



MISTIK MANAGEMENT LTD.

# 2019 20-YEAR FOREST MANAGEMENT PLAN

*Volume II Documents*



# 2019 FOREST MANAGEMENT PLAN – VOLUME II

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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Box 9060

Meadow Lake, Saskatchewan

Canada, S9X 1V7

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



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

*I hereby certify that I have prepared this Volume II to the best of my professional skill and judgement in accordance with the requirements of the Forest Planning Manual.*

**Submitted by:**



**21 December 2018**

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Plan Author  
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**Date**

**Approved by:**



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**Amy Slack**  
Manager of Forest Planning, Policy & Protection  
Forest Service Branch  
Saskatchewan Ministry of Environment



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**Date**



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**MISTIK MANAGEMENT LTD.**

# **2019 20-YEAR FOREST MANAGEMENT PLAN**

## ***Volume II Document I- Planning Inventory and Forest Characterization***



# **2019 FOREST MANAGEMENT PLAN – VOLUME II**

## **Planning Inventory and Forest Characterization**

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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## Changes Since Previous Submission

This document was previously submitted to Saskatchewan Ministry of Environment on September 12, 2017. The only changes from the version submitted on that date to this current and final version are listed below.

Section	Page	Change
N/A	N/A	Headers (changed to "2019 Planning Inventory and Forest Characterization")
N/A	ii	Changed date: April 1, 2019 to March 31, 2039
N/A	iii	Removed sign-off sheet and added this description of changes
N/A	N/A	Footers (changed dates)



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## 1.0 FOREST CHARACTERIZATION

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This document contains a detailed description of the methods used to characterize the complete landbase for the Mistik Management Ltd. FMA area. Map 1-1 illustrates the FMA area boundaries.

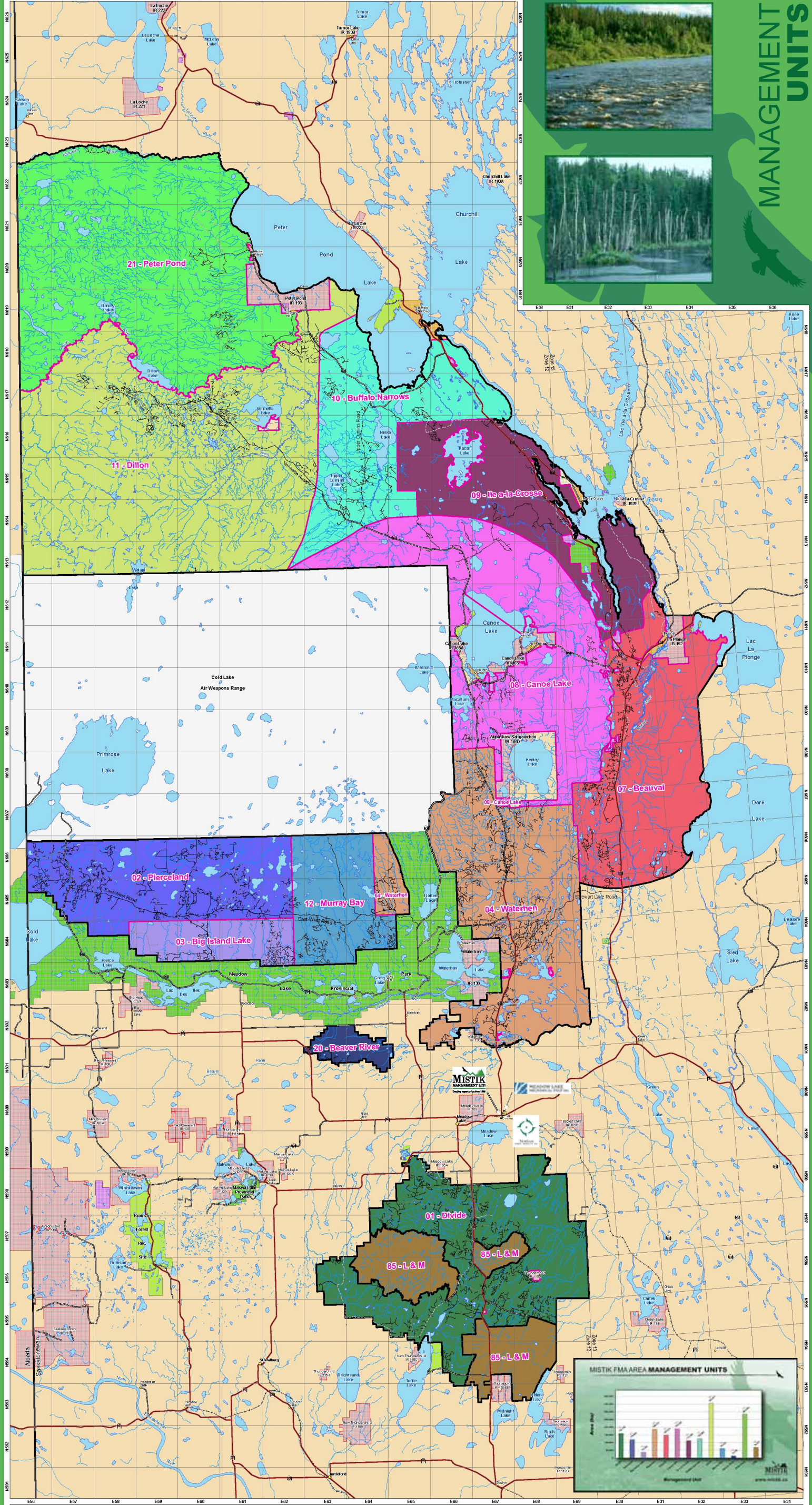
The intent of this report is to describe the forest characterization process and is comprised of the following six sections:

- ◆ Inventory;
- ◆ Inventory Stratification;
- ◆ Forest Management Planning Manual Requirements;
- ◆ Forest Composite Database Structure and Description;
- ◆ Spatial Data.
- ◆ Current Landbase Characterization

Mistik's volume I document produced a basis for the preparation of the forest characterization document providing background information on a variety of information related to sustainable forest management of Mistik's and L&Ms Forest Management Agreement(s) (FMA(s)). This document demonstrated ongoing commitment to sustainable forest management of Saskatchewan's boreal forests. It also underscores Mistik's corporate vision of being innovative, responsible and adaptive forest management company that continually strives to improve its relationships, services, and trust within the land, local people, and local mills. This information also provided the basis for future forestry activities and inventory stratification.



# MANAGEMENT UNITS

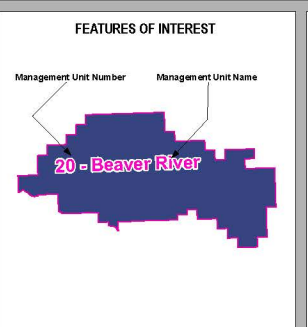
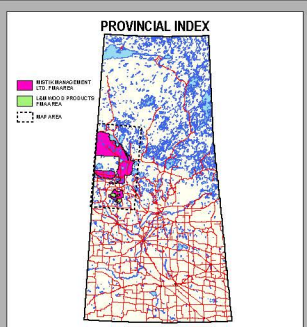


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**MISTIK FMA AREA MANAGEMENT UNITS**

**silvacon™**

Map Version: 1.00  
Original Map: June 1, 2010  
Map Date: November 2, 2010  
Revision: 04/10/10  
Map File: map/forest\_mgmt/units\_mu.mxd



**PLANIMETRIC LEGEND**

Public Paved Road	Provincial Forestry Class Roads
Public Gravel Road	Class 1
Public Road	Class 2
Oil and Gas Road	Class 3
Railroad	FMA Boundary
Creek	MU Boundary
Lake	Village
Provincial Border	Settlement
UTM Tie Boundary	Timber Exclusion
Air Weapons Range	Town
Indian Reserve	Hamlet / Village
Park	Mill Site
Recreation Area	Woodwards Office





## 2.0 INVENTORY

---

### 2.1 FOREST INVENTORY

The forest inventory involved a complete stratification of all forested and non-forested areas within the Mistik FMA area using Saskatchewan Forest Vegetation Inventory (SFVI) standards. This “census” of the entire landbase will accommodate complete FMA area-wide summaries by tile, species, age class or any other inventory attribute and will facilitate short and long term planning.

Medium scale (1:10,000 and 1:15,000) ‘leaf-on’, black and white panchromatic air photo coverage was obtained for Mistik’s entire FMA area beginning in 1994 and ending in 2005. The stratification of forested and non-forested lands was completed in accordance with SFVI specifications created by Silvacom Ltd. (approved, September 06, 2000).

Digital orthophotos (1:60,000) were produced by Land Data Technologies Inc., acquired (in combination with 50 metre digital elevation model data) between 1998 and 2001. Data stratified on the aerial photography was transferred to these orthophotos, digitized and entered into a database. Throughout the various processes strict quality control measures were implemented.

It should be noted the effective date of this planning inventory is 2015.

### 2.2 INVENTORY UPDATES

Inventory updates have been acquired to reflect recent activity on the Mistik FMA area including:

- ◆ Mistletoe update coverage, produced by Natural Resources Canada;
- ◆ Forest health update coverage, produced by Mistik Management Ltd;
- ◆ Landuse update coverage, produced by Silvacom Ltd;
- ◆ Fire update coverage, produced by Saskatchewan Environment (SE);
- ◆ Forest operations (FMS) dataset, produced by Mistik Management Ltd;
- ◆ Digital Elevation Model was produced by Natural Resources Canada (2000)<sup>1</sup>.
- ◆ Aerial Survey update coverage, produced by Silvacom Ltd. Survey of the Deer, Moose, and Hawk Fires:
  - In 1993 and 1995, the Deer, Moose, and Hawk fires burned large areas in the Mistik FMA.
  - As a result of the scale and timing of photography in relation to the fire events, many polygons were labeled as “Non-forested Shrub” or “Non-forested Grass”.

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<sup>1</sup> <http://geogratis.gc.ca/api/en/nrcan-mcan/ess-sst/3A537B2D-7058-FCED-8D0B-76452EC9D01F.html>





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- A program was developed with an objective to collect sufficient data on the regeneration status of recently burned areas, so that these polygons can be placed on a growth trajectory in the wood supply analysis.
- A program proposal was submitted to Saskatchewan Environment – Forest Service August 31, 2005.
  - The program was approved by the Saskatchewan Environment – Forest Service inventory group on September 19, 2005.
- The outcome was the inventory call pre-fire was used with reset age



### 3.0 INVENTORY STRATIFICATION

Table 3-1 summarizes the input coverages used in creating the initial forest composite spatial GIS coverage.

**TABLE 3-1: INPUT SPATIAL COVERAGES**

GIS Coverage	Description	Landbase Database Fields <sup>2</sup>
Forest Inventory	Described in Section 2.0.	SFVI attributes
Administrative Boundaries	Administrative feature coverage which defines the FMA area, management units and operating areas.	TIMBER_SUPPLY_AREAS, MU, MU_NAME, OP_AREA, SDE_FIELD_NUM, SDE_WORKING_AREA_IDN_ID, WORKING_AREA
Season of Access	Coverage produced by Mistik identifies the following: <ul style="list-style-type: none"> <li>◆ Winter season access;</li> <li>◆ All season access.</li> </ul>	SEASON
Sub Sub Basin Watershed Coverage	Coverage produced by CanNorth identifying the sub sub basin watersheds within the FMA area.	WATERSHED_NUMBER, WATERSHED_NUMBER2
Wildlife Management Zone Coverage	Coverage produced by SE identifying all wildlife management zones within the FMA area.	WILDLIFE_ZONE_NUMBER
White Tailed Deer Licence Zone Coverage	Coverage produced by SE identifying all white tailed deer licence zones within the FMA area.	DEERLICNO
Black Bear Licence Zone Coverage	Coverage produced by SE identifying all black bear licence zones within the FMA area.	BEARLICNO
Dwarf Mistletoe Updates	Coverage received from Natural Resources Canada identifies dwarf mistletoe damage.	DMT_ID, DMT_HOST, DMT_SEVER, DMT_METHOD, DMT_DATE, SK_ssi
Budworm Updates	Coverage received from Natural Resources Canada identifies budworm damage.	BUDOWRM_YEAR, BUDWORM_DEFO
Forest Health Updates-Abiotic	Coverage received from Natural Resources Canada identifies abiotic damage	ABIOTIC_YEAR, ABIOTIC_TYPE
Forest Health Updates- Biotic	Coverage received from Natural Resources Canada identifies other biotic damage	BIOTIC_YEAR, BIOTIC_TYPE
Soils Profile Coverage	Coverage produced by Agriculture Canada (CANSIS 2.1) identifying the following: <ul style="list-style-type: none"> <li>◆ Soils Development;</li> <li>◆ Parent Material;</li> <li>◆ Local Surface Form;</li> <li>◆ Ecoregions.</li> </ul>	SOIL_NAME, DEVEL, PMDEP, LOCSF
Fire Update	Coverage produced by SE that identifies fire occurrences by area bordering or within the FMA area between 1948 and 2015 inclusive.	FIRE_NO, PROJECT, YEAR, FIRENAME

<sup>2</sup> A complete database structure description is provided in Table 5-1.



Furblock Coverage	Coverage produced by SE identifying all fur blocks within the FMA area.	FCA
Forest Operations Update	Coverage reflecting forest operations activities as follows: <ul style="list-style-type: none"> <li>◆ Harvesting activities;</li> <li>◆ Road building activities;</li> <li>◆ Tending activities;</li> <li>◆ Regeneration (planted and natural) activities;</li> <li>◆ Establishment survey activities.</li> </ul>	BLOCK_ID, BLOCK_SHAPE_ID, AOP_YEAR, BLOCSTAT_IDN_ID, BLOCSTAT, NET_HARVESTED_HA, BLOCSPECGROU_CODE, SKID_CLEANRANCE DATE, ESTS_STAT, ESTA_SURVEY_DATE, LFN_SP, LFN_HA, LFN_DATE, PLANT_SP, PLANT_HA, PLANT_YEAR, TEND_TYPE, TEND_HA, TEND_DATE, OPENTYPE_CODE
Landuse Update	Coverage identifies the following: <ul style="list-style-type: none"> <li>◆ Seismic Programs;</li> <li>◆ Access Roads;</li> <li>◆ Well Sites;</li> <li>◆ Risers, Compressors, Valve Sites or Meter Stations;</li> <li>◆ Pipelines.</li> </ul>	built_ge_1995, ANTH_DISTURBE, ANTH_CONFIDENCE,
Visually Sensitive Areas	Coverage identifies visually sensitive areas within the FMA area.	VISUAL_WATER, VISUAL_ROADS
Digital Elevation Model (Version 2003)	Coverage identifies areas with slopes greater than or equal to 30%.	INOPERABLE
Riparian Zones	Coverage identifies the following: <ul style="list-style-type: none"> <li>◆ Lake buffers: 90m buffer applied to all lakes greater than 4 ha in area;</li> <li>◆ River buffers: 90m buffer applied to both sides of all major rivers and rivers identified by Mistik;</li> <li>◆ Permanent stream buffers: 30m buffer applied to both sides of all permanent streams;</li> <li>◆ Intermittent and Indefinite stream buffers: 15m buffer applied to both sides of all intermittent and indefinite streams;</li> <li>◆ Islands of land that are surrounded by water.</li> </ul>	BUF_15, BUF_30, BUF_90, BUF_ISLAND WAT_ISLAND
Lac La Plonge Identifier	Fields identify the following: <ul style="list-style-type: none"> <li>◆ Lac La Plonge;</li> <li>◆ Islands within Lac La Plonge.</li> </ul>	LAC_PLONGE
SFVI Photo Year	Coverage identifies the year of SFVI photography acquisition on the FMA area.	PHOTO_YEAR



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Aerial Survey Update Coverage	Updates for select areas burned within the Moose and Hawk fires: <ul style="list-style-type: none"><li>◆ Species;</li><li>◆ Crown coverage;</li><li>◆ Height class;</li><li>◆ Density;</li><li>◆ Canopy pattern;</li></ul> Stand area.	CRZ_FLAG, CRZ_SPGP, CRZ_LEAD, CRZ_SP2, CRZ_SP3, CRZ_CROWN, CRZ_SIZE
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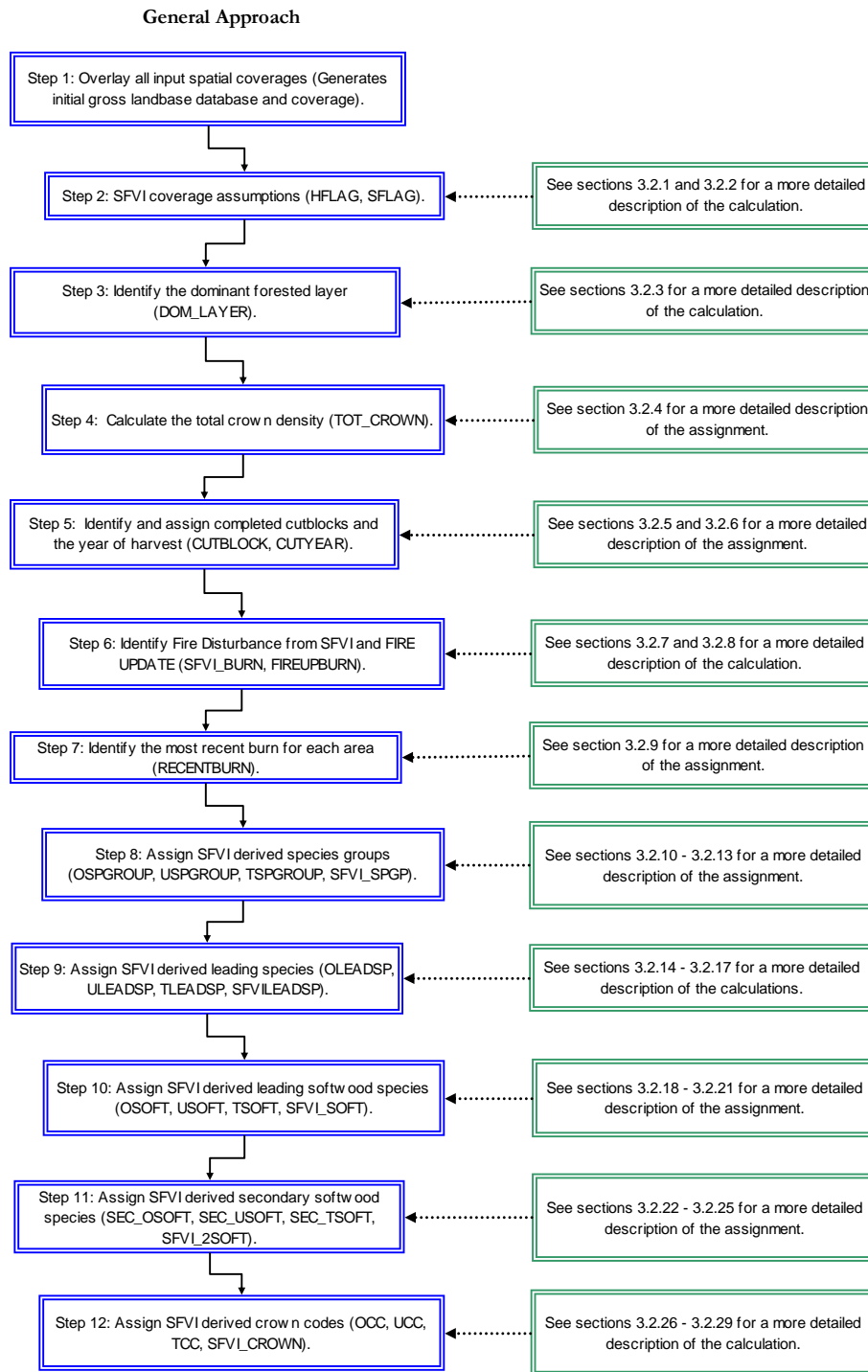


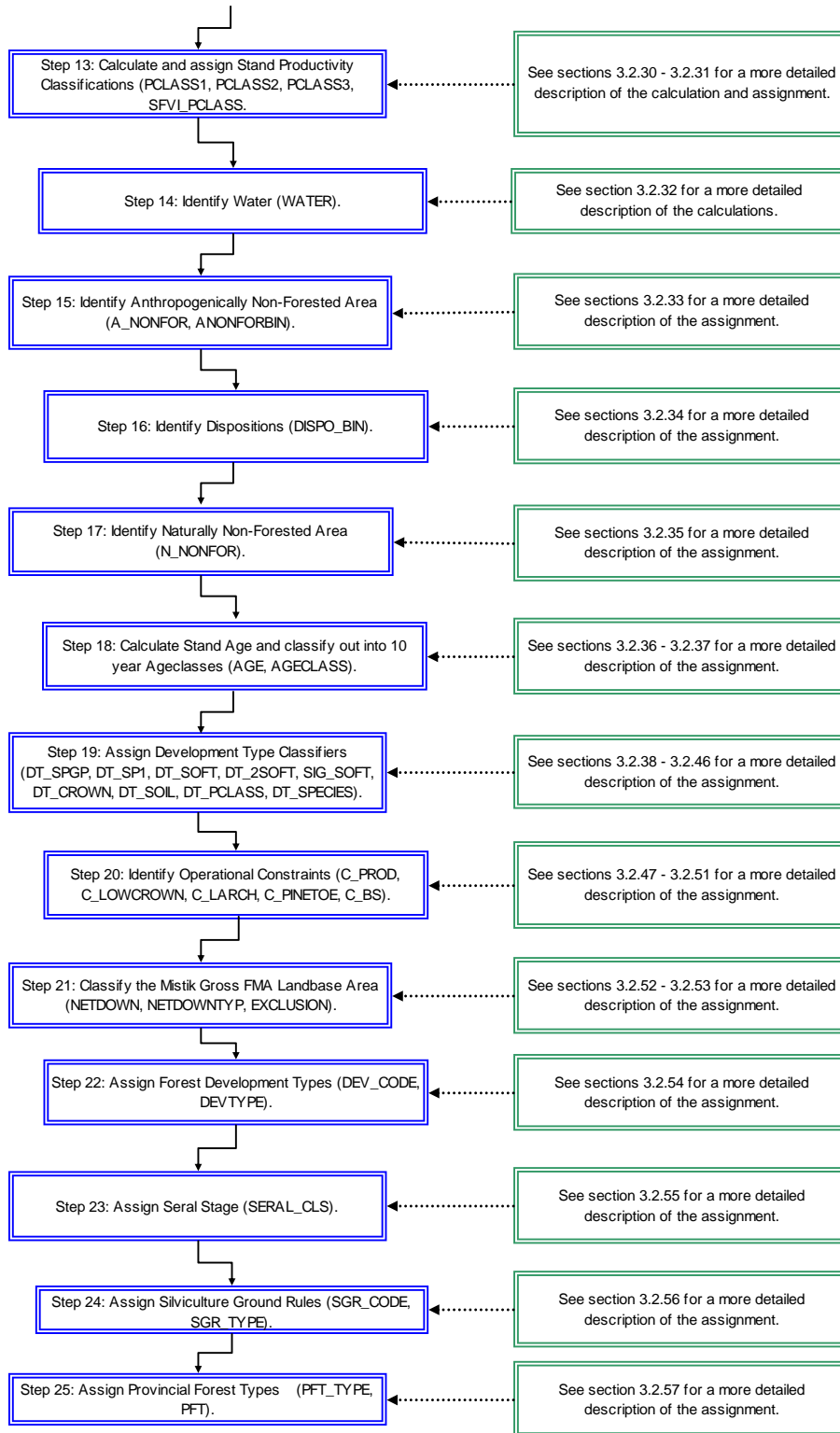
### **3.1 GROSS FMA LANDBASE AREA**

Figure 3-1 outlines the approach taken to create the forest composite from the gross FMA landbase area.



**FIGURE 3-1: GROSS FMA LANDBASE AREA DATABASE CREATION PROCESS**







## 3.2 CALCULATED FIELDS

### 3.2.1 HORIZONTAL LAYERS (HFLAG)

Stands with a horizontal structure are composed of numerous homogeneous stands within other distinctly different homogeneous stands, both or each individual stand are too small to delineate at the 1:20000 mapping scale. Horizontal stands (COMPLX\_1, COMPLX\_2, COMPLX\_S, COMPLX\_H, COMPLX\_A, or COMPLX\_N='H') are assigned a classification that represents the majority of the polygon, through a hierarchical structure as follows:

- ◆ The overstorey forested layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=1) for the following:
  - ◆ The overstorey forested layer horizontal proportion represents 50% or greater of the horizontal polygon (COMPLX\_1='H' and COMPRG\_1≥5).
- ◆ The secondary forested layer call is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=2) for the following:
  - ◆ A majority portion layer has not already been assigned (HFLAG=0) and the secondary forested layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_2='H' and COMPRG\_2≥5).
- ◆ The tertiary forested layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=3) for the following:
  - ◆ A majority portion layer has not already been assigned (HFLAG=0) and the shrub layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_3='H' and COMPRG\_3≥5).
- ◆ The shrub layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=4) for the following:
  - ◆ A majority portion layer has not already been assigned (HFLAG=0) and the shrub layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_S='H' and COMPRG\_S≥5).
- ◆ The herb layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=5) for the following:
  - ◆ A majority portion layer has not already been assigned (HFLAG=0) and the herb layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_H='H' and COMPRG\_H≥5).
- ◆ The aquatic layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=6) for the following:
  - ◆ A majority portion layer has not already been assigned (HFLAG=0) and the aquatic layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_A='H' and COMPRG\_A≥5).
- ◆ The non-forested layer is assumed for the entire stand and all other portions are ignored for all landbase calculations (HFLAG=7) for the following:



- ◆ A majority portion layer has not already been assigned (HFLAG=0) and the non-forested layer horizontal proportion represents a greater portion of the horizontal polygon (COMPLX\_N='H' and COMPRG\_N≥5).
- ◆ The polygon is identified as at least partially anthropogenic in origin (COMPLX\_N='H' and NONFOR='RD', 'PL', or 'TL').

### 3.2.2 VETERAN STANDS (SFLAG)

Forested stands are assigned a classification to describe the forested layer that most represents the stand based on crown closure. This classification is carried out in two steps and is used to assign the dominant forested layer to a forested stand.

The first step applies to cases that are forested with at least one forested layer whose crown is equal to or greater than 20%. They are classified as follows:

- ◆ The overstorey forested layer has a crown closure greater than or equal to 20% (CROWN\_1 ≥ 20) are assigned as SFLAG=1.
- ◆ The overstorey forested layer does not have a crown closure greater than or equal to 20% (SFLAG = 0) and the secondary forested layer has a crown closure of greater than or equal to 20% (CROWN\_2 ≥ 20) are assigned as SFLAG=2.
- ◆ Neither the overstorey nor the secondary forested layers have a crown closure greater than or equal to 20% (SFLAG = 0) and the tertiary layer has a crown closure of greater than or equal to 20% (CROWN\_3 ≥ 20) are assigned as SFLAG=3.

The second step applies to cases that are forested with all forested layers each less than 20% crown cover. They are classified as follows:

- ◆ Stands that are forested (CROWN\_1 ≥ 1 or CROWN\_2 ≥ 1 or CROWN\_3 ≥ 1) and all forested layers each exhibit a crown closure less than 20% (SFLAG=0) and the overstorey forested layer exhibits a crown closure greater than or equal to all other forested layers (CROWN\_1 ≥ CROWN\_2 and CROWN\_1 ≥ CROWN\_3) are assigned as SFLAG=1.
- ◆ Stands that are forested (CROWN\_1 ≥ 1 or CROWN\_2 ≥ 1 or CROWN\_3 ≥ 1) and all forested layers each exhibit a crown closure less than 20% (SFLAG=0) and the secondary forested layer exhibits a crown closure greater than or equal to all other forested layers (CROWN\_2 ≥ CROWN\_1 and CROWN\_2 ≥ CROWN\_3) are assigned as SFLAG=2.
- ◆ Stands that are forested (CROWN\_1 ≥ 1 or CROWN\_2 ≥ 1 or CROWN\_3 ≥ 1) and all forested layers each exhibit a crown closure less than 20% (SFLAG=0) and the tertiary forested layer exhibits a crown closure greater than or equal to all other forested layers (CROWN\_3 ≥ CROWN\_1 and CROWN\_3 ≥ CROWN\_2) are assigned as SFLAG=3.
- ◆ Stands that have been classified as both a horizontal (HFLAG≥1) classifier and a veteran (SFLAG≥1) classifier are overridden and assigned as SFLAG=0.

### 3.2.3 DOMINANT FORESTED LAYER (DOM\_LAYER)

Stands with multiple forested layers are assigned a classification to identify which forested layer will be used for age, species group, leading species and development type classifications.



- ◆ The overstorey forested layer is assumed to be the dominant forested layer (DOM\_LAYER=1) for the following:
  - ◆ The stand is assigned an HFLAG=1 or SFLAG=1.
- ◆ The secondary forested layer is assumed to be the dominant forested layer (DOM\_LAYER=2) for the following:
  - ◆ The stand is assigned an HFLAG=2 or SFLAG=2.
- ◆ The tertiary forested layer is assumed to be the dominant forested layer (DOM\_LAYER=3) for the following:
  - ◆ The stand is assigned an HFLAG=3 or SFLAG=3.

### 3.2.4 TOTAL CROWN DENSITY (TOT\_CROWN)

Total crown cover is calculated using SFVI as follows:

- ◆ Total crown cover (TOT\_CROWN) equals the sum of the crown covers from the three forested layers of a stand (CROWN\_1 + CROWN\_2 + CROWN\_3).
- ◆ Stands that identify the overstorey forested layer as the dominant layer in a horizontal stand (HFLAG=1) are calculated as TOT\_CROWN=CROWN\_1.
- ◆ Stands that identify the secondary forested layer as the dominant layer in a horizontal stand (HFLAG=2) are calculated as TOT\_CROWN=CROWN\_2.
- ◆ Stands that identify the tertiary forested layer as the dominant layer in a horizontal stand (HFLAG=3) are calculated as TOT\_CROWN=CROWN\_3.

### 3.2.5 CUTBLOCK IDENTIFIER (CUTBLOCK) <sup>3</sup>

Cutblocks are identified from two sources; SFVI and FMS (Mistik's proprietary forest operations tracking database). They are classified as follows:

- ◆ Cases with cutblocks first identified within the most recent modifier field of the SFVI (MOD3='CO' or MOD3='SI') that are assigned a valid modifier year (YEAR3≠0) are identified as CUTBLOCK=1.
- ◆ Cases with cutblocks first identified within the second most recent modifier field of the SFVI (CUTBLOCK=0 and (MOD2='CO' or MOD2='SI')) that are assigned a valid modifier year (YEAR2≠0) are identified as CUTBLOCK=2.
- ◆ Cases with cutblocks first identified within the oldest modifier field of the SFVI (CUTBLOCK=0 and (MOD1='CO' or MOD1='SI')) that are assigned a valid modifier year (YEAR1≠0) are identified as CUTBLOCK=3.

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<sup>3</sup> Interpreted SFVI is used to characterize stands for SFVI cutblocks (CUTBLOCK=1 to 6) and Mistik updates are used to characterize stands harvested by Mistik (CUTBLOCK=7).





- ◆ Cases with cutblocks first identified within the most recent modifier field of the SFVI (CUTBLOCK = 0 and (MOD3='CO' or MOD3='SI')) that are not assigned a valid modifier year (YEAR3=0) are identified as CUTBLOCK=4.
- ◆ Cases with cutblocks first identified within the second most recent modifier field of the SFVI (CUTBLOCK=0 and (MOD2='CO' or MOD2='SI')) that are not assigned a valid modifier year (YEAR2=0) are identified as CUTBLOCK=5.
- ◆ Cases with cutblocks first identified within the oldest modifier field of the SFVI (CUTBLOCK=0 and (MOD1='CO' or MOD1='SI')) that are not assigned a valid modifier year (YEAR1=0) are identified as CUTBLOCK=6.
- ◆ Cases with cutblocks identified as a FMS cutblock (BLOCSTAT='Cut') are identified as CUTBLOCK=7. This classification over-rides any cutblocks identified in SFVI.

### 3.2.5.1 CUTFLAG

- ◆ Cases identified as an FMS cutblock above (CUTBLOCK=7) are assigned a CUTFLAG=1.

### 3.2.6 YEAR OF HARVEST (CUTYEAR)

The year of harvest (CUTYEAR) is identified from two sources; SFVI and FMS (Mistik's proprietary forest operations tracking database). It is identified by the year of the disturbance as follows:

- ◆ Cases with cutblocks first identified within the most recent SFVI modifier field that are assigned a valid modifier year (CUTBLOCK=1) are identified as CUTYEAR=YEAR3.
- ◆ Cases with cutblocks first identified within the second most recent SFVI modifier field that are assigned a valid modifier year (CUTBLOCK=2) are identified as CUTYEAR=YEAR2.
- ◆ Cases with cutblocks first identified within the oldest SFVI modifier field that are assigned a valid modifier year (CUTBLOCK=3) are identified as CUTYEAR=YEAR1.
- ◆ Cases with cutblocks identified within any SFVI modifier field that are not assigned a valid modifier year (CUTBLOCK=4 or CUTBLOCK=5 or CUTBLOCK=6) are identified as CUTYEAR=0.
- ◆ Cases with cutblocks identified as a FMS cutblock (CUTBLOCK=7) are given a CUTYEAR equal to the Year from the SKID\_CLEARANCE\_DATE.
- ◆ Cases with cutblocks identified as FMS cutblock (CUTBLOCK=7) and CUTYEAR = 0 or CUTYEAR = 1899 and AOP\_YEAR ≤ 2015 are assigned a CUTYEAR = AOP\_YEAR. This classification over-rides the cutyear for any cutblocks identified in the SFVI.
- ◆ Any remaining cases of CUTYEAR = 1899 are overwritten to CUTYEAR = 0 because they are planned blocks.

### 3.2.7 SFVI FIRE IDENTIFER (SFVI\_BURN)

The most recent disturbances from fire that are captured within SFVI are identified in a hierarchical manner as follows:



- ◆ Cases with fire disturbance first identified within the most recent SFVI modifier field (MOD3='BO') that are assigned a valid modifier year (YEAR3≠0) are identified as SFVI\_BURN=YEAR3.
- ◆ Cases with fire disturbance first identified within the second most recent SFVI modifier field (SFVI\_BURN=0 and MOD2='BO') that are assigned a valid modifier year (YEAR2≠0) are identified as SFVI\_BURN=YEAR2.
- ◆ Cases with fire disturbance first identified within the oldest SFVI modifier field (SFVI\_BURN=0 and MOD1='BO') that are assigned a valid modifier year (YEAR1≠0) are identified as SFVI\_BURN=YEAR1.
- ◆ Cases with fire disturbance identified within the most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN = 0 and MOD3='BO' and YEAR3=0) and contain a fire year from the FIRE UPDATE layer that is within 8 years of the photography year (YEAR\_INT-YEAR ≤ 8) are identified as SFVI\_BURN=YEAR.
- ◆ Cases with fire disturbance identified within the most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN = 0 and MOD2='BO' and YEAR2=0) and contain a fire year from the FIRE UPDATE layer that is within 8 years of the photography year (YEAR\_INT-YEAR ≤ 8) are identified as SFVI\_BURN=YEAR.
- ◆ Cases with fire disturbance identified within the most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN = 0 and MOD1='BO' and YEAR1=0) and contain a fire year from the FIRE UPDATE layer that is within 8 years of the photography year (YEAR\_INT-YEAR ≤ 8) are identified as SFVI\_BURN=YEAR.
- ◆ Cases with fire disturbance identified within the most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN = 0 and MOD3='BO' and YEAR3=0) are identified as SFVI\_BURN=YEAR\_INT.
- ◆ Cases with fire disturbance identified within the second most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN=0 and MOD2='BO' and YEAR2=0) are identified as SFVI\_BURN=YEAR\_INT.
- ◆ Cases with fire disturbance identified within the most recent SFVI modifier field that are not assigned a valid modifier year (SFVI\_BURN = 0 and MOD1='BO' and YEAR1=0) are identified as SFVI\_BURN=YEAR\_INT.
- ◆ Cases with fire disturbance identified at this point (SFVI\_BURN≠0) and are greater than the year of aerial photography (SFVI\_BURN>YEAR\_INT) use the year of disturbance to re-assign the year of aerial photography to YEAR\_INT=SFVI\_BURN.

### 3.2.8 FIRE UPDATE BURN IDENTIFIER (FIREUPDATE\_BURN)

Disturbances from fire that are captured within the FIRE UPDATE data layer that burned after SFVI photography capture are identified by the year of the fire as follows:

- ◆ Cases with fire disturbance identified within the FIRE UPDATE data layer (FIREUPDATE\_BURN=0 and FIRENAME≠' ') that have a valid burn year (YEAR>0 and YEAR<2016) and occur after SFVI photography capture (YEAR≥YEAR\_INT) are identified as FIREUPDATE\_BURN=YEAR. For fires that occur before the photo year are identified as YEAR\_INT≥YEAR = 0.



### 3.2.9 MOST RECENT FIRE IDENTIFIER (RECENT\_BURN)

The most recent burn that occurs within a case is based on the SFVI and FIRE UPDATE data layer and is identified by the year of the fire as follows:

- ◆ Stands where the most recent fire disturbance from the FIRE UPDATE data layer is more recent than the most recent fire disturbance from the SFVI (if any) ( $\text{FIREUPDATE\_BURN} \geq \text{SFVI\_BURN}$ ) are classified as  $\text{RECENT\_BURN} = \text{FIREUPDATE\_BURN}$ .
- ◆ Stands where the most recent fire disturbance from the SFVI is more recent than the most recent fire disturbance from the FIRE UPDATE data layer ( $\text{SFVI\_BURN} > \text{FIREUPDATE\_BURN}$ ) are classified as  $\text{RECENT\_BURN} = \text{SFVI\_BURN}$ .

### 3.2.10 OVERSTOREY FORESTED LAYER SPECIES GROUP (OSPGROUP)

The percentage of softwood species from the overstorey forested layer in each forested stand is calculated using SFVI and a species group is assigned as follows:

- ◆ S – 70% or greater softwood component;
- ◆ SH – greater than or equal to 40 % but less than 70% softwood component;
- ◆ HS – greater than 10% but less than 40% softwood component;
- ◆ H – Less than or equal 10% softwood component and  $\text{sp1\_1} \neq ' '$ .

### 3.2.11 SECONDARY FORESTED LAYER SPECIES GROUP (USPGROUP)

The percentage of softwood species in the secondary forested layer is used to calculate USPGROUP the same way that the percentage of softwood in the overstorey forested layer is used to calculate OSPGROUP.

### 3.2.12 TERTIARY FORESTED LAYER SPECIES GROUP (TSPGROUP)

The percentage of softwood species in the tertiary forested layer is used to calculate TSPGROUP the same way that the percentage of softwood in the forested layer 1 is used to calculate OSPGROUP.

### 3.2.13 SFVI SPECIES GROUP (SFVI\_SPGP)

The overall SFVI derived species group is assigned to SFVI forested stands based upon the dominant forested layer as follows:

- ◆ If the overstorey forested layer is identified as the dominant forested layer ( $\text{DOM\_LAYER} = 1$ ), the SFVI species group is assigned based on the overstorey forested layer species group as  $\text{SFVI\_SPGP} = \text{OSPGROUP}$ .
- ◆ If the secondary forested layer is identified as the dominant forested layer ( $\text{DOM\_LAYER} = 2$ ), the SFVI species group is assigned based on the secondary forested layer species group as  $\text{SFVI\_SPGP} = \text{USPGROUP}$ .



- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI species group is assigned based on the tertiary forested layer species group as SFVI\_SPGP=TSPGROUP.
- ◆ If the horizontal stands flag indicates the dominant layer is either shrub, herbaceous, aquatic or non-forested (HFLAG≥4), the SFVI species group is blanked out as SFVI\_SPGP=' '.

### 3.2.14 OVERSTOREY FORESTED LAYER LEADING SPECIES (OLEADSP)

The species composition of the overstorey forested layer is assigned for each tree species based on its percent component within SFVI and a leading species consistent with the overstorey forested layers' species group is identified as follows:

- ◆ If the overstorey forested layer species group is classified as a softwood or softwood dominated mixedwood (OSPGROUP='S' or OSPGROUP='SH'), and the first tree species of the overstorey forested layer is a softwood (SP1\_1='WS' or SP1\_1='BF' or SP1\_1='BS' or SP1\_1='TL' or SP1\_1='JP'), the overstorey forested layer leading species is identified as OLEADSP=SP1\_1.
- ◆ If the overstorey forested layer species group is classified as a softwood or softwood dominated mixedwood (OSPGROUP='S' or OSPGROUP='SH'), and the first tree species of the overstorey forested layer is not a softwood but the second species is (OLEADSP=' ' and (SP2\_1='WS' or SP2\_1='BF' or SP2\_1='BS' or SP2\_1='TL' or SP2\_1='JP')), the overstorey forested layer leading species is identified as OLEADSP=SP2\_1.
- ◆ If the overstorey forested layer species group is classified as a softwood or softwood dominated mixedwood (OSPGROUP='S' or OSPGROUP='SH'), and the first tree species of the overstorey forested layer that is a softwood is the third species (OLEADSP=' ' and (SP3\_1='WS' or SP3\_1='BF' or SP3\_1='BS' or SP3\_1='TL' or SP3\_1='JP')), the overstorey forested layer leading species is identified as OLEADSP=SP3\_1.
- ◆ If the overstorey forested layer species group is classified as a softwood or softwood dominated mixedwood (OSPGROUP='S' or OSPGROUP='SH'), and the first tree species of the overstorey forested layer that is a softwood is the fourth species (OLEADSP=' ' and (SP4\_1='WS' or SP4\_1='BF' or SP4\_1='BS' or SP4\_1='TL' or SP4\_1='JP')), the overstorey forested layer leading species is identified as OLEADSP=SP4\_1.
- ◆ If the overstorey forested layer species group is classified as a hardwood or hardwood dominated mixedwood (OSPGROUP='H' or OSPGROUP='HS'), and the first tree species of the overstorey forested layer that is a hardwood is the first species (SP1\_1='TA' or SP1\_1='WB' or SP1\_1='BP') the overstorey forested layer leading species is identified as OLEADSP=SP1\_1.
- ◆ If the overstorey forested layer species group is classified as a hardwood or hardwood dominated mixedwood (OSPGROUP='H' or OSPGROUP='HS'), and the first tree species of the overstorey forested layer that is a hardwood is the second species (OLEADSP=' ' and SP2\_1='TA' or SP2\_1='WB' or SP2\_1='BP') and the overstorey tree layer leading species is not assigned (OLEADSP=' '), the overstorey forested layer leading species is identified as OLEADSP=SP2\_1.



- ◆ If the overstorey forested layer species group is classified as a hardwood or hardwood dominated mixedwood (OSPGROUP='H' or OSPGROUP='HS'), and the first tree species of the overstorey forested layer that is a hardwood is the third species (OLEADSP=' ' and SP3\_1='TA' or SP3\_1='WB' or SP3\_1='BP') the overstorey forested layer leading species is identified as OLEADSP=SP3\_1.
- ◆ If the overstorey forested layer species group is classified as a hardwood or hardwood dominated mixedwood (OSPGROUP='H' or OSPGROUP='HS'), and the first tree species of the overstorey forested layer that is a hardwood is the fourth species (OLEADSP=' ' and SP4\_1='TA' or SP4\_1='WB' or SP4\_1='BP') the overstorey forested layer leading species is identified as OLEADSP=SP4\_1.

### **3.2.15 SECONDARY FORESTED LAYER LEADING SPECIES (ULEADSP)**

The secondary forested layer leading species is calculated the same way as the overstorey leading species but using SFVI for the secondary forested layer for the classification.

### **3.2.16 TERTIARY FORESTED LAYER LEADING SPECIES (TLEADSP)**

The tertiary forested layer leading species is calculated the same way as the overstorey leading species but using SFVI for the tertiary forested layer for the classification.

### **3.2.17 SFVI LEADING SPECIES (SFVI\_LEAD)**

The overall SFVI derived leading species is assigned to SFVI forested stands based upon the dominant forested layer as follows:

- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), the SFVI lead species is assigned based on the overstorey forested layer lead species as SFVI\_LEAD=OLEADSP.
- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), the SFVI lead species is assigned based on the secondary forested layer lead species as SFVI\_LEAD=ULEADSP.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI lead species is assigned based on the tertiary forested layer lead species as SFVI\_LEAD=TLEADSP.
- ◆ If the horizontal stands flag indicates the dominant layer is either shrub, herbaceous, aquatic or non-forested (HFLAG>4), the SFVI lead species is blanked out as SFVI\_LEAD=' '.

### **3.2.18 OVERSTOREY FORESTED LAYER LEAD SOFTWOOD SPECIES (OSOFT)**

The leading softwood species within the overstorey regardless of overstorey forested layer species group assignment is based on SFVI and used within development type classification. It is identified as follows:

- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the first species (SP1\_1='WS' or SP1\_1='BF' or SP1\_1='BS' or SP1\_1='TL' or SP1\_1='JP') is identified as OSOFT=SP1\_1.



- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the second species (OSOFT=' ' and (SP2\_1='WS' or SP2\_1='BF' or SP2\_1='BS' or SP2\_1='TL' or SP2\_1='JP')) is identified as OSOFT=SP2\_1.
- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the third species (OSOFT=' ' and (SP3\_1='WS' or SP3\_1='BF' or SP3\_1='BS' or SP3\_1='TL' or SP3\_1='JP')) is identified as OSOFT=SP3\_1.
- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the fourth species (OSOFT=' ' and (SP4\_1='WS' or SP4\_1='BF' or SP4\_1='BS' or SP4\_1='TL' or SP4\_1='JP')) is identified as OSOFT=SP4\_1.
- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the fifth species (OSOFT=' ' and (SP5\_1='WS' or SP5\_1='BF' or SP5\_1='BS' or SP5\_1='TL' or SP5\_1='JP')) is identified as OSOFT=SP5\_1.
- ◆ Forested stands whose first tree species of the overstorey forested layer that is a softwood is the sixth species (OSOFT=' ' and (SP6\_1='WS' or SP6\_1='BF' or SP6\_1='BS' or SP6\_1='TL' or SP6\_1='JP')) is identified as OSOFT=SP6\_1.

### 3.2.19 SECONDARY FORESTED LAYER LEAD SOFTWOOD SPECIES (USOFT)

The secondary forested layer leading softwood species is calculated the same way as the overstorey leading softwood species but using SFVI for the secondary forested layer for the classification.

### 3.2.20 TERTIARY FORESTED LAYER LEAD SOFTWOOD SPECIES (TSOFT)

The tertiary forested layer leading softwood species is calculated the same way as the overstorey leading softwood species but using SFVI for the tertiary forested layer for the classification.

### 3.2.21 SFVI LEAD SOFTWOOD SPECIES (LEAD\_SOFT)

The overall SFVI derived lead softwood species is assigned to SFVI forested stands based upon the dominant forested layer as follows:

- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), the SFVI lead softwood species is assigned based on the overstorey forested layer lead softwood species as LEAD\_SOFT=OSOFT.
- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), the SFVI lead softwood species is assigned based on the secondary forested layer lead softwood species as LEAD\_SOFT=USOFT.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI lead softwood species is assigned based on the tertiary forested layer lead softwood species as LEAD\_SOFT=TSOFT.





### 3.2.22 OVERSTOREY FORESTED LAYER SECONDARY SOFTWOOD SPECIES (SEC\_OSOF)

The secondary leading softwood species within the overstorey regardless of overstorey forested layer species group assignment is based on SFVI and used within development type classification. It is identified as follows:

- ◆ Forested stands whose secondary softwood tree species is the second tree species in the overstorey forested layer (SP2\_1≠OSOFT and (SP2\_1='WS' or SP2\_1='BF' or SP2\_1='BS' or SP2\_1='TL' or SP2\_1='JP')) are identified as SEC\_OSOF=SP2\_1.
- ◆ Forested stands whose secondary softwood tree species is the third tree species in the overstorey forested layer (SEC\_OSOF=' ' and SP3\_1≠OSOFT and (SP3\_1='WS' or SP3\_1='BF' or SP3\_1='BS' or SP3\_1='TL' or SP3\_1='JP')) are identified as SEC\_OSOF=SP3\_1.
- ◆ Forested stands whose secondary softwood tree species is the fourth tree species in the overstorey forested layer (SEC\_OSOF=' ' and SP4\_1≠OSOFT and (SP4\_1='WS' or SP4\_1='BF' or SP4\_1='BS' or SP4\_1='TL' or SP4\_1='JP')) are identified as SEC\_OSOF=SP4\_1.
- ◆ Forested stands whose secondary softwood tree species is the fifth tree species in the overstorey forested layer (SEC\_OSOF=' ' and SP5\_1≠OSOFT and (SP5\_1='WS' or SP5\_1='BF' or SP5\_1='BS' or SP5\_1='TL' or SP5\_1='JP')) are identified as SEC\_OSOF=SP5\_1.
- ◆ Forested stands whose secondary softwood tree species is the sixth tree species in the overstorey forested layer (SEC\_OSOF=' ' and SP6\_1≠OSOFT and (SP6\_1='WS' or SP6\_1='BF' or SP6\_1='BS' or SP6\_1='TL' or SP6\_1='JP')) are identified as SEC\_OSOF=SP6\_1.

### 3.2.23 SECONDARY FORESTED LAYER SECONDARY SOFTWOOD SPECIES (SEC\_USOF)

The secondary forested layer secondary softwood species is calculated the same way as the overstorey forested layer secondary softwood species but using SFVI for the secondary forested layer for the classification and including the following as a first step:

### 3.2.24 TERTIARY FORESTED LAYER SECONDARY SOFTWOOD SPECIES (SEC\_TSOFT)

The tertiary forested layer secondary softwood species is calculated the same way as the overstorey forested layer secondary softwood species but using SFVI for the tertiary forested layer for the classification.

### 3.2.25 SFVI SECONDARY SOFTWOOD SPECIES (SEC\_SOFT)

The overall SFVI derived secondary softwood species is assigned to SFVI forested stands based upon the dominant forested layer as follows:



- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), the SFVI secondary softwood species is assigned based on the overstorey forested layer secondary softwood species as SEC\_SOFT=SEC\_OSOF.
- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), the SFVI secondary softwood species is assigned based on the secondary forested layer secondary softwood species as SEC\_SOFT=SEC\_USOF.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI secondary softwood species is assigned based on the tertiary forested layer secondary softwood species as SEC\_SOFT=SEC\_TSOFT.
- ◆ If the horizontal stands flag indicates the dominant layer is either shrub, herbaceous, aquatic or non-forested (HFLAG>4), the SFVI secondary softwood species is assigned based on the overstorey forested layer secondary softwood species as SEC\_SOFT= ' '.

### 3.2.26 OVERSTOREY FORESTED LAYER CROWN CODE (OCC)

The overstorey forested layer crown code assigns a classification code based on the SFVI overstorey forested layer crown cover as follows:

- ◆ Forested stands whose overstorey forested layer crown cover is less than or equal to  $\frac{1}{4}$  the stand area or less (CROWN\_1 $\geq$ 1 and CROWN\_1  $\leq$  25) are classified as OCC='A'.
- ◆ Forested stands whose overstorey forested layer crown cover is greater than  $\frac{1}{4}$  and less than or equal to  $\frac{1}{2}$  the stand area (CROWN\_1>25 and CROWN\_1  $\leq$  50) are classified as OCC='B'.
- ◆ Forested stands whose overstorey forested layer crown cover is greater than  $\frac{1}{2}$  and less than or equal to  $\frac{3}{4}$  the stand area (CROWN\_1>50 and CROWN\_1  $\leq$  75) are classified as OCC='C'.
- ◆ Forested stands whose overstorey forested layer crown cover is greater than  $\frac{3}{4}$  the stand area (CROWN\_1>75 and CROWN\_1  $\leq$  100) are classified as OCC='D'.

### 3.2.27 SECONDARY FORESTED LAYER CROWN CODE (UCC)

The secondary forested layer crown code is assigned the same way as the overstorey forested layer crown code but using SFVI for the secondary forested layer for the classification.

### 3.2.28 TERTIARY FORESTED LAYER CROWN CODE (TCC)

The tertiary forested layer crown code is assigned the same way as the overstorey forested layer crown code but using SFVI for the tertiary forested layer for the classification.

### 3.2.29 SFVI CROWN CODE (SFVI\_CRWN)

The overall SFVI derived crown code is assigned to SFVI forested stands based upon the dominant forested layer as follows:

- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), the SFVI crown code is assigned based on the overstorey forested layer crown code as SFVI\_CRWN=OCC.



- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), the SFVI crown code is assigned based on the secondary forested layer crown code as SFVI\_CRWN=UCC.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI crown code is assigned based on the tertiary forested layer crown code as SFVI\_CRWN=TCC.

### 3.2.30 STAND PRODUCTIVITY CLASS (PCLASS1, PCLASS2, PCLASS3)

Stand productivity class is determined for each of the forested layers (PCLASS1, PCLASS2 and PCLASS3) and correspond to the overstorey, secondary and tertiary forested layers respectively. For each layer, the stand productivity is calculated first based on mensurational data of the leading species.<sup>4</sup> A class is then assigned based on this value according to Table 3-2.

**TABLE 3-2: STAND PRODUCTIVITY BREAKS USED TO DETERMINE STAND PRODUCTIVITY CLASS**

SPECIES	STAND PRODUCTIVITY AGE	SITE INDEX	STAND PRODUCTIVITY CLASS
TA	50	5.00 – <10.05	1
		10.05 – <14.05	2
		14.05 – <16.05	3
		16.05 – <18.05	4
		18.05 and greater	5
WB	50	5.00 – <10.05	1
		10.05 – <14.05	2
		14.05 – <16.05	3
		16.05 – <18.05	4
		18.05 and greater	5
BP	50	5.00 – <10.05	1
		10.05 – <14.05	2
		14.05 – <16.05	3
		16.05 – <18.05	4
		18.05 and greater	5
WS	50	3.00 – <6.05	1
		6.05 – <10.55	2
		10.55 – <13.05	3
		13.05 – <15.55	4
		15.55 and greater	5
BF	50	3.00 – <6.05	1
		6.05 – <10.55	2
		10.55 – <13.05	3
		13.05 – <15.55	4
		15.55 and greater	5
JP	50	3.00 – <7.05	1
		7.05 – <12.05	2
		12.05 – <14.05	3
		14.05 – <16.05	4
		16.05 and greater	5

<sup>4</sup> Stand Productivity is calculated in a similar fashion as Site Index as per the Alberta Vegetation Inventory Standards Manual, Version 2.1.1, March 2005



SPECIES	STAND PRODUCTIVITY AGE	SITE INDEX	STAND PRODUCTIVITY CLASS
BS	50	1.00 – <6.05	1
		6.05 – <7.05	2
		7.05 – <8.54	3
		8.54 – <10.05	4
		10.05 and greater	5
TL	50	1.00 – <6.05	1
		6.05 – <7.05	2
		7.05 – <8.54	3
		8.54 – <10.05	4
		10.05 and greater	5

### 3.2.31 SFVI STAND PRODUCTIVITY CLASS (SFVI\_PCLASS)

The overall SFVI derived Productivity Class is assigned to SFVI forested stands based upon the dominant forested layer as follows:

- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), the SFVI Productivity Class is assigned based on the overstorey forested layer Productivity Class as SFVI\_PCLASS=PCLASS1.
- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), the SFVI Productivity Class is assigned based on the secondary forested layer Productivity Class as SFVI\_PCLASS=PCLASS2.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), the SFVI Productivity Class is assigned based on the tertiary forested layer Productivity Class as SFVI\_PCLASS=PCLASS3.

### 3.2.32 WATER (WATER)

Water is identified using the SFVI and LAC LA PLONGE identifier as follows:

- ◆ Cases not identified as a horizontal (HFLAG=0) and is classified as either a lake, river or aquatic in SFVI (NONFOR='L' or NONFOR='R' or (CROWN\_A≠0 and sp1\_1=' ')) are assigned as WATER=1.
- ◆ Cases identified as a lake or river horizontal (HFLAG=7 and (NONFOR='L' or NONFOR='R')) are assigned as WATER=1.
- ◆ Cases identified as an aquatic moisture regime with no forested layer (MOIST='A' and SP1\_1=' ') are assigned as WATER=1.
- ◆ Cases identified as either an aquatic vegetation horizontal (HFLAG=6) are assigned as WATER=1.
- ◆ Cases identified as Lac La Plonge (LAC\_PLONGE=1) are assigned as WATER=1.



### 3.2.33 ANTHROPOGENIC NON-FORESTED (A\_NONFOR, ANONFORBIN)

Anthropogenic non-forested area is identified using the SFVI, LANDUSE UPDATE and ROAD UPDATE datasets and classified as either 'SFVI LANDUSE' (A\_NONFOR=1), 'TIMBER DISPOSITION' (A\_NONFOR=2) or 'ROADS, PIPELINES, TRANSMISSION LINES and RAIL LINES' (A\_NONFOR=3) as follows:

- ◆ Cases identified in SFVI as landuse (LANDUSE≠' ') are identified as A\_NONFOR=1.
- ◆ Cases not already classified out as anthropogenically non-forested (A\_NONFOR=0) and are identified in the LANDUSE UPDATE dataset as a timber disposition (ANTH\_DISTURB≠' ') are identified as A\_NONFOR=2.
- ◆ Cases not already classified out as anthropogenically non-forested (A\_NONFOR=0) and are identified in the SFVI as a non-aquatic anthropogenically non-forested area (NONFOR='RD' or NONFOR='PL' or NONFOR='TL' or NONFOR='ARW' or NONFOR='RW') or in the ROAD UPDATE dataset as an update road (RD\_UPDATE ≥ 1) or a single road that has been identified in SFVI as a clearing but is actually a road (MOD1='CL' and ext1=5) are identified as A\_NONFOR=3.

Anthropogenic non-forested area is further identified in a binary format as follows:

- ◆ Cases identified as anthropogenically non-forested (A\_NONFOR ≠ 0) are identified as ANONFORBIN = 1.

### 3.2.34 DISPOSITIONS (DISPO\_BIN)

Timber Reserves and Recreation Areas are classified as dispositions and identified as follows:

- ◆ Cases identified as a Timber Reserve or Recreation Area (MU=78 or MU=79) are identified as DISPO\_BIN=1.

### 3.2.35 NATURALLY NON-FORESTED (N\_NONFOR)

Naturally non-forested area is identified using the SFVI and AERIAL SURVEY dataset as follows:

- ◆ Cases that are not forested in SFVI (DOM\_LAYER=0 and sp1\_1=' ') are identified as N\_NONFOR=1.
- ◆ Cases that are shrub or grass horizontals (HFLAG=4 or HFLAG=5) are identified as N\_NONFOR=1.
- ◆ Cases that are flooded non-forested horizontals (HFLAG=7 and NONFOR='FL') are identified as N\_NONFOR=1.
- ◆ Cases that are already classified as water or as anthropogenically non-forested (WATER=1 or A\_NONFOR≥1) or as the eastern island in Lac La Plonge for which there is no SFVI (STAND=0) or are identified as forested from the Aerial Survey program (CRZ\_FLAG=1) are identified as N\_NONFOR=0.



### 3.2.36 STAND AGE (AGE)

The stand age is calculated using SFVI and various calculated fields in a hierarchical order as follows:

- ◆ Forested stands whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) and have a valid SFVI origin (ORIGIN\_1≠0) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as AGE=2015-ORIGIN\_1.
- ◆ Forested stands whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) and have a valid SFVI origin (ORIGIN\_2≠0) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as AGE=2015-ORIGIN\_2.
- ◆ Forested stands whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) and have a valid SFVI origin (ORIGIN\_3≠0) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as AGE=2015-ORIGIN\_3.
- ◆ Forested stands identified as naturally non-forested (N\_NONFOR≥1) are assigned as AGE=0.
- ◆ Forested stands that are identified as a Mistik cutblock with a valid cutyear (CUTBLOCK=7 and CUTYEAR≠0) are assigned as AGE=2015-CUTYEAR.
- ◆ Forested stands identified as water (WATER=1) are assigned as AGE=0.
- ◆ Forested stands not identified as a Mistik cutblock but burned after SFVI interpretation (CUTBLOCK≠7 and RECENT\_BURN≠0 and RECENT\_BURN>YEAR\_INT) are assigned as AGE=0.
- ◆ Forested stands that are identified as a Mistik cutblock that have burned since harvest (CUTBLOCK=7 and RECENT\_BURN≠0 and RECENT\_BURN≥CUTYEAR) are assigned as AGE=0.
- ◆ Forested stands that are identified as forested within the Aerial Survey Program (CRZ\_FLAG≠0) are assigned as AGE=2015-RECENT\_BURN.
- ◆ Forested stands that are identified as anthropogenically non-forested (A\_NONFOR≥1) are assigned as AGE=0.
- ◆ Cases that are identified as damaged from windthrow that are not a Mistik planned cutblock (windthrow≠' ' and PLAN\_BLK=0 and TACT\_BLK=0) are assigned as AGE=0.

### 3.2.37 AGE CLASS (AGECLASS)

Age class is calculated based on the “AGE” field as per Table 3-3:

**TABLE 3-3: 5 YEAR AGE CLASS CALCULATION<sup>5</sup>**

Age (years)	Age Class	Age (years)	Age Class
0-4	0	100-104	100
5-9	5	105-109	105

<sup>5</sup> The age class calculation breaks are consistent with the Mistik SF95VI program started before the release of the 1SE-FS SFVI Standards. Mistik will follow the SE-FS SFVI Standards for all future re-interpretation of the Mistik FMA Area.





Age (years)	Age Class	Age (years)	Age Class
10-14	10	110-114	110
15-19	15	115-119	115
20-24	20	120-124	120
25-29	25	125-129	125
30-34	30	130-134	130
35-39	35	135-139	135
40-44	40	140-144	140
40-49	45	145-149	145
50-54	50	150-154	150
55-59	55	155-159	155
60-64	60	160-164	160
65-69	65	165-169	165
70-74	70	170-174	170
75-79	75	175-179	175
80-84	80	180-184	180
85-89	85	185-189	185
90-94	90	190-194	190
95-99	95	195-199	195
		200+	200

Age class is calculated based on the “AGE” field as per Table 3-3:

**TABLE 3-4: 10 YEAR AGE CLASS CALCULATION<sup>6</sup>**

Age (years)	Age Class	Age (years)	Age Class
0-9	0	100-109	100
10-19	10	110-119	110
20-29	20	120-129	120
30-39	30	130-139	130
40-49	40	140-149	140
50-59	50	150-159	150
60-69	60	160-169	160
70-79	70	170-179	170
80-89	80	180-189	180
90-99	90	190-199	190
		200+	200

<sup>6</sup> The age class calculation breaks are consistent with the Mistik SFVI program started before the release of the SE-FS SFVI Standards. Mistik will follow the SE-FS SFVI Standards for all future re-interpretation of the Mistik FMA Area.



### 3.2.38 DEVELOPMENT TYPE SPECIES GROUP (DT\_SPGP)

Forested stands are assigned a final species group using various fields in a hierarchical order to be used for various development type assignments. It is assigned as follows:

- ◆ Forested stands that are not Mistik cutblocks (CUTFLAG=0) are assigned a species group from the SFVI as DT\_SPGP=SFVI\_SPGP.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are assigned a species group from the updated FMS post harvest species group as DT\_SPGP=POSTHVSPGP.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and not yet assigned a development species group (DT\_SPGP≠'S' and DT\_SPGP≠'SH' and DT\_SPGP≠'HS' and DT\_SPGP≠'H') are assigned a species group from the FMS pre-harvest species group as DT\_SPGP=PREHVSPGP.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and still not assigned a development species group (DT\_SPGP='') are assigned a DT\_SPGP='HS'
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) are assigned a species group based on this survey as follows: DT\_SPGP=CRZ\_SPGP.

### 3.2.39 DEVELOPMENT TYPE LEADING SPECIES (DT\_SP1)

Forested stands are assigned a final leading species using various fields in a hierarchical order that is used for various development type assignments. It is assigned as follows:

- ◆ Forested stands that are not Mistik cutblocks (CUTBLOCK≠7) and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species from the SFVI as DT\_SP1=SFVI\_LEAD.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood or softwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH') with a valid FMS renewal species (RENEW\_SPECIES='BS' or RENEW\_SPECIES='JP' or RENEW\_SPECIES='WS' or RENEW\_SPECIES='TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species from the FMS renewal species as DT\_SP1=RENEW\_SPECIES.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood or softwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH') without a valid FMS renewal species (RENEW\_SPECIES≠'BS' and RENEW\_SPECIES≠'JP' and RENEW\_SPECIES≠'WS' and RENEW\_SPECIES≠'TL') and a valid FMS leave-for-natural species (LFN\_SP='BS' or LFN\_SP='JP' or LFN\_SP='WS' or LFN\_SP='TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species from the BLOCTRAC leave-for-natural species as DT\_SP1=LFN\_SP.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood or softwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH') without a valid FMS renewal or leave-for-natural species (RENEW\_SPECIES≠'BS' and RENEW\_SPECIES≠'JP' and RENEW\_SPECIES≠'WS' and RENEW\_SPECIES≠'TL' and LFN\_SP≠'BS' and LFN\_SP≠'JP' and LFN\_SP≠'WS' and LFN\_SP≠'TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species as DT\_SP1='JP'.



- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are hardwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='H' or DT\_SPGP='HS') with a valid FMS renewal species (RENEW\_SPECIES='TA' or RENEW\_SPECIES='WB') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species from the FMS renewal species as DT\_SP1=RENEW\_SPECIES.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are hardwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='H' or DT\_SPGP='HS') without a valid FMS renewal species (RENEW\_SPECIES≠'TA' and RENEW\_SPECIES≠'WB') and a valid FMS leave-for-natural species (LFN\_SP='TA' or LFN\_SP='WB') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species from the FMS leave-for-natural species as DT\_SP1=LFN\_SP.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are hardwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='H' or DT\_SPGP='HS') without a valid FMS renewal or leave-for-natural species (RENEW\_SPECIES≠'TA' and RENEW\_SPECIES≠'WB' and LFN\_SP≠'TA' and LFN\_SP≠'WB') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final leading species as DT\_SP1='TA'.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) are assigned a species group based on this survey as follows: DT\_SP1=CRZ\_LEAD.

### **3.2.40 DEVELOPMENT TYPE LEADING SOFTWOOD SPECIES (DT\_SOFT)**

Forested stands are assigned a final leading softwood species using various fields in a hierarchical order that is used for various development type assignments. It is assigned as follows:

- ◆ Forested stands are assigned a final leading softwood species from the SFVI as DT\_SOFT=LEAD\_SOFT.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood, softwood dominated mixedwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH' or DT\_SPGP='HS') with a valid FMS renewal species (RENEW\_SPECIES='BS' or RENEW\_SPECIES='JP' or RENEW\_SPECIES='WS' or RENEW\_SPECIES='TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final softwood leading species from the FMS renewal species as DT\_SOFT=RENEW\_SPECIES.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood, softwood dominated mixedwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH' or DT\_SPGP='HS') without a valid FMS renewal species (RENEW\_SPECIES≠'BS' and RENEW\_SPECIES≠'JP' and RENEW\_SPECIES≠'WS' and RENEW\_SPECIES≠'TL') and a valid FMS leave-for-natural species (LFN\_SP='BS' or LFN\_SP='JP' or LFN\_SP='WS' or LFN\_SP='TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final softwood leading species from the FMS leave-for-natural species as DT\_SOFT =LFN\_SP.



- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) and are softwood, softwood dominated mixedwood or hardwood dominated mixedwood development type species groups (DT\_SPGP='S' or DT\_SPGP='SH' or DT\_SPGP='HS') without a valid FMS renewal or leave-for-natural species (RENEW\_SPECIES≠'BS' and RENEW\_SPECIES≠'JP' and RENEW\_SPECIES≠'WS' and RENEW\_SPECIES≠'TL' and LFN\_SP≠'BS' and LFN\_SP≠'JP' and LFN\_SP≠'WS' and LFN\_SP≠'TL') and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final softwood leading species as DT\_SOFT='JP'.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) and the development type leading species is softwood (DT\_SP1='WS' or DT\_SP1='BF' or DT\_SP1='BS' or DT\_SP1='TL' or DT\_SP1='JP') are assigned a final softwood leading species as follows: DT\_SOFT=DT\_SP1.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG≥1) and the stand was surveyed from the air (CRZ\_SIZE≥5) and are hardwood dominated mixedwood development type species groups (DT\_SPGP='HS') with a hardwood leading development type species (DT\_SP1='TA' or DT\_SP1='WB') are assigned a final softwood leading species based on this survey as follows: DT\_SOFT=CRZ\_SP2.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) and the stand was surveyed from the air (CRZ\_SIZE≥5) and are hardwood dominated mixedwood development type species groups (DT\_SPGP='HS') with a hardwood leading development type species (DT\_SP1='TA' or DT\_SP1='WB') that is still not assigned a development type softwood leading species (DT\_SOFT≠'BS' and DT\_SOFT≠'JP' and DT\_SOFT≠'WS' and DT\_SOFT≠'TL') are assigned a final softwood leading species based on this survey as follows: DT\_SOFT=CRZ\_SP3.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) and the stand was not surveyed from the air (CRZ\_SIZE<5) and are hardwood dominated mixedwood development type species groups (DT\_SPGP='HS') with a hardwood leading development type species (DT\_SP1='TA' or DT\_SP1='WB') are assigned a final softwood leading species based on this survey as follows: DT\_SOFT='WS'.

### 3.2.41 DEVELOPMENT TYPE SECONDARY SOFTWOOD SPECIES (DT\_2SOFT)

Forested stands are assigned a final secondary softwood species using various fields in a hierarchical order that is used for various development type assignments. It is assigned as follows:

- ◆ Forested stands that are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final secondary softwood species from the SFVI as DT\_2SOFT=SEC\_SOFT.
- ◆ Forested stands that are Mistik cutblocks (CUTFLAG=1) or are identified within the Aerial Survey Program (CRZ\_FLAG=1) are assigned no final secondary softwood species as follows: DT\_2SOFT=' '.

### 3.2.42 SIGNIFICANT SOFTWOOD IN HARDWOOD STANDS (SIG\_SOFT)

Forested stands that are hardwood dominated within the dominant forested layer but also contain a significant amount of softwood within all forested layers combined are assigned a





significant softwood identifier through a series of calculations and are assigned within the following two steps:

- ◆ Each forested layer is assigned both a softwood and hardwood component based on the layer's species composition that is a softwood component (weighted by the layer's crown cover). The softwood and hardwood component for each layer are then added up to provide the total softwood and hardwood components for the stand.
- ◆ The total crown cover weighted softwood percentage relative to the total species percentage for the entire stand is calculated as the total softwood percentage.
- ◆ Forested stands whose softwood percentage is greater than 10% are considered to have significant softwood and are assigned as SIG\_SOFT=1.

### 3.2.43 DEVELOPMENT TYPE CROWN (DT\_CROWN)

Forested stands are assigned a final development type crown using various fields in a hierarchical order that is used for various development type assignments. It is assigned as follows:

- ◆ Forested stands that are not Mistik cutblocks (CUTBLOCK≠7) and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) and the SFVI assigned crown is low density (SFVI\_CRWN='A' or SFVI\_CRWN='B') are assigned a final development type crown as DT\_CROWN='LD'.
- ◆ Forested stands that are not Mistik cutblocks (CUTBLOCK≠7) and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) and the SFVI assigned crown is high density (SFVI\_CRWN='C' or SFVI\_CRWN='D') are assigned a final development type crown as DT\_CROWN='HD'.
- ◆ Forested stands that are Mistik cutblocks (CUTBLOCK=7) and are not identified within the Aerial Survey Program (CRZ\_FLAG=0) are assigned a final development type crown as DT\_CROWN='HD'.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) and the Aerial Survey Program assigned crown is low density (CRZ\_CROWN='A' or CRZ\_CROWN='B') are assigned a final development type crown as DT\_CROWN='LD'.
- ◆ Forested stands that are identified within the Aerial Survey Program (CRZ\_FLAG=1) and the Aerial Survey Program assigned crown is high density (CRZ\_CROWN='C' or CRZ\_CROWN='D') are assigned a final development type crown as DT\_CROWN='HD'.

### 3.2.44 DEVELOPMENT TYPE SOIL ORDER (DT\_SOIL)

Forest soils from the SOILS PROFILE COVERAGE are assigned a final development type soil order that is used for various development type assignments as follows:

- ◆ Cases with Luvisolic forest soils (DEVEL='C' or DEVEL='D' or DEVEL='F') or no soil type (DEVEL=' ') are assigned a final development type soil order as DT\_SOIL='L'.
- ◆ Cases with Brunisolic forest soils (DEVEL='M' or DEVEL='P' or DEVEL='R') are assigned a final development type soil order as DT\_SOIL='B'.



- ◆ Cases with Organic forest soils (DEVEL='W' or DEVEL='X' or DEVEL='Y') are assigned a final development type soil order as DT\_SOIL='O'.

### 3.2.45 DEVELOPMENT TYPE PRODUCTIVITY CLASS (DT\_PCLASS)

Forested stands are assigned a final development type Productivity Class using previously calculated PCLASS values in a hierarchical order that is used for various development type assignments. It is assigned as follows:

- ◆ Forested stands that are assigned a lower SFVI Productivity Class or no SFVI Productivity Class at all (SFVI\_PCLASS=0 or SFVI\_PCLASS=1 or SFVI\_PCLASS=2 or SFVI\_PCLASS=3 or SFVI\_PCLASS=4) are assigned a final development type Productivity class as DT\_PCLASS=1.
- ◆ Forested stands that are assigned a high SFVI Productivity Class (SFVI\_PCLASS=5) are assigned a final development type Productivity Class as DT\_PCLASS=2.
- ◆ Cases not yet assigned a development type productivity class (DT\_PCLASS≠1 and DT\_PCLASS≠2) are assigned a final development type Productivity Class as DT\_PCLASS=1.

### 3.2.46 DEVELOPMENT TYPE SPECIES ASSIGNMENT (DT\_SPECIES)

Forested stands are further assigned a final development type species using previously assigned development type species group and development type leading species classifications. It is used for various development type assignments as follows:

- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Hardwood' (DT\_SPGP='H') are assigned as DT\_SPECIES='TA'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Softwood' (DT\_SPGP='S') and the development type leading species is either 'WS' or 'BF' (DT\_SP1='WS' or DT\_SP1='BF') are assigned as DT\_SPECIES='WS'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Softwood' (DT\_SPGP='S') and the development type leading species is either 'BS' or 'TL' (DT\_SP1='BS' or DT\_SP1='TL') are assigned as DT\_SPECIES='BS'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Softwood' (DT\_SPGP='S') and the development type leading species is 'JP' (DT\_SP1='JP') are assigned as DT\_SPECIES='JP'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Softwood Dominated Mixedwood' (DT\_SPGP='SH') and the development type leading species is either 'WS' or 'BF' or 'BS' or 'TL' (DT\_SP1='WS' or DT\_SP1='BF' or DT\_SP1='BS' or DT\_SP1='TL') are assigned as DT\_SPECIES='WS'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Softwood Dominated Mixedwood' (DT\_SPGP='SH') and



the development type leading species is 'JP' (DT\_SP1='JP') are assigned as DT\_SPECIES='JP'.

- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Hardwood Dominated Mixedwood' (DT\_SPGP='HS') and the development type leading softwood species is either 'WS' or 'BF' or 'BS' or 'TL' (DT\_SOFT='WS' or DT\_SOFT='BF' or DT\_SOFT='BS' or DT\_SOFT='TL') are assigned as DT\_SPECIES='WS'.
- ◆ Forested stands that are assigned a development type leading species (DT\_SP1≠' ') and the development type species group is 'Hardwood Dominated Mixedwood' (DT\_SPGP='HS') and the development type leading softwood species is 'JP' (DT\_SOFT='JP') are assigned as DT\_SPECIES='JP'.

### 3.2.47 OPERATIONAL CONSTRAINTS – LOW STAND PRODUCTIVITY (C\_PROD)

Forested stands that Mistik will not operate in due to low stand productivity considerations are identified as follows:

- ◆ Forested stands consisting of a low stand productivity (SFVI\_PCLASS=1) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PROD=1.
- ◆ Forested stands that are either Mistik cutblocks (CUTBLOCK=7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) are overridden to C\_PROD=0.

### 3.2.48 OPERATIONAL CONSTRAINTS – LOW CROWN CLOSURE (C\_LOWCROWN)

Forested stands that Mistik will not operate in due to current low crown closure are identified as follows:

- ◆ Forested stands consisting of a low total crown (TOT\_CROWN≠0 and TOT\_CROWN<20) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_LOWCROWN=1.
- ◆ Forested stands that are either Mistik cutblocks (CUTBLOCK=7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) are overridden to C\_LOWCROWN=0.

### 3.2.49 OPERATIONAL CONSTRAINTS – SIGNIFICANT LARCH COMPONENT (C\_LARCH)

Forested stands that Mistik will not operate in due to significant larch component ( $\geq 40\%$  larch in the dominant tree layer) are identified first by summarizing the larch component present in each forested layer and then by examining the larch component within the dominant forested layer. These stands are identified first by treed layer (OLARCH, ULARCH, TLARCH) and then final larch component used to classify significant larch component C\_LARCH) is identified from the dominant layer (DOM\_LAYER) as follows:

#### 3.2.49.1 OVERSTOREY FORESTED LAYER LARCH COMPONENT (OLARCH)

Overstorey forested layer larch component is summarized as follows:



- ◆ Forested stands with the first tree species within the overstorey forested layer identified as larch (SP1\_1='TL') is calculated as OLARCH=PER1\_1.
- ◆ Forested stands with the second tree species within the overstorey forested layer identified as larch (SP2\_1='TL') is calculated as OLARCH=OLARCH +PER2\_1.
- ◆ Forested stands with the third tree species within the overstorey forested layer identified as larch (SP3\_1='TL') is calculated as OLARCH=OLARCH +PER3\_1.
- ◆ Forested stands with the fourth tree species within the overstorey forested layer identified as larch (SP4\_1='TL') is calculated as OLARCH=OLARCH +PER4\_1.
- ◆ Forested stands with the fifth tree species within the overstorey forested layer identified as larch (SP5\_1='TL') is calculated as OLARCH=OLARCH +PER5\_1.
- ◆ Forested stands with the sixth tree species within the overstorey forested layer identified as larch (SP6\_1='TL') is calculated as OLARCH=OLARCH +PER6\_1.

### 3.2.49.2 SECONDARY FORESTED LAYER LARCH COMPONENT (ULARCH)

The secondary forested layer larch component is calculated the same way as the overstorey forested layer larch component but using SFVI for the secondary forested layer for the classification.

### 3.2.49.3 TERTIARY FORESTED LAYER LARCH COMPONENT (TLARCH)

The tertiary forested layer larch component is calculated the same way as the overstorey forested layer larch component but using SFVI for the tertiary forested layer for the classification.

### 3.2.49.4 OPERATIONAL CONSTRAINTS – SIGNIFICANT LARCH COMPONENT (C\_LARCH)

- ◆ If the overstorey forested layer is identified as the dominant forested layer (DOM\_LAYER=1), and the overstorey larch component is significant (OLARCH $\geq$ 4), then the significant larch component is identified as C\_LARCH =1.
- ◆ If the secondary forested layer is identified as the dominant forested layer (DOM\_LAYER=2), and the secondary larch component is significant (ULARCH $\geq$ 4), then the significant larch component is identified as C\_LARCH=1.
- ◆ If the tertiary forested layer is identified as the dominant forested layer (DOM\_LAYER=3), and the tertiary larch component is significant (TLARCH $\geq$ 4), then the significant larch component is identified as C\_LARCH =1.
- ◆ Forested stands that are either Mistik cutblocks (CUTBLOCK=7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) are overridden to C\_LARCH=0.

### 3.2.50 OPERATIONAL CONSTRAINTS – SIGNIFICANT MISTLETOE INFESTATION (C\_PINETOE)

Forested stands that Mistik will not operate in due to significant dwarf mistletoe infestation are identified as follows:



- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') with a severe SFVI disease modifier ((mod1='DI' and ext1 $\geq$ 3) or (mod2='DI' and ext2 $\geq$ 3) or (mod3='DI' and ext3 $\geq$ 3) or (mod4='DI' and ext4 $\geq$ 3)) that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) that are low height (height\_1 $\leq$ 16) and identified with a moderate SFVI disease modifier ((mod1='DI' and (ext1=2 or ext1=1)) or (mod2='DI' and (ext2=2 or ext2=1)) or (mod3='DI' and (ext3=2 or ext3=1)) or (mod4='DI' and (ext4=2 or ext4=1))) that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) that are low height (height\_2 $\leq$ 16) and identified with a moderate SFVI disease modifier ((mod1='DI' and (ext1=2 or ext1=1)) or (mod2='DI' and (ext2=2 or ext2=1)) or (mod3='DI' and (ext3=2 or ext3=1)) or (mod4='DI' and (ext4=2 or ext4=1))) that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) that are low height (height\_3 $\leq$ 16) and identified with a moderate SFVI disease modifier ((mod1='DI' and (ext1=2 or ext1=1)) or (mod2='DI' and (ext2=2 or ext2=1)) or (mod3='DI' and (ext3=2 or ext3=1)) or (mod4='DI' and (ext4=2 or ext4=1))) that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) that are low height (height\_1 $\leq$ 9) and identified with no SFVI disease modifier (mod1 $\neq$ 'DI' and mod2 $\neq$ 'DI' and mod3 $\neq$ 'DI' and mod4 $\neq$ 'DI') but identified as infested as dwarf mistletoe from the DWARF MISTLETOE UPDATE dataset (dmtoe='S') and that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) that are low height (height\_2 $\leq$ 9) and identified with no SFVI disease modifier (mod1 $\neq$ 'DI' and mod2 $\neq$ 'DI' and mod3 $\neq$ 'DI' and mod4 $\neq$ 'DI') but identified as infested as dwarf mistletoe from the DWARF MISTLETOE UPDATE dataset (dmtoe='S') and that are not Mistik cutblocks (CUTBLOCK $\neq$ 7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.
- ◆ Forested stands classified as a jack pine leading softwood species group (DT\_SPGP='S' and DT\_SP1='JP') whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) that are low height (height\_3 $\leq$ 9) and identified with no SFVI disease modifier (mod1 $\neq$ 'DI' and mod2 $\neq$ 'DI' and mod3 $\neq$ 'DI' and mod4 $\neq$ 'DI') but identified as infested





as dwarf mistletoe from the DWARF MISTLETOE UPDATE dataset (dmtoe='S') and that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_PINETOE=1.

- ◆ Forested stands that are either Mistik cutblocks (CUTBLOCK=7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) are overridden to C\_PINETOE=0.

### 3.2.51 OPERATIONAL CONSTRAINTS – LOW PRODUCTIVITY BLACK SPRUCE (C\_BS)

Black spruce dominated forested stands that Mistik will not operate in due to various operability constraints are identified as follows:

- ◆ Forested stands classified as a black spruce leading softwood or softwood dominated mixedwood species group (DT\_SPGP='S' or DT\_SPGP='SH' and DT\_SP1='BS') on an organic soil site (DT\_SOIL='O') and classified as less than the highest productivity site (SFVI\_PCLASS≠0 and SFVI\_PCLASS≤4) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands classified as a black spruce leading softwood or softwood dominated mixedwood species group (DT\_SPGP='S' or DT\_SPGP='SH' and DT\_SP1='BS') whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) on a luvisolic soil site (DT\_SOIL='L') and classified as a lower productivity site (PCLASS1≤3) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands classified as a black spruce leading softwood or softwood dominated mixedwood species group (DT\_SPGP='S' or DT\_SPGP='SH' and DT\_SP1='BS') whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) on a luvisolic soil site (DT\_SOIL='L') and classified as a lower productivity site (PCLASS2≤3) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands classified as a black spruce leading softwood or softwood dominated mixedwood species group (DT\_SPGP='S' or DT\_SPGP='SH' and DT\_SP1='BS') whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) on a luvisolic soil site (DT\_SOIL='L') and classified as a lower productivity site (PCLASS3≤3) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands classified as a black spruce leading or larch leading softwood species group (DT\_SPGP='S' and (DT\_SP1='BS' or DT\_SP1='TL')) whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) that are of short height (height\_1≤15) and have no record of disturbance (CUTBLOCK=0 and SFVI\_BURN=0) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands classified as a black spruce leading or larch leading softwood species group (DT\_SPGP='S' and (DT\_SP1='BS' or DT\_SP1='TL')) whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) that are of short height (height\_2≤15) and



have no record of disturbance (CUTBLOCK=0 and SFVI\_BURN=0) that are not Mistik cutblocks (CUTBLOCK≠7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.

- ◆ Forested stands classified as a black spruce leading or larch leading softwood species group (DT\_SPGP='S' and (DT\_SP1='BS' or DT\_SP1='TL')) whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) that are of short height (height\_3≤15) and have no record of disturbance (CUTBLOCK=0 and SFVI\_BURN=0) that are not Mistik cutblocks (CUTBLOCK≠7) and are not identified as forested within the Aerial Survey Program (CRZ\_FLAG=0) are identified as C\_BS=1.
- ◆ Forested stands that are either Mistik cutblocks (CUTBLOCK=7) or identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) are overridden to C\_BS=0.

### 3.2.52 FOREST CHARACTERIZATION (NETDOWN AND NETDOWN\_TYPE)

The entire gross landbase is assigned to one of a hierarchical number of categories (see Figure 1-1) as follows:

- ◆ Cases that are identified as water (NETDOWN=0 and WATER=1) are characterized as NETDOWN=1 and NETDOWN\_TYPE='WATER'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as landuse dispositions (MU=78 or MU=79) are characterized as NETDOWN=2 and NETDOWN\_TYPE='DISPOSITIONS'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as anthropogenically non-forested (A\_NONFOR≠0) are characterized as NETDOWN=3 and NETDOWN\_TYPE='ANTHROPOGENICALLY NON-FORESTED'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as naturally non-forested (N\_NONFOR≠0) are characterized as NETDOWN=4 and NETDOWN\_TYPE='NATURALLY NON-FORESTED'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as 90 meter riparian zone (BUF\_90=1 or LAC\_PLONGE=2)<sup>7</sup> are characterized as NETDOWN=5 and NETDOWN\_TYPE='WATERCOURSE BUFFER-90m'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as 30 meter riparian zone (BUF\_30=1) are characterized as NETDOWN=6 and NETDOWN\_TYPE='WATERCOURSE BUFFER-30m'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as 15 meter riparian zone (BUF\_15=1) are characterized as NETDOWN=7 and NETDOWN\_TYPE='WATERCOURSE BUFFER-15m'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as inoperable (INOPERABLE=1) are characterized as NETDOWN=8 and NETDOWN\_TYPE='INOPERABLE'.

<sup>7</sup> Single geographic island within Lac La Plonge has no SFVI and the entire island is classified as 90 meter riparian zone.



- ◆ Cases not already characterized (NETDOWN=0) that are identified as low productivity operational constraints (C\_PROD=1) are characterized as NETDOWN=9 and NETDOWN\_TYPE='OPERATIONAL CONSTRAINTS-LOW PRODUCTIVITY CLASS'.
- ◆ Cases not already characterized (NETDOWN=0) that are identified as low crown operational constraints (C\_LOWCROWN=1) are characterized as NETDOWN=10 and NETDOWN\_TYPE='OPERATIONAL CONSTRAINTS-LOW CROWN COVER'.
- ◆ Cases not already characterized as (NETDOWN=0) that are identified as significant larch operational constraints (C\_LARCH=1) are characterized as NETDOWN=11 and NETDOWN\_TYPE='OPERATIONAL CONSTRAINTS-HIGH LARCH COMPONENT'.
- ◆ Within the L&M Wood Products supply area (TIMBER\_SUPPLY\_AREAS=L & M Wood Products) high larch component is allowed, so cases previously characterized as NETDOWN=11 are changed to NETDOWN=0.
- ◆ Cases not already characterized as (NETDOWN=0) that are identified as dwarf mistletoe operational constraints (C\_PINETOE=1) are characterized as NETDOWN=12 and NETDOWN\_TYPE='OPERATIONAL CONSTRAINTS-PINE STANDS WITH SIGNIFICANT DWARF MISTLETOE'.
- ◆ Cases not already characterized as (NETDOWN=0) that are identified as black spruce operational constraints (C\_BS=1) are characterized as NETDOWN=13 and NETDOWN\_TYPE='LOW PRODUCTIVITY BLACK SPRUCE STANDS'.
- ◆ L&M's approach to sawmilling and their diversified product line allows L&M to have an alternate approach to non-productive black spruce stands. Cases not already characterized as (NETDOWN=0) within L&M Wood Products supply area (TIMBER\_SUPPLY\_AREAS=L & M Wood Products) that are identified as pure black spruce leading development type (DT\_SP1=BS and DT\_SP2= ' ') and height less than 10m (HEIGHT\_1 < 10) are characterized as NETDOWN=13 and NETDOWN\_TYPE='LOW PRODUCTIVITY BLACK SPRUCE STANDS'.
- ◆ Cases not already characterized as (NETDOWN=0) within L&M Wood Products supply area (TIMBER\_SUPPLY\_AREAS=L & M Wood Products) that are identified as black spruce leading development type (DT\_SP1=BS) and crown closure less than 15% (CROWN\_1 < 15) and secondary height less than or equal to 7m (HEIGHT\_2 ≤ 10) are characterized as NETDOWN=13 and NETDOWN\_TYPE='LOW PRODUCTIVITY BLACK SPRUCE STANDS'.
- ◆ Cases that are Mistik cutblocks (CUTBLOCK=7) and identified as a watercourse buffer, inoperable area or operational constraint (NETDOWN≥4) are overridden to NETDOWN=0.
- ◆ Cases that are identified as forested within the Aerial Survey Program (CRZ\_FLAG=1) and identified as an operational constraint (NETDOWN≥9) are overridden to NETDOWN=0.

### 3.2.53 EXCLUSION TYPE (EXCLUSION)

As per the Forest Management Planning Document (November, 2005) guidelines, the area within the gross landbase that is removed from the net productive forested area is classified by exclusion type as follows:



- ◆ Cases that are removed from the net productive forested area that are either water, dispositions, anthropogenically non-forested or naturally non-forested (NETDOWN>0 and NETDOWN≤4) are assigned as EXCLUSION= 'PERMANENT'.
- ◆ Cases that are removed from the net productive forested area that are either riparian zones, inoperable, or operational constraints (NETDOWN>4) are assigned as EXCLUSION= 'PARTIAL'.

### 3.2.54 DEVELOPMENT TYPE (DEV\_CODE AND DEVTYPE)

Forest development type (DEVTYPE) and it's associated numeric code (DEV\_CODE) is determined for each of the forested stands within the net productive forested area (NETDOWN=0) and is assigned based on species group (DT\_SPGP), leading softwood species (DT\_SPECIES), crown cover (DT\_CROWN) productivity class (DT\_PCLASS) and significant softwood (SIG\_SOFT) according to Table 3-5:

**TABLE 3-5: FOREST DEVELOPMENT TYPE ASSIGNMENT**

SPECIES GROUP (DT_SPGP)	LEADING SPECIES (DT_SPECIES)	CROWN COVER (DT_CROWN)	PRODUCTIVITY CLASS (DT_PCLASS)	SIGNIFICANT SOFTWOOD (SIG_SOFT)	DEVELOPMENT TYPE (DEVTYPE)	DEVELOPMENT TYPE CODE (DEV_CODE)
S	WS	ALL	ALL	N/A	'S-WS-A-A'	1
S	BS	ALL	ALL	N/A	'S-BS-A-A'	2
S	JP	LD	1	N/A	'S-JP-LD-A-1'	3
S	JP	LD	2	N/A	'S-JP-LD-A-2'	4
S	JP	HD	1	N/A	'S-JP-HD-A-1'	5
S	JP	HD	2	N/A	'S-JP-HD-A-2'	6
S	JP	ALL	ALL	N/A	'S-JP-L&M'	7
SH	JP	ALL	ALL	N/A	'SH-JP-A-A'	8
SH	WS	ALL	ALL	N/A	'SH-WS-A-A'	9
HS	WS	ALL	ALL	N/A	'HS-WS-A-A'	10
HS	JP	ALL	ALL	N/A	'HS-JP-A-A'	11
H	N/A	LD	1	0	'H-A-LD-A-1'	12
H	N/A	LD	2	0	'H-A-LD-A-2'	13
H	N/A	HD	1	0	'H-A-HD-A-1'	14
H	N/A	HD	2	0	'H-A-HD-A-2'	15
H	N/A	LD	ALL	1	'H(S)-A-LD-A'	16
H	N/A	HD	ALL	1	'H(S)-A-HD-A'	17

### 3.2.55 SERAL STAGE (SERAL\_CLS)

Seral stage is determined for each of the forested stands within the FMA forested area (NETDOWN=0 or NETDOWN ≥ 5) and is assigned according to Appendix 5 (January 2006) guidelines within the Forest Management Planning Document as described in Table 3-5:

**TABLE 3-6: SERAL STAGE ASSIGNMENT**

SPECIES GROUP (DT_SPGP)	AGE IN YEARS (AGE)	SERAL STAGE (SERAL_CLS)	SERAL STAGE DESCRIPTION
H or HS	≤ 20	1	Young



SPECIES GROUP (DT_SPGP)	AGE IN YEARS (AGE)	SERAL STAGE (SERAL_CLS)	SERAL STAGE DESCRIPTION
H or HS	21 – 70	2	Immature
H or HS	71 – 90	3	Mature
H or HS	91 – 120	4	Old
H or HS	120+	5	Older
S or SH	≤ 20	1	Young
S or SH	21 – 80	2	Immature
S or SH	81 – 100	3	Mature
S or SH	101 – 120	4	Old
S or SH	120+	5	Older

### 3.2.56 SILVICULTURE GROUND RULE (SGR\_CODE AND SGR\_TYPE)

Silviculture Ground Rule type (SGR\_TYPE) and the associated numeric code (SGR\_CODE) are assigned to each of the forested stands within the net productive forested area (NETDOWN=0) based on species group (DT\_SPGP) and leading softwood species (DT\_SPECIES) according to Table 3-6.

**TABLE 3-7: SILVICULTURE GROUND RULES ASSIGNMENT**

SPECIES GROUP (DT_SPGP)	LEADING SOFTWOOD SPECIES (DT_SPECIES)	SILVICULTURAL GROUND RULE (SGR_TYPE)	SILVICULTURAL GROUND RULE CODE (SGR_CODE)
S	WS	1	'S-WS'
S	BS	2	'S-BS'
S	JP	3	'S-JP'
SH	JP	4	'SH-JP'
SH	WS	5	'SH-WS'
HS	WS	6	'HS-WS'
HS	JP	7	'HS-JP'
H	N/A	8	'H'

### 3.2.57 PROVINCIAL FOREST TYPE (PFT\_TYPE, PFT)

As part of the Forest Characterization Process, the Mistik FMA area is also classified into 'polygon types' (PFT\_TYPE) of which the polygons classified as 'FORESTED' are further classified into provincial forest types (PFT). These classifications are largely based on the Forest Management Planning Manual, Appendix 5 (January, 2006).

### 3.2.58 UPDATED HEIGHT (UPD\_HEIGHT)

For purposes of tactical planning, an updated height field was included and calculated as follows:

- ◆ Forested stands whose dominant forested layer is the overstorey forested layer (DOM\_LAYER=1) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as UPD\_HEIGHT=HEIGHT\_1.





- ◆ Forested stands whose dominant forested layer is the secondary forested layer (DOM\_LAYER=2) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as UPD\_HEIGHT=HEIGHT\_2.
- ◆ Forested stands whose dominant forested layer is the tertiary forested layer (DOM\_LAYER=3) and are not identified as a Mistik cutblock (CUTBLOCK≠7) are assigned as UPD\_HEIGHT=HEIGHT\_3.
- ◆ Forested stands identified as naturally non-forested (N\_NONFOR≥1) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands that are identified as a Mistik cutblock (CUTBLOCK=7) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands identified as water (WATER=1) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands not identified as a Mistik cutblock but burned after SFVI interpretation (CUTBLOCK≠7 and RECENT\_BURN≠0 and RECENT\_BURN>YEAR\_INT) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands that are identified as a Mistik cutblock that have burned since harvest (CUTBLOCK=7 and RECENT\_BURN≠0 and RECENT\_BURN≥CUTYEAR) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands that are identified as forested within the Aerial Survey Program (CRZ\_FLAG≠0) are assigned as UPD\_HEIGHT=0.
- ◆ Forested stands that are identified as anthropogenically non-forested (A\_NONFOR≥1) are assigned as UPD\_HEIGHT=0.
- ◆ Cases that are identified as damaged from windthrow that are not a Mistik planned cutblock (FORHEALTH≠' ' and PLAN\_BLK=0 and TACT\_BLK=0) are assigned as UPD\_HEIGHT=0.



## 4.0 FOREST CHARACTERIZATION PROCESS

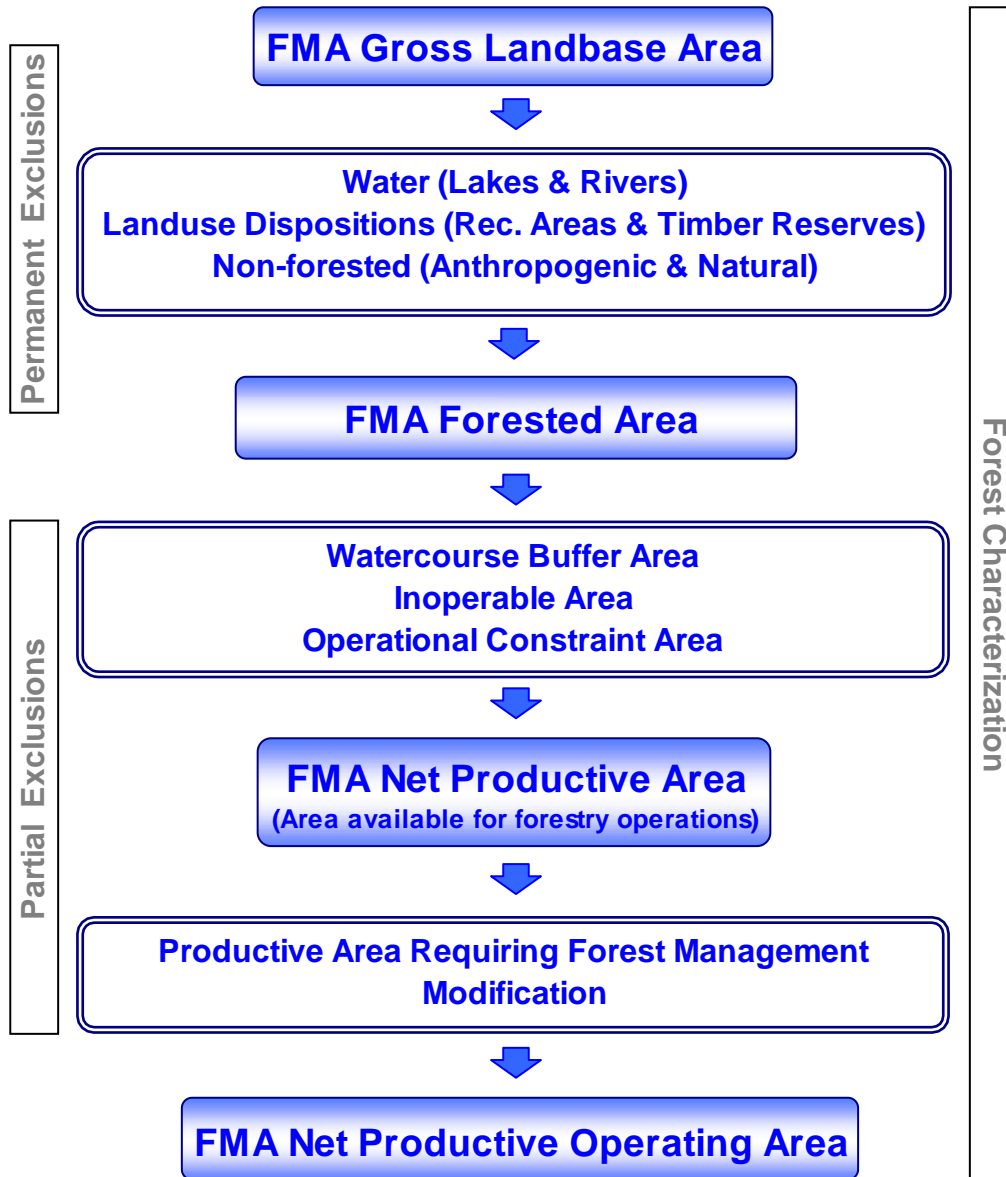
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Figure 4-1 illustrates the forest characterization procedure. The FMA area-wide forest characterization map is presented as Map 4-1 of this document. The FMA area-wide species group and age class distribution within the Mistik FMA net productive forested area is presented as Map 4-2 of this document.

The area in each characterization category and the net productive forested area age class distribution by overstorey species group category, and eligible exclusions are presented for the entire FMA area and each operating area on pages 4-4 to 4-18. The eligible exclusions include forested areas that are in buffers and operational constraints. Eligible for late seral retention areas are not within netdown categories 1, 3, or 4. Netdown category 2 may be included if `n_nonfor` equals 0 and `a_nonfor` equals 0. Areas in all other netdowns may be included if `c_prod` and `c_bs` equals 0. Lacplonge cases are also taken out from becoming eligible for late seral retention.

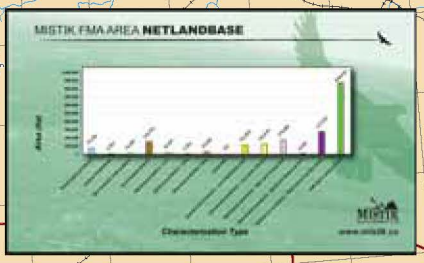
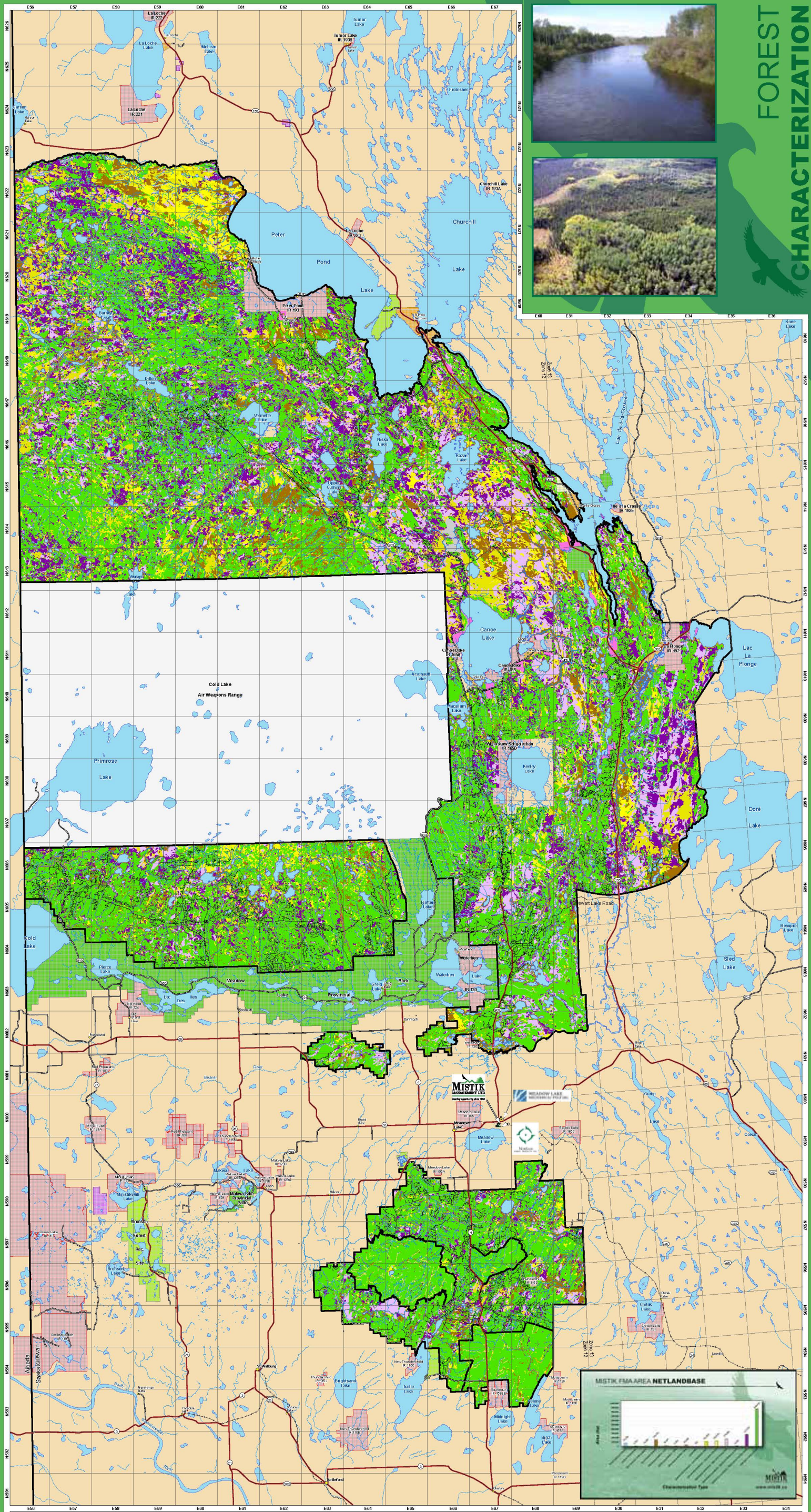


**FIGURE 4-1: PRODUCTIVE FOREST CLASSIFICATION PROCEDURES**





# FOREST CHARACTERIZATION

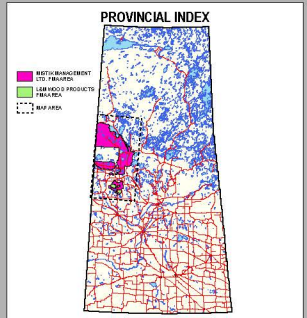


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**MISTIK FMA AREA FOREST CHARACTERIZATION**

**silvacom™**

Map Version: 1.00  
Original Map Scale: 1:50,000  
Map Date: November 13, 2018  
Map Scale: November 13, 2018  
Revision: 01/1/2019  
Map File: mistikfma\_netlandbase\_updated.mxd



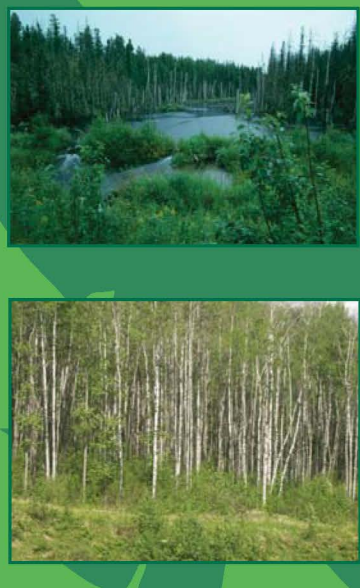
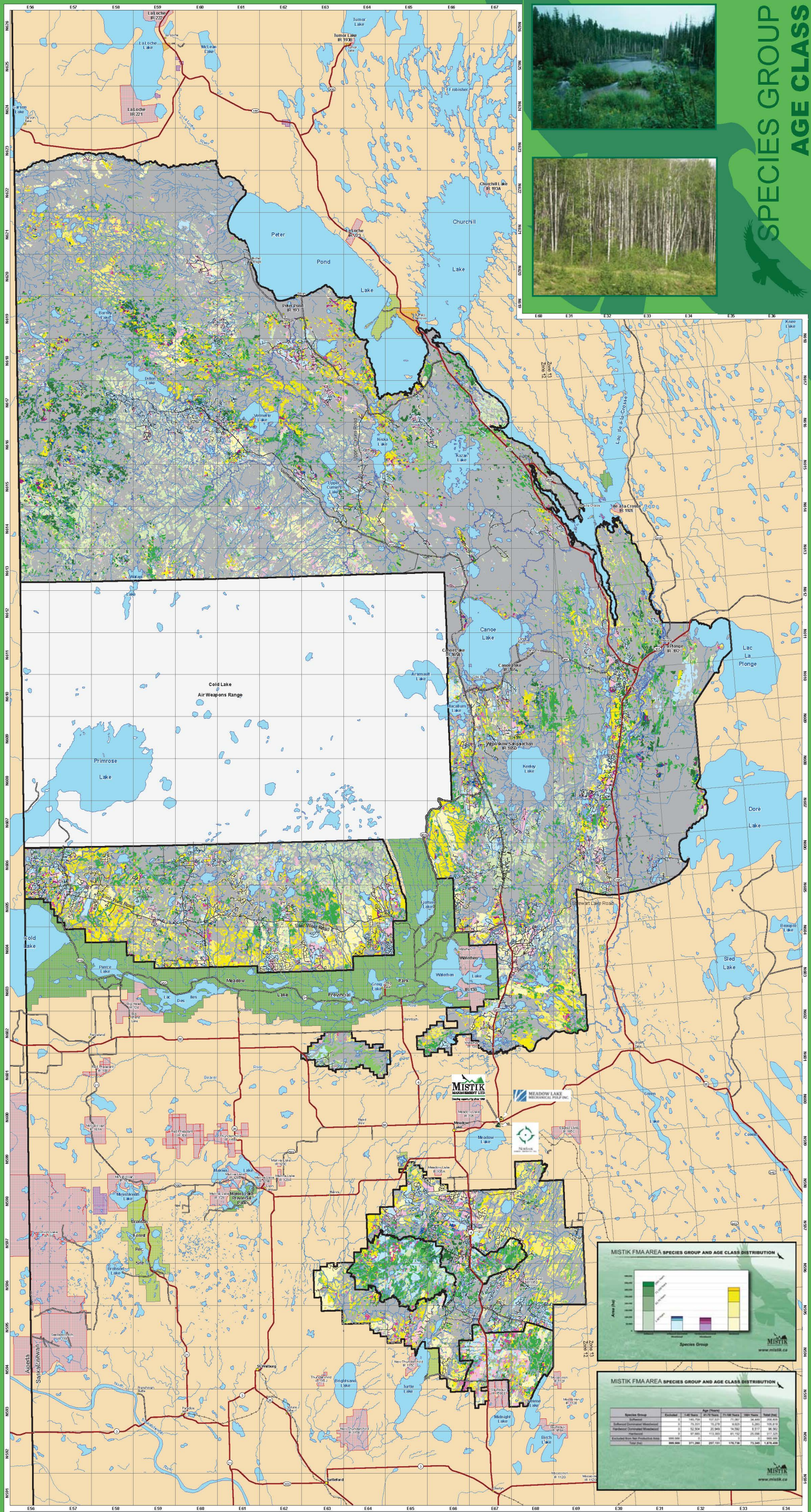
**FOREST CHARACTERIZATION**

Water
Openwater
Anthropogenically Non-Forested
Naturally Non-Forested
Watercourse Buffer - 50m
Watercourse Buffer - 30m
Watercourse Buffer - 15m
Inoperable
Operational Conifers - Low Productivity Class
Operational Conifers - Low Open Cover
Operational Conifers - High Larch Component
Operational Conifers - Pine Stands with Significant Deciduous
Operational Conifers - Low Productivity Risk Spruce Stand
Net Productive Area

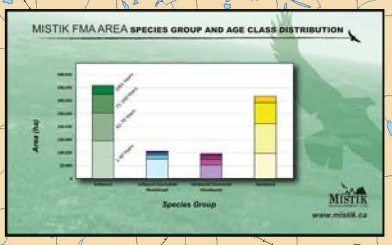
**PLANIMETRIC LEGEND**

Public Paved Road	Provincial Forestry Class Roads
Public Gravel Road	Class 1
Public Road	Class 2
Oil and Gas Road	Class 3
Railroad	FMA Boundary
Creek	Village
Lake	Settlement
Provincial Border	Timber Exclusion
UTM Tie Boundary	Town
Air Weapons Range	Hamlet/Village
Indian Reserve	Mill Site
Park	Woodlands Office
Recreation Area	





**SPECIES GROUP**  
**AGE CLASS**

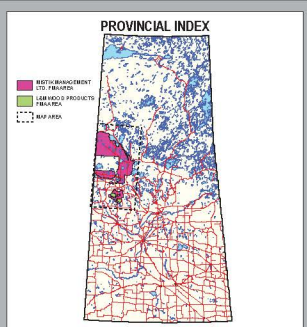


**MISTIK FMA AREA SPECIES GROUP AND AGE CLASS DISTRIBUTION**

Species Group	Excluded	1-40 Years	41-70 Years	71-100 Years	101+ Years	Total (ha)
Softwood	15,000	120,000	100,000	80,000	60,000	375,000
Hardwood	5,000	10,000	15,000	20,000	25,000	75,000
Mixedwood	10,000	20,000	30,000	40,000	50,000	150,000
Excluded from FMA Net Productive Area	30,000	0	0	0	0	30,000
<b>Total (ha)</b>	<b>55,000</b>	<b>150,000</b>	<b>135,000</b>	<b>140,000</b>	<b>135,000</b>	<b>565,000</b>

**SPECIES GROUP AND AGE CLASS DISTRIBUTION: MISTIK FMA NET PRODUCTIVE AREA**

Map Version: 1.00  
Original Map Year: 1-2010  
Map Date: November 21, 2010  
Map Date: 1-1-2010  
Map Date: 1-1-2010  
Map File: mapshaded\_mistik\_fma\_netproductive.mxd  
Map File: mapshaded\_mistik\_fma\_netproductive.mxd



**SPECIES ASSOCIATION**

Age Class	Softwood	Softwood/Hardwood	Hardwood/Softwood	Hardwood
1-40 Years	[Green]	[Light Green]	[Light Blue]	[Light Yellow]
41-70 Years	[Light Green]	[Light Blue]	[Light Yellow]	[Light Pink]
71-100 Years	[Light Green]	[Light Blue]	[Light Yellow]	[Light Pink]
101+ Years	[Light Green]	[Light Blue]	[Light Yellow]	[Light Pink]

Excluded from FMA Net Productive Area: [Grey]

**PLANIMETRIC LEGEND**

- Public Paved Road
- Public Gravel Road
- Public Road
- Oil and Gas Road
- Railroad
- Creek
- Lake
- Provincial Border
- UTM Tie Boundary
- Air Weapons Range
- Indian Reserve
- Park
- Recreation Area

**Provincial Forestry Class Roads**

- Class 1
- Class 2
- Class 3
- FMA Boundary
- Village
- Settlement
- Timber Exclusion
- Town
- Hamlet/Village
- Mill Site
- Woodlands Office

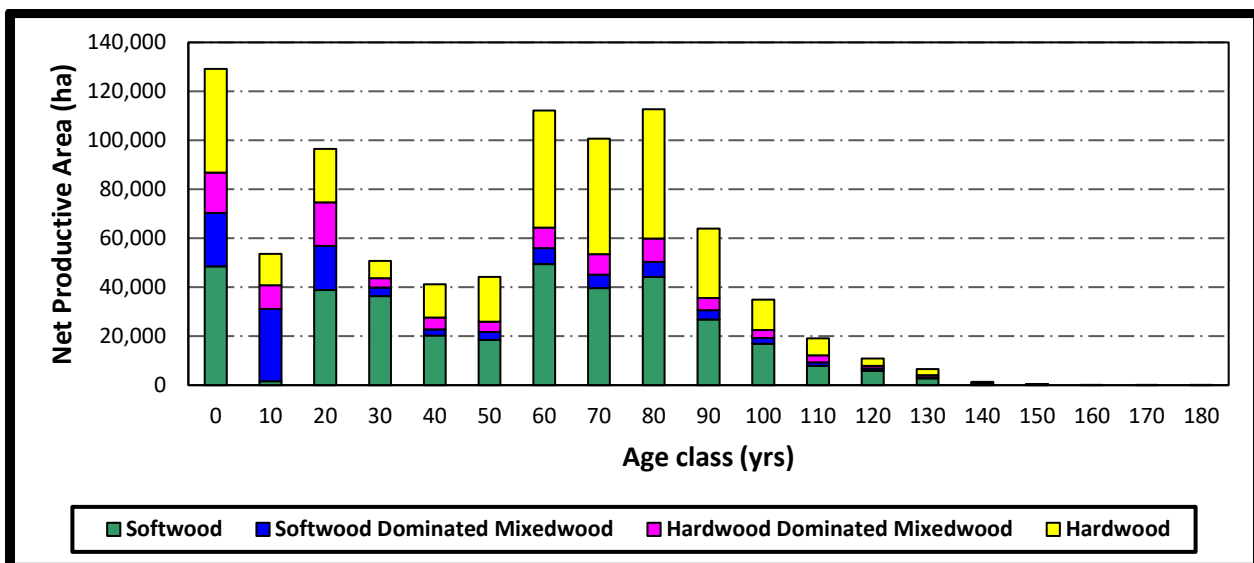




**TABLE 4-1: FOREST CHARACTERIZATION SUMMARY: GROSS LANDBASE**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>1,878,499</b>	<b>100</b>	<b>1,017,277</b>
Water (Lakes and Rivers)	74,758	4	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	6,767	0	4,817
Non-Forested: Anthropogenic	12,696	1	0
Non-Forested: Natural	152,591	8	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>246,812</i>	<i>13</i>	<i>4,817</i>
<b>FMA Managed Forested Area</b>	<b>1,631,687</b>	<b>87</b>	<b>1,012,460</b>
Watercourse Buffers - 15 m	19,347	1	8,807
Watercourse Buffers - 30 m	5,921	0	3,556
Watercourse Buffers - 90 m	32,506	2	20,770
Inoperable	253	0	243
Operational Constraints - Low Productivity Class	111,843	6	0
Operational Constraints - Low Crown Closure	123,974	7	69,965
Operational Constraints - High Larch Component	175,096	10	23,669
Operational Constraints - Significant Disease on Pine	6,928	0	6,928
Operational Constraints - Black Spruce Considerations	277,308	15	4
<b>FMA Net Productive Area</b>	<b>878,510</b>	<b>46</b>	<b>878,510</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>753,176</i>	<i>41</i>	<i>133,949</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>878,510</b>	<b>46</b>	<b>878,510</b>

**FIGURE 4-2: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: GROSS LANDBASE**

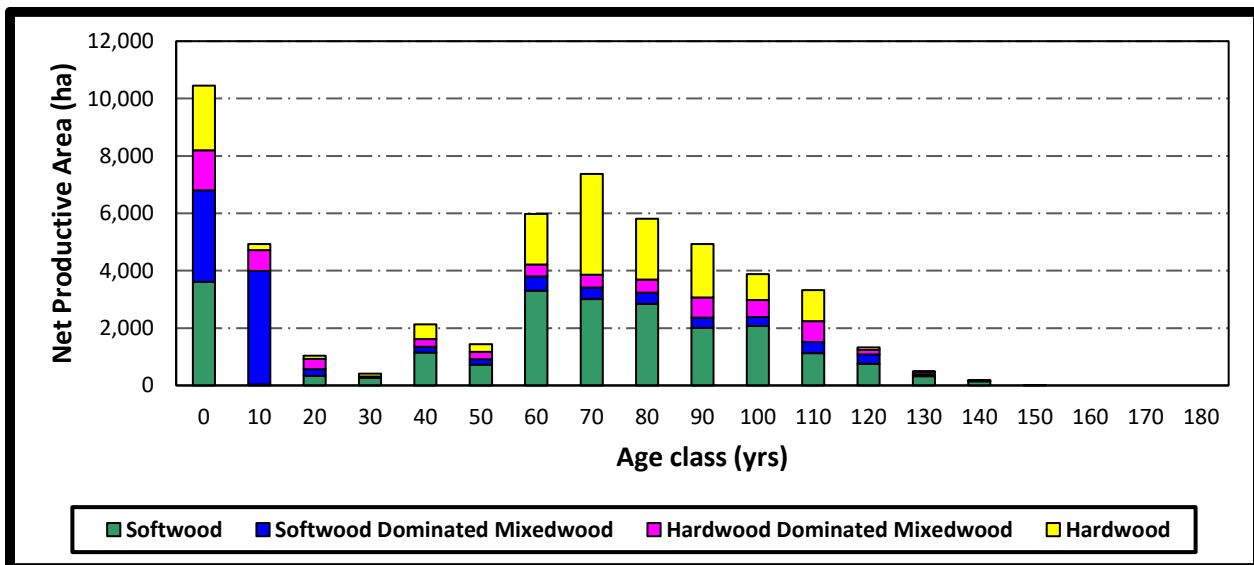




**TABLE 4-2: FOREST CHARACTERIZATION SUMMARY: BEAUVAL MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>149,212</b>	<b>100</b>	<b>64,322</b>
Water (Lakes and Rivers)	5,224	4	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	1,130	1	0
Non-Forested: Natural	9,255	6	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>15,609</i>	<i>10</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>133,603</b>	<b>90</b>	<b>64,322</b>
Watercourse Buffers - 15 m	1,185	1	334
Watercourse Buffers - 30 m	418	0	244
Watercourse Buffers - 90 m	3,731	3	2,741
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	9,757	7	0
Operational Constraints - Low Crown Closure	7,859	5	4,139
Operational Constraints - High Larch Component	23,131	16	2,309
Operational Constraints - Significant Disease on Pine	861	1	861
Operational Constraints - Black Spruce Considerations	32,968	22	0
<b>FMA Net Productive Area</b>	<b>53,693</b>	<b>36</b>	<b>53,693</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>79,910</i>	<i>54</i>	<i>10,629</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>53,693</b>	<b>36</b>	<b>53,693</b>

**FIGURE 4-3: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: BEAUVAL MANAGEMENT UNIT**

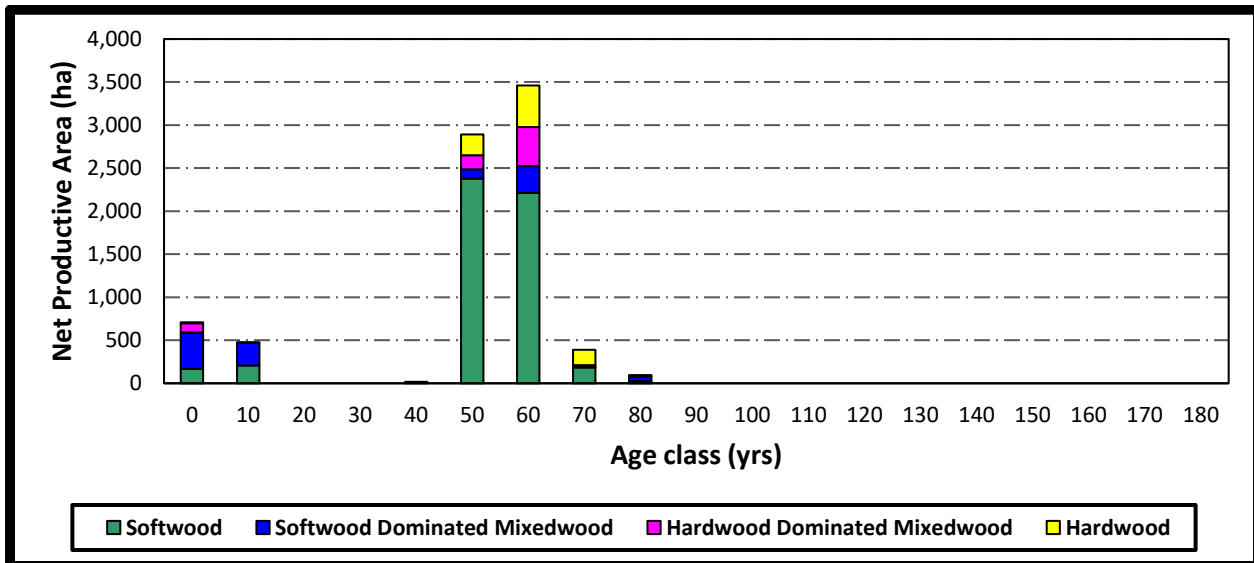




**TABLE 4-3: FOREST CHARACTERIZATION SUMMARY: BEAVER RIVER MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>13,705</b>	<b>100</b>	<b>9,005</b>
Water (Lakes and Rivers)	262	2	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	56	0	0
Non-Forested: Natural	919	7	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>1,237</i>	<i>9</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>12,468</b>	<b>91</b>	<b>9,005</b>
Watercourse Buffers - 15 m	117	1	30
Watercourse Buffers - 30 m	4	0	1
Watercourse Buffers - 90 m	182	1	100
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	20	0	0
Operational Constraints - Low Crown Closure	750	5	163
Operational Constraints - High Larch Component	2,323	16	73
Operational Constraints - Significant Disease on Pine	595	4	595
Operational Constraints - Black Spruce Considerations	432	3	0
<b>FMA Net Productive Area</b>	<b>8,045</b>	<b>59</b>	<b>8,045</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>4,423</i>	<i>32</i>	<i>961</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>8,045</b>	<b>59</b>	<b>8,045</b>

**FIGURE 4-4: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: BEAVER RIVER MANAGEMENT UNIT**

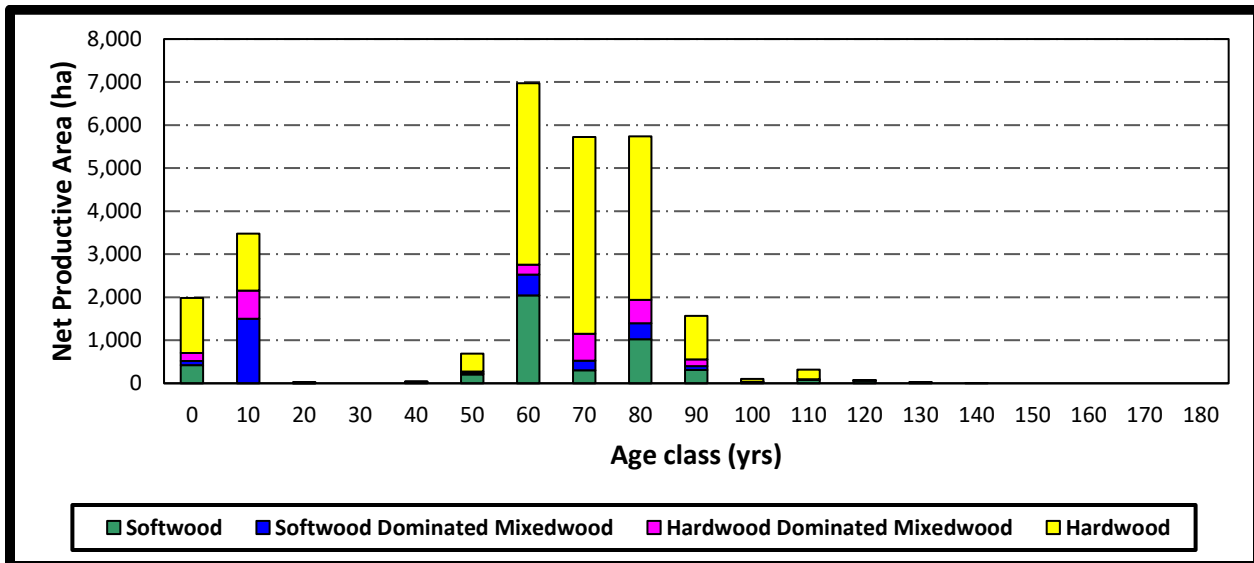




**TABLE 4-4: FOREST CHARACTERIZATION SUMMARY: BIG ISLAND LAKE MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>37,926</b>	<b>100</b>	<b>27,745</b>
Water (Lakes and Rivers)	335	1	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	200	1	0
Non-Forested: Natural	2012	5	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>2,547</i>	<i>7</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>35,379</b>	<b>93</b>	<b>27,745</b>
Watercourse Buffers - 15 m	11	0	6
Watercourse Buffers - 30 m	450	1	243
Watercourse Buffers - 90 m	199	1	82
Inoperable	29	0	28
Operational Constraints - Low Productivity Class	585	2	0
Operational Constraints - Low Crown Closure	1,169	3	345
Operational Constraints - High Larch Component	1,649	4	290
Operational Constraints - Significant Disease on Pine	0	0	0
Operational Constraints - Black Spruce Considerations	4,537	12	0
<b>FMA Net Productive Area</b>	<b>26,751</b>	<b>71</b>	<b>26,751</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>8,629</i>	<i>23</i>	<i>994</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>26,751</b>	<b>71</b>	<b>26,751</b>

**FIGURE 4-5: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: BIG ISLAND LAKE MANAGEMENT UNIT**

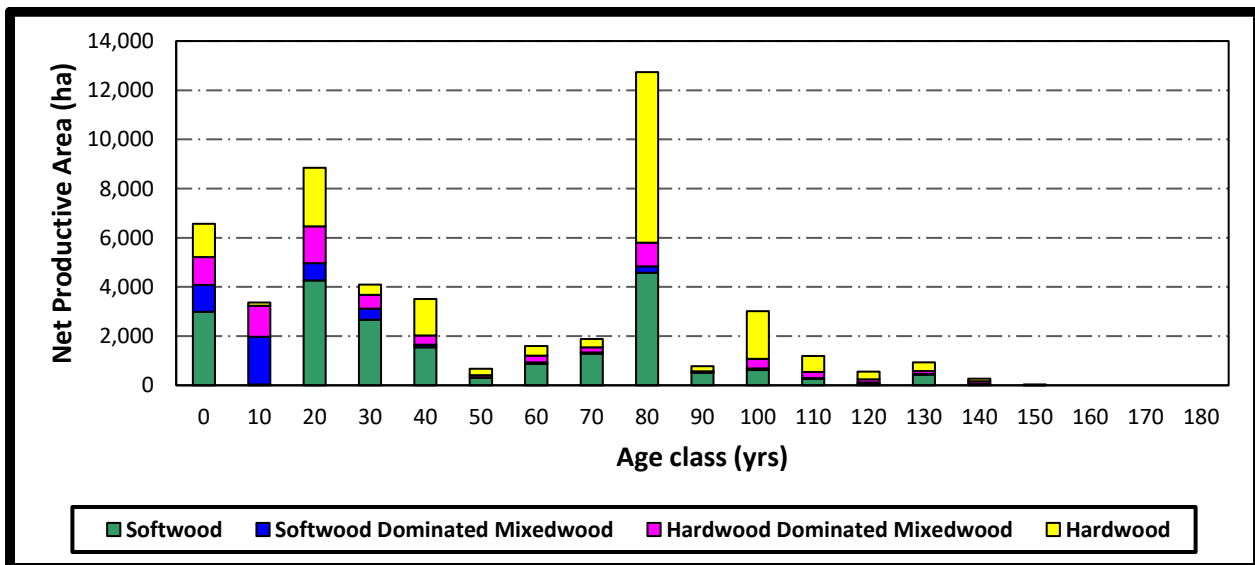




**TABLE 4-5: FOREST CHARACTERIZATION SUMMARY: BUFFALO NARROWS MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>125,665</b>	<b>100</b>	<b>55,002</b>
Water (Lakes and Rivers)	10,275	8	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	896	1	0
Non-Forested: Natural	12,122	10	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>23,293</i>	<i>19</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>102,372</b>	<b>81</b>	<b>55,002</b>
Watercourse Buffers - 15 m	733	1	311
Watercourse Buffers - 30 m	122	0	108
Watercourse Buffers - 90 m	3,053	2	1,868
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	7,244	6	0
Operational Constraints - Low Crown Closure	5,044	4	1,797
Operational Constraints - High Larch Component	11,847	9	788
Operational Constraints - Significant Disease on Pine	45	0	45
Operational Constraints - Black Spruce Considerations	24,225	19	0
<b>FMA Net Productive Area</b>	<b>50,059</b>	<b>40</b>	<b>50,059</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>52,313</i>	<i>42</i>	<i>4,917</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>50,059</b>	<b>40</b>	<b>50,059</b>

**FIGURE 4-6: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: BUFFALO NARROWS MANAGEMENT UNIT**



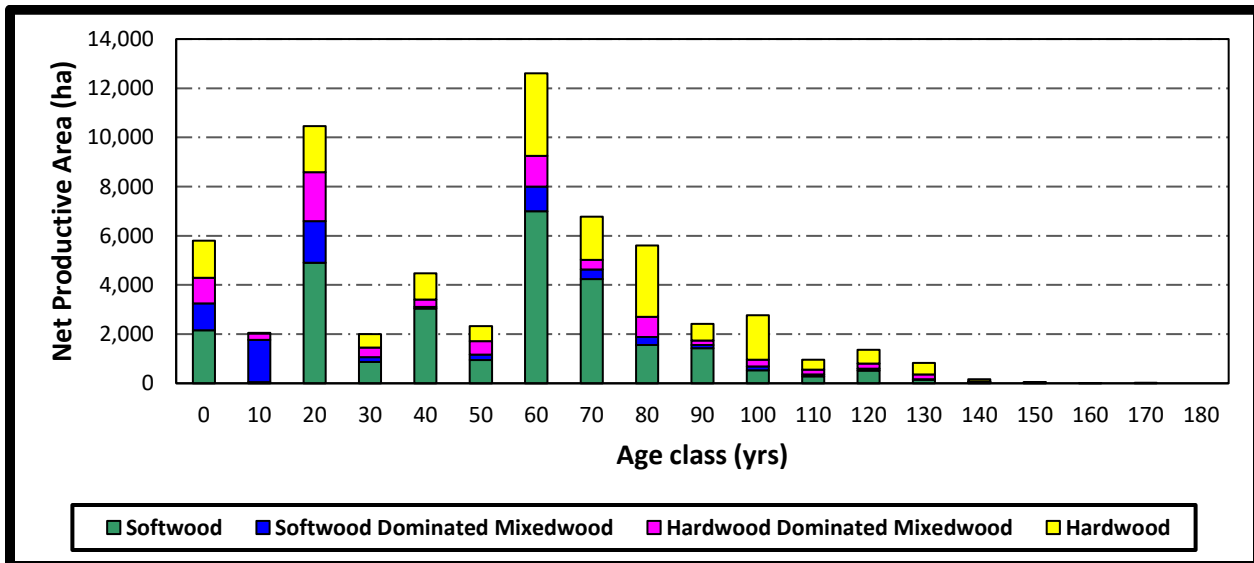




**TABLE 4-6: FOREST CHARACTERIZATION SUMMARY: CANOE LAKE MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>189,585</b>	<b>100</b>	<b>70,444</b>
Water (Lakes and Rivers)	12,443	7	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	2,516	1	0
Non-Forested: Natural	17,904	9	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>32,863</i>	<i>17</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>156,722</b>	<b>83</b>	<b>70,444</b>
Watercourse Buffers - 15 m	1,388	1	480
Watercourse Buffers - 30 m	131	0	52
Watercourse Buffers - 90 m	3,647	2	2107
Inoperable	6	0	6
Operational Constraints - Low Productivity Class	16,949	9	0
Operational Constraints - Low Crown Closure	13,753	7	4,840
Operational Constraints - High Larch Component	32,569	17	2,095
Operational Constraints - Significant Disease on Pine	176	0	176
Operational Constraints - Black Spruce Considerations	27,413	14	0
<b>FMA Net Productive Area</b>	<b>60,690</b>	<b>32</b>	<b>60,690</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>96,032</i>	<i>51</i>	<i>9,756</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>60,690</b>	<b>32</b>	<b>60,690</b>

**FIGURE 4-7: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: CANOE LAKE MANAGEMENT UNIT**

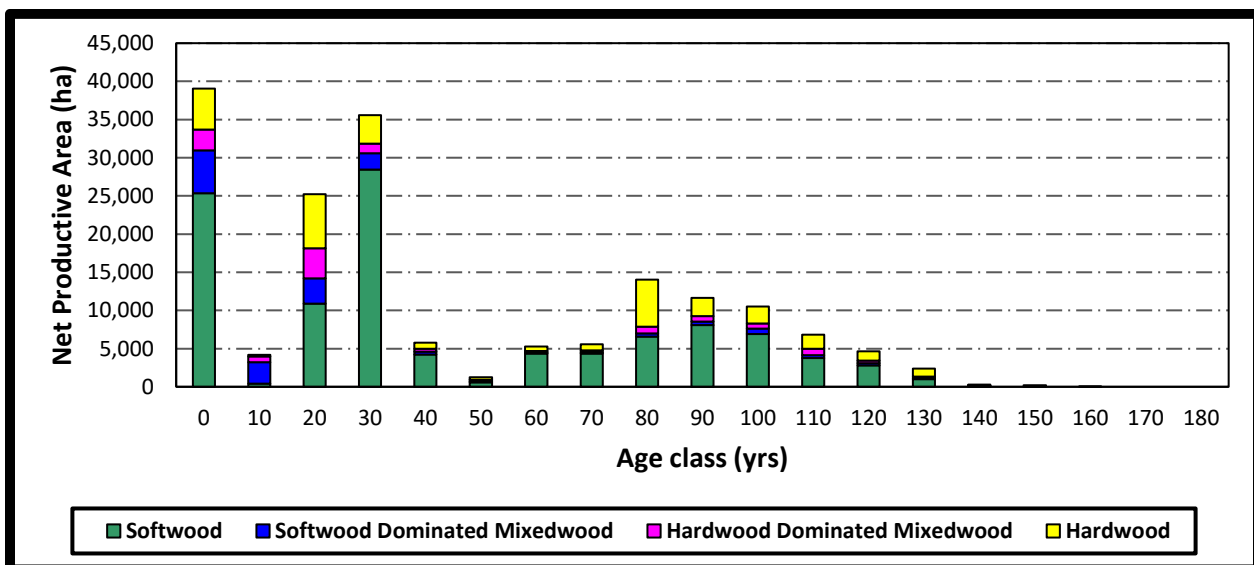




**TABLE 4-7: FOREST CHARACTERIZATION SUMMARY: DILLON MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>355,677</b>	<b>100</b>	<b>201,871</b>
Water (Lakes and Rivers)	10,307	3	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	683	0	0
Non-Forested: Natural	24,262	7	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>35,252</i>	<i>10</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>320,425</b>	<b>90</b>	<b>201,871</b>
Watercourse Buffers - 15 m	4,447	1	2,210
Watercourse Buffers - 30 m	1,966	1	1,075
Watercourse Buffers - 90 m	7,219	2	4,935
Inoperable	5	0	5
Operational Constraints - Low Productivity Class	25,683	7	0
Operational Constraints - Low Crown Closure	19,873	6	9,625
Operational Constraints - High Larch Component	26,997	8	8,273
Operational Constraints - Significant Disease on Pine	3,264	1	3,264
Operational Constraints - Black Spruce Considerations	58,482	16	0
<b>FMA Net Productive Area</b>	<b>172,489</b>	<b>48</b>	<b>172,489</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>147,936</i>	<i>42</i>	<i>29,388</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>172,489</b>	<b>48</b>	<b>172,489</b>

**FIGURE 4-8: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: DILLON MANAGEMENT UNIT**

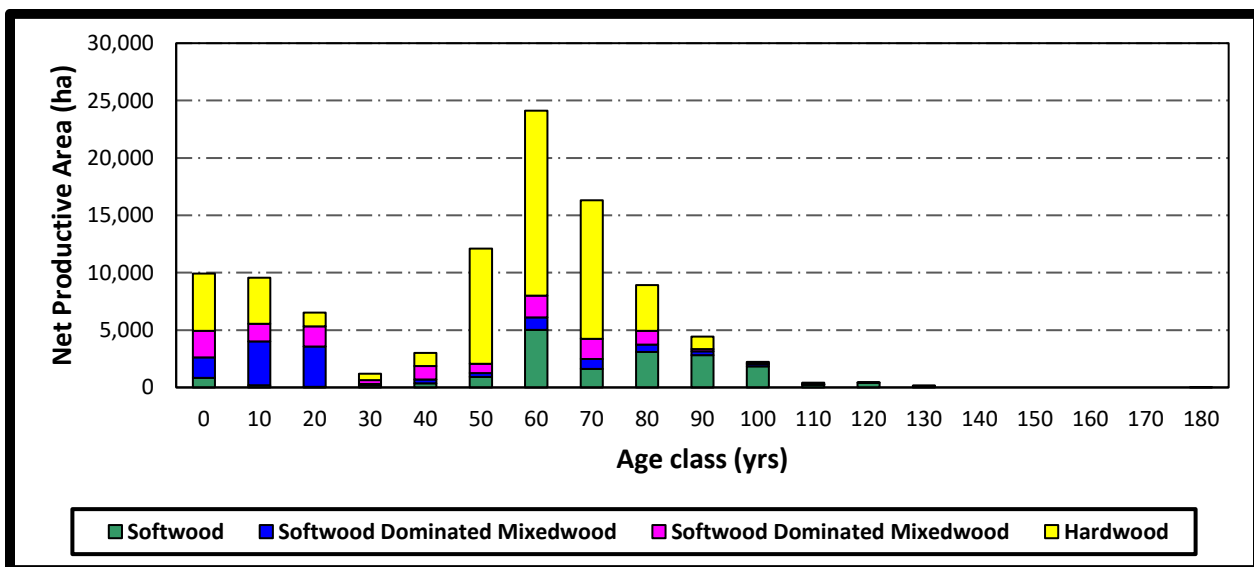




**TABLE 4-8: FOREST CHARACTERIZATION SUMMARY: DIVIDE MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>160,128</b>	<b>100</b>	<b>107,003</b>
Water (Lakes and Rivers)	2,455	2	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	2,075	1	0
Non-Forested: Natural	18,229	11	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>22,759</i>	<i>14</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>137,370</b>	<b>86</b>	<b>107,003</b>
Watercourse Buffers - 15 m	1,543	1	938
Watercourse Buffers - 30 m	564	0	482
Watercourse Buffers - 90 m	816	1	557
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	2,369	1	0
Operational Constraints - Low Crown Closure	7,700	5	4,386
Operational Constraints - High Larch Component	11,752	7	1,314
Operational Constraints - Significant Disease on Pine	0	0	0
Operational Constraints - Black Spruce Considerations	13,298	8	0
<b>FMA Net Productive Area</b>	<b>99,327</b>	<b>62</b>	<b>99,327</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>38,042</i>	<i>24</i>	<i>7,676</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>99,327</b>	<b>62</b>	<b>99,327</b>

**FIGURE 4-9: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: DIVIDE MANAGEMENT UNIT**

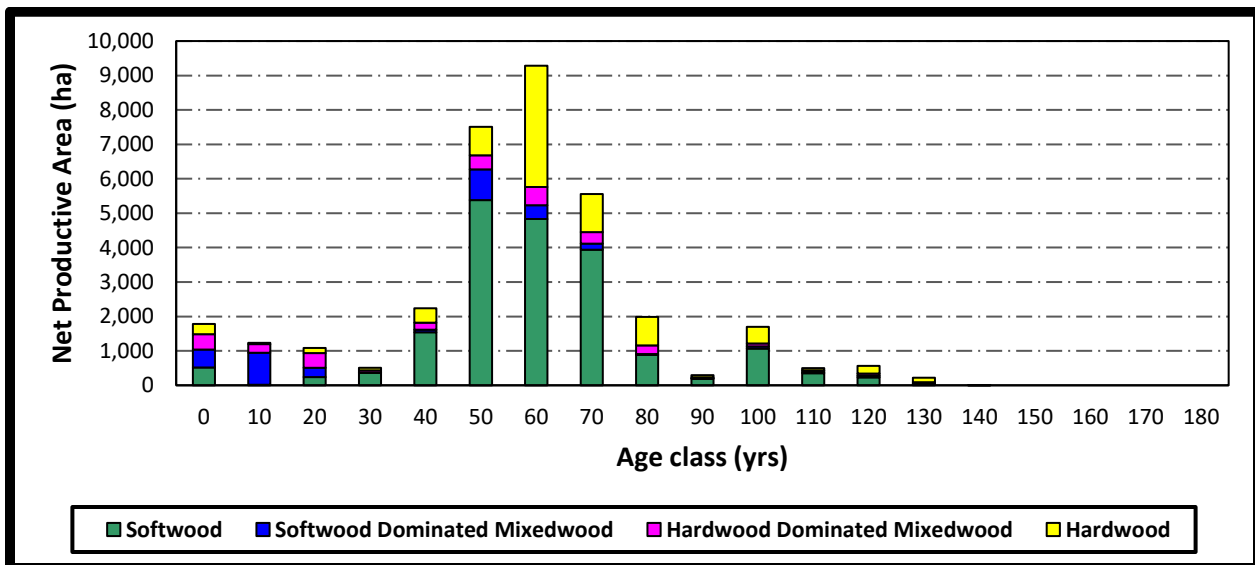




**TABLE 4-9: FOREST CHARACTERIZATION SUMMARY: ILE A-LA-CROSSE MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>112,426</b>	<b>100</b>	<b>40,928</b>
Water (Lakes and Rivers)	2,838	3	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	821	1	0
Non-Forested: Natural	14,319	13	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>17,978</i>	<i>16</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>94,448</b>	<b>84</b>	<b>40,928</b>
Watercourse Buffers - 15 m	211	0	50
Watercourse Buffers - 30 m	40	0	5
Watercourse Buffers - 90 m	2,755	2	1,507
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	8,281	7	0
Operational Constraints - Low Crown Closure	10,373	9	4,117
Operational Constraints - High Larch Component	18,990	17	632
Operational Constraints - Significant Disease on Pine	153	0	153
Operational Constraints - Black Spruce Considerations	19,183	17	0
<b>FMA Net Productive Area</b>	<b>34,462</b>	<b>31</b>	<b>34,462</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>59,986</i>	<i>53</i>	<i>6,465</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>34,462</b>	<b>31</b>	<b>34,462</b>

**FIGURE 4-10: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: ILE A-LA-CROSSE MANAGEMENT UNIT**

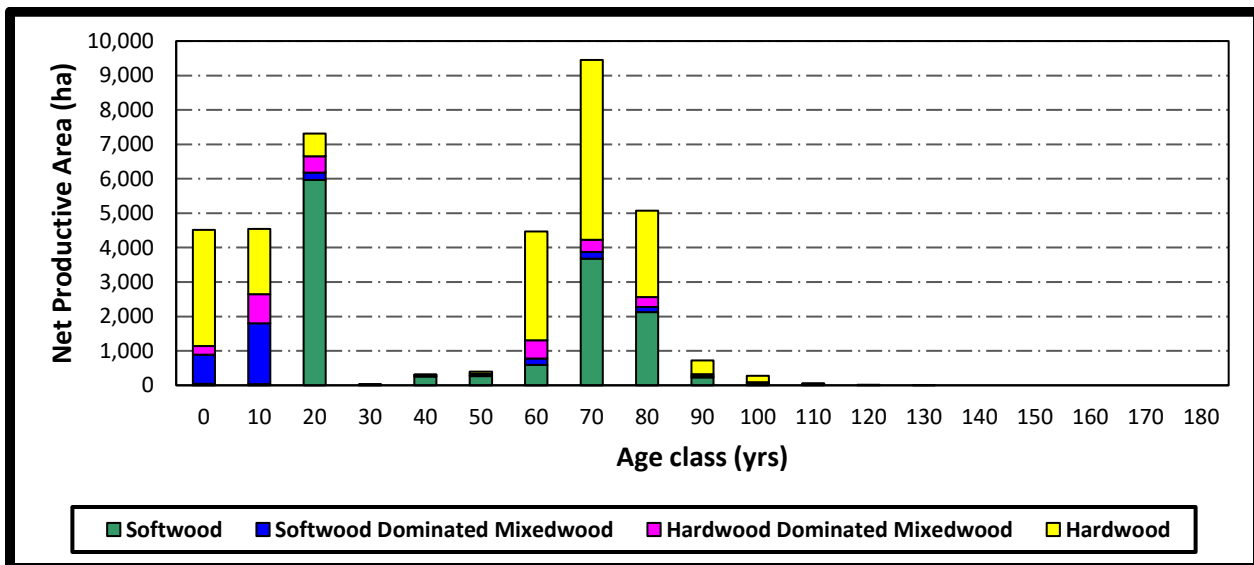




**TABLE 4-10: FOREST CHARACTERIZATION SUMMARY: MURRAY BAY MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>62,412</b>	<b>100</b>	<b>42,817</b>
Water (Lakes and Rivers)	1,974	3	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	271	0	0
Non-Forested: Natural	5,974	10	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>8,219</i>	<i>13</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>54,193</b>	<b>87</b>	<b>42,817</b>
Watercourse Buffers - 15 m	449	1	240
Watercourse Buffers - 30 m	414	1	231
Watercourse Buffers - 90 m	1,115	2	737
Inoperable	91	0	88
Operational Constraints - Low Productivity Class	1,966	3	0
Operational Constraints - Low Crown Closure	6,180	10	3,910
Operational Constraints - High Larch Component	901	1	444
Operational Constraints - Significant Disease on Pine	0	0	0
Operational Constraints - Black Spruce Considerations	5,911	9	0
<b>FMA Net Productive Area</b>	<b>37,166</b>	<b>60</b>	<b>37,166</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>17,027</i>	<i>27</i>	<i>5,650</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>37,166</b>	<b>60</b>	<b>37,166</b>

**FIGURE 4-11: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: MURRAY BAY MANAGEMENT UNIT**



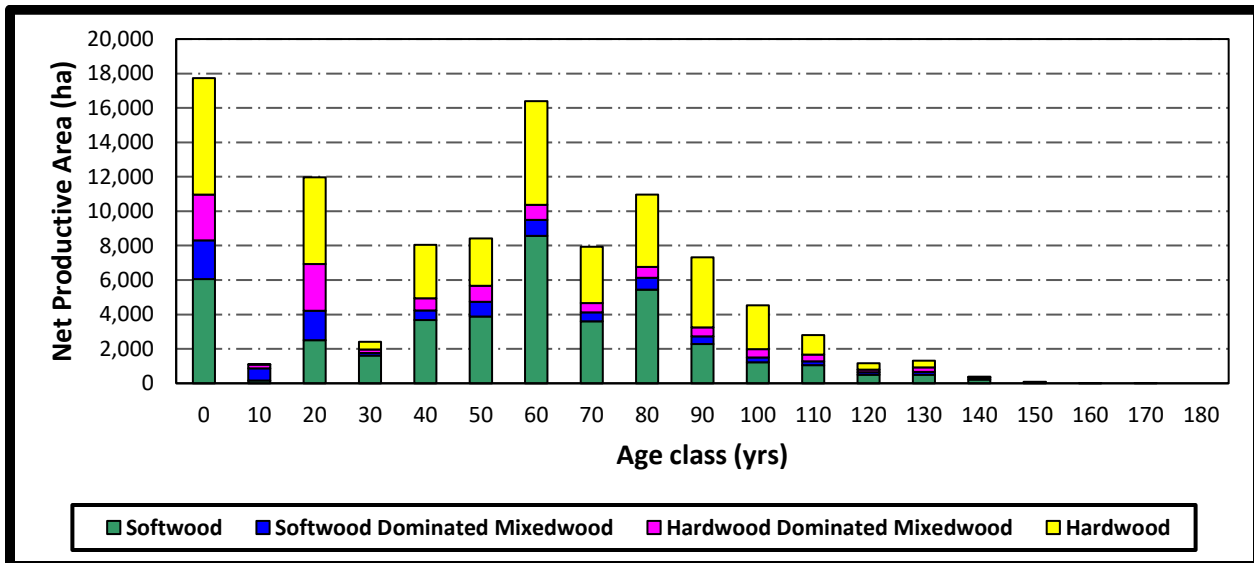




**TABLE 4-11: FOREST CHARACTERIZATION SUMMARY: PETER POND MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>283,956</b>	<b>100</b>	<b>131,351</b>
Water (Lakes and Rivers)	9,574	3	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	86	0	0
Non-Forested: Natural	23,753	8	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>33,413</i>	<i>12</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>250,543</b>	<b>88</b>	<b>131,351</b>
Watercourse Buffers - 15 m	5,686	2	2,156
Watercourse Buffers - 30 m	445	0	341
Watercourse Buffers - 90 m	3,069	1	1,781
Inoperable	32	0	27
Operational Constraints - Low Productivity Class	31,644	11	0
Operational Constraints - Low Crown Closure	30,527	11	21,207
Operational Constraints - High Larch Component	17,997	6	2,123
Operational Constraints - Significant Disease on Pine	1,139	0	1,139
Operational Constraints - Black Spruce Considerations	57,428	20	0
<b>FMA Net Productive Area</b>	<b>102,576</b>	<b>36</b>	<b>102,576</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>147,967</i>	<i>52</i>	<i>28,773</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>102,576</b>	<b>36</b>	<b>102,576</b>

**FIGURE 4-12: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: PETER POND MANAGEMENT UNIT**

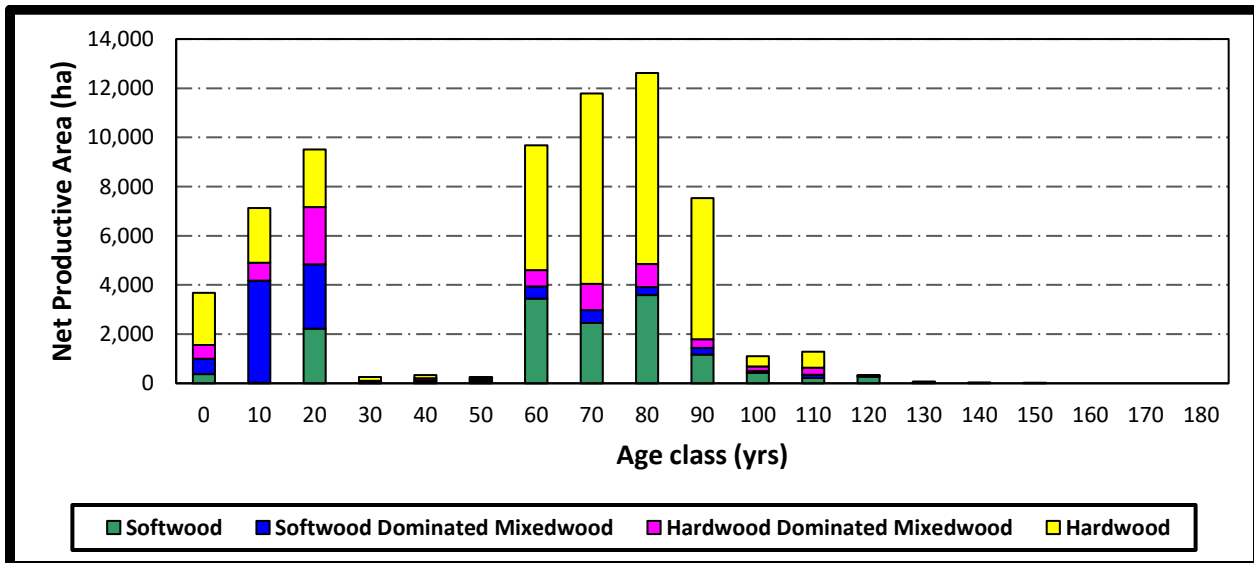




**TABLE 4-12: FOREST CHARACTERIZATION SUMMARY: PIERCELAND MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>119,855</b>	<b>100</b>	<b>74,692</b>
Water (Lakes and Rivers)	5,449	5	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	1,098	1	0
Non-Forested: Natural	8,572	7	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>15,119</i>	<i>13</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>104,736</b>	<b>87</b>	<b>74,692</b>
Watercourse Buffers - 15 m	525	0	276
Watercourse Buffers - 30 m	743	1	323
Watercourse Buffers - 90 m	2,071	2	1,172
Inoperable	3	0	3
Operational Constraints - Low Productivity Class	5,384	4	0
Operational Constraints - Low Crown Closure	8,314	7	6,524
Operational Constraints - High Larch Component	6,002	5	797
Operational Constraints - Significant Disease on Pine	0	0	0
Operational Constraints - Black Spruce Considerations	16,098	13	0
<b>FMA Net Productive Area</b>	<b>65,596</b>	<b>55</b>	<b>65,596</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>39,140</i>	<i>33</i>	<i>9,095</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>65,596</b>	<b>55</b>	<b>65,596</b>

**FIGURE 4-13: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: PIERCELAND MANAGEMENT UNIT**

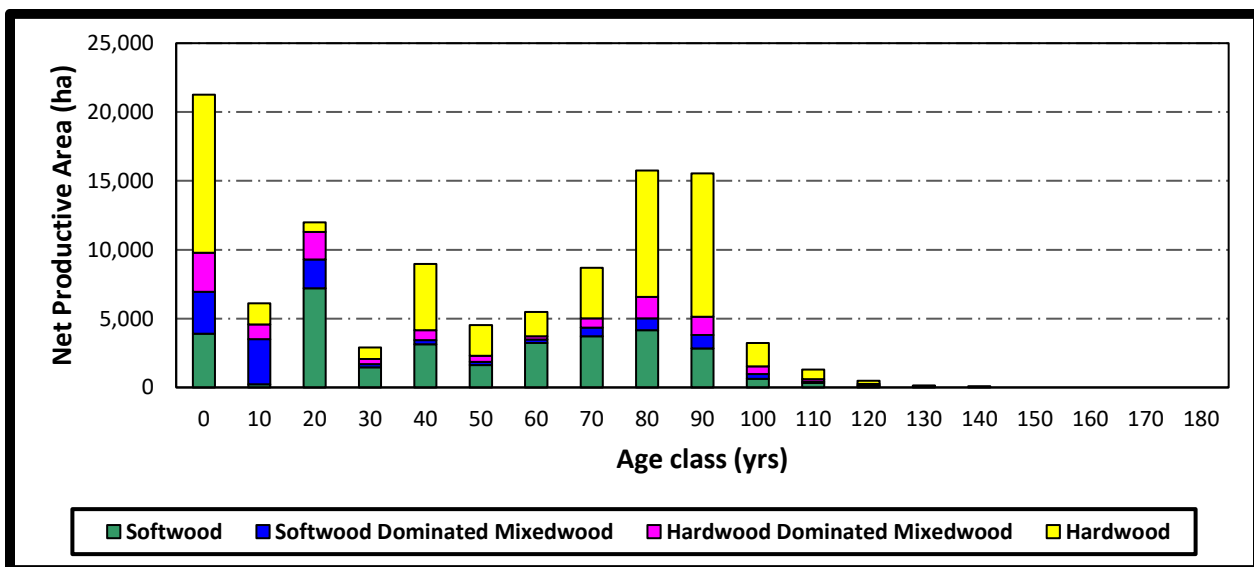




**TABLE 4-13: FOREST CHARACTERIZATION SUMMARY: WATERHEN MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>186,515</b>	<b>100</b>	<b>124,282</b>
Water (Lakes and Rivers)	7,940	4	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	2,168	1	0
Non-Forested: Natural	12,319	7	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>22,427</i>	<i>12</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>164,088</b>	<b>88</b>	<b>124,355</b>
Watercourse Buffers - 15 m	2,022	1	1,138
Watercourse Buffers - 30 m	518	0	399
Watercourse Buffers - 90 m	4,649	2	3,190
Inoperable	87	0	85
Operational Constraints - Low Productivity Class	1,628	1	0
Operational Constraints - Low Crown Closure	10,273	6	7,815
Operational Constraints - High Larch Component	20,940	11	4,532
Operational Constraints - Significant Disease on Pine	695	0	695
Operational Constraints - Black Spruce Considerations	16,849	9	0
<b>FMA Net Productive Area</b>	<b>106,428</b>	<b>57</b>	<b>106,428</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>57,661</i>	<i>31</i>	<i>17,854</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>106,428</b>	<b>57</b>	<b>106,428</b>

**FIGURE 4-14: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: WATERHEN MANAGEMENT UNIT**

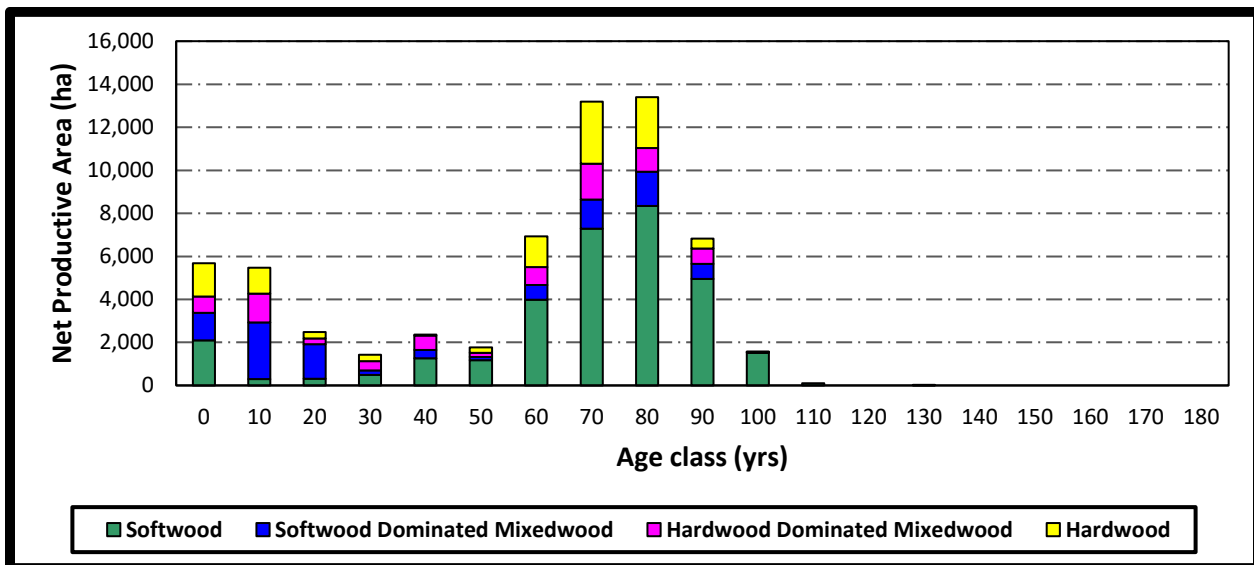




**TABLE 4-14: FOREST CHARACTERIZATION SUMMARY: L&M MANAGEMENT UNIT**

Landbase Category	Area (ha)	Percent of Gross Area	Area (ha) Eligible for Late Seral Retention
<b>Gross FMA Landbase Area</b>	<b>69,211</b>	<b>100</b>	<b>63,018</b>
Water (Lakes and Rivers)	223	0	0
Landuse Dispositions (Recreation Areas and Timber Reserves)	0	0	0
Non-Forested: Anthropogenic	697	1	0
Non-Forested: Natural	2,953	4	0
<i>Sub-Total (Permanent Exclusions)</i>	<i>3,873</i>	<i>6</i>	<i>0</i>
<b>FMA Managed Forested Area</b>	<b>65,338</b>	<b>94</b>	<b>63,024</b>
Watercourse Buffers - 15 m	1,031	1	636
Watercourse Buffers - 30 m	107	0	52
Watercourse Buffers - 90 m	0	0	0
Inoperable	0	0	0
Operational Constraints - Low Productivity Class	332	0	0
Operational Constraints - Low Crown Closure	2,158	3	1,100
Operational Constraints - High Larch Component	0	0	0
Operational Constraints - Significant Disease on Pine	0	0	0
Operational Constraints - Black Spruce Considerations	484	1	4
<b>FMA Net Productive Area</b>	<b>61,226</b>	<b>88</b>	<b>61,226</b>
Forest Management Modification Area	0	0	0
<i>Sub-Total (Partial Exclusions)</i>	<i>4,112</i>	<i>6</i>	<i>1,792</i>
<b>FMA Net Productive Area – No Constraints</b>	<b>61,226</b>	<b>88</b>	<b>61,226</b>

**FIGURE 4-15: NET PRODUCTIVE AREA AGE CLASS DISTRIBUTION BY OVERSTOREY SPECIES GROUP: L&M MANAGEMENT UNIT**





## 5.0 FOREST MANAGEMENT MANUAL PLANNING REQUIREMENTS

**TABLE 5-1: MEASURES EMPLOYED TO MEET REQUIREMENTS WITHIN THE FOREST MANAGEMENT PLANNING DOCUMENT**

SECTION	FMP MANUAL REQUIREMENT	MEASURES EMPLOYED
Section 2	<p><b>Inventories</b>            The Forest Service requires licensees to submit all data layers used for generating the planning inventory. Also, licensees must list the names of all inventories used for generating the planning inventory in FMP-Table-Appendix-1, and the names of all other layers in FMP-Table-Appendix-2.</p>	<p>The names, sources and contents of all inventories used to generate the planning inventory are supplied within the Forest Characterization document.</p>





SECTION	FMP MANUAL REQUIREMENT	MEASURES EMPLOYED
Section 2	<p><b>The Planning Inventory</b>            The licensee must preserve and maintain the planning inventory unless FMP amendments necessitate modifications.</p> <p>Starting from the SFVI inventory, the licensee must follow the steps below to generate the planning inventory using the GIS tools:</p> <ol style="list-style-type: none"> <li>1. Updating;</li> <li>2. Adding forecasted changes for the remaining three years;</li> <li>3. Formatting attributes; and,</li> <li>4. Updating and coding attribute values</li> </ol>	<p>The licensee will preserve and maintain the planning inventory approved by S.E.</p>



SECTION	FMP MANUAL REQUIREMENT	MEASURES EMPLOYED
<p>Section 6 and Volume I</p>	<p><b>Planning Units</b></p> <ol style="list-style-type: none"> <li>1. Identified in collaboration with the planning team</li> <li>2. Not in excess of 500,000 hectares</li> <li>3. Subdivided into management units and operating areas</li> </ol>	<p>Planning unit description can be found in section 6. (Vol I Map 2)</p>



SECTION	FMP MANUAL REQUIREMENT	MEASURES EMPLOYED
<p>Section 3 and Volume I</p>	<p><b>Updating</b>            In order to generate a planning inventory, the licensee must spatially update the SFVI inventory with the following GIS datasets:</p> <ol style="list-style-type: none"> <li>1. Basic Features: The most current basic features provided by the Forest Service, such as water, wetland, ownership, management unit, parks, and centre-line features (i.e., road buffer).</li> <li>2. Disturbances: Both harvest and natural disturbances (fire, insect, disease, wind, snow, etc.) that occurred up to three years prior to the scheduled FMP submission date.</li> <li>3. Reforestation: Regenerated area that meets free-to-grow status as of three years prior to the scheduled FMP submission date.</li> <li>4. Values: Non-timber values that can be spatially identified and which impact the FMP within the licence area, such as riparian area, visual quality, seasonal access, restriction, wildlife habitat, inoperable limits, etc.</li> <li>5. Other: Any other spatial layer listed in FMP</li> </ol>	<ol style="list-style-type: none"> <li>1. The basic features or 'Base Data' used to create the planning inventory is provided from various sources including the Government of Canada, S.E., Mistik Management Ltd. and various consulting firms. The specific source of each feature is described within the Forest Characterization document;</li> <li>2. Disturbances (natural and anthropogenic) that occurred up to three years prior to the scheduled FMP submission date are included and considered within the planning inventory process as described within the Forest Characterization document (Volume I Map 26, 27, 28, and map 24) ;</li> <li>3. Reforestation activities that occurred as of 3 years prior to the scheduled FMP submission date are included and considered within the planning inventory process as described within the Forest Characterization document (Volume 1 Map 30);</li> <li>4. Non timber values are included and considered within the planning inventory process as described within the Forest Characterization document (Volume 1 Maps 16, 17, 18, 19, and 20);</li> <li>5. Other spatial layers included and considered within the planning inventory process are described within the Forest Characterization document.</li> </ol>



SECTION	FMP MANUAL REQUIREMENT	MEASURES EMPLOYED
<p>Section 3 and Volume I</p>	<p><b>Updating and coding attribute values</b>            After the licensee creates the planning inventory by spatially updating the SFVI with all layers, they will need to assign or update values for some attributes as described in Appendix 6 Section 2.2.4.</p> <p>Each polygon in the planning inventory must be coded with one of the following codes: PERMANENT, PARTIAL, NON-EXCLUSION and NA.</p>	<p>All new and updated attributes are described within the Forest Characterization document;            All exclusions within the planning inventory are labelled as either PERMANENT or PARTIAL;            Productive forest stands have been examined to identify 'stand isolation' (spatial) and will not be considered for further forest characterization.</p>
<p>Section 3</p>	<p><b>Data Standards</b></p> <ul style="list-style-type: none"> <li>◆ Dataset name;</li> <li>◆ Data format;</li> <li>◆ Publication date, and where applicable, year of update;</li> <li>◆ originator;</li> <li>◆ Date obtained;</li> <li>◆ Description of planning inventory attributes, including codes and definitions; and</li> <li>◆ Any other relevant information.</li> </ul>	<ol style="list-style-type: none"> <li>1. The Planning Inventory is in shapefile format;</li> <li>2. All layers contributing to the Planning Inventory are overlaid in the correct projection and the coordinate system is described within the Forest Characterization document;</li> <li>3. The Planning Inventory is stored in double precision and without any errors;</li> <li>4. Shifting errors are minimized during forest composite overlay and the area of polygons is consistent within all Planning Inventory datasets to within 0.01 percent;</li> <li>5. All Planning Inventory datasets are properly coded;</li> <li>6. The "area" field is present;</li> <li>7. All unnecessary fields are dropped from the Planning Inventory.</li> <li>8. Disturbance layers are overlaid prior to determining stand productivity in the Forest Characterization process;</li> <li>9. All processes affecting the planning boundary are described within the Forest Characterization Document;</li> <li>10. There are no topology errors within the Planning Inventory dataset.</li> </ol>



## 6.0 FOREST COMPOSITE DATABASE STRUCTURE AND DESCRIPTION

File: Mistik\_LANDBASE\_11Nov16.dbf

Number of data records: 850,489

**TABLE 6-1: FOREST COMPOSITE DATABASE STRUCTURE AND DESCRIPTION**

FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
1.	TIMBER_SUPPLY_AREAS	String	25	0	Timber Supply Areas: L&M Wood Products; Mistik
2.	GL20160616	Numeric	11	2	Unique spatial identifier
3.	MU	String	2	0	Manangement unit number identified as follows: <ul style="list-style-type: none"> <li>◆ 01-Divide;</li> <li>◆ Pierceland;</li> <li>◆ Big Island Lake;</li> <li>◆ Waterhen;</li> <li>◆ 07- Beauval;</li> <li>◆ 08- Canoe Lake;</li> <li>◆ 09- Ile-a-la-Crosse;</li> <li>◆ 10- Buffalo Narrows;</li> <li>◆ 11- Dillon;</li> <li>◆ 12- Murray Bay;</li> <li>◆ 20- Beaver River;</li> <li>◆ 21- Peter Pond;</li> <li>◆ 78- Recreation Area;</li> <li>◆ 79- Timber Reserve;</li> <li>◆ 85- L&amp;M</li> </ul>
4.	MU_NAME	String	40	0	Manangement unit name identified as follows: <ul style="list-style-type: none"> <li>◆ Beauval;</li> <li>◆ Beaver river;</li> <li>◆ Big island lake;</li> <li>◆ Buffalo Narrows;</li> <li>◆ Canoe Lake;</li> <li>◆ Dillon;</li> <li>◆ Divide;</li> <li>◆ Ile-a-la-Crosse;</li> <li>◆ L &amp; M;</li> <li>◆ Murray Bay;</li> <li>◆ Peter Pond;</li> <li>◆ Pierceland;</li> <li>◆ Recreation Area;</li> <li>◆ Timber Reserve;</li> <li>◆ Waterhen</li> </ul>
5.	OP_AREA	String	6	0	Management unit and Operating area code
6.	OP_NAME	String	40	0	Operating area name





FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
7.	OP_NUM	String	3	0	Operating area number
8.	SEASON	String	10	0	Harvest Season: ♦ ALL_SEASON; ♦ WINTER
9.	WATERSHED_NUMBER	String	10	0	Watershed: ♦ 5EG; ♦ 5GE; ♦ 5GF; ♦ 6AE; ♦ 6AF; ♦ 6BB; ♦ 6BC; ♦ 6CC
10.	WATERSHED_NUMBER2	String	10	0	Watershed 2: ♦ 5EF; ♦ 5EG; ♦ 6AD; ♦ 6AF; ♦ 6AG; ♦ 6BA; ♦ 6BB; ♦ 6BD
11.	WILDLIFE_ZONE_NUMBER	String	16	0	Wildlife management zone number: ♦ ZONE 47; ♦ ZONE 55; ♦ ZONE 66; ♦ ZONE 67; ♦ ZONE 69; ♦ ZONE 73
12.	DEER_LICNO	String	100	0	White Tailed Deer Outfitting License Number
13.	BEAR_LICNO	String	100	0	Black Bear Outfitting License Number C2005
14.	DMT_HOST	String	2	0	Dwarf mistletoe host: PJ- Jack Pine
15.	DMT_SEVER	String	1	0	Dwarf mistletoe severity: S- Severe
16.	DMT_DATE	String	9	0	Dwarf mistletoe date:
17.	BUDWORM_YEAR	String	50	0	Budworm defoliation year
18.	BUDWORM_DEFO	String	50	0	Budworm defoliation severity: ♦ Moderate ♦ Severe
19.	SK_ssi	Numeric	11	2	Stand susceptibility index
20.	ABIOTIC_YEAR	Numeric	11	2	Abiotic year of disturbance
21.	ABIOTIC_TYPE	String	50	0	Abiotic disturbance: What Is the 3? ♦ 3-“Other”; ♦ FLOOD; ♦ WINDTHROW
22.	BIOTIC_YEAR	Numeric	11	2	Biotic year of disturbance:



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
23.	BIOTIC_TYPE	String	50	0	Biotic disturbance: ♦ EASTERN LARCH BEETLE; ♦ HARDWOOD DEFOLIATION; ♦ SPRUCE NEEDLE RUST
24.	SOIL_NAME	String	40	0	♦ BOREAL TRANSITION ♦ MID-BOREAL UPLANDS
25.	DEVEL	String	1	0	Soil development type: ♦ C- Chernozemic; ♦ F- Luvisolic; ♦ M- Eutric Brunisolic; ♦ P- Dystric Brunisolic; ♦ R- Regosolic; ♦ W- Humo-Ferric Podzolic; ♦ X- Fibrisolic; ♦ Y- Mesisolic
26.	PMDEP	String	2	0	Parental mode of desposition types: ♦ B- Organic; ♦ F- Fluvioglacial; ♦ L- Lacustrine; ♦ M- Moranian; ♦ N- Organic; ♦ O- Organic; ♦ U- Undifferentiated; ♦ W- Marine
27.	LOCSF	String	3	0	Local surface form: ♦ B14- Bog; ♦ B16- Bog; ♦ D- Dissected; ♦ F13- Fen; ♦ H- Hummocky; ♦ K- Knoll and Kettle; ♦ M- Rolling; ♦ U- Undulating; ♦ W- Water
28.	FIRE_NO	String	50	0	Fire number
29.	YEAR	Numeric	11	2	Fire year
30.	FIRENAME	String	40	0	Fire name



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
31.	FCA	String	5	0	Fur Conservation Aea: ♦ M-37; ♦ M-38; ♦ M-38B; ♦ M-53; ♦ M-54; ♦ M-55; ♦ M-56; ♦ M-58; ♦ M-81; ♦ M-94; ♦ N-12; ♦ N-13A; ♦ N-13B; ♦ N-14; ♦ N-15; ♦ N-19; ♦ N-21; ♦ P-88
<b>MISTIK FOREST OPERATIONS UPDATE</b>					
32.	BLOCK_ID	Numeric	11	2	FMS block Id
33.	BLOCK_SHAPE_ID	Numeric	15	7	FMA block shape area
34.	SHAPSTAT	String	255	0	Cutblock shape status: ♦ ACTUAL ♦ PLANNED
35.	AOP_YEAR	Numeric	15	7	Annual Operating Plan Year
36.	BLOCSTAT	String	255	0	Cutblock status: ♦ CUT; ♦ PLANNED
37.	OPENTYPE_CODE	String	255	0	Harvest Type: ♦ Burrow pit; ♦ CC: Clearcut; ♦ Clearcut (patch); ♦ Clearcut (strip); ♦ Clearcut w/POR; ♦ High Grade; ♦ Other; ♦ Patch Retention; ♦ PC: Partial Cut; ♦ Salvage; ♦ Salvage – burn; ♦ Salvage - forest health; ♦ Salvage – mistletoe; ♦ Salvage – windthrow; ♦ Seed Tree (single); ♦ ST: Sanitation Cut; ♦ wS undrstry presrvtn



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
38.	BLOCSPECGROU_CODE	String	255	0	Block Species Group Code: ♦ C- Coniferous; ♦ CD- Conifer leading mixedwood; ♦ D- Deciduous; ♦ DC-Deciduous leading mixedwood
39.	SKID_CLEARANCE_DATE	Date	40	0	Skid Clearance Date (dd-mmm-yyyy)
40.	ESTS_SURVEY_DATE	Date	40	0	Date of establishment survey
41.	Regen_status	String	47	0	Establishment survey regenerated status: ♦ STOCSTAT-NSR- Not satisfactorily regenerated; ♦ STOCSTAT-SR- Satisfactorily regenerated; ♦ STOCSTAT-SRV- Not satisfactorily vegetated
42.	LFN_SP	String	47	0	Leave for Natural Speices: ♦ JP- Jackpine; ♦ TA- Trembling Aspen; ♦ SW- White spruce
43.	LFN_HA	Numeric	16	7	Area left for natural (ha) (dd-mmm-yyyy)
44.	LFN_DATE	Date	40	0	Date of left for natural (dd-mmm-yyyy)
45.	PLANT_SP	String	47	0	Planted Species: ♦ SPEC-BS- Black Spruce ♦ SPEC-JP- Jack Pine ♦ SPEC-LP- Lodgepole Pine ♦ SPEC-OTHER-Other ♦ SPEC-RP- Red Pine ♦ SPEC-SP- Scots Pine ♦ SPEC-SW- White Spruce ♦ SPEC-WB –White Birch ♦ SPEC-WS- White Spruce
46.	PLANT_HA	Numeric	16	7	Area Planted (ha)
47.	PLANT_YEAR	Numeric	31	15	Plant date (year)
48.	TEND_TYPE	String	47	0	Stand tend type: ♦ STANTENDTYPE-CL ♦ STANTENDTYPE-DIE ♦ STANTENDTYPE-SPAC ♦ STANTENDTYPE-THIN
49.	TEND_HA	Numeric	31	15	Area tended (ha)
50.	TEND_DATE	Date	40	0	Tending date (dd-mmm-yyyy)
51.	VISUAL_WATER	Numeric	11	2	Visually sensitive area identifier for areas surrounding water: ♦ 0- Not visually sensitive; ♦ 1- visually sensitive
52.	VISUAL_ROADS	Numeric	11	2	Visually sensitive area identifier for areas surrounding roads: ♦ 0- Not visually sensitive; ♦ 1- Visually sensitive
53.	INOPERABLE	Numeric	11	2	Binary identifier of polygons that are inoperable due to slope: ♦ 0- Operable; ♦ 1- Inoperable (slope > 30%)



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
54.	BUF_90	Numeric	11	2	Binary Identifier of 90 meter riparian zones: ♦ 0- no 90 metre buffer; ♦ 1- 90 metre buffer zone
55.	BUF_30	Numeric	11	2	Binary Identifier of 30 meter riparian zones: ♦ 0- no 30 metre buffer; ♦ 1- 30 metre buffer zone
56.	BUF_15	Numeric	11	2	Binary Identifier of 15 meter riparian zones: ♦ 0- no 15 metre buffer; ♦ 1- 15 metre buffer zone
57.	WAT_ISLAND	Numeric	11	2	Water island identifier: ♦ 0- No Water Island; ♦ 1- Water island
58.	LAC_PLONGE	Numeric	11	2	Lac La Plonge polygon flag: ♦ 0- No flag; ♦ 2- Lac La Plonge
59.	Built_ge_1995	Numeric	11	2	Built greater than 1995 flag: ♦ 0- no flag; ♦ 1995- built greater than 1995
60.	ANTH_DISTURB	String	3	0	Anthropogenic Disturbance ♦ AGR- Agriculture; ♦ AIR- Airstrip; ♦ BLT- Built-up areas; ♦ CMP- Camps and lodges; ♦ FLE- Flowline Easement; ♦ GFT- Government Fire Tower; ♦ IND- Industrial areas; ♦ MIN- Mine Sites; ♦ PIT- Gravel Pits; ♦ PTM- Peat moss; ♦ REC- Recreational; ♦ RES- Rural residential; ♦ RWT- Radio Weather Tower; ♦ WEL- Wells
61.	ANTH_CONFIDENCE	String	1	0	Confidence code: ♦ H- high; ♦ L- low; ♦ M- mid
62.	Road_update	Numeric	11	2	Road presence: ♦ 0; ♦ 2006
SFVI ATTRIBUTES					
63.	ID_TILE	String	11	0	Tile Number made up of zone, easting, and northing.
64.	STAND	Numeric	11	2	SFVI Polygon identification number.
65.	ID_FOR	Numeric	31	15	Identification number made up of ID_TILE and Stand.
66.	CROWN_1	Numeric	11	2	Crown Closure of layer 1 expressed to the nearest 1%.
67.	HEIGHT_1	Numeric	11	2	Average height of layer 1 (m).
68.	COMPLX_1	String	1	0	Canopy structure as follows: ♦ C - Complex; ♦ H - Horizontal.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
69.	COMPRG_1	Numeric	11	2	Complex Stand Quantifier ♦ Complex Stand - Describes Height range; ♦ Horizontal Stand - Describes percent of ground area covered by the horizontal component.
70.	SP1_1	String	2	0	Species 1 of layer 1 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
71.	PER1_1	Numeric	11	2	Percent Composition for Species 1 of Layer 1.
72.	SP2_1	String	2	0	Species 2 of layer 1 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
73.	PER2_1	Numeric	11	2	Percent Composition for Species 2 of Layer 1.
74.	SP3_1	String	2	0	Species 3 of layer 1 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
75.	PER3_1	Numeric	11	2	Percent Composition for Species 3 of Layer 1.
76.	SP4_1	String	2	0	Species 4 of layer 1 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
77.	PER4_1	Numeric	11	2	Percent Composition for Species 4 of Layer 1.
78.	SP5_1	String	2	0	Species 5 of layer 1 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
79.	PER5_1	Numeric	11	2	Percent Composition for Species 5 of Layer 1.





FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
80.	PATTRN_1	String	2	0	Canopy pattern of layer 1 defined as follows: ♦ P0 - Single stems; ♦ P1 - Single patch of stems; ♦ P2 - Few patches of stems; ♦ P3 - Several patches of stems; ♦ P4 - Continuous canopy; openings common; ♦ P5 - Continuous canopy; openings uncommon.
81.	ORIGIN_1	Numeric	11	2	Year of origin of Layer 1.
82.	ORGNINT1	String	1	0	Differentiates between known and estimated year of origin of layer 1 as follows: ♦ A - year of origin is known to the nearest year (annum); ♦ D - year of origin is estimated to the nearest decade.
83.	CROWN_2	Numeric	11	2	Crown Closure of layer 2 expressed to the nearest 1%.
84.	HEIGHT_2	Numeric	11	2	Average height of layer 2 (m).
85.	COMPLX_2	String	1	0	Canopy structure as follows: ♦ H - Horizontal.
86.	COMPRG_2	Numeric	11	2	Complex Stand Quantifier Horizontal Stand - Describes percent of ground area covered by the horizontal component.
87.	SP1_2	String	2	0	Species 1 of layer 2 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
88.	PER1_2	Numeric	11	2	Percent Composition for Species 1 of Layer 2.
89.	SP2_2	String	2	0	Species 2 of layer 2 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
90.	PER2_2	Numeric	11	2	Percent Composition for Species 2 of Layer 2.
91.	SP3_2	String	2	0	Species 3 of layer 2 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
92.	PER3_2	Numeric	11	2	Percent Composition for Species 3 of Layer 2.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
93.	SP4_2	String	2	0	Species 4 of layer 2 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
94.	PER4_2	Numeric	11	2	Percent Composition for Species 4 of Layer 2.
95.	SP5_2	String	2	0	Species 5 of layer 2 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
96.	PER5_2	Numeric	11	2	Percent Composition for Species 5 of Layer 2.
97.	PATTRN_2	String	2	0	Canopy pattern of layer 2 defined as follows: ♦ P0 - Single stems; ♦ P1 - Single patch of stems; ♦ P2 - Few patches of stems; ♦ P3 - Several patches of stems; ♦ P4 - Continuous canopy; openings common; ♦ P5 - Continuous canopy; openings uncommon.
98.	ORIGIN_2	Numeric	11	2	Year of origin of layer 2.
99.	ORGNINT2	String	1	0	Differentiates between known and estimated year of origin of layer 2 as follows: ♦ A - year of origin is known to the nearest year (annum); ♦ D - year of origin is estimated to the nearest decade.
100.	CROWN_3	Numeric	11	2	Crown Closure of layer 3 expressed to the nearest 1%.
101.	HEIGHT_3	Numeric	11	2	Average height of layer 3 (m).
102.	COMPLX_3	String	1	0	Canopy structure as follows: ♦ None present.
103.	COMPRG_3	Numeric	11	2	Complex Stand Quantifier ♦ None present.
104.	SP1_3	String	2	0	Species 1 of layer 3 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
105.	PER1_3	Numeric	11	2	Percent Composition for Species 1 of Layer 3.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
106.	SP2_3	String	2	0	Species 2 of layer 3 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
107.	PER2_3	Numeric	11	2	Percent Composition for Species 2 of Layer 3.
108.	SP3_3	String	2	0	Species 3 of layer 3 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
109.	PER3_3	Numeric	11	2	Percent Composition for Species 3 of Layer 3.
110.	SP4_3	String	2	0	Species 4 of layer 3 as follows: ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ BP - Balsam Poplar; ♦ BF - Balsam Fir; ♦ TL - Larch; ♦ JP - Jack Pine; ♦ BS - Black Spruce; ♦ WS - White Spruce.
111.	PER4_3	Numeric	11	2	Percent Composition for Species 4 of Layer 3.
112.	SP5_3	String	2	0	Species 5 of layer 3 as follows: ♦ JP - Jack Pine.
113.	PER5_3	Numeric	11	2	Percent Composition for Species 5 of Layer 3.
114.	PATTRN_3	String	2	0	Canopy pattern of layer 3 defined as follows: ♦ P0 - Single stems; ♦ P1 - Single patch of stems; ♦ P2 - Few patches of stems; ♦ P3 - Several patches of stems; ♦ P4 - Continuous canopy; openings common; ♦ P5 - Continuous canopy; openings uncommon.
115.	ORIGIN_3	Numeric	11	2	Year of origin of layer 3.
116.	ORGNINT3	String	1	0	Differentiates between known and estimated year of origin of layer 3 as follows: ♦ A - year of origin is known to the nearest year (annum); ♦ D - year of origin is estimated to the nearest decade.
117.	CROWN_S	Numeric	11	2	Crown Closure of the shrub layer expressed to the nearest 1%.
118.	COMPLX_S	String	1	0	Canopy structure as follows: ♦ H - Horizontal.
119.	COMPRG_S	Numeric	11	2	Complex Stand Quantifier Horizontal Stand - Describes percent of ground area covered by the horizontal component.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
120.	SP1_S	String	2	0	Species 1 of the shrub layer as follows: ♦ Ts - Tall Shrubs; ♦ Al - Alder; ♦ Bh - Beaked Hazel; ♦ Wi - Willow; ♦ Ls - Low Shrub Category; ♦ Bi - Bog Birch; ♦ Bl - Bog Laurel; ♦ La - Labrador tea.
121.	PER1_S	Numeric	11	2	Percent Composition for Species 1 of the Shrub Layer.
122.	SP2_S	String	2	0	Species 2 of the shrub layer as follows: ♦ Ts - Tall Shrubs; ♦ Al - Alder; ♦ Bh - Beaked Hazel; ♦ Cr - High Bush Cranberry; ♦ Wi - Willow; ♦ Ls - Low Shrub Category; ♦ Bu - Buffalo Berry; ♦ Bl - Bog Laurel.
123.	PER2_S	Numeric	11	2	Percent Composition for Species 1 of the Shrub Layer.
124.	SP3_S	String	2	0	Species 3 of the shrub layer as follows: ♦ Wi - Willow; ♦ Ls - Low Shrub Category; ♦ Ro - Prickly Rose;
125.	PER3_S	Numeric	11	2	Percent Composition for Species 3 of the Shrub Layer.
126.	SP4_S	String	2	0	Species 4 of the shrub layer as follows: ♦ No species present.
127.	PER4_S	Numeric	11	2	Percent Composition for Species 3 of the Shrub Layer.
128.	CROWN_H	Numeric	11	2	Crown Closure of the herb layer expressed to the nearest 1%
129.	COMPLX_H	String	1	0	Canopy structure as follows: ♦ H - Horizontal
130.	COMPRG_H	Numeric	11	2	Complex Stand Quantifier Horizontal Stand - Describes percent of ground area covered by the horizontal component.
131.	SP1_H	String	2	0	Species 1 of the herb layer as follows: ♦ Gr - Grasses; ♦ Se - Sedges, Rushes, Reeds; ♦ Li - Lichens.
132.	PER1_H	Numeric	11	2	Percent Composition for Species 1 of the Herb Layer.
133.	SP2_H	String	2	0	Species 2 of the herb layer as follows: ♦ He - Herbs (unknown species);
134.	PER2_H	Numeric	11	2	Percent Composition for Species 2 of the Herb Layer.
135.	SP3_H	String	2	0	Species 3 of the herb layer as follows: ♦ No species present.
136.	PER3_H	Numeric	11	2	Percent Composition for Species 3 of the Herb Layer.
137.	SP4_H	String	2	0	Species 4 of the herb layer as follows: ♦ No species present.
138.	PER4_H	Numeric	11	2	Percent Composition for Species 4 of the Herb Layer.
139.	SP5_H	String	2	0	Species 5 of the herb layer as follows: ♦ No species present.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
140.	PER5_H	Numeric	11	2	Percent Composition for Species 5 of the Herb Layer.
141.	CROWN_A	Numeric	11	2	Crown Closure of the aquatic layer expressed to the nearest 1%.
142.	COMPLX_A	String	1	0	Canopy structure as follows: ◆ H - Horizontal.
143.	COMPRG_A	Numeric	11	2	Complex Stand Quantifier Horizontal Stand - Describes percent of ground area covered by the horizontal component.
144.	SP1_A	String	2	0	Species 1 of the aquatic layer as follows: ◆ Av - Aquatic Vegetation; ◆ Af - Floating Aquatic Vegetation; ◆ Ae - Emergent Aquatic Vegetation.
145.	PER1_A	Numeric	11	2	Percent Composition for Species 1 of the Aquatic Layer.
146.	SP2_A	String	2	0	Species 2 of the aquatic layer as follows: ◆ No species present.
147.	PER2_A	Numeric	11	2	Percent Composition for Species 2 of the Aquatic Layer.
148.	SP3_A	String	2	0	Species 3 of the aquatic layer as follows: ◆ No species present.
149.	PER3_A	Numeric	11	2	Percent Composition for Species 3 of the Aquatic Layer.
150.	COMPLX_N	String	1	0	Canopy structure as follows: ◆ H - Horizontal.
151.	COMPRG_N	Numeric	11	2	Complex Stand Quantifier Horizontal Stand - Describes percent of ground area covered by the horizontal component.
152.	NONFOR	String	3	0	Non-forested features identified as follows: ◆ L - Lakes or Ponds; ◆ R - Rivers; ◆ FL - Floods; ◆ RD - Roads; ◆ TL - Transmission Line; ◆ PL - Oil or Gas Pipeline.
153.	NONFOR_E	Numeric	11	2	Extent; used for roads only as follows: ◆ 1 - Paved, numbered highway; ◆ 2 - Gravel, numbered highway; ◆ 3 - Gravel, access road; ◆ 4 - Local access, dirt/ice road; ◆ 5 - Trail, dirt.
154.	LANDUSE	String	5	0	Non-vegetated land-use clearings identified as follows: ◆ vegu - Vegetation (agriculture); ◆ bugp - Built-up area (settlement); ◆ towu - Tower; generic; ◆ cmty - Cemetery; ◆ dmgu - Campground (recreation); ◆ gsou - Gas and oil facilities; ◆ rwgu - Runway; ◆ muou - Mining area: open pit; ◆ mg - Mining area: generic; ◆ peatc - Peat cutting; ◆ lmby - Lumber yard; ◆ sdgu - Solids depot; ◆ bupo - Built-up area (industrial); ◆ ftow - Fire tower.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
155.	MOIST	String	2	0	Soil moisture regime identified as follows: ♦ VD - Very Dry; ♦ D - Dry; ♦ MF - Moderately Fresh; ♦ F - Fresh; ♦ VF - Very Fresh; ♦ MM - Moderately Moist; ♦ M - Moist; ♦ VM - Very Moist; ♦ MW - Moderately Wet; ♦ W - Wet; ♦ VW - Very Wet; ♦ A - Aquatic.
156.	MOD1	String	2	0	Stand modifier 1 identified as follows: ♦ CO - Cutover; ♦ BO - Burnover; ♦ WI - Windthrow; ♦ IN - Insect; ♦ DI - Disease; ♦ AK - Animal Kill; ♦ SF - Seasonal Flood; ♦ SL - Slump; ♦ SI - Silviculture; ♦ CW - Abandoned Well Site; ♦ GZ - Grazing; ♦ CL - Clearing; ♦ SN - Snags; ♦ SB - Sand/gravel; ♦ CB - Cutbank.
157.	EXT1	Numeric	11	2	Extent of modification 1 identified as follows: ♦ 'Blank' - No disturbance; ♦ 1 - Light; ♦ 2 - Moderate; ♦ 3 - Heavy; ♦ 4 - Severe; ♦ 5 - Entire.
158.	YEAR1	Numeric	11	2	Year of modification 1.
159.	YR1_INT	String	1	0	Differentiates between known and estimated year of modifier 1 as follows: ♦ a - year of modification is known to the nearest year (annum); ♦ d - year of modification is estimated to the nearest decade.
160.	MOD2	String	2	0	Stand modifier 2 identified as follows: ♦ CO - Cutover; ♦ BO - Burnover; ♦ WI - Windthrow; ♦ DI - Disease; ♦ CL - Clearing; ♦ SF - Seasonal Flood; ♦ SI - Silviculture; ♦ SN - Snags;





FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
161.	EXT2	Numeric	11	2	Extent of modification 2 identified as follows: ♦ 'Blank' - No disturbance; ♦ 1 - Light; ♦ 2 - Moderate; ♦ 3 - Heavy; ♦ 4 - Severe; ♦ 5 - Entire.
162.	YEAR2	Numeric	11	2	Year of modification 2.
163.	YR2_INT	String	1	0	Differentiates between known and estimated year of modifier 2 as follows: ♦ a - year of modification is known to the nearest year (annum).
164.	MOD3	String	2	0	Stand modifier 3 identified as follows: ♦ CO - Cutover; ♦ BO - Burnover; ♦ WI - Windthrow; ♦ SF - Seasonal Flood; ♦ SI - Silviculture; ♦ CL - Clearing; ♦ SN - Snags.
165.	EXT3	Numeric	11	2	Extent of modification 3 identified as follows: ♦ 1 - Light; ♦ 2 - Moderate; ♦ 3 - Heavy; ♦ 4 - Severe; ♦ 5 - Entire.
166.	YEAR3	Numeric	11	2	Year of modification 3.
167.	YR3_INT	String	1	0	Differentiates between known and estimated year of modifier 3 as follows: ♦ a - year of modification is known to the nearest year (annum).
168.	MOD4	String	2	0	Stand modifier 4 identified as follows: ♦ SN - Snags;
169.	EXT4	Numeric	11	2	Extent of modification 4 identified as follows: ♦ 1 - Light; ♦ 2 - Moderate.
170.	YEAR4	Numeric	11	2	Year of modification 4.
171.	YR4_INT	String	1	0	Differentiates between known and estimated year of modifier 4 as follows: ♦ Not present.
172.	MOISTH2	String	2	0	Soil moisture regime for the minor horizontal layer identified as follows: ♦ F - Fresh; ♦ VF - Very Fresh; ♦ MM - Moderately Moist; ♦ M - Moist; ♦ VM - Very Moist; ♦ MW - Moderately Wet; ♦ W - Wet; ♦ VW - Very Wet; ♦ A - Aquatic.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
173.	MOD1H2	String	2	0	Stand modifier 1 for the minor horizontal layer identified as follows: ♦ BO - Burnover; ♦ SF - Seasonal Flood; ♦ CL - Clearing; ♦ SN - Snags.
174.	EXT1H2	Numeric	11	2	Extent of modification 1 for the minor horizontal layer identified as follows: ♦ 1 - Light; ♦ 2 - Moderate; ♦ 3 - Heavy; ♦ 5 - Entire.
175.	YEAR1H2	Numeric	11	2	Year of modification 1 for the minor horizontal layer.
176.	YR1_INH2	String	1	0	Differentiates between known and estimated year of modifier 1 for the minor horizontal layer as follows: ♦ a - year of modification is known to the nearest year (annum).
177.	MOD2H2	String	2	0	Stand modifier 2 for the minor horizontal layer identified as follows: ♦ No modifier present.
178.	EXT2H2	Numeric	11	2	Extent of modification 2 for the minor horizontal layer identified as follows: ♦ No extent present.
179.	YEAR2H2	Numeric	11	2	Year of modification 2 for the minor horizontal layer.
180.	YR2_INH2	String	1	0	Differentiates between known and estimated year of modifier 2 for the minor horizontal layer as follows: ♦ Not present.
181.	MOD3H2	String	2	0	Stand modifier 3 for the minor horizontal layer identified as follows: ♦ No modifier present.
182.	EXT3H2	Numeric	11	2	Extent of modification 3 for the minor horizontal layer identified as follows: ♦ No extent present.
183.	YEAR3H2	Numeric	11	2	Year of modification 3 for the minor horizontal layer.
184.	YR3_INH2	String	1	0	Differentiates between known and estimated year of modifier 3 for the minor horizontal layer as follows: ♦ Not present.
185.	Year_int	Numeric	11	2	Interpretation Year: ♦ 1994; ♦ 1995; ♦ 1996; ♦ 1999; ♦ 2000; ♦ 2001; ♦ 2002; ♦ 2003; ♦ 2005; ♦ 2006; ♦ 2015
186.	SHAPE_LENGTH	Numeric	31	15	Shape length in m
187.	SHAPE_AREA	Numeric	31	15	Shape Area in m <sup>2</sup>
<b>CALCULATED FIELDS</b>					



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
188.	AREAHA	Numeric	8	2	Area in hectares (ha).
189.	HFLAG	Numeric	8	2	Horizontal Identifier as follows: ♦ 0 - Not a horizontal; ♦ 1 - Overstorey is the majority horizontal component; ♦ 2 - Secondary layer is the majority horizontal component; ♦ 4 - Shrub layer is the majority horizontal component; ♦ 5 - Herb layer is the majority horizontal component; ♦ 6 - Aquatic layer is the majority horizontal component; ♦ 7 - Non Forested layer is the majority horizontal component.
190.	SFLAG	Numeric	8	2	Dominant Crown Layer Identifier as follows: ♦ 0 - SFVI Non Forested or a horizontal; ♦ 1 - Overstorey is the dominant crown; ♦ 2 - Secondary layer is the dominant crown; ♦ 3 - Tertiary layer is the dominant crown.
191.	DOM_LAYER	Numeric	8	2	Identifies which canopy layer is the dominant layer based on canopy structure as assigned in HFLAG and SFLAG: ♦ 1 - Overstorey layer is the dominant layer; ♦ 2 - Secondary layer is the dominant layer; ♦ 3 - Tertiary layer is the dominant layer.
192.	TOT_CROWN	Numeric	8	2	Sum of the crown closure of all three canopy layers or the dominant crown closure if a forested horizontal.
193.	RENEW_SPECIES	String	3	0	Renewal species
194.	CUTBLOCK	Numeric	8	2	Identifies most recent cutblock from both SFVI cutblocks and FMS cutblocks: ♦ 1 - Cutblocks identified in SFVI MOD3 field; ♦ 2 - Cutblocks identified in SFVI MOD2 field that have not been previously identified; ♦ 3 - Cutblocks identified in SFVI MOD1 field that have not been previously identified; ♦ 4 - Cutblocks identified in SFVI MOD3 field with no modifier year (YEAR3); ♦ 5 - Cutblocks identified in SFVI MOD2 field not previously identified with no modifier year (YEAR2); ♦ 6 - Cutblocks identified in SFVI MOD1 field not previously identified with no modifier year (YEAR1); ♦ 7 - Override for all FMS cutblocks.
195.	CUTYEAR	Numeric	8	2	Cut Year
196.	PLAN_BLK	Numeric	8	2	Planned Block Flag: ♦ 0; ♦ 1
197.	TACT_BLK	Numeric	8	2	Tactical Block Flag: ♦ 0; ♦ 1
198.	CUTFLAG	Numeric	8	2	Cutflag: ♦ 0; ♦ 1
199.	SFVI_BURN	Numeric	8	2	The most recent burn year identified in SFVI
200.	FIREUPDATE_BURN	Numeric	8	2	Identifies the year burned from the fire update layer
201.	RECENT_BURN	Numeric	8	2	The most recent burn year between the SFVI_BURN and the FIREUPDATE_BURN



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
202.	BURNFLAG	Numeric	8	2	Burn flag ♦ No burn ♦ 1- Burnt
203.	NEWOCC	String	2	0	Overstorey crown closure class: ♦ A - 1%-25%; ♦ B - 26%-50%; ♦ C - 51%-75%; ♦ D - 76%-100%.
204.	OSGROUP	String	2	0	Overstorey Species Group identified as follows: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.
205.	OPCTCON	Numeric	8	2	Overstorey layer percent Conifer ♦ 0- 0-9; ♦ 1- 10-19; ♦ 2 - 20-29; ♦ 3- 30-39; ♦ 4- 40-49; ♦ 5- 50-59; ♦ 6- 60-69; ♦ 7- 70-79; ♦ 8- 80-89; ♦ 9- 90-99; ♦ 10- 100
206.	OPCTDEC	Numeric	8	2	Overstorey layer percent Deciduous ♦ 0- 0-9; ♦ 1- 10-19; ♦ 2 - 20-29; ♦ 3- 30-39; ♦ 4- 40-49; ♦ 5- 50-59; ♦ 6- 60-69; ♦ 7- 70-79; ♦ 8- 80-89; ♦ 9- 90-99; ♦ 10- 100
207.	NEWUCC	String	2	0	Secondary forested layer crown closure class: ♦ A - 1%-25%; ♦ B - 26%-50%; ♦ C - 51%-75%; ♦ D - 76%-100%.
208.	USPGROUP	String	2	0	Secondary layer Species Group identified as follows: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
209.	UPCTCON	Numeric	8	2	Secondary layer percent Conifer ♦ 0- 0-9; ♦ 1- 10-19; ♦ 2 – 20-29; ♦ 3- 30-39; ♦ 4- 40-49; ♦ 5- 50-59; ♦ 6- 60-69; ♦ 7- 70-79; ♦ 8- 80-89; ♦ 9- 90-99; ♦ 10- 100
210.	UPCTDEC	Numeric	8	2	Secondary layer percent Deciduous ♦ 0- 0-9; ♦ 1- 10-19; ♦ 2 – 20-29; ♦ 3- 30-39; ♦ 4- 40-49; ♦ 5- 50-59; ♦ 6- 60-69; ♦ 7- 70-79; ♦ 8- 80-89; ♦ 9- 90-99; ♦ 10- 100
211.	NEWTCC	String	2	0	Tertiary layer crown closure class: ♦ A - 1%-25%; ♦ B - 26%-50%; ♦ C - 51%-75%; ♦ D - 76%-100%.
212.	TSPGROUP	String	2	0	Tertiary layer Species Group identified as follows: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.
213.	SFVI_SPGP	String	4	0	Dominant layer species group: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.
214.	BLOCK_SPGP	String	6	0	Block regen species group ♦ H; ♦ HS; ♦ S; ♦ SH
215.	PREHARVEST_SPGP	String	2	0	Preharvest species group ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
216.	POSTHARV_SPGP	String	2	0	Postharvest species group- including NSR/NSV ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood. ♦ NSR- not satisfactory restocked ♦ NSV- Not satisfactory vegetated
217.	POSTHARVEST_SPG P	String	3	0	Postharvest species group- not including NSR/NSV ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.
218.	OLEADSP	String	2	0	Overstorey leading species assigned based on OSPGROUP: ♦ BF - Balsam Fir; ♦ BP - Balsam Poplar; ♦ BS - Black Spruce; ♦ JP - Jack Pine; ♦ TA - Trembling Aspen; ♦ TL - Larch; ♦ WB - White Birch; ♦ WS - White Spruce.
219.	ULEADSP	String	2	0	Secondary layer leading species assigned based on USPGROUP: ♦ BF - Balsam Fir; ♦ BP - Balsam Poplar; ♦ BS - Black Spruce; ♦ JP - Jack Pine; ♦ TA - Trembling Aspen; ♦ TL - Larch; ♦ WB - White Birch; ♦ WS - White Spruce.
220.	TLEADSP	String	2	0	Tertiary layer leading species assigned based on TSPGROUP: ♦ BF - Balsam Fir; ♦ BP - Balsam Poplar; ♦ BS - Black Spruce; ♦ JP - Jack Pine; ♦ TA - Trembling Aspen; ♦ TL - Larch; ♦ WB - White Birch; ♦ WS - White Spruce.
221.	SFVI_LEAD	String	2	0	Dominant layer leading species: ♦ BF - Balsam Fir; ♦ BP - Balsam Poplar; ♦ BS - Black Spruce; ♦ JP - Jack Pine; ♦ TA - Trembling Aspen; ♦ TL - Larch; ♦ WB - White Birch; ♦ WS - White Spruce.
222.	SOFT1	String	2	0	Primary layer softwood
223.	SOFT2	String	2	0	Secondary layer softwood
224.	SOFT3	String	3	0	Tertiary layer softwood





FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
225.	LEAD_SOFT	String	2	0	SFVI lead softwood
226.	SEC_SOFT1	String	2	0	Primary secondary softwood
227.	SEC_SOFT2	String	2	0	Secondary secondary softwood
228.	SEC_SOFT3	String	3	0	Tertiary secondary softwood
229.	MARK1	Numeric	8	2	Primary secondary softwood identifier
230.	MARK2	Numeric	8	2	Secondary secondary softwood identifier
231.	MARK3	Numeric	8	2	Tertiary secondary softwood identifier
232.	SEC_SOFT	String	2	0	Secondary softwood
233.	SFVI_CRWN	String	1	0	Dominant layer crown closure class: ♦ A - 1%-25%; ♦ B - 26%-50%; ♦ C - 51%-75%; ♦ D - 76%-100%.
234.	BHAGE	Numeric	8	2	Overstorey layer age at breast height
235.	P_INDEX1	Numeric	8	3	Overstorey layer Productivity Index calculated using formulas from the AVI 2.1 manual
236.	SPECNUM	Numeric	8	2	Primary layer overstorey species
237.	PCLASS1	Numeric	8	2	Overstorey layer productivity index class assigned by SFVI species SP1_1 and P_INDEX1: ♦ 1 - Lowest; ♦ 2 - Low; ♦ 3 - Medium; ♦ 4 - High; ♦ 5 - Highest.
238.	BHAGE2	Numeric	8	2	Secondary layer age at breast height
239.	P_INDEX2	Numeric	8	3	Secondary layer Productivity Index calculated using formulas from the AVI 2.1 manual
240.	SPECNU2	Numeric	8	2	Secondary layer overstorey species
241.	PCLASS2	Numeric	8	2	Secondary layer productivity index class assigned by SFVI species SP1_2 and P_INDEX2: ♦ 1 - Lowest; ♦ 2 - Low; ♦ 3 - Medium; ♦ 4 - High; ♦ 5 - Highest.
242.	BHAGE3	Numeric	8	2	Tertiary layer age at breast height
243.	P_INDEX3	Numeric	8	3	Tertiary layer Productivity Index calculated using formulas from the AVI 2.1 manual
244.	SPECNUM3	Numeric	8	2	Tertiary layer overstorey species
245.	PCLASS3	Numeric	8	2	Tertiary layer productivity index class assigned by SFVI species SP1_3 and P_INDEX3: ♦ 1 - Lowest; ♦ 2 - Low; ♦ 3 - Medium; ♦ 4 - High; ♦ 5 - Highest.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
246.	SFVI_PCLAS	Numeric	8	2	Dominant layer productivity class: ♦ 1 - Lowest; ♦ 2 - Low; ♦ 3 - Medium; ♦ 4 - High; ♦ 5 - Highest.
<b>AERIAL CRUISE DATA</b>					
247.	CRZ_FLAG	Numeric	8	2	Identifies polygons that were surveyed in the aerial cruise program: ♦ 0 - Not Cruised; ♦ 1 - Aerial Cruised.
248.	CRZ_SPGP	String	2	0	Aerial Cruise Species Group identified as follows: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.
249.	CRZ_OPCTCON	Numeric	8	2	Aerial Cruise percent conifer
250.	CRZ_OPCTDEC	Numeric	8	2	Aerial Cruise percent deciduous
251.	CRZ_CROWN	String	2	0	Aerial Cruise Crown Closure: ♦ D.
252.	CRZ_LEAD	String	2	0	Aerial Cruise Leading Species: ♦ BS - Black Spruce; ♦ JP - Jack Pine; ♦ TA - Trembling Aspen; ♦ WB - White Birch; ♦ WS - White Spruce.
<b>FINAL CALCULATED FIELDS</b>					
253.	WATER	Numeric	8	2	Binary identifier of Water polygons: ♦ 0 - Not Water; ♦ 1 - Water.
254.	DISPO_BIN	Numeric	8	2	Binary identifier of Disposition (Timber Reserve and Recreation Area) polygons: ♦ 0 - Not a Disposition; ♦ 1 - Disposition.
255.	A_NONFOR	Numeric	8	2	Identifies Anthropogenically Non-Forested polygons: ♦ 0 - Not Anthropogenically Non-Forested; ♦ 1 - SFVI LANDUSE Field; ♦ 2 - Landuse update layer, ANTH_DISTURB; ♦ 3 - Mistik update roads identified in RD_UPDATE field.
256.	AGE	Numeric	8	2	Stand Age
257.	AGECLASS5	Numeric	8	2	5-year age class
258.	AGECLASS10	Numeric	8	2	10-year age class
259.	DT_SPGP	String	4	0	Development Type Species Group: ♦ S - Softwood; ♦ SH - Softwood dominated mixedwood; ♦ HS - Hardwood dominated mixedwood; ♦ H - Hardwood.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
260.	DT_SP1	String	2	0	Development Type Leading Species: ◆ BF - Balsam Fir; ◆ BP - Balsam Poplar; ◆ BS - Black Spruce; ◆ JP - Jack Pine; ◆ TA - Trembling Aspen; ◆ TL - Larch; ◆ WB - White Birch; ◆ WS - White Spruce.
261.	DT_SOFT	String	2	0	Development Type Leading Softwood: ◆ BF - Balsam Fir ◆ BS - Black Spruce; ◆ JP - Jack Pine; ◆ TL - Larch; ◆ WS - White Spruce.
262.	DT_2SOFT	String	2	0	Development Type Secondary Softwood: ◆ BF - Balsam Fir ◆ BS - Black Spruce; ◆ JP - Jack Pine; ◆ TL - Larch; ◆ WS - White Spruce.
263.	SIG_SOFT	Numeric	8	2	Identifies polygons with a hardwood development type species group that contains softwood in one or more layers.
264.	DT_CROWN	String	2	0	Development Type Crown Closure: ◆ HD - High Density; ◆ LD - Low Density.
265.	DT_SOIL	String	1	0	Development Type Soil: ◆ B - Brunisolic; ◆ L - Luvisolic; ◆ O - Organic.
266.	DT_PCLASS	Numeric	8	2	Development Type Productivity Class: ◆ 1 - Lower Productivity; ◆ 2 - Higher Productivity.
267.	DT_SPECIES	String	2	0	Development Type Species: ◆ BS - Black Spruce; ◆ JP - Jack Pine; ◆ TA - Trembling Aspen; ◆ WS - White Spruce.
268.	C_PROD	Numeric	8	2	Binary identifier of stands with low productivity: ◆ 0 - No Productivity Constraint; ◆ 1 - Low Productivity Constraint.
269.	C_LOWCROWN	Numeric	8	2	Binary identifier of stands with low crown closure: ◆ 0 - No Crown Closure Constraint; ◆ 1 - Low Crown Closure Constraint.
270.	C_LARCH	Numeric	8	2	Binary identifier of stands with significant (>40%) larch component: ◆ 0 - No Larch Constraint; ◆ 1 - Significant Larch Composition Constraint.
271.	OLARCHCOMP	Numeric	8	2	Overstorey larch composition
272.	ULARCHCOMP	Numeric	8	2	Second layer larch composition
273.	TLARCHCOMP	Numeric	8	2	Tertiary layer larch composition



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
274.	C_PINETOE	Numeric	8	2	Binary identifier of stands infested with Mistletoe using SFVI modifiers and FORHEALTH field from NRCAN: ♦ 0 - No Mistletoe Constraint; ♦ 1 - Mistletoe Constraint.
275.	C_BS	Numeric	8	2	Binary identifier of low productivity Black Spruce stands: ♦ 0 - No Black Spruce Constraint; ♦ 1 - Low Productivity Black Spruce Constraint.
276.	TPR	String	1	0	Stand Productivity ♦ F- Fair; ♦ G- Good; ♦ M- Medium; ♦ U- Unproductive
277.	NETDOWN	Numeric	8	2	Landbase category numbers identified as follows: ♦ 0 - Netlandbase; ♦ 1 - Water; ♦ 2 - Dispositions; ♦ 3 - Anthropogenically Non-Forested; ♦ 4 - Naturally Non-Forested; ♦ 5 - 90 metre Watercourse Buffer; ♦ 6 - 30 Metre Watercourse Buffer; ♦ 7 - 15 Metre Watercourse Buffer; ♦ 8 - Inoperable; ♦ 9 - Operational Constraints - Low Productivity Class; ♦ 10 - Operational Constraints - Low Crown Cover; ♦ 11 - Operational Constraints - High Larch Component; ♦ 12 - Operational Constraints - Pine Stands with Significant Dwarf Mistletoe; ♦ 13 - Operational Constraints - Low Productivity Black Spruce Stands.
278.	NETDOWN_TYPE	String	50	0	Landbase category names identified as follows: ♦ Netlandbase; ♦ Water; ♦ Dispositions; ♦ Anthropogenically Non-Forested; ♦ Naturally Non-Forested; ♦ 90 metre Watercourse Buffer; ♦ 30 metre Watercourse Buffer; ♦ 15 metre Watercourse Buffer; ♦ Inoperable; ♦ Operational Constraints - Low Productivity Class; ♦ Operational Constraints - Low Crown Cover; ♦ Operational Constraints - High Larch Component; ♦ Operational Constraints - Pine Stands with Significant Dwarf Mistletoe; ♦ Operational Constraints - Low Productivity Black Spruce Stands.
279.	EXCLUSION	String	10	0	Identifies polygons that are not in the netlandbase: ♦ Partial; ♦ Permanent.



FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
280.	DEV_CODE	Numeric	8	2	Development Type Number identified as follows: ♦ 1 - S-WS-A-A; ♦ 2 - S-BS-A-A; ♦ 3 - S-JP-LD-A-1; ♦ 4 - S-JP-LD-A-2; ♦ 5 - S-JP-HD-A-1; ♦ 6 - S-JP-HD-A-2; ♦ 7 - S-JP-L&M ♦ 8 - SH-JP-A-A; ♦ 9 - SH-WS-A-A; ♦ 10 - HS-WS-A-A; ♦ 11 - HS-JP-A-A; ♦ 12 - H-A-LD-A-1; ♦ 13 - H-A_LD-A-2; ♦ 14 - H-A-HD-A-1; ♦ 15 - H-A-HD-A-2; ♦ 16 - H(S)-A-LD-A; ♦ 17 - H(S)-A-HD-A.
281.	DEVTYPE	String	15	0	Development Type Name identified as follows: ♦ H-A-HD-A-1; ♦ H-A-HD-A-2; ♦ H-A-LD-A; ♦ H(S)-A-HD-A; ♦ H(S)-A-LD-A; ♦ HS-JP-A-A; ♦ HS-WS-A-A; ♦ S-BS-A-A; ♦ S-JP-HD-A-1; ♦ S-JP-HD-A-2; ♦ S-JP-LD-A-1; ♦ S-JP-LD-A-2; ♦ S-JP-L&M ♦ S-WS-A-A; ♦ SH-JP-A-A; ♦ SH-WS-A-A.
282.	SERAL_CLAS	Numeric	8	2	Seral Stage ♦ 1- Young; ♦ 2- Immature; ♦ 3- Mature; ♦ 4- Old; ♦ 5- Older
283.	SGR_CODE	Numeric	8	2	Silviculture Ground Rules Number as follows: ♦ 1 - S-WS; ♦ 2 - S-BS; ♦ 3 - S-JP; ♦ 4 - SH-JP; ♦ 5 - SH-WS; ♦ 6 - HS-WS; ♦ 7 - HS-JP; ♦ 8 - H.





FIELD NO.	FIELD NAME	FIELD TYPE	FIELD WIDTH	NO. OF DECIMALS	FIELD DESCRIPTION
284.	SGR_TYPE	String	15	0	Silviculture Ground Rules identified as follows: ♦ H; ♦ HS-JP; ♦ HS-WS; ♦ S-BS; ♦ S-JP; ♦ S-WS; ♦ SH-JP; ♦ SH-WS.
285.	PFT_TYPE	String	10	0	PFT polygon type identified as follows: ♦ ALA - Agriculture Land; ♦ BSH - Bush; ♦ FOR - Forested; ♦ GRS - Grass; ♦ OMS - Open Muskeg; ♦ OTH - Other; ♦ TMS - Treed Muskeg; ♦ UCL - Unclassified; ♦ WAT - Water.
286.	PFT	String	10	0	Provincial Forest Type identified as follows: ♦ AOH - Any other hardwood except TAB; ♦ BSJ - Black Spruce, Jack Pine; ♦ BSL - Black Spruce, Larch; ♦ HPM - Hardwood with Pine Mixedwood; ♦ HSM - Hardwood with Spruce Mixedwood; ♦ JLP - Jack Pine, Lodgepole Pine; ♦ PMW - Pine dominated mixedwood; ♦ SMW - Spruce dominated mixedwood; ♦ TAB - Trembling Aspen, White Birch; ♦ WSF - White Spruce, Balsam Fir.
287.	PFT_SERAL_CLASS	Numeric	8	2	Seral Class identified as follows: ♦ 1 - Young; ♦ 2 - Immature; ♦ 3 - Mature; ♦ 4 - Old; ♦ 5 - Older.
288.	PFT_SERAL_CLASS	Numeric	8	2	Seral Class identified as follows: ♦ 1 - Young; ♦ 2 - Immature; ♦ 3 - Mature; ♦ 4 - Old; ♦ 5 - Older.
289.	UPD_HEIGHT	Numeric	8	2	Updated Height



## 7.0 PLANNING UNITS

The FMA area is currently managed within the context of twelve landscape-level management units ranging in size from 13,711 ha to 355,914 ha (Table 7-1). Table 7-1 identifies the management units and respective areas (ha) comprising the current Mistik FMA area. The average management unit size is 152,700 ha. On average, only 45% (ranging from 29% to 70%) of the Mistik FMA area is considered capable of supporting productive tree growth. Each management unit within the FMA area is subdivided into many operating areas. There are 416 operating areas comprising the Mistik FMA area with an average size of ~4,400 ha (Table 7-2).

**TABLE 7-1: MANAGEMENT UNIT PRODUCTIVE AREA SUMMARY**

Management Unit	Gross Area (ha)	Net Productive Area	% Productive
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
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
01-Divide	160,128	99,326	62
04-Waterhen	186,515	106,428	57
08-Canoe Lake	189,585	60,688	32
21-Peter Pond	283,956	102,578	36
11-Dillon	355,677	172,491	48
85- L&M	69,211	61,226	88
<b>Total</b>	<b>1,866,274</b>	<b>878,511</b>	<b>47</b>

**TABLE 7-2: MANAGEMENT UNIT AND OPERATING AREA SUMMARY**

Management Unit	Gross Area (ha)	# of Operating Areas	Average Size (ha)
20-Beaver River	13,706	4	3,426
03-Big Island Lake	37,926	8	4,741
12-Murray Bay	62,412	16	3,901
02-Pierceland	119,855	31	3,866
09-Ile a la Crosse	112,426	27	4,164
10-Buffalo Narrows	125,665	29	4,333
07-Beauval	149,212	34	4,389
01-Divide	160,128	45	3,558
04-Waterhen	186,515	45	4,145
08-Canoe Lake	189,585	29	6,537
21-Peter Pond	283,956	35	8,113
11-Dillon	355,677	113	3,148
85-L&M	69,211	10	6,921
<b>Total</b>	<b>1,866,274</b>	<b>426</b>	<b>4,381</b>



## 8.0 HEIGHT ADJUSTMENT

Height estimations for the Mistik Management Ltd. landbase were based off of parameter estimates for age and site index models following the equations and parameters outlined in Forest Management Research Note: Subregion- Based compatible height and site index models for young and mature stands in Alberta (*Huang et al. 1997*) (Table 1 and Table 2). Because Saskatchewan does not follow the same natural subregions as Alberta, the provincial estimates for the coefficients and timber productivity rating (TPR) were used as equivalents in comparison to Mistik’s landbase.

### Parameter estimates

Table 1. Parameter estimates for the height and site index models based of the Provincial Subregion.

Species	B0	B1	B2	B3
Lodgepole Pine	n/a	8.133968	-1.364558	1.2589996
Black Spruce	n/a	9.281497	-1.620883	5.598441
Balsam Fir	n/a	11.914158	-2.0207219	10.0000
Tamarack	n/a	9.281497	-1.620883	5.598441
Aspen	0.202935	9.908202	-1.390081	1.868576
Birch	0.202935	9.908202	-1.390081	1.868576
Jack Pine	0.073456	8.770517	-1.334706	1.719841
White Spruce	0.044435	11.381718	-1.944325	6.728764

Table 2. TPR estimates based of the Provincial Subregion

TPR Value	Site0 (except Sb)	Site 0 (Sb)
Good	20	12
Medium	14	8
Fair	10	6
Unproductive	6	5

### Methodology

Due to the complexity and growth differentials between species, different equations were used to produce the height increments. Equation 1(A and B) applies to lodgepole pine (*Pinus contorta*), black spruce (*Picea Mariana*), balsam fir (*Abies balsamia*), and tamarack (*Larix laricina*). Equation 2 (A and B) applies to trembling aspen (*Populus tremuloides*), white birch (*Betula papyrifera*), jack pine (*Pinus banksiana*), and white spruce (*Picea glauca*). Equation 3 is the estimate of height at photo year derived using both the x values from equations 1 and 2. To obtain incremental growth, bhage was substituted using 5 year age class intervals starting with



0 and ending with 200 for each species and TPR value. Once the increment was calculated it could be applied to Equation 4 to obtain the value added to the current height.

**Equation 1A**

$$X1 = (1 + \exp(b1 + b2 * LN(50 + b3) - LN(site0 - 1.3))).$$

Where:

*X1* = Height at age 50  
*b1, b2, b3* = Provincial coefficients per species base  
*site0* = TPR coefficient value

**Equation 1B**

$$X2 = (1 + \exp(b1 + b2 * LN(bhage + b3) - LN(site0 - 1.3))).$$

Where:

*X2* = Breast height age  
*b1, b2, b3* = Provincial coefficients per species base  
*site0* = TPR coefficient value

**Equation 2A**

$$X1 = (1 + b0 * (site0 - 1.3) + \exp(b1 + b2 * LN(50 + b3) - LN(site0 - 1.3))).$$

Where:

*X1* = Height at age 50  
*b0, b1, b2, b3* = Provincial coefficients per species base  
*site0* = TPR coefficient value

**Equation 2B**

$$X2 = (1 + b0 * (site0 - 1.3) + \exp(b1 + b2 * LN(bhage + b3) - LN(site0 - 1.3))).$$

Where:

*X2* = Breast height age  
*b0, b1, b2, b3* = Provincial coefficients per species base  
*site0* = TPR coefficient value

**Equation 3**

$$Height\ at\ photo\ year = 1.3 + (site0 - 1.3) * \left(\frac{x1}{x2}\right)$$

Where:

*site0* = TPR coefficient value  
*X1* = Value calculated from Equations 1A or 2A



X2 = Value calculated from Equations 1B or 2B

**Equation 4**

$y = \text{current age height estimation} - \text{photo year age height estimation}$

Where:

$y$  = Additional increment to add to current height