeneration: MLMP would like to achieve but there are many hurdles to overcome, evaluation of cogeneration is ongoing
- MLMP has ongoing projects to evaluate production processes to improve/increase energy efficiency
- Paper Excellence, MLMP parent company, owns pulp mills located at Prince Albert, (on hold) and Meadow Lake, Sask., Chetwyn, McKenzie and Howell Sound, B.C., Pictou, N.S. and two mills in France.

Q: What about liquid effluent?

A: MLMP was the first and still is the only zero effluent mill in the world. No liquid effluent is discharged from the site. All water is recycled. The only water loss is steam coming from the pulp flash drying process. Make up water can come from 2 sources – well and/or Meadow Lake.

NorSask Forest Products – Erin Duff

- 2012: \$3 million planer upgrade – reduced labor costs, reduced human error and increased efficiency
- 2014/15: \$3 million kiln project – to eliminate bottleneck at sawmill, kiln currently operating above expectations
- 2015: NorSask pellets: taking pilot project to production scale, based on demand production of pellets can move from one to two shifts in tandem with the planer
- near term global sales outlook:
 - 60% of production to U.S. and with strong dollar short term looks good
 - Increased fibre supply from Russia to China
 - Uncertainly regarding the Softwood Lumber Agreement (SLA) which expires October

2015

- 2015/16 anticipated mill fibre consumption 525,000 m3 (210,000 m3 from Mistik FMA)
- NorSask wants to achieve 200 million board feet annual production – to achieve this need to reduce downtime, create efficiencies and reduce costs
- NorSask goal to create and maintain safe working environment

Q: is NorSask reaching out to more distant Aboriginal regarding employment opportunities at the mill?

A: MLTC initiatives for Aboriginal (near and far) mill employment are 'works in progress'. A current example is the development of a transportation strategy to bring workers from outlying communities.



6. Forestry - Northern Community Perspectives

Canoe Lake Co-management Board Perspective – Vivian West

Vivian reviewed the history and function of the co-management board.

- The board originated as a result of the 1992 blockade.
- There are 4 members each from Canoe Narrows, Cole Bay and Jans Bay.
- The board reviews and comments on forestry operating (harvesting) plans.
- The board interacts with a multitude of stakeholders (e.g. trappers, cabin owners, etc.) and serves to pass on information to stakeholders.
- The board is a non-profit entity and supports community projects.
- The board will furnish Letters of Support to potential forestry related contractor opportunities.

Waterhen Forestry Perspective – Chief Carol Bernard, Waterhen Lake First Nation

Waterhen Lake First nation is adjacent to Meadow Lake Provincial Park, has a population of ~1950 people, half of which reside on the reserve.

Waterhen Forestry started in 1994, obtained its first feller buncher in 1995 and in 1999 expanded with log loading and road building equipment.

Waterhen Forestry purchased a shop and existing truck fleet in 2012.

Waterhen Forestry is a 'stump to dump' operation in that it completes all activities (e.g. harvesting, road building and log hauling) required getting logs to the mills.

Currently harvests ~200,000 m³ hardwood and 20,000 m³ softwood.

Employs up to 50 operators in the winter plus an additional 12-14 drivers associated with the log haul.

Waterhen Forestry operated throughout the 2008-2010 downturn.

From a band perspective Waterhen Forestry fulfills the objectives of creating employment and returning profits to the community.

Waterhen Forestry still struggles with maintaining an adequate number of log haul truck drivers.

7. Climate Variability, Mark Johnston, Saskatchewan Research Council

Mark Johnston was unable to attend the meeting due to illness. Mistik (Balisky and Nesdoly), with Mark Johnston's permission, gave the power point presentation in his absence.

8. Boreal Avian Communities, Steve Van Wilgenburg, Environment Canada's Canadian Wildlife Service Branch

Power Point presentation

9. Ungulates, Furbearers and the Coarse Scale Habitat Management Paradigm, Gilbert Proulx, Alpha Wildlife Management

Power Point presentation

10. Site/Forest Productivity, Ken Van Rees, Dept. of Soil Science, University of Saskatchewan

Power Point presentation



**11. Pest Management Implications Related to Climate Variability, Rory MacIntosh,
Ministry of Environment Forest Service Branch**

Power Point presentation

**12. Biodiversity” and “Anthropogenic” Natural Forest Patterns, David Andison,
Bandaloo Landscape Ecosystem Services**

Power Point presentation

**13. SK Response to the Federal Boreal Caribou Recovery Strategy, Gigi Pitoello,
Ministry of Environment, Fish and Wildlife Branch**

Power Point presentation

**14. Plausible Forest Futures 2090 Workshop Outcomes, Dwayne Dye, Ministry of
Environment, Forest Service Branch**

Power Point presentation

Motion to adjourn 5:25 p.m. – Tony Leeson.

Facilitator Terry Lamon closed the meeting at 5:25 PM.



Topic:

Minutes of the October 1, 2015 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Brenda Nightingale and Cliff McLauchlan, Mistik Management Ltd.

MEETING ATTENDEES (NAME AND AFFILIATION) WERE:

Name	Affiliation
Barry Opekokew	Canoe Lake Cree Nation
John Purves	Goodsoil/Pierceland
Dwayne Mysko	MLMP
Zane Delainey	L&M Wood Products
Travis Hagel	L&M Wood Products
Dale Sheppard	Meadow Lake
Ron Waugh	Loon Lake
Leonard Greenhough	Makwa-Zone 8 Trappers
Chris Dallyn	MoE-Prince Albert
Robert Follett	MLTCII/NorSask
Fred Byhette	Buffalo River Band
Larry Anderson	DFACC
Alden Halseth	DFACC
Narayan Dhital	MoE
Mark Doyle	MoE/Forest Service
Simon Imray	MLMP
Kathleen Gazey	MoE-Meadow Lake
Calvin Groot	Northern Lights Snowmobile Association
Bill Thibeault	MoE-Meadow Lake
Paula Currie	MLMP
Allyson Brady	Sask Environmental Society
Terrance Byhette	Buffalo River Band
Norman Martell	Waterhen Lake First Nation
SueAnn Fiddler	Waterhen Lake First Nation
Toney Leeson	St. Walburg
Merrill Leeson	St. Walburg
Sheri Andrews	University of Saskatchewan
Kevin Gillis	Mistik
Brenda Nightingale	Mistik
Cliff McLauchlan	Mistik
Niska Hodgson	Mistik

**SUPPORTING DOCUMENTS PRESENTED/PROVIDED TO THE PUBLIC ADVISORY GROUP MEMBERS FOR THE OCTOBER 1, 2015 MEETING:**

1. Public Advisory Group Meeting Agenda, Thursday October 1, 2015.
2. Minutes of Public Advisory Group Meeting held March 19, 2015
3. Mistik Management 2013 Annual Report - hard copy and power point presentation
4. PP Presentation - ISO, FSC and CSA 2015 Certification update Report
5. PP Presentation - Volume 1 Background Information Document of MISTIK's 2017 20-year FMP
6. PP Presentation - Forest Inventory
7. PP Presentation - Forestry Access Winter Crossings

PROCEEDINGS OF THE OCTOBER 1, 2015 MISTIK PUBLIC ADVISORY GROUP MEETING:

1. **Brenda Nightingale, Chair of the Board of Directors of Mistik Management Ltd. called the Mistik Public Advisory Group meeting to order at 10:16 with welcome and round table introductions and introduction of the agenda.**
2. **Minutes of the Mistik Public Advisory Group Meeting held March 19, 2015 were circulated. A motion by Leonard Greenough and seconded by Ron Waugh approving the Minutes as circulated was passed.**
3. **Housekeeping Matters - Brenda Nightingale** - washrooms, exits, mileage, accommodation, meals and other miscellaneous items
4. **Current Affairs**

a) Mistik Personnel Changes - Brenda Nightingale

Reported on resignation of Al Balisky as General Manager of Mistik, expressing appreciation for his leadership at Mistik which inspired, guided and supported all Mistik Operations and extending best wishes for his future undertakings in leadership with MLTII.

Reported on appointment of Roger Nesdoly as General Manager and on recruitment for a new Planning Coordinator to replace Roger Nesdoly who formerly held this position.

Spoke of Roger's recent illness and reason for his absence at this meeting. Acknowledgement was given to the impressive effectiveness of Mistik team in going forward with all operations in absence of Roger and deep gratitude was expressed on behalf of the Board of Directors and Shareholders of Mistik to the Mistik staff.

b) Mistik Harvest Operations - Kevin Gillis

Operations started up in Jumbo Lake area in pine and hardwood blocks early in the spring.

A new contractor Dean Hermann associated with Buffalo Narrows Management Unit began operations. He will be working as a processor across the FMA.

Further North in the FMA operations in areas which include the communities of Jans Bay, Cole Bay and Canoe Lake and Beauval, a conglomeration of various contractors work with Mistik to bring product to roadside for haul. Contractors are working North of Canoe right now about 135 km North of Meadow Lake on Highway 903. This is the most northerly operations Mistik has undertaken in a number of years,



working around areas where there has been fire. Hauling operations come from Waterhen which delivers its own hardwood products and from Canoe and Gravel Express which delivers softwood cut to length products to NorSask.

Almar Limbing were operating on the East West Road starting in June and wrapped up operations there. They are now working in the Divide Forest on the Burness Road. There have been no operations there for quite a few years. Initially there was a challenge to begin operations because of rain, but with good weather over the last few weeks they are now harvesting about 4 km on the Burness Road.

Heppner is hauling on East West road from Km 45 to 60 and is delivering to MLMP.

Communities in the FMA faced various impacts from fire this year and in July Mistik spent time in trying to provide assistance and support to the Keewatin Yatthe Health Authority by providing them with maps providing information about forest roads which could facilitate evacuation plans. As many of the local communities use these roads it was important that the Health Authority know the location and conditions of various roads.

Until this summer Mistik had not experienced a lot of fire impact since 2006. This year Mistik will be conducting salvage operations in relation to two fires. The first is the Bob fire which the Mistik PAG will be touring tomorrow located in the Canoe Lake area, along Highway 903.

The other fire which is going to be subject to a salvage plan with MoE is the Jayleen fire on the Upper Cummings Road with a burn area of more than 20,000 hectares.

The Bray fire had a big impact on Vermette Lake and Dillon Lake areas. There were different degrees of burn there. Lots of patches were left behind but jack pine and spruce burnt very hot. Vermette has numerous cabins from surrounding communities.

The Sudden Fire on Highway 155 in Durocher Lake area south of Beauval and north of Green Lake burnt a lot of muskeg and low productivity ground. Not much timber to salvage.

The Pond Fire in the Waterhen area was close to highway 903 and the Waterhen Cut Across road. No timber to salvage.

The Divide Fire started this summer south of Meadow Lake just off Sundance road and burnt a lot of cutover area. It was one of the earlier fires in the year. No timber to salvage.

The David Fire impacted communities of La Loche, Buffalo, and Dillon. This fire burnt a bit of the north end of FMA near community of Garson Lake and is too far north for MISTIK to salvage any timber.

The Mug Fire near Dore Lake burnt a few hectares and is not in MISTIK's FMA, so MISTIK cannot salvage this fire as it will have to be done by the SAKAW shareholders in the PA FMA.

Mistik will be doing a limited salvage plan this year trying to access some of the wood products as insects play a big issue for wood quality.



Q: What salvage plans applications have been made to MoE?

A: Applications have been made in relation to the Jayleen and Bob Fires. There is no submission for Dillon area yet, nor the Durocher Lake area. These submissions were not made because there was not a lot of salvageable timber available.

Q: Can there be a request for salvage operations for part of the Dore Fire off the FMA?

A: No, because it is in someone else's FMA and even if it were within our FMA our capacity is limited because of road constraints.

Q: How big was Bob Fire?

A: Around 2,000 hectares.

Q: What about the effect of insects?

A: We are time limited, they begin infesting immediately. When we bring infested wood into any mill it will have to be sold as a discounted product. We try to do the most harvest the year of fire and potentially the second year after.

Q: What about recruitment for Roger and what will be his presence with planning?

A: Roger will be handling recruitment for a Planning Coordinator. Mistik is also working on succession plans for all senior employees who may be leaving Mistik due to retirement in the next number of years and is aware of the fact that it may be necessary to hire an additional forester if operations move further north on the FMA.

While Roger is now GM, he will still be involved with Planning, just as Al Balisky used to work closely with Roger in the past.

Q: When there are fires, does low bush cranberry come back and how long for low bush cranberry to come back?

A: Yes, they do come back but they usually take an extra year beyond other berry types. Blueberries will grow rapidly in the 2nd and 3rd years, but cranberry take an extra year because they grow as a vine. Blueberries will be dominant initially and so too will mushrooms.

c) L & M Harvest Operations - Zane Delainey

L & M harvest operations are concentrated in Divide Forest Area so not as large a landscape as Mistik, as a result L&M just uses one contractor. The volume harvested is small enough to support one harvester, but not numerous ones.

Had late start this year because of weather, but the late start was planned. When the harvest started in late July and early August then the rain started and couldn't haul. L & M only have had wood coming in last few days.

This year the focus will be on harvesting jack pine for posts and rails and which will also feed the sawmill. L & M will be pushing for full harvest off the L & M land base which is in 3 harvest blocks and operations will be conducted in all of them this year. It will take to the end of March to get all of the wood in.

There were no fires in the Divide Forest which changes their planning, but because of fires on the PA FMA side there is some impact on harvest. L & M is working with Mistik to develop plans and this planning process works very well.



Q: What will be harvest this year for full allocation?

A: 86,000 softwood and 44,000 hardwood.

Q: What is area for harvest operations?

A: About 115,000 hectares for whole base, usually under 1,000 hectares for harvest

Q: What is the cut block size?

A: The cut block size gets bigger and bigger each year to emulate forest fire patterns, now the smallest cut block is 20 hectares.

Q: How is the demand for fencing materials right now?

A: Because of price of beef coming up demand for fencing material is also up, that is why we are focussing on jack pine because that is what we use for posts. We are harvesting another way too. We used to do tree-length, now the crew in the forest with processors are harvesting into 12- or 13-foot lengths and we are building the infrastructure at L&M to do 6-foot posts.

Q: Is Almar working for you this year?

A: Not this year, we are working with P & E only, but when we do work on the PA FMA, we will sometimes use other contractors.

Q: Any plans to operate in Lavigne area of your FMA?

A: Yes, by working with Mistik on planning we can build a road system there to keep us away from water crossings, so we will have a main road and then keep branching off.

Q: Why are you looking at doubling production?

A: This is partly because of an increase in demand and also because of our capacity to create more posts and treat them. We wanted to make sure that the treating plant could handle the production, then we looked at capacities in the post plant and now we can look at the harvest volumes.

Q: Are you doubling harvest?

A: Yes, we will go from 20,000 m³ to 40,000, but that also opens up more saw logs for us too.

Q: Do you use hard and softwood for posts?

A: We harvest hardwood, but we don't use it. MLMP and Tolko OSB takes our hardwood. We move the right wood to the right mills.

d) MLMP Operations - Simon Imray

Introduced himself as being involved in pulp industry since 1988, beginning in Whitecourt Alberta then when the decision was made to build this mill, he came to Meadow Lake in 1991 when ground and foundations were being laid for mill. He thought he would be in Meadow Lake for 5 years and is still here. He has been the General Manager of the mill 2011 having worked through production positions at the mill.

The mill has been on shut down since Sept 14 because of the market conditions. MLMP had an over stock of inventory of finished pulp in Canada, and it reached appoint where the MLMP shareholders said enough had been produced and was just being warehoused in Vancouver.



The timing of the shutdown coincided with a planned outage of the mill in September for a 7-day period to do maintenance, with 2.5 million dollars to be spent on maintenance and repair during the shutdown. MLMP decided to go through with that work, but to reduce reliance on contractors as much as it can by using existing staff. The shutdown now is scheduled to be for four weeks with a tentative start up is October 15, but this is yet to be confirmed as inventory is still too high and there aren't a lot of pulp orders at the present time.

From forestry perspective MLMP has not told Mistik to slow down in operations. Fibre inventory at MLMP was run low intentionally, and with the wet season and slow on delivery it worked out well for the mill.

MLMP continues to buy woodchips from NorSask and Carrier and is trying to divert those chips to other users. As of right now there is a growing stockpile of hardwood roundwood at the mill and a growing pile of softwood chips. But it is business as usual for fibre supply from Mistik.

Q: Why is this happening?

A: Pulp is all sold to China for a parent company of this mill which will make packaging board with our pulp which is considered a low-cost type of pulp. Better types of pulp come from chemical pulp mills like PA with higher brightness and whiteness. MLMP is a mechanical mill so has low cost fibre. The Chinese economy has slowed down so China usage has decreased on the pulp. MLMP's main customer is in South East China and they have 5 months of MLMP inventory in their warehouse. The game plan is to try to shift market into Europe, but it is hard to break into market when pulp price is so low. We can't run the mill at such low prices. Pricing has to go back up for this mill to run at a profit. The US dollar exchange rate is helping, but pulp prices need to come back up. One side of all of this is price, the other is input cost. Mistik has done a great job to keep cost relatively constant in the face of rising fuel costs and labour costs.

The greater issue is not in relation to wood cost. When we started looking at this, we saw in relation too the cost of goods going into a ton of pulp wood used to be the highest cost item. It is now second highest cost with energy costs, electricity now the being the biggest. A 2% increase for a home owner is a lot, but for the mill this 2% increase means 1 million dollars, so the mill is talking to SASK POWER executives about this. They could put the mill out of business by charging utilities at this price. This mill is critical to forestry sector in Saskatchewan and because of use of aspen we support the saw mills by sharing the forest with the softwood users. This makes their cost of getting wood cheaper as they are harvesting mixed forest. We have taken softwood chips from all three saw mills in the past, now we just purchase from Carrier and NorSask.

We have not done layoffs at the mill this summer as we have put all our mill staff to work on the shutdown doing the maintenance, thus we have cut back with contractors. We are in a cash conservation mode at the mill. If there is no start up on the 15th, there will be more changes at the mill.

Q: Where did you go with bio-mass power project?

A: We have kept it going. It will be about \$100 million to start it. Right now, we are incinerating bark and sludge, but bark production has gone down. We need bark to burn wetter effluent, so we have created a bit of an imbalance between bark and sludge. It is hard to keep up with burning sludge.



Q: What would be the payback period for the bio-mass power project?

A: That is the key. We have a lucrative power purchase agreement with SASK POWER. But the key is that you can't have any fossil fuels in there to qualify - it has to just be bio-mass. It gets complicated because Paper Excellence owns this mill and also PAPI pulp mill in Prince Albert. They own both power purchase agreements and can divide it up between the two mills. Our power plant in Meadow Lake gets tied in with complexities in PA. MLTC still has their power purchase agreement and plans. I hope that Meadow Lake area sometime will have a biomass plant. The MLMP pulp mill was a world class on environmental standards being a zero effluent mill when it was built; why not take it the next step and not burn? So, the plans are still on the table, with 3 vendors selected, but the prices are so broad we have to bring them down before making a final selection on vendors, financing has to be in place, and we have to have a secure fuel supply before we move forward.

Another option we are looking at is that MLMP build on the fence power generation. If MLMP can't get anywhere on reduction in the electrical rate, we will have to do it ourselves and self-generate so we can choose whatever power options we want. We have visited some other mills that are doing this.

Q: Canoe Co-management Board has environmental concerns about pulp mill, concern about poison coming from the pond. There should be more communication annually or quarterly to the stakeholders or communities explaining what goes on out there. With burning dry sludge is that dangerous to the environment?

A: There are no particular emissions coming from that. It is a high temperature 1200-degree exhaust. It is a refractory system.

Q: MLMP should explain this to stakeholders and communities. How is communication done?

A: Specifically, on the incinerator MLMP talked to nearby neighbors, residential occupants where wind might carry particles. MLMP has spoken with them face to face and have sent samples of ash content. Nearby residents seem to be fairly comfortable with their houses.

Q: What about poisons from the ponds?

A: It needs to be contained and it is contained. We have groundwater monitoring wells which continue to be monitored.

Q: Is there one from the lake?

A: Yes, we take samples from the lake or drill our own well to the aquifer. We have to report each month to MoE, so it will tell us if there are changes.

Q: This needs to be communicated to the public. Perhaps this should be done by MoE or somebody.

A: I believe our obligation is to report to MoE, it is then up to MoE to decide if there is anything further to do with communication to the public.

Q: With downsizing and money problems, don't you have a big expansion going on in the back of the mill?

A: Yes, we are building a new sludge landfill. MLMP had to do that because MLMP didn't want to put sludge in there. We would rather burn it or do a power plant, but we have to be good



stewards. We can't put the sludge on unprotected ground, so we are building a landfill which is lined. It is a necessity of our business.

Q: Is it done?

A: It is two weeks away from being done.

Q: Canoe has been trying to get involved with all three mills in hauling the finished product. Who is your hauling contractor?

A: We have Edge Transport.

Q: Can a guy get in there for work?

A: Yes, talk to Brent. We don't have a long-term agreement with any carrier. If you want to haul pulp talk to Brent.

Q: How does fire wood impact the mill?

A: In 2006 the mill received some. The mill can deal with it, but there can be no burn under the bark. MLMP can't turn char back to original brightness. Pulp brightness or whiteness is measured in a percent. MLMP would have to bleach heavier to bring up to the proper brightness. We will work with Mistik to do as much as we can to sort burnt wood in the field. We don't want to just let it stand and let it be insect ridden, but we have to be careful that we don't through the mill off grade. We manage the risk.

Q: About Green Power can there also be natural gas?

A: There can be a bit of natural gas assist to get it started, but after that it can't be sold as green power if there is gas. We are looking at various avenues to see if we can get the money to get this started.

e) NorSask Operations - Robert Follett

Agreed with Simon Imray's comments about co-operation between mills and need for pulp industry to be strong.

Robert Follett came to Saskatchewan in 1999 to work for Mistik and then in 2011 he moved to PA Pulp. In April of 2015 he joined MLTCII (NorSask) as Fibre Manager.

NorSask had a good year with production records of 120 million board feet. But now market conditions have fallen off, the USA isn't buying, the Chinese market has dried up and there is no "super cycle" that the economists talked about. As well BC mills are pumping beetle-killed low-grade product into the market.

As a result, NorSask had to go from 2 shifts to 1 1/2 shifts with the strategy to take some product off the market and get costs down. October 12, 2015 is the date of the expiry of Softwood Lumber Agreement so there will probably another price drop.

Even with this there is the expectation that 400000 m3 will go through the mill this year. This will be back to normal as last year's 500,000 m3 was unusual. For this 150,000 - 200,000 m3 will come off the Mistik FMA and the remainder off the PA FMA.

NorSask started the pellet mill and while it is not up to full production it is operating at about 50 - 60 percent capacity. The hammer mill couldn't keep up to the pelleters, so NorSask is ordering



a new hammer mill to have this capacity. Pellets will be sold in bulk about will go to the oil and gas industry for spills and the remainder to market for home owners for furnaces.

MLTCII owns NorSask Transport and has 9 logging trucks which deliver to NorSask, MLMP and Tolko mills and is looking at expanding this over the next few years.

Q: It is frustrating that I can't buy NorSask wood locally to build my garage. I have to buy BC wood. Are there opportunities to sell NorSask wood in Saskatchewan?

A: You are right, I have to buy Carrier lumber in PA, not from our sawmill. But there is a better return for NorSask to sell to the US market. On the pellet side there isn't a huge local market, but every bag we can sell locally is good for NorSask.

Q: How can you sell locally with pellets?

A: Many companies use pellet brokers. We are small enough we can sell to individual buyers, around \$5.00 to \$6.00/bag. We will be selling in bulk soon. We hope to sell 30% of the mill production in bulk.

Q: That is expensive compared to coal. Will pellet prices ever be comparable to coal?

A: I doubt if we will ever be able to compete with coal in cost. But I can say our pellets are made from shavings from the mill with no bark, so they are very high BTU. Pellets are really high quality for burning, but in terms of cost with coal, we probably can't compete.

Q: Can you use sludge from MLMP for pellets?

A: It was tried, and it cannot hold together to make pellets. MLMP has tried other machines and it doesn't work because of high moisture. There are also residual chemicals in sludge which make it not so useful for pellets, and there is an odor too it too.

Q: NorSask used to sell fire wood. Do you still do that?

A: Some people get trim blocks where trucks clean log decks. But similar to L&M we might be able to dump some for people buy.

Q: What about getting fire logs right from the bush? There is a gate on Chums road, and we can't get in.

A: Answered by Kathleen Gazey MoE: The gate is there to protect wildlife populations from extreme hunting pressure and conservation officers are monitoring it. They aren't closed just for the sake of keeping people out, there are important ecological reasons for gates. When the gate is open, people can use the road to get firewood.

(Adjourned at 11:44 for lunch)

(Recommended at 1:00)

f) L & M Operations - Zane Delainey

L & M runs a single shift at its operations and employees between 85 - 90 people. L & M remains in a "niche" market, doing small scale operations consisting of a saw mill, a post and rail plant, firewood sales, wood treatment and custom work such as building pallets. This gives L&M more flexibility in production as it can do things which other mills which are bigger cannot. In last year's report L&M said it was 2 - 5 years out from optimization project, now it is 6 - 8 months out from that. Producing 144 different products will continue. Optimization is not just



about moving more wood through, but the purpose of optimization is better recovery and better-quality products. Typically, through optimization L&M can get more production, it is not just about getting more wood through. L&M remains committed to getting the most product out of each piece of wood.

L&M will be going to a double shift and is just working out the logistics around the post plant, but we are planning to double shift it also, probably by this spring. Demand for posts is strong and the window for post sales is about 5 years.

In the treatment plant L&M went from doing 6 charges a day up to 13 - 14/day, but one of the downfalls of this increase in treated wood production was that the boiler now requires an improvement sooner. Other improvements are all on line too.

L&M was originally a privately-owned family company. In November L&M will become a publicly traded company. We will become part of Jemi Fibre Corporation out of BC. Once that sale is concluded L & M will become Canada's largest producer of agricultural posts and rails. Jemi has been a key player in optimization. As we went through the process of negotiating the sale to Jemi, they found that L & M's system works well, so they want to keep all of L & M's personnel and systems and move their other companies more into line with what L & M has been doing.

L&M is also moving forward more into more firewood marketing especially for jack pine and we hope to work closely with NorSask, through Mistik to look at wood flow and value of wood so that wood is moved to where it is supposed to go.

Q: Exciting times.

A: Yes, it is. There will be change, but it is positive change, it is not gutting the company or involving job loss. It offers opportunities to expand and do the things L&M always talked about doing but never had the financing to do so like wood optimization.

Q: What percentage of product is treated vs. non-treated?

A: We treat with CCA (copper chromium arsenic) which is best for agricultural and industrial use. It cannot be used for homes and residences. At one time treated product was 75% of the mills total production but now it is more like about 45%. L&M deals a lot with oil companies for looking for dimensional lumber for wood matting for lease pads. This is still a good market. Production can't keep up to sales right now on posts. L&M has the same issue as NorSask, when the price for studs go down, the price for everything goes down, but L&M picked up sales in different places. In the future L & M will also be doing more treating through Jemi.

Q: Once the sale goes through will the name change; will the relationship with Mistik change?

A: No. L & M won't change its name, it keeps operating as is. The relationship with Mistik won't change.

Q: What is furthest market?

A: China and Kansas, but with a drop in the China market, China isn't a feasible market right now. L&M is trying to do more sales directly to the local dealers rather than to wholesalers when trying to sell their product to the local market. In a commodities market we are trying to say, "Why don't we just ship directly?" and cut out the middle man.



5. Certification Update - Kevin Gillis

- a) Update re ISO 2015 audit results
- b) Update re FSC 2015 audit results
- c) Update re CSA 2015 Z809 results

PP Presentation by Kevin Gillis, Mistik Management Ltd.

No questions

6. Mistik 2013 Annual Report - Al Balisky

PP - Presentation Al Balisky, former GM of Mistik Management Ltd., presently of MLTCII.

Q: Could you describe the relationship between Mistik and L & M for this year and in the future?

A: L & M and Mistik have been close partners. The pulp mill receives hardwood from L&M on a consistent basis and this has worked well for L & M. Mistik has had a longstanding relationship with them which is very positive. L&M's license is embedded in Mistik's land base and is now formally part of Mistik's FMP renewal process and certification programs.

Q: Is this report available to the public?

A: Yes, it is, it will be posted on the MISTIK website.

7. Volume 1 Background Information Document of Mistik's 2017 20 Year FMP - Niska Hodgson and Kevin Gillis

PP Presentation by Niska Hodgson and Kevin Gillis

PP Presentation from Silvacom on forest inventory presented by Kevin Gillis

PP Presentation on Forestry Access Winter Crossings by Kevin Gillis

Q: Are there trends in trapping related to specific communities showing an increase/decrease in various communities? There is concern that the statistics shown are not the true representation of the active trappers in the northern fur zone, which leads to the misperception that there is no one trapping in the north so there are no concerns by trappers in the north about the forest in the north, which is untrue.

A: The Saskatchewan government creates annual trapping stats by tallying the number of licenced Saskatchewan trappers that have sold fur to either of the two fur auction houses in Canada each year. Traditional users do not trap under license or sell through auction. If someone traps and furs for moccasins this would not necessarily be reflected in the statistics maintained by MoE. There is a perceived difference between "community knowledge/statistics" and government statistics and in some areas, there are issues regarding the sharing of this information.

Q: Why is there such a sharp increase in the number of trappers in some of the FCA's

A: Not sure exactly but some communities there has been an increase in new young trappers.

Q: How will harvesting activities be modified for habitat protection for caribou?

A: A lot of protected areas (CPA's-Candidate Protected Areas) for caribou habitat were protected voluntarily by Mistik even before the government regulations came into effect for



protection of habitat. We will continue to ensure that if we know there are caribou, we will try not to do any harvesting that will impact them negatively.

Q: But this wasn't really any modification of harvesting activities because you weren't going to harvest there anyway because it was muskeg. How is exactly is this a "modification" then?

A: We try to maintain things in an intact state. We can't go over the threshold so 65% has to remain not impacted, so we do have that parameter in place. But in addition, where we know there is caribou habitat, we will not impact the habitat through avoidance. We will not build roads through the CPA's to access harvesting areas near or adjacent to the caribou habitats as well.

Q: What impact is there on certification for pulp being sold in China?

A - Answered by Dwayne Mysko. It doesn't matter much at all for China, but as MLMP is looking at European market, it is very important for MLMP. It also matters for US markets.

MEETING ADJOURNED AT 4:59 P.M.

Note: the presentation given at this meeting for Volume I was the same one given at the first open house sessions and can be found in section 3.4 of this document.



Topic:

Minutes of the March 31, 2016 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
Buffalo River Dene First Nation	Terrence Byhette & Fred Bhyette
Forestry Contractors	Tim Wall & Vicky Pryor
L&M Wood Products Ltd.	Zane Delainey & Travis Hagel
Meadow Lake Mechanical Pulp Inc.	Dwayne Mysko & Lexi Gardiner
Ministry of Environment Forest Service (ML)	Kathleen Gazey, Janine Leach
Mistik Board of Directors	Chairperson Brenda Nightingale
Mistik FMA West District Stakeholder	John (Jack) Purves
NorSask Unionized Employees	Larry Boudreau
Northern Lights Snowmobile Club	Calvin Groot
Northern Village of Buffalo Narrows	Estelle Laliberte
Saskatchewan Environmental Society	Allyson Brady
Saskatchewan Research Council	Mark Johnston
Third Party Softwood Quota Holders	Dean Millard
Tourism Saskatchewan	Tim Ouellette
Town of St. Walburg	Tony Leeson
U of S, Department of Soil Science	Professor Ken Van Rees
University of Saskatchewan	Sheri Andrews
Village of Loon Lake	Ron Waugh
Meeting Facilitator	Terry Lamon



Interested Party	Participant Name
Mistik Management Ltd.	Bernice Alger, Kevin Gillis, Cliff McLauchlan, Roger Nesdoly & Karl Schulz
Regrets	
Beauval Co-Mgt Board & Commercial Fishers	Participant did not attend
Buffalo Narrows Co-management Board	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
Canoe Lake Co-management Board	Participant did not attend
City of Meadow Lake	Participant did not attend
Divide Forest Advisory Council Corporation	Participant did not attend
Ducks Unlimited Canada	Participant did not attend
Ile-A-La-Crosse Metis Local #21	Participant did not attend
MoE Fish & Wildlife Br	Participant did not attend
Ministry of Environment Forest Service (PA)	Participant did not attend
MN-S Meadow Lake Local #31	Participant did not attend
MN-S Northern Region #2	Participant did not attend
MoE Parks, Sport & Culture Branch	Participant did not attend
Ministry of Environment Wildfire Management	Participant did not attend
NorSask Forest Products Inc. (MLTCRDI)	Participant did not attend
Northern Village of Green Lake	Participant did not attend
Northwest Communities Wood Prod./Beauval	
Rural Municipality of Meadow Lake #588	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Trappers Association (Zone 8)	Participant did not attend
Saskatchewan Water Security Agency	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend
Saulteaux First Nation	Participant did not attend
Waterhen Lake First Nation	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the March 31, 2016 PAG meeting.

1. Public Advisory Group Meeting Agenda, Thursday March 31, 2016.
2. Minutes of the October 1, 2015 Meeting of Mistik's Public Advisory Group.
3. PP presentation – Climate Variability, Mark Johnston, SRC
4. November 2015 – Mistik management 2013 Annual Report Technical Review Comments, Ministry of Environment
5. Mistik Management Ltd. review comments (dated Feb. 26, 2016) of the Forest Management Planning Standard dated February 19, 2016
6. Table 3. Values, Objectives, Indicators and Targets from a Saskatchewan Perspective from the August 2007 Forest Management Planning Manual (pages 46 to 56)



7. Table 1. Summary of Values, Objectives, Indicators and Targets (VOITs) Requirements – Draft Forest Management Planning Standard (Feb 2016) (pages 24 to 31)
8. Exerts from Vol I of Mistik 2017 20-Yr FMP Background Information Document

Proceedings of the March 31, 2016 Mistik Public Advisory Group 'meeting:

- 1. Facilitator Terry Lamon commenced the March 19, 2015 Public Advisory Group (PAG) Meeting at 1:00 p.m. with a welcome, 'round the table introductions' and introduction of the agenda. Jack Purves motioned adoption of the agenda – all in favor.**
- 2. Facilitator Terry Lamon initiated discussion of the meeting minutes from the October 31, 2015 Public Advisory Group (PAG) Meeting. A motion by Jack Purves and seconded by Tony Leeson to accept the minutes as presented was passed.**
- 3. Allyson Brady requested PAG meeting minutes (e.g. email) be circulated to PAG members in advance of PAG meetings.**
- 4. The PAG commended Brenda Nightingale on the quality of the last PAF meeting minutes.**
- 5. Housekeeping, Roger Nesdoly**

Washrooms, exits, mileage, accommodation, meals and other miscellaneous items.

Reviewed Mistik's current 12 staff members (2 recent staff additions: Robert Follett and Karl Schulz).

6. Current Affairs.

- All harvesting operations are now shut down; generally budgeted volumes were achieved.
- The haul is now shut down (year end – termination of permits) as road restrictions are now in place
- Due to warm weather there is some inventory left in the forest (mostly hardwood)
- Fire salvage operations were conducted in the Bob and Jaylene Fires
- Stockpiled ~ 7,000 m³ in Prince Albert (Sakaw) FMA
- Softwood Lumber Agreement is being discussed again – nothing concrete coming from talks.
- Market lumber prices have fluctuated greatly but the value of the Canadian dollar has helped offset some of the lumber market volatility.

NorSask (Larry Boudreau & Mistik)

- had a rough 2015, personnel and productivity issues
- recently production issues were turned around and the mill is now consuming logs at its' highest rate ever
- raw log quality is good (generally best ever)
- 9-foot stud market yields best financial return
- NorSask will want an increased supply of 18-foot logs for the 2016 year

Meadow Lake Mechanical Pulp (Dwayne Mysko)

- last year was the first ever 5 week shut down due to market conditions



- cut back budget to save on expenditures
- 99% of pulp going to China
- market competition – their own mills costs must be offset to compete with other mills
- 1/3 of furnish is softwood chips coming from sawmills (e.g. Big River and NorSask)
- hardwood is being utilized from approximately 2/3 of the Mistik FMA

L & M Wood Products (Zane Delainey)

- started year with production issues and are now currently breaking production records
- dimension lumber – lost oil patch business but gained in other markets
- post and rail focus on 7-inch material down to 2.5 inch
- Jemi Fibre is making play to purchase L & M
- CanWell Distributors (Vancouver) has now bought out Jemi Fibre so L & M purchase process has started over
- cost of handling materials have added to overall challenge of running a mill
- fence posts – about 5-7 million a year coming from Sask., L & M supplies about 2 million

General Observations (Kevin Gillis)

- PAG group represents the broad 'north to south' expanse of the Mistik FMA and offered some observations that have occurred over that expanse in the last year
- whooping crane sightings near St. Walburg
- recreational canoeing in and around the Buffalo Narrows area that has been recognized in Canadian geographic
- energy (e.g. oil) exploration in the Dillon Management Unit
- and we (Mistik) had a 'short' winter with not much cold weather and the increased costs associated with warm weather 'poor' conditions

7. Climate Change Impacts on Mistik's FMA (Mark Johnston, SRC)

- dominant theme is greater climatic variability
- some research indicates the treeline will migrate northward in extreme warming scenarios
- increased occurrence and severity of forest fire regime may lead to a 'younger' forest - - predictive scenario planning needed
- Sheri Andrews (U of Saskatchewan PhD Candidate) will be conducting research/working with Mark Johnston/Mistik on the question of 'Management Changes Required to Mitigate Climate Change' using the as yet untested Environment Canada/Canadian Forest Service manual.

8. Volume I Background Information Document (Roger Nesdoly)

- via handout and power point presentation Mistik reviewed ~ 30 themes that were updated for the 2017 20-Yr FMP from the background information document
- the meeting noted that there has been only minimal harvest disturbance in the north (combination of distance, haul cost and MLMP reduced consumption of hardwood)
- trapping activity and economics are lower – reflection of effort and world prices

Q. Why do some of the fish numbers not match?

A. Largely a relic of how the province compiles the commercial fish harvest numbers.

Q. Moose numbers are higher near Yorkton than in the north, why?



A. Combination of habitat, hunting pressure and lack of predators.

Q. Did Mistik do any salvage harvest this past year?

A. Yes, salvage harvesting operations were done in the Bob and Jaylene Fires.

Q. What is the worst time for forest fires?

A. Historically the worst months have been May/June but in 2015 July was the worst month.

9. Values, Objectives, Indicators and Targets (VOITs) (Roger Nездoly)

- Table 3. Values, Objectives, Indicators and Targets from a Saskatchewan Perspective from the August 2007 Forest Management Planning Manual (pages 46 to 56) was compared to the Table 1. Summary of Values, Objectives, Indicators and Targets (VOITs) Requirements – Draft Forest Management Planning Standard (dated Feb 2016) (pages 24 to 31).
- Differences and changes from the 'old' to the 'proposed new' were examined.

Motion to adjourn 5:05 p.m. – Tony Leeson.

Facilitator Terry Lamon closed the meeting at 5:05 PM.



Topic:

Minutes of the Oct 27-28, 2016 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
Buffalo Narrows Co-management Board	Isadore Desjarlais
Buffalo River Dene First Nation	Terrence Byhette & Fred Bhyette
Canoe Lake Co-management Board	Barry Opekokew
Divide Forest Advisory Council Corporation	Larry Anderson and Barry Frisk
Ducks Unlimited Canada	Mark Kornder
Forestry Contractors	Tim Wall & Vicky Pryor
L&M Wood Products Ltd.	Shawn Delainey
Meadow Lake Mechanical Pulp Inc.	Simon Imray, Paula Currie and Trisha LaCarte
MLTCII	Al Balisky
MN-S Meadow Lake Local #31	Guy Tourond
Metis Local #62	Wes Wilson and Nap Chartier
Ministry of Environment Forest Service (ML)	Kathleen Gazey, Janine Leach
Mistik FMA West District Stakeholder	John (Jack) Purves
NorSask Unionized Employees	Larry Boudreau
Northern Lights Snowmobile Club	Calvin Groot
Rural Municipality of Meadow Lake #588	Dale Sheppard
Saskatchewan Environmental Society	Allyson Brady
Saskatchewan Trappers Association (Zone 8)	Leonard Greenhough
Third Party Softwood Quota Holders	Dean Millard
Tourism Saskatchewan	Tim Ouellette



Interested Party	Participant Name
Town of St. Walburg	Tony and Merrill Leeson
University of Saskatchewan	Sheri Andrews
Waterhen Lake First Nation	Kelly Fiddler
Meeting Facilitator	Terry Lamon
Mistik Management Ltd.	Bernice Alger, Kevin Gillis, Niska Hodgson, Robert Follette, Cliff McLauchlan, Bill Murray, Roger Nesdoly
Regrets	
Beauval Co-Mgt Board & Commercial Fishers	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
City of Meadow Lake	Participant did not attend
Ile-A-La-Crosse Metis Local #21	Participant did not attend
MoE Fish & Wildlife Br	Participant did not attend
Ministry of Environment Forest Service (PA)	Participant did not attend
MN-S Northern Region #2	Participant did not attend
MoE Parks, Sport & Culture Branch	Participant did not attend
Ministry of Environment Wildfire Management	Participant did not attend
NorSask Forest Products Inc.	Participant did not attend
Northern Village of Green Lake	Participant did not attend
Northwest Communities Wood Prod./Beauval	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Water Security Agency	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend
Saulteaux First Nation	Participant did not attend
Village of Loon Lake	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the Oct. 27/28, 2016 PAG meeting.

1. Public Advisory Group Meeting Agenda, Thursday Thurs & Fri Oct 27/28 2016.
2. Minutes of the March 31, 2015 Meeting of Mistik's Public Advisory Group.
3. PP presentation – Assessing Climate Change in Forest management Areas in Canada: The Mistik Scenario (Sheri Andrews, U of Saskatchewan)
4. August 2016 – Mistik Management 2014 Annual
5. Exerts from Vol III of Mistik 2017 20-Yr Forest Management Plan

Proceedings of the Oct.27, 2016 Mistik Public Advisory Group 'meeting:



- 1) **Facilitator Terry Lamon commenced the Oct. 27, 2016 Public Advisory Group (PAG) Meeting at 1:00 p.m. with a welcome, 'round the table introductions' and introduction of the agenda. Jack Purves motioned adoption of the agenda – all in favor.**
- 2) **Facilitator Terry Lamon initiated discussion of the meeting minutes from the March 31, 2016 Public Advisory Group (PAG) Meeting. A motion by Jack Purves and seconded by Tony Leeson to accept the minutes as presented was passed.**
- 3) **Housekeeping, Roger Nesdoly**

Washrooms, exits, mileage, accommodation, meals and other miscellaneous items.

Due to a long stretch of very wet weather the planned forest tour is not feasible (e.g. poor access and contractors not working). As an alternative to the forest tour the PAG will tour the L&M facilities. Eight PAG members committed to the L&M tour.

4) **Current Affairs.**

- All harvesting operations are now basically shut down due to the weather.
 - The hauls are shut down due to the weather
- Bill Murray – Mistik FMA operations update.

Robert Follett – PAFMA operations update

Q – Is there as much snow on the PAFMA as here?

A – Yes, at least as much snow.

Shawn Delainey – L&M operations and mill update.

NorSask (Al Balisky)

- mill update, softwood lumber agreement
- NorSask is 100% First nations owned

Q – is the power plant still on the table?

A – Yes (hoped someone would ask)? It is a big effort, but biomass is an alternative that works (e.g. carbon tax & flexibility). Economics is a big factor. The power purchase agreement could involve multiple mill facilities. Cannot say when it will happen but hopeful.

Meadow Lake Mechanical Pulp (Simon Imray)

- last year at this time mill was shut down due to market conditions.
- Gave mill update via power point presentation (equipment and process improvements such as making tonne of pulp with less electricity)

Q – Explanation re activity in the back of the mill?

A- Development of the landfill for the ash byproduct.

Q – Increase in production is attributed to what?

A – Investment in infrastructure and process improvement.



Q – Downward electrical trend is attributed to what?

A – “Drainage” of pulp takes less energy, refiner plate savings, other producers are improving costs so we must do the same to stay competitive.

Q – Don’t understand issue with ‘seamless’ borders on FMA’s?

A – Uncertainty is in the forefront, will be answered better in the next presentation.

L & M Wood Products (Zane Delainey)

- Zane Delainey was not available

5) Interconnectedness and Uncertainty Associated with the Saskatchewan Commercial Forest Sector (Al Balisky & Roger Nesdoly)

- 2006 start of current uncertainty:

Weyerhaeuser shutdown then buyout

MLMP financial problems

Paper Excellence arriving on scene

MLMP use of softwood

Big River saw mill

Tactical Plan

Sask. Environmental Code and expansion of ‘duties & requirements’

FMP strategy – maximum flexibility required to operate into the future

Repercussions regarding long term viability

Q – Who is asking for the baseline thing?

A – Province of Saskatchewan.

Q – Government did have ideas of more utilization?

A – Yes and changes have occurred to meet demands. The economic climate plays the dominant role in determining responses. Other mills may play a role in future opportunities.

6) Certification Update (Kevin Gillis)

- Annual audit process, last year there were no findings,

Power Point presentation regarding Mistik FMA and species at risk.

7) Assessing Climate Change in Forest Management Areas in Canada: The Mistik Scenario (Sheri Andrews)

Power Point presentation on the scope of the research project and work accomplished to date.

Q – Do you have accurate climate data?

A – Yes, we have Environment Canada data from different stations.

Q – Is there interaction with wildfire?

A – The project is focused on working on adaptations not on the biophysical.

Q – FSC, is climate change risk management in the new standard?



A – There are no specifics in the new standard.

Q – Could you do a presentation to co-management?

A – That would be great – a definite possibility. Could be valuable input for the project.

8) Mistik 2014 Annual Report (Roger Nesdoly)

Review/recap/highlights of 2014 Annual Report

Q – Geography of retention – point is does it need to change?

A – Adjacent structure retention is often not counted in the current scenario and thus we do not get credit for everything.

Q – Is the % of roads skewed because you are currently not operating in the north?

A – No. The road % numbers are not skewed because the analysis is based on the entire FMA.

9) Volume III Forest Management Plan (Roger Nesdoly)

Aspects of Volume III reviewed via power point presentation.

Q – Question about the matrix remnant issue.

A – We are not allowed to count anything as structure retention if it is exterior to the block boundary.

Q – Question asked about hauling on the Matchee-Neeb road when it rains?

A – Mistik (Robert Follette) was in process of answering (we haul not hauled anywhere in the last month because of weather) but before answer completed another question was asked.

Q – What about those that live along this road?

A – There have been no log trucks on the Matchee-Neeb Road for the last 6 weeks due to the weather.

Q – Can the mills make a plan for the safety/saving of the road?

A – Issue – who should they be talking to.

Q – Can we have a meeting (inferred between mills and RM of Meadow Lake)?

A – Yes, anytime, anyplace and with all the players.

Q – How do roads 'status' impact/affect provincial regulations.

A – It is the other way around. Provincial regulations affect/control FMA road status e.g. request must be made to the province to leave a road open if the regulations require Mistik to close and/or reclaim a road.

Q – The 2007 FMP and SGR's regarding tree seed.

A – No more than 5% could be improved and the 95% balance would be 'wild' seed.

Q – Sakaw seed orchard.

A – Mistik is based on 'natural' Canadian Council of Forest Ministers criterion.



Motion to adjourn 5:15 p.m. – Jack Purves.

Facilitator Terry Lamon closed the meeting at 5:15 PM.

Friday Oct. 28, 2017

Eight members of the PAG traveled to Glaslyn and were treated to an L&M facility tour. Thanks to L&M and their staff for a very interesting tour of all of the aspects of their facility



Photos of the PAG going through a safety orientation before commencing the L&M facility tour.



Topic:

Minutes of the April 6, 2017 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
Alpha Wildlife	Gilbert Proulx
City of Meadow Lake	Tom Harrison & Conrad Reed
Divide Forest Advisory Council Corporation	Don Gristwood & Bill Kresowaty
Meadow Lake Mechanical Pulp Inc.	Paul Orser, Trisha LaCarte & Dwayne Mysko
Metis Local #62 Ile A La Crosse	Mervin Bouvier, Larry Gardiner, Fabian Mispounas & Craig Sanderson
Ministry of Environment Forest Service (ML)	Bill Thibeault, Janine Leach
Ministry of Environment Wildfire Management	Chris Dallyn
Mistik FMA West District Stakeholder	John (Jack) Purves
Meadow Lake and area resident	Jeremy Nightingale
NorSask Forest Products Inc.	Regan Beck
Saskatchewan Trappers Association (Zone 8)	Leonard Greenhough
Silvacom	Ryan Spooner
Third Party Softwood Quota Holders	Dean Millard
Town of St. Walburg	Tony and Merrill Leeson
University of Saskatchewan	Sheri Andrews & Brent Key
Meeting Facilitator	Brenda Nightingale
Mistik Management Ltd.	Bernice Alger, Cliff McLaughlan Niska Hodgson, Karl Schulz & Roger Nesdoly
Regrets	



Interested Party	Participant Name
Beauval Co-Mgt Board & Commercial Fishers	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Buffalo Narrows Co-management Board	Participant did not attend
Buffalo River Dene First Nation	Participant did not attend
Canoe Lake Co-management Board	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
Ducks Unlimited Canada	Participant did not attend
Forestry Contractors	Participant did not attend
L&M Wood Products Ltd	Participant did not attend
Ile-A-La-Crosse Metis Local #21	Participant did not attend
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MN-S Northern Region #2	Participant did not attend
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<i>NorSask Unionized Employees</i>	Participant did not attend
Northern Lights Snowmobile Club	Participant did not attend
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Saulteaux First Nation	Participant did not attend
Tourism Saskatchewan	Participant did not attend
Village of Loon Lake	Participant did not attend
Waterhen Lake First Nation	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the April 6, 2017 PAG meeting.

1. Public Advisory Group Meeting Agenda, Thursday April 6, 2017.
2. Minutes of the October 27 (in house) and October 28 (forest tour) Meeting of Mistik's Public Advisory Group.
3. PP presentation – Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest Industry in Saskatchewan (Sheri Andrews, U of Saskatchewan)



4. PP presentation – Late Winter Habitat of The Woodland Caribou (*Rangifer tarandus caribou*) In the Northwestern Region of The Mistik FMA Area, Saskatchewan - 2017 (Gilbert Proulx, Alpha Wildlife)
5. PP presentation – Tactical Plan and Wood Supply Analysis – Mistik 2017 20-Yr FMP (Ryan Spooner, Silvacom)

Proceedings of the April 6, 2017 Mistik Public Advisory Group 'meeting:

1. Facilitator Brenda Nightingale commenced the April 6, 2017 Public Advisory Group (PAG) Meeting at 1:00 p.m. with a welcome, 'round the table introductions' and introduction of the agenda. Leonard Greenhough motioned adoption of the agenda – all in favor.

2. Facilitator Brenda Nightingale initiated discussion of the meeting minutes from the October 27.28, 2016 Public Advisory Group (PAG) Meeting. A motion by Jack Purves and seconded by Leonard Greenhough to accept the minutes as presented was passed.

3. Housekeeping, Roger Nesdoly

Washrooms, exits, mileage, meals and other miscellaneous items.

5. Current Affairs.

- All operations are now shut down for spring break up.
- Mistik's operating plan has been approved.
- Mistik is developing/working on the 2017/18 budget.
- Mistik and the mills got through last fall's extended wet weather period, but circumstances had reached a critical juncture as MLMP fibre inventory was down to approximately 4-5 days.
- MLMP set a production record in the 2016 calendar year.
- NorSask Jan 12, 2017 fire (infeed area) will result in less budgeted softwood deliveries for the 2017/18 operating year.

MLMP (Paul Orser)

- Indonesian paper consumption has gone up, all MLMP production goes to Asia.
- ~35% if MLMP fibre consumption is in the form of softwood chips.
- Discussion of how pulp is made, and the mitigation/reduction of energy required and/or environmental impacts.
- Biomass power plant: joint venture between MLMP/MLTCII/SPC, work is advancing, decision on project expected within 3 months.

NorSask (Regan Beck)

- Update re Jan 12/17 fire, current lumber production and time frame to get mill repaired and back in full production.

Q (Jack): Comments on lumber (e.g. softwood lumber agreement) issue/



A: Ruling on tariff and application of same expected April 24. Tariff level could be anywhere from 20% to 60%.

Q (Jack): Develop domestic market to offset lumber going to the U.S.?

A: Canadian domestic market too small to offset Canadian lumber production. Much of NorSask lumber sales into western Canadian market have developed from our (e.g. NorSask) relationship with our “customers”.

L & M Wood Products (Roger Neddoly)

- Zane/Shawn Delainey were not available (previous commitments).
- L&M log inventory low
- Market for treated wood products is picking up e.g. some significant orders to the Fort MacMurray area
- L&M has a new Sawmill Manager and this has resulted in better production and recovery
- NorSask and L&M did some log trading this past winter
- L&M, from a strategic perspective, is combined with Mistik’s 2017 20-Yr FMP

Q (Mervin): Is Mistik harvesting in the far north.

A: Basically, none over the last 10 years, there has only been very limited activity in the Buffalo Narrows and Ile a La Crosse MUs. Mistik has not need to access far north as parent mills have allocations on the Sakaw FMA and MLMP now utilizes softwood chips to meet ~ 1/3 of its fibre requirements.

Q (Mervin): 20-Yr FMP?

A: Mistik provided a brief recap of the 20-Yr Forest Management Plan process.

Q (Mervin): What about the Carrier wood coming from the North”

A: Any from the ‘North’ going to the Carrier sawmill is from the Northwest Communities TSL – Carrier has no right and/or allocation from the Mistik FMA.

Q (Dean): Oversize size logs going to L&M, why not trade in the bush with third party softwood operators for oversize logs (like I have been telling you since 2004)?

A: Mistik and the mills will always look at synergies and/or actions that make economic and ecological sense. To date the greatest barrier regarding third party softwood exchanges is that these operators have been hesitant to pay Mistik’s log costs.

6. Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest Industry in Saskatchewan (Sheri Andrews)

Power Point presentation on the scope of the research project and work accomplished to date.

- climatic variables
- tree growth ring analysis
- regulatory policies and regimes
- Mistik High conservation Value Areas (HCVAs) – this is a proactive approach versus reactive regarding climate change



Q (Mervin): Is the extinction of animals part of what is managed for?

A: For clarification what is managed for is so that animals will not go extinct. There are many attributing factors considered when managing for the persistence of all animals across the landscape.

Q (Mervin): Are you only looking at temperature and precipitation when doing your climate work?

A: Yes, as these 2 are the most accurate. If you use more than these 2 variables the accuracy decreases.

Q (Mervin): When you say 'assisted migration' do you mean the movement of animals?

A: In the context of this research 'assisted migration' means helping or moving plants.

Q (Mervin): Has assisted migration been done?

A: In some areas of the world, yes, but to our knowledge not in Saskatchewan.

Comment (Mervin): is very concerned with caribou, 'movement of trees' with respect to climate change will cause movement of caribou.

Q (Jack): climate change and erratic weather patterns – how to engage a strategy?

A: Looking at the past may inform predictions for the future. First determination is are we dealing with longer term climate change or are we faced with longer term climatic variability with greater extremes and/or intensity.

Q (Jack): Is there any trend to fires identified yet.

A: No specific trend per se but greater confidence in predicting 'bad' years.

Q (Mervin): What are VOITs?

A: "Values, objectives, Indicators and Targets.

7. Certification Update (Roger Nesdoly)

Mistik was to be recertified by June 2017 to a new FSC Controlled Wood Standard but FSC has pushed back the date of this requirement to December 2017. Mistik believes it would not be able to meet the requirements of the new FSC controlled Wood Standard. This year Mistik is to be recertified to the FSC Boreal Standard. There will be in the near future (e.g. 1-2 years) a new FSC Canadian Standard for Certified Wood (e.g. wood from the Mistik FMA) and after an introductory period Mistik will have to be recertified to this new standard. FSC certification is expensive. Mistik's parent mills gain no tangible economic benefit or value from FSC certification. Further if Mistik believes it cannot achieve the requirements of a 'certification' scheme it will recommend to the shareholders that it not be attempted. Due to cost and onerous requirements Mistik may not maintain FSC certification schemes beyond the foreseeable future.

Q (Dwayne): Can PEFC fulfill or take the place of FSC schemes.

A: PEFC came in after FSC and the shareholders do have PEFC status for wood from the Mistik and Sakaw FMAs. PEFC could be obtained for non FMA wood.



Q (Mervin): What are PEFC and FSC?

A: PEFC – Program for the Equivalency of Forest Certifications and FSC – Forest Stewardship Council.

Q (Mervin): Can we go PEFC instead?

A: Yes

8. Late Winter Habitat of The Woodland Caribou (*Rangifer tarandus caribou*) In the Northwestern Region of The Mistik FMA Area, Saskatchewan - 2017 (Gilbert Proulx)

Recap of study from 2009 to 2012.

Recap of work/study done February 2017. Study found 209 caribou tracks and proponents are confident there were at least 190 individual caribou.

Study has shown wolves do not follow caribou into muskegs.

Study has shown caribou will use fringe and/or unburnt areas within recent fires (fires from 2 to 25 years ago).

Management implications – maintaining connectivity between patches of caribou habitat (e.g. muskegs).

Alberta strategy of killing wolves will not work if the caribou still have no habitat.

Q (Mervin): Were the elders talked to about their knowledge of where caribou are?

A: Yes, Mistik (Kevin) talked to and got feedback from the communities.

Q (Mervin): Do fires and climate change disrupt migration patterns?

A: There is evidence this does happen.

Q (Jack): What is the difference of habitat requirements for fisher and martin?

A: Martin has very little fat cover, needs older aged mixed wood forest for warmth. The fisher can handle more cold and stay more active in cold weather catching food so they can use a broader range of habitat types. Fishers are less sensitive to disturbance.

Q (Mervin): What is the difference between certification and our (Mistik) planning?

A: Certification schemes endorse Mistik planning as being economically responsible that is done in an ecological and socially sensitive manner.

9. Tactical Plan and Wood Supply Analysis – Mistik 2017 20-Yr FMP (Ryan Spooner)

Tactical Plan – where Mistik will be conducting activities in the future, more wood is identified than needed and actual yearly activities are identified in the operating plan.

Wood Supply Analysis – quantifies wood supply (e.g. HVS-Harvest Volume Schedule) available after all management considerations/constraints are applied.

The modeling procedure runs different scenarios to be able to quantify outcomes.

Utilization standards – softwood scenarios will be run with 7.5, 10.0 and 12.5 cm top sizes to determine effect on HVS and to better quantify saw log versus pulp wood supply.

Q (Sherri): Can model run outcomes be used for other projects.



A: Depending what data the other projects require, yes.

Q (Jack): Mountain pine beetle, is it here yet.

A: Not that we are aware. Has come east in Alberta to the Slave lake region. Monitoring sites are set up from Slave Lake to the Alberta/Sask border.

Q (Jack): What are the tree planting plans for this year?

A: Mistik will be planting approximately 1 million white spruces this year.

Q (Jack): What is renewal success (e.g. how much NSR-Not Sufficiently Regenerated)?

A: Mistik has harvested ~130,000 Ha since its inception and there is only about 200 Ha of outstanding NSR.

Motion to adjourn 5:15 p.m. – Jack Purves.

Facilitator Brenda Nightingale closed the meeting at 5:15 PM.



Topic:

Minutes of the November 23, 2017 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
A Le Baie Metis Local #21 (ILX)	Brennan Merasty & Brandon McCallum
Buffalo Narrows	Derek Petit & Rodney McCallum
Canoe Lake Traditional Resources User Board	Barry Opekokew
Green lake	Rose Richardson
L & M Wood Products	Zane Delainey & Travis Hagel
Meadow Lake and area resident	Oliver Poitras (& wife)
Meadow Lake Mechanical Pulp Inc.	Simon Imray, Taneal Brucks, Lorne Neale & Dwayne Mysko
Meadow Lake Metis Local #31	Gwen King
Metis Nation – Sask (Northern Region #3)	Mervin Bouvier
Ministry of Environment Wildfire Management	Chris Dallyn
Mistik FMA West District Stakeholder	John (Jack) Purves
<i>NorSask Unionized Employees</i>	Larry Boudreau
Northern Lights Snowmobile Club	Calvin Groot
RM of Meadow Lake #588	Blair Mysko, Russ Jones & Dale Sheppard
Saskatchewan Trappers Association (Zone 8)	Leonard Greenhough
Waterhen First Nation	David Fleury
Town of St. Walburg	Tony and Merrill Leeson
University of Saskatchewan	Sheri Andrews-Key & Brent Key
Wildfire Management Branch	Chris Wilson & Chris Dallyn
Zone 8 Trappers Association	Leonard Greenhough
Meeting Facilitator	Jack Purves



Interested Party	Participant Name
Mistik Management Ltd.	Bernice Alger, Cliff McLauchlan Niska Hodgson, Karl Schulz, Shawn Delainey, Kevin Gillis & Roger Nesdoly
Regrets	
Beauval Co-Mgt Board & Commercial Fishers	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Buffalo River Dene First Nation	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
City of Meadow Lake	Participant did not attend
Divide Forest Advisory Council Corporation	Participant did not attend
Ducks Unlimited Canada	Participant did not attend
Forestry Contractors	Participant did not attend
MLTCII	Participant did not attend
MoE Fish & Wildlife Br	Participant did not attend
Ministry of Environment Forest Service (ML)	Participant did not attend
Ministry of Environment Forest Service (PA)	Participant did not attend
MoE Parks, Sport & Culture Branch	Participant did not attend
NorSask Forest Products Inc.	Participant did not attend
Northern Village of Green Lake	Participant did not attend
Northwest Communities Wood Prod./Beauval	Participant did not attend
Saskatchewan Environmental Society	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Water Security Agency	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend
Saulteaux First Nation	Participant did not attend
Silvacom	Participant did not attend
Third Party Softwood Quota Holders	Participant did not attend
Tourism Saskatchewan	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the November 23, 2017 PAG meeting.

1. Public Advisory Group Meeting Agenda, Thursday November 23, 2017.
2. Minutes of the April 26, 2017 Meeting of Mistik's Public Advisory Group.
3. PP presentation – Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest Industry in Saskatchewan (Sheri Andrews-Key, U of Saskatchewan)
4. Excel sheet – Scenario 6 – Same as 5, forcing through the tactical plan



- 5 Table 10-4 Current timber volume requirements by mill, page 175, Mistik 2017 20-Yr FMP Volume I – Background Information Document
- 6 Excel sheets with HVS related to Scenarios 1 through 6
- 7 Graphs – District harvest flows

Proceedings of the November 23 and 24, 2017 Mistik Public Advisory Group meeting:

- 1. Facilitator Jack Purves commenced the Nov 23, 2017 Public Advisory Group (PAG) Meeting at 1:00 p.m. with a welcome, 'round the table introductions' and introduction of the agenda. Barry Opekokew motioned adoption (2nd Zane Delaine) of the agenda – all in favor.**
- 2. Facilitator Jack Purves initiated discussion of the meeting minutes from the April 26, 2017 Public Advisory Group (PAG) Meeting. A motion by Tony Leeson and seconded by Blair Mysko to accept the minutes, with corrections (e.g. change Metis local to #21 from 62 and correct date in Section 2), was passed.**

Mervin Bouvier: Metis Nation-Sask. wants 'agreements' to be able to engage technical support for the dissemination of Forest management Plan documentation.

Mistik: Mistik tries to accommodate all request but with the nature of the MN-S request Mistik will need some time to respond. Mistik is willing to meet with Mervin in the near future for further discussion.

3. Housekeeping, Roger Nesdoly

Washrooms, exits, mileage, meals and other miscellaneous items.

4. Current Affairs.

- Roads are now frozen and harvest/haul operations are in full winter mode (e.g. haul going 24 hours)
- The weather turned cold end of Oct and hardwood haul picked up after that.
- MLMP inventory was down to about 2.5 weeks (last year down to ~4 – 5 days) before the haul got going with the cold weather.
- Mistik staff are busy with the preparation of the operating plan which is to be submitted to MoE by the end of Dec 2017.

MLMP (Simon Imray & MLMP staff)

- MLMP updated/reported on internal projects to increase efficiency and decrease power consumption.

Q: About power sourcing and power projects?

A (Roger): MLMP/NorSask has a joint proposal for a 40-megawatt biomass plant. SPC has not been receptive due to the anticipated power purchase price required to ensure the project is viable long term.

Q: 'Landfill' site at MLMP?

A (Simon): Construction of the 'landfill' has been completed.



Q: Environmental reports – are they available to the public?

A (Simon): MLMP did not think they were. All required MLMP environmental reporting may be available from the province.

NorSask (Roger Nездoly)

- The new infeed system has been rebuilt and the mill started operations Oct 2, 2017.
- Currently NorSask is experiencing higher log recovery and production levels and the quality of the inventory in the yard has contributed to these outcomes.
- Mistik, in concert with the harvesting contractors, are focusing on an enhanced and consistent log quality program.
- NAFTA – no noticeable effects regarding export of lumber to the United States.
- Softwood Lumber Agreement expired and cooling off period over. NorSask is currently paying a levy of 20.*5 for lumber going to the United States (lumber demand is strong, and prices are at all-time highs). Hurricane, fire and flood damages are contributing to the increased U.S. demand for Canadian lumber.

Comment (Mervin B.): Climate change and habitat effect on animals is different from science and cultural aspect, protection of culture is key, and it appears science and culture are not working together.

Comment (Barry O.): Canoe lake Traditional Resource Users Board ensure that Mistik lives up to its' obligations regarding reforestation, sticking to the plan, look at environmental impacts and acknowledges the views of others.

Q (Brennan M.): Are there any reports that will be available?

A (Roger): The 2017 FMP will be completed and approved in a couple of months, all co-managements boards will receive a digital copy. Also, on an annual basis the Annual Report is available on Mistik's website.

Q: Roads – are they all turned into 'Game Road Corridors'?

A (Roger & Kevin): No, but the government does have game corridors on Forest Resource Roads. We (Mistik) close roads in the form of road reclamation.

Comment (Gwen K.): Meadow Lake stampede ground need repairs. We are looking for donations.

A (Roger): Best to ask the mills (e.g. L&M and NorSask) that produce the items you require, I am sure they would give a request of this nature careful consideration.

L & M Wood Products (Zane Delainey)

- Mill production projected to be in the 17 to 20 million board foot measure range.
- The post plant has set a new annual production record.
- L & M invested in mill upgrade equipment.
- L & M has had a treatment plant since 1968/69. Treatment is CCA (copper chromium arsenic) and L & M is ahead of the curve with requirements (e.g. closed vessel treatment system).
- L & M is in the final review stage of EMPA regulations which are to come into effect in 2020.



Q: Harvest and fire impact on caribou?

A (Zane); forest is old on L & M landbase. We (L & M) feel good about we are doing at the mill and on the landbase. We hire apprentices. 65-70 of employees at the mill are aboriginal. As to caribou, there are no caribou on the L & M landbase. As to fire impact, depending on the size it could have severe negative effects on the mill.

5. Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest Industry in Saskatchewan (Sheri Andrews-Key)

Power Point presentation on the scope of the research project and work accomplished to date.

- climatic variables
- regulatory policies and regimes
- MoE and Mistik major economic sponsors of this project
- Mistik High Conservation Value Areas (HCVAs) – this is a proactive approach versus reactive regarding climate change.
- The project is a “Case Study Review” assessing Mistik’s ability to adept and/or to mitigate changes in response to climate change scenarios.
- The project takes other people’s work (e.g. Ken Van Rees (U of S) and Mark Johnston (SRC)) to form the ‘foundation’ or basis to this projects work.

Q (Mervin B): Who is involved in the policy making with communities and elders, and what about protection of the values like medicinal plant collection?

A (Sherri): The first question asked is not the focus of this project. As to the second question Mistik does have a proactive approach for the value you mentioned (e.g. HCVAs).

Q (Mervin B): Governments change every 4 years so 1) why does project have to recommend changes to forestry, and 2) why is there a 20-Year Plan?

A (Sherri): Changes to forestry may be recommended to enable industry to better respond to a potentially changing environment, and 2) a 20-Year Plan is a regulatory requirement. The 20-year plan is of a strategic nature indicating the management regime of the company preparing it.

Q (Mervin): What about mercury in forestry?

A (Roger): Detection of these types of substance is more advanced and reliable. There is evidence of mercury associated with industrial activity in the shield region of Ontario (e.g. mercury accumulates in the fatty tissue of fish). We are not aware of any mercury issue associated with the commercial forest zone of Saskatchewan.

6. Certification Update (Kevin Gillis)

PowerPoint presentation – update on Mistik’s systems and recent audits.

Q: how do protected areas change/grow/move?

A (Kevin): Look at soils and topography as risks (land facets) then need to look at supply of same and whether they need protection.

Q: Do you have any protected areas in northwestern Saskatchewan?



A (Kevin): Only previously areas such as Mistik's FSC Candidate Protected Areas which are Mistik voluntary no go zones. Mistik is willing to work together with communities in this subject area.

Comment: It is hard to protect trapping areas.

A (Kevin): Areas are only protected from industry (e.g. harvesting trees) as rights holders cannot be denied from trapping.

Q: does the government have protected areas?

A: Yes, parks, RANs, wildlife sanctuary, etc.

Comment: There is Mistik but there also Carrier who have forestry plans.

Response: There is opportunity to include them in processes.

Q (Mervin B.): When you come across caribou trail can you stop harvesting?

A (Kevin): Report and may defer harvest. May also buffer area.

7. Forest Management Plan, Volume III of Mistik's 2017 20-Tear FMP (Roger Nesdoly)

- Tactical plan maps are posted throughout the meeting room; the tactical plan demonstrates strategic intent as to where wood will be accessed over the FMP term. Actual location of activity is determined through the operating plan process.
- Reviewed the harvest volume schedule (HVS) for six scenarios.
- Hardwood volumes very similar to last FMP, softwood volume will decrease 15-20% by going to a 5-inch top utilization standard versus a 4-inch top.

Comment (Mervin B.): You have a plan for northern Saskatchewan for 10, we also have a plan for you.

Response (Roger): The 10-year plan only applies to the Mistik FMA. We will continue to engage to learn of community concerns and plans.

Q (Mervin B.): If other mills open will there be other agreements?

A (Roger): If the Green Lake mill (e.g. Titan Lumber proposal) opens it comes without a wood supply. For it to acquire fibre there would have to be additional agreements. Also, the area northeast of Dore Lake is not in Mistik's FMA.

Q; Logging for x years, concerned about volumes and number of years in plans.

A (Roger): The tactical plan shows strategic "intent" and there is more wood in tactical plan to allow for flexibility. The operating plan has 1-2 years of detail with years 3-5 less defined as to timing. The FMP purpose is to define sustainable harvest levels.

Q (Mervin B.): What are opportunities for contributions to local communities?

A (Roger): Through the co-management system communities receive funds when harvesting occurs in the fur block. If any community has a specific request, they will have to direct that request to the mills.



Motion to adjourn 4:55 p.m. – Leonard Greenhough.

Facilitator Brenda Jack Purves closed the November 23, 2017 meeting session at 5:00 P.M.

Friday November 24, 2017 Mill Tours

Seven members of the PAG first toured NorSask with focus on the newly constructed infeed portion of the mill and then the tour moved to Meadow Lake Mechanical Pulp where the focus was the 'wood room'. Thanks to NorSask and MLMP staff for facilitating the PAG mill tours.



Topic:

Minutes of the May 15, 2018 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Roger G. Nesdoly RPF, Mistik Management Ltd.

Meeting attendees (name and affiliation) were:

Interested Party	Participant Name
Beauval Co-management Board	Shirley Bell-Morin & Nick Daigneault
Buffalo River Dene First Nation	Travis Noltcho, Wesley Sylvestre & Terrence Billette
Canadian Forest Service (Edmonton)	Jason Edwards
Canoe Lake Traditional Resources User Board	Barry Opekokew & Theodore Bouvier
Ducks Unlimited Canada	Mark Kornder
Green lake	Joe Gardiner
L & M Wood Products	Zane Delainey
Meadow Lake Mechanical Pulp Inc.	Taneal Brucks, Lorne Neale & Dwayne Mysko
Ministry of Environment Forest Service (ML)	Kathleen Gazey, Michael Sleightholm, Natasha Hirschfeld, Meaghan Dieker & Mark Metcalfe
Mistik FMA West District Stakeholder	John (Jack) Purves
NorSask Forest Products Inc.	Regan Beck
Kris McCleary	PAEIA
RM of Meadow Lake #588	Blair Mysko
Saskatchewan Research Council	Mark Johnston
Saskatchewan Trappers Association (Zone 8)	Leonard Greenhough
Silvacom	Ryan Spooner
Third Party Softwood Quota Holders	Dean Millard & Kristopher Millard
Town of St. Walburg	Tony and Merrill Leeson
University of Saskatchewan	Sheri Andrews-Key & Brent Key



Interested Party	Participant Name
Wildfire Management Branch	Chris Wilson & Chris Dallyn
Zone 8 Trappers Association	Leonard Greenhough
Meeting Facilitator	Jack Purves
Mistik Management Ltd.	Tanya Fillion, Niska Hodgson, Karl Schulz, Shawn Delaine, Kevin Gillis, Robert Follett & Roger Nesdoly
Regrets	
A Le Baie Metis Local #21 (ILX)	Participant did not attend
Big Island Lake Cree Nation	Participant did not attend
Buffalo Narrows	Participant did not attend
Canadian Parks and Wilderness Society	Participant did not attend
City of Meadow Lake	Participant did not attend
Divide Forest Advisory Council Corporation	Participant did not attend
Forestry Contractors	Participant did not attend
Meadow Lake Metis Local #31	Participant did not attend
Metis Nation – Sask (Northern Region #3)	Participant did not attend
MLTCII	Participant did not attend
MoE Fish & Wildlife Br	Participant did not attend
Ministry of Environment Forest Service (PA)	Participant did not attend
MoE Parks, Sport & Culture Branch	Participant did not attend
Ministry of Environment Wildfire Management	Participant did not attend
Northern Lights Snowmobile Club	Participant did not attend
Northwest Communities Wood Prod./Beauval	Participant did not attend
Saskatchewan Environmental Society	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Water Security Agency	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend
Saulteaux First Nation	Participant did not attend
Third Party Softwood Quota Holders	Participant did not attend
Tourism Saskatchewan	Participant did not attend
Waterhen First Nation	Participant did not attend

Supporting documents presented/provided to the Public Advisory Group (PAG) members for the May 15, 2018 PAG meeting.

1. Public Advisory Group Meeting Agenda, Tuesday May 15, 2018
2. Minutes of the November 23, 2017 Meeting of Mistik's Public Advisory Group
3. Mistik's 2017-20-Yr Forest Management Plan Highlights
4. Mistik's 2015 Annual Report
5. Conclusions: Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest industry in Saskatchewan (PowerPoint Presentation)



6 FSC and Mistik's Protected Area Gap Analysis (PowerPoint Presentation)

Proceedings of the May 15, 2018 Mistik Public Advisory Group meeting:

1. **Facilitator Jack Purves commenced the May 15, 2018 Public Advisory Group (PAG) Meeting at 1:03 p.m. with a welcome, 'round the table introductions' and introduction of the agenda. Leonard Greenhough motioned adoption of the agenda – all in favor.**
2. **Facilitator Jack Purves initiated discussion of the meeting minutes from the November 23, 2017 Public Advisory Group (PAG) Meeting. A motion by Leonard Greenhough and seconded by Tony Leeson to accept the minutes, all in favor.**

3. **Housekeeping, Roger Nesdoly**

Washrooms, exits, mileage, meals and other miscellaneous items.

4. **Current Affairs (Roger Nesdoly)**

Currently operations shut down, will start some operations end of May/beginning of June. Tree plants are starting. Comments re Meadow Lake Provincial Park 'Tuff' fire.

Good end to operating season, weather cooperated till end of March and budgeted volume deliveries to the mills were achieved. Have a small amount of softwood bush inventory and about 65,000 m3 of hardwood in stockpiles.

NorSask (Regan Beck)

Update on mill production and markets. NorSask continues to invest capital to improve mill efficiency and lumber recovery factor. The rebuilt front end is functioning above expectations.

MLMP (Dwayne Mysko)

Update on mill production and markets. MLPP continues efforts to improve processes while decreasing electrical usage. Comment re currency fluctuations. Yard inventory will last till mid-August.

L & M Wood Products (Zane Delainey)

Continued focus on improving wood quality (e.g. logs) and efficiency of processes to garner more product from the same amount of raw material.

5. **Conclusions: Vulnerability and Adaptation to Climate Change in Sustainable Forest Management and the Forest industry in Saskatchewan (Sheri Andrews-Key, U of S)**

Sherri's PowerPoint presentation recapped her project and provided examples of the climate change project implementation and examples resource maintenance, availability and Mistik adaptability.

6. **Thoughts on Forest Sector Climate Change Challenges (Jason Edwards)**



Jason gave an overview, from a Canadian Forest Service perspective, on the forest sector climate change challenges. The greatest challenge is uncertainty and to what degree that uncertainty will manifest itself as we proceed into the future. The forest sector needs to be able to be innovative and adaptive to face whatever challenges that arise in the near and long term.

Q. Can you point to any specific carbon impacts from forestry and climate change?

A. Increased forest fire activity will affect the forest from carbon source or sink perspective. A warming climate may cause organic soil complexes to release more methane. Warmer climates may increase disease and pests and limit the forest's annual to store carbon through growth.

7. Mistik's 2015 Annual report (Roger Nездoly)

Presentation of overall results and review of some specific targets was completed. Non-achievement of some targets is not always a negative outcome.

Q. What about targets not achieved?

A. In some instances a modification of the VOIT may be required. Non-achievement of a target can be OK if the trend over time results indicate that Mistik is making progress to eventually achieving the target. Also, a target on an annual basis may be out of sync due to forces (e.g. mill shut down) beyond Mistik's ability to control and/or anticipate.

Q. Who gets the 'surveys'?

A. The PAG and in the past co-management and advisory boards.

Q. Who gets the telephone call from the auditors?

A. The auditor makes the decision as to who to contact. The auditors use Mistik's PAG and co-management /advisory board's membership as their primary source of information as to whom they may wish to speak with.

Q. Are there government pressures when targets are not achieved?

A. Depending on the nature of the target the government has expressed concern as to the status of the target. Many variables may contribute to the status of a target and Mistik in discussion with the government annually review target status.

8. FSC and Mistik's Protected Area Gap Analysis (Kevin Gillis)

This is a cooperative project between Al-Pac and Mistik with Ducks Unlimited Canada and Canadian Parks and Wilderness Society serving as the 2 cooperators who are doing the majority of the data acquisition and analysis.

This necessary project stems from FSC Principle 6 (6.5 Protected Areas Strategy).

A meeting will be coming up shortly with Canoe Lake/Jans Bay. This is an opportunity for local communities to be involved.

Q. Are Department of National Defense or Gas & Oil sector partners or involved?

A. No, not at this time. The intent is not to be limiting to any particular industry, but time is of the essence – we have to be efficient.



9. Mistik's 2017 20-Yr Forest Management plan 'Highlights' (Roger Nesdoly)

This is Mistik's third Forest management plan effort.

Mistik (Roger) reviewed the FMP 'highlights' on a one-page handout.

Harvest Volume Schedule (HVS): basically status quo for hardwood and with a change in softwood utilization from a 4 inch to a five-inch top softwood HVS will decrease by ~ 20% (to 4676,000 m3 from 581,000 m3).

Vertical structure requirements will increase from 4% to 9% and up to 3% of the 9% requirement can be 'proximate' retention.

The measurement period for harvest level determination has been reduced to 5 years from the previous 10 years.

VOITs – some significant change to requirements.

Caribou – when the SK2 West Caribou Range Plan is completed this will have to be melded into the Mistik Woodland Caribou Habitat Mitigation Plan.

Motion to adjourn 4:55 p.m. – Nick Daigneault.

Facilitator Jack Purves closed the May 15, 2018 meeting session at 4:55 P.M.



Topic:

Minutes of the November 21st, 2018 Meeting of Mistik's Public Advisory Group (PAG)

Meeting location:

United Church, 502 6th Avenue West, Meadow Lake, SK

Meeting notes/minutes kept and prepared by:

Kevin Gillis RPF, Mistik Management Ltd.

Niska Hodgson, Mistik Management Ltd.

Meeting Attendees (name and affiliation):

Interested Party	Participant Name
Silvacom	Ryan Spooner
Zone 8 Trappers	Leonard Greenhough
Mistik Board of Directors	Brenda Nightingale, Jeremy Nightingale
RM of Meadow Lake 588	Blair Mysko, Russ Jones
Third Party Softwood Quota Holders	Dean Millard
Mistik	Robert Follett, Niska Hodgson, Krystina Penner, Steven Hanky, Sherri Gregoire, Kevin Gillis, Karl Schulz, Tanya Fillion
Village of Green Lake	Joe Gardiner
Ministry of Environment	Natasha Hirschfeld, Mark Doyle, Kathleen Gazey, Mike Sleightholm
Meadow Lake Mechanical Pulp Inc.	Taneal Brucks, Lorne Neal
Meadow Lake Mechanical Pulp Inc. Employees	Dwayne Mysko
DeneSuline Co-Management Board	Louie Chanalquay & William Sylvestre
Canoe Lake Traditional Resources User Board	Barry Opekokew
Divide Forest Advisory Council Corporation	Cordell Cross, Larry Anderson
Wildfire Management Branch	Chris Wilson, Chris Dallyn
Town of St. Walburg	Tony & Merrill Leeson
Forestry Contractors	Tim Wahl & Vicki Pryor
U of S	Amanda Lindgren
West District Stakeholders	Jack Purves
Big Island Lake Cree Nation	Jason Wild
Buffalo Narrows Co-Management Board	Bill Pederson



Interested Party	Participant Name
NorSask Forest Products Inc.	Regan Beck
U of S/SRC/UBC	Sheri Andrews-Key
Saulteaux First Nation	Brook Night
NorSask Employees Union	Larry Boudreau
A Le Baie Metis Local #21 (ILX)	Participant did not attend
City of Meadow Lake	Participant did not attend
Meadow Lake Metis Local #31	Participant did not attend
MLTCII	Participant did not attend
Ministry of Environment Forest Service (PA)	Participant did not attend
Northern Lights Snowmobile Club	Participant did not attend
Northwest Communities Wood Prod./Beauval	Participant did not attend
Saskatchewan Environmental Society	Participant did not attend
Saskatchewan Forestry Association	Participant did not attend
Saskatchewan Outfitters Association	Participant did not attend
Saskatchewan Water Security Agency	Participant did not attend
Saskatchewan Wildlife Federation	Participant did not attend
Tourism Saskatchewan	Participant did not attend
Waterhen First Nation	Participant did not attend
CPAWS	Participant did not attend
Ducks Unlimited Canada	Participant did not attend
L&M Wood Products Ltd.	Participant did not attend
Ministry of Government Relations	Participant did not attend
Moosomin First Nation	Participant did not attend
RM of Loon Lake #561	Participant did not attend
University of Saskatchewan	Participant did not attend
Village of Loon Lake	Participant did not attend

Supporting documents presented/provided to the (PAG) members:

1. Public Advisory Group Meeting Agenda, November 21st, 2018
2. Minutes of the May 15th, 2018 Meeting of Mistik's Public Advisory Group
3. Mistik's 2016 Annual Report (Presentation)
4. Mistik's 2017-20-Yr Forest Management Plan Highlights (Presentation)
5. Top size: 10 cm vs. 12.5 cm (Presentation)
6. Vulnerability and Adaptation to Climate Change in Sustainable Forest Management (Presentation)
7. Mistik & Meadow Lake Forestry Story (Presentation)
8. FSC and Mistik's Protected Area Gap Analysis (Presentation)
9. High Conservation Values (Presentation)

Proceedings of the November 21, 2018 Mistik Public Advisory Group meeting:



Facilitator Brenda Nightingale commenced the May 15, 2018 Public Advisory Group (PAG) Meeting at 10:15 a.m. with a welcome, round table introductions and adoption of the agenda. Ryan Spooner motioned adoption of the agenda, Barry Opikokew seconded – all in favor.

Facilitator Brenda Nightingale initiated discussion of the meeting minutes from the November 23, 2017 Public Advisory Group (PAG) Meeting. A motion by Barry Opikokew and seconded by Ryan Spooner to accept the minutes, all in favor.

Housekeeping, Brenda Nightingale

Washrooms, exits, mileage, meals and other miscellaneous items were covered.

Mistik & L&M Current Affairs (Robert Follett)

Mistik staff update – introduced new Operations Manager, Steven Hankey. Recent acquisition of L&M Wood Products by MLTC was discussed. L&M will be included in the 2019 20 Year FMP. Currently operations are going well. Roughly 50% of the required wood volume for this year has been delivered. We are also planning a stockpile of hardwood for the pulp mill of 60,000 m³.

There is a northern contractor opportunity in the Buffalo Narrows management unit for a processor for the “Northern Group”.

NorSask (Regan Beck)

NorSask is currently at 73% indigenous employees this is a MLTC II mandate and the mill is very proud of this number. Update on mill production and markets. NorSask continues to invest capital to improve mill efficiency and lumber recovery factor. NorSask has had record output this fall.

Q. Are you continuing with the graveyard shifts (Tim Wahl)?

A. The graveyard shift is predominantly for the planer. The benefits of the graveyard shift are finishing off the wood cut that day and getting the lines ready for the next day's shift. This does lead to a bottleneck at the kiln, but we are always looking for additional efficiency opportunities.

Q. Are you actively pursuing the Power Plant option (Tim Wahl)?

A. Yes. Talks with the Government are ongoing with regard to this opportunity.

L & M Wood Products (Regan Beck)

L&M is now under the MLTC II umbrella. We are currently working on the transition process. Continued focus on improving wood quality (e.g. logs) and efficiency of processes to garner more product from the same amount of raw material.

MLMP (Dwayne Mysko)

Update on mill production and markets. MLMP recently had a fire in a debarker (still determining the cause). Cost of running satellite chippers is very expensive but expect to have repairs completed on the debarker by mid-December (parts are manufactured when ordered). No Questions.

Mistik's 2016 Annual Report (Niska Hodgson)



Presentation outlined overall “success” related to 2016 forest management indicator measurement, overview of 2016 operations and “on-target” indicators. More in-depth detail presented on “off-target” indicators (33/236).

Note: 2016 Annual Report and associated maps can be found on the Mistik website at www.Mistik.ca

Comment: (Barry Opikokew) there are other users (i.e. Carrier in the Beauval area). There is the impression that Mistik has the trust of communities and Consultation takes time. There was general discussion about Caribou movements and harvesting after fire as well.

Q. What is the objective of the single trees?

A. To maintain perching sites for birds and biodiversity. Target is 2 trees/ha. Up to 4 trees in a clump are counted as single trees. This helps improve resistance to wind damage and blowdown.

Q. Will the Forest Values Survey continue (Taneal Brucks)?

A. It was discontinued because the PAG felt it was redundant but if the group wishes, we can reinstate the survey. Can decide or discuss it later. Mistik can look at adding it to the website as a voluntary survey also.

Q. Where do the Indicators come from (Taneal Brucks)?

A. They are requirements under the Saskatchewan Forest Management Planning Standard

Q. Are there other opportunities for other mills etc. in the north if Mistik is not harvesting there (asked to the Ministry of Environment)?

A. (Mark Doyle/Kathleen Gazey) There is a general “use it or lose it” stipulation for wood supplies of forest management agreement holders in SK. There are also economic opportunities that the government is always considering. There may be some dialogue with the PA pulp mill for fibre opportunities in the future.

Open Forum for General Questions

Feedback – It was noted that others may not have an opportunity to learn about these issues in a meeting sense (other users/Carrier in Beauval).

Q. If Mistik is not harvesting in the North, are you overharvesting elsewhere?

A. No. We stay within the sustainable harvest levels. We also offset with other harvesting on Leased and Private lands.

MLMP (Dwayne Mysko) also noted that the Pulp Mill uses softwood at the mill now.

Q. (Joe Gardiner) Green Lake would like to have Mistik come and share maps and plans with the community. The blocks are getting smaller and there is less cutting. We depend on firewood. Why is that?

A. The harvesting there is done by the ML OSB and is part of the PA FMA harvest plans.

Q. There is blow down in the Dillon area. Is it still harvestable?



A. Mistik will be mapping that area to determine the extent of the blow down, but harvesting is not as likely as it is already two years old. MoE - there are processes in place to apply for reduced or waived dues. If one wishes to cut and sell wood, they must have a permit. There may be opportunity to negotiate the "issues" around this type of harvesting. For personal use, no permit is required for dead or down wood.

Comment (Vicky Pryor) – The Vermette road and UCR are now well maintained. The Dillon band is doing this maintenance (UCR) at their expense. Mistik has contributed to maintaining infrastructure to the healing lodge. It would be a shame if these roads fell apart. Mistik is committed to maintaining other infrastructure for the benefit of communities and future harvesting opportunities.

Mistik/L&M 2019 20-Yr Forest Management Plan

Update given on VOIT document changes, Volume III updates & strategies for management of Woodland Caribou, species at risk, climate change and utilization (top size) changes updates (Niska Hodgson)

Q. What is considered old as opposed to very old for trees?

A. Old is 90 to 100 years and very old is 110-120 years on the FMP area.

Mistik requested a show of interest in noting the number frozen days on the three lakes chosen for monitoring on the FMP area (Peter Pond, Keeley and Turtle Lake). High interest noted for follow up at individual co-management meetings.

Top Size Comparison (Ryan Spooner) - Part of FMP Volume III

Ryan presented the implications of changing the utilization to 10 cm top size in softwood for Mistik and L&M (was previously 12.5 cm top in earlier submissions of FMP documents). This is a change from the original selected management strategy and will involve doing additional analysis for the final FMP submission. The advantage is that there will be better utilization (recovery) of volume from a given area by utilizing a tree down to a 4" top, rather than 5".

Climate Change (Sheri Andrews-Key, U of S)

Presentation 1 recapped the project and provided examples of mainstreaming the climate change adaptation implementation.

Q. How is climate change measured in a logged area versus not logged?

A. We do not really measure it on areas that are logged versus not logged. Research involved looking at growth increment of trees (growth rings) and comparing them to the climatic conditions of the same timeframe to determine how much affect climate change may have had on tree growth.

Canoe Lake Co-Management Board invited Sherri to attend a meeting Canoe Lake is having that involves Highways. A network of key people for information flow and a collaborative approach would be the most beneficial

NorSask: Regan Beck noted that operationally NS has been affected by climate conditions in that the requirement of timber volume the mill has in the yard has increased. Crisis levels of



timber in the yard have led to increasing the inventory they keep in the yard overall as a way to mitigate variable weather conditions that may affect harvesting and hauling.

Sherri noted that she is going to be working on her post-doctoral fellowship paper looking at creating a business case for adaption to climate change with a forestry economist from UBC.

In Presentation 2 - Sherri reviewed the first part of a project which she has been asked to participate in. The focus of the study will be looking back on 30 years of Aboriginal forest management and manufacturing in the Meadow Lake area. It will highlight the key benefits for both industry and stakeholders. Sherri stated that she will be back to conduct interviews as part of the project.

Q. (Barry Opikokew) when will you be doing this?

A. Aim is for January.

Mistik's FSC Protected Gap Analysis (Kevin Gillis)

A Power Point Presentation on the Phase 1 Project Report on the NE AB NW SK Protected Areas Gap Analysis and implications for the Provincial target of having 12% of the province under protection. Call for more interested parties to come to the table in aiding in selecting areas for protection, special management areas and other effective area-based conservation methods. (Northern Village of Green Lake and Divide Forestry Advisory Committee).

Mistik's FSC Controlled Wood Specified Risk Control Measure

Kevin presented Mistik's Intact Forest Landscapes control measure for FSC Controlled Wood in the Risk Assessment Region, and specifically in the Dore/Smoothstone area. An explanation was given for maintaining the area due to the low level of human disturbance. Woodland caribou are also known to inhabit a significant portion to the area. The size of the area was described to the group as being greater than 200 000 hectares. Since the National Risk Assessment has not been completed by FSC Canada and the FSC National Standard is also in transition an Advice Note was sent out of FSC calling for a limit of disturbance of 20% of any IFL and not having the size fall below 50,000 hectares. Mistik showed that both the Dore/Smoothstone and Montreal Lake IFLs were not impacted by more than 20% of the area (map and calculations shown).

Brenda Nightingale called for a motion for the Public Advisory Group to support the principle of maintaining the Intact Forest Landscapes concept and that Mistik's Control Measure is acceptable until the FSC Controlled Wood National Risk Assessment is finalized:

Questions prior to vote:

Q. Where did the IFL idea come from and does everyone have to follow it?

A. FSC International came forward with Motion 65 to maintain IFL on certified land bases. The motion was also applied to Controlled Wood as well. Only companies with FSC certificates are required to recognize IFLs.

Q. Can we get a copy of the presentation as some of the legends / data are hard to read?

A. Yes. Kevin will email or provide a hard copy.



Q. Can Kevin do presentations at the Green Lake Co-management Meetings? We have a strong interest in getting information on things like carbon, peat moss companies are trying to come into our area, and we want to make good decisions on allowing them access.

A. Yes, I would like to come to Green Lake and present to the Village council, Kevin will make arrangements with Joe.

Brenda asked for support votes, all in favor of the Control Measure?

Dore IFL vote conducted. 22 yes, 0 no

Montreal Lake IFL vote conducted. 20 yes, 0 no

Q. Is it important to report whooping cranes sightings?

A. Yes.

Billy Pedersen noted that whooping cranes have been sighted near Buffalo Narrows.

Saskatchewan Forestry Historical Society (Harry Ward)

Harry informed the group of the formation of the new historical society created with the goal of capturing the diverse history and evolution of forestry in Saskatchewan. Invited interested parties to contact Harry Ward directly or contact Mistik and speak with Niska, Kevin or Tanya.

Facilitator Brenda Nightingale closed the November 21, 2018 meeting session at 4:10 P.M.