Alberta Newsprint Company

Figure 2.38

ALBERTA NEWSPRINT COMPANY
FOREST MANAGEMENT AGREEMENT AREA

POST-ROTATION (HABITAT Type 3): Time 0

(1999)

Rge 5 Rge 4 Rge 3 Rge 2 Rge 1 6th MER Rge 27 Rge 26 Rge 25 Rge 24 Rge 23 Rge 22 Rge 21 Rge 20 Rge 19 Rge 18 Rge 17

Twp 64 Twp 63 Twp 62 Twp 61 Twp 60 Twp 59 Twp 58 Twp 57 Twp 56 Twp 55

N W E S

Fox Creek

Two Creeks

Muskeg River

CARIBOU ZONE

Provincial Location of FMA

Post-rotation forest community

- H_100-140
- H_140+
- HS_100-140
- HS_140+
- S_100-140
- S_140+
- SH_100-140
- SH_140+

CARIBOU ZONE BOUNDARY

ATS grid

Recreation area

Scale 1:425,000

10 0 10 km

Projection: Universal Transverse Mercator zone 11
NAD 83 GRS 80
Spheroid
GDC project ref: 20-0096
Date: 09/2001

GDC
GEOGRAPHIC DYNAMICS CORP.

2.3.6.5. Habitat Type 5 – Thermal Cover

The thermal cover forest community consists of all D density (or 70% crown closure) stands with an overstorey height greater than or equal to 10 m, greater than or equal to 10 ha, and with a minimum stand width of 200 m.

Stands were first differentiated by moist and wet AVI moisture regimes (version 2.1 standards). Table 2.39 shows the average overstorey height by stand age class for both AVI moisture regimes. The 10-m average height requirement begins at stand age classes 40 and 100 for moist and wet stands, respectively. Thus, the criterion for the overstorey height requirement is:

1. Greater than or equal to 40 years if moisture regime equals moist, and
2. Greater than or equal to 100 years if moisture regime equals wet.

Table 2.39 Average overstorey height, in metres, by stand age class for moist and wet moisture regimes

Stand Age Class	Average Height (m)	
	Moist	Wet
20	7.0	7.0
30	7.2	6.3
40	**10.6**	8.5
50	9.1	6.9
60	13.4	8.5
70	15.8	7.4
80	14.5	8.6
90	17.1	8.7
100	19.5	**12.2**
110	17.2	11.1
120	16.0	12.8
130	22.4	12.8
140	17.1	12.8
150	18.6	13.4
170	17.4	14.1
180	22.0	15.8
190	22.0	NS
200	13.9	NS

(Note: Blue values indicate the age class where average overstorey height is greater than or equal to 10 m).

The variables used in age-class structure analysis were stand-level AVI species group and 20-year age-classes. Figure 2.40 summarizes the results for habitat type 5.

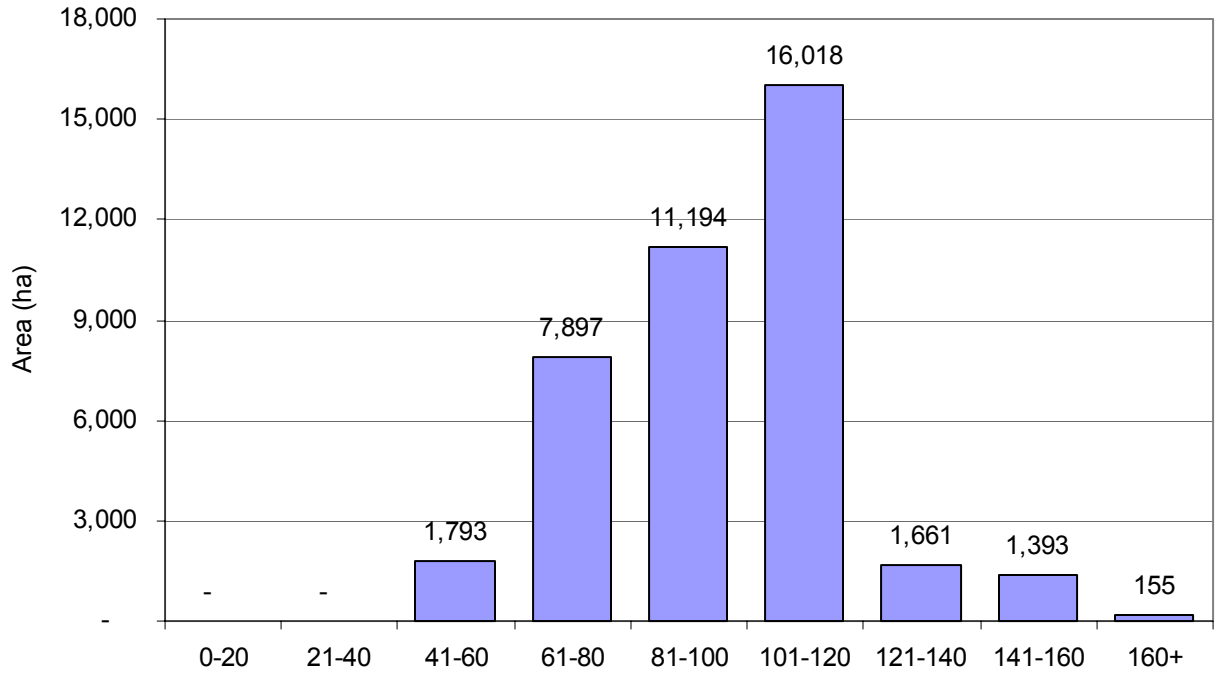


Figure 2.40 Habitat Type 5 - Age-class Distribution of Thermal Cover

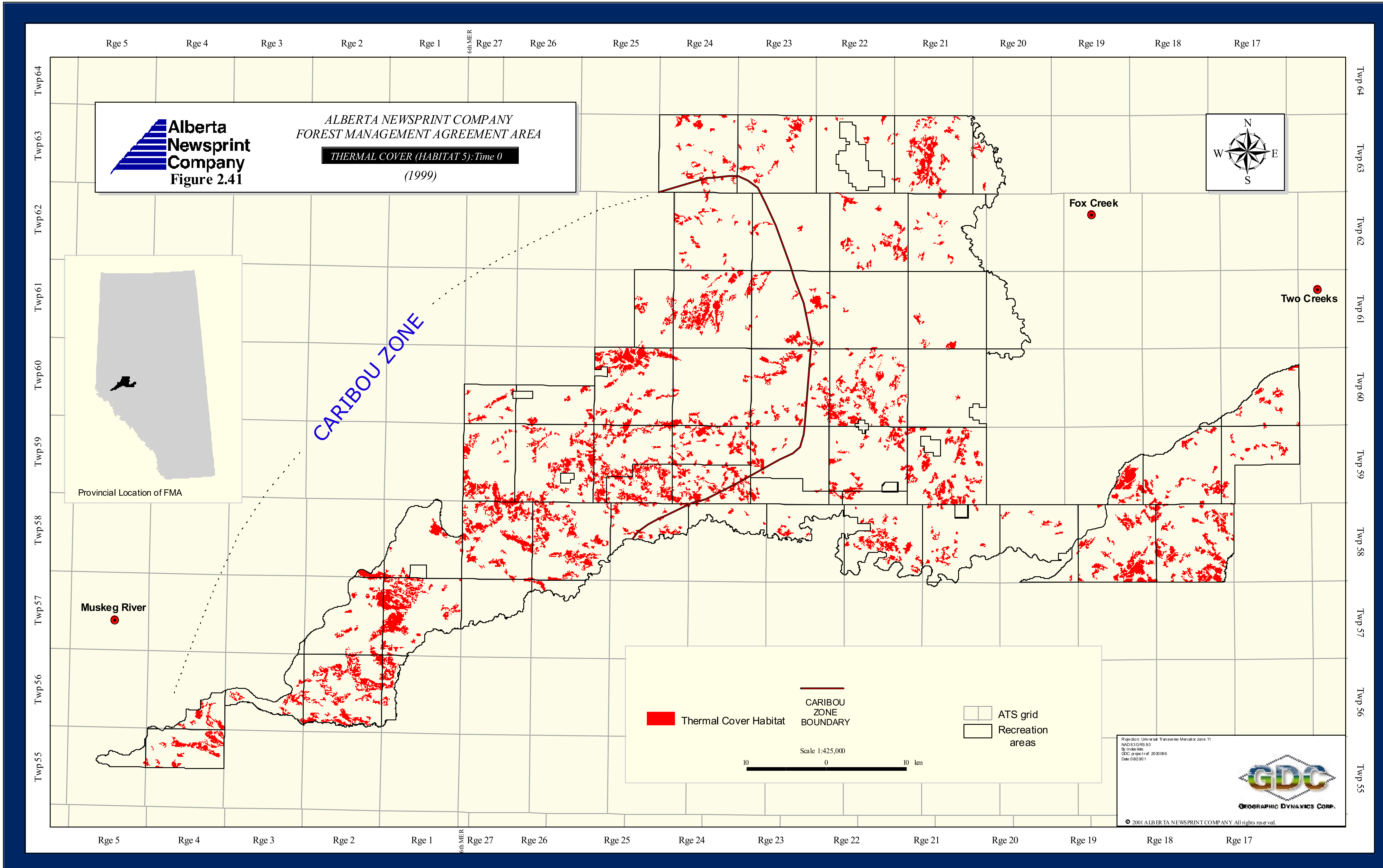
The current (1999) thermal cover forest community comprises 40,111 ha, or 11.5% of the forested land base. Most stands, (27,212 ha or 68%) are between 80 to 120 years old. Younger thermal communities (less than 80 years) are rather common, as well. They form 9,690 ha (24%) of the total thermal cover and are between 40 and 80 years old. Older thermal communities, however, are less common. They form 3,054 ha (8%) of the total thermal cover area and are between 120 and 160 years old. Thermal communities older than 160 years have a combined area less than 155 ha (1%). No thermal communities occur younger than 40 years because it is the minimum age criterion for the overstorey 10-m height requirement (see methods).

Figure 2.41 shows the spatial distribution of habitat type 5.

2.3.6.6. Habitat Type 6 – Residual Structure

This habitat type is applied only to stands scheduled for harvesting during the 180-year planning horizon, or 282,683 ha (74.6%) of forested ANC's FMA area (Figure 2.42). Habitat type 6 is subdivided into categories.

I. Softwood understorey
II. Live balsam poplar or white birch trees
III. Standing dead conifer trees
IV. Standing dead deciduous trees
V. Undersized trees


Alberta Newsprint Company
Figure 2.41
ALBERTA NEWSPRINT COMPANY
FOREST MANAGEMENT AGREEMENT AREA
THERMAL COVER (HABITAT 5): Time 0
(1999)
Provincial Location of FMA
CARIBOU ZONE
Fox Creek
Two Creeks
Muskeg River
N
S
E
W
Rge 5
Rge 4
Rge 3
Rge 2
Rge 1
6th MER
Rge 27
Rge 26
Rge 25
Rge 24
Rge 23
Rge 22
Rge 21
Rge 20
Rge 19
Rge 18
Rge 17
Twp 64
Twp 63
Twp 62
Twp 61
Twp 60
Twp 59
Twp 58
Twp 57
Twp 56
Twp 55
Thermal Cover Habitat
CARIBOU ZONE BOUNDARY
ATS grid
Recreation areas
Scale 1:425,000
10
0
10
km
Projection: Universal Transverse Mercator zone 11
NAD83 GRS 80
By: mdesilets
GDC project ref: 2000096
Date: 08/20/01
GDC
Geographic Dynamics Corp.
© 2001 ALBERTA NEWSPRINT COMPANY All rights reserved.

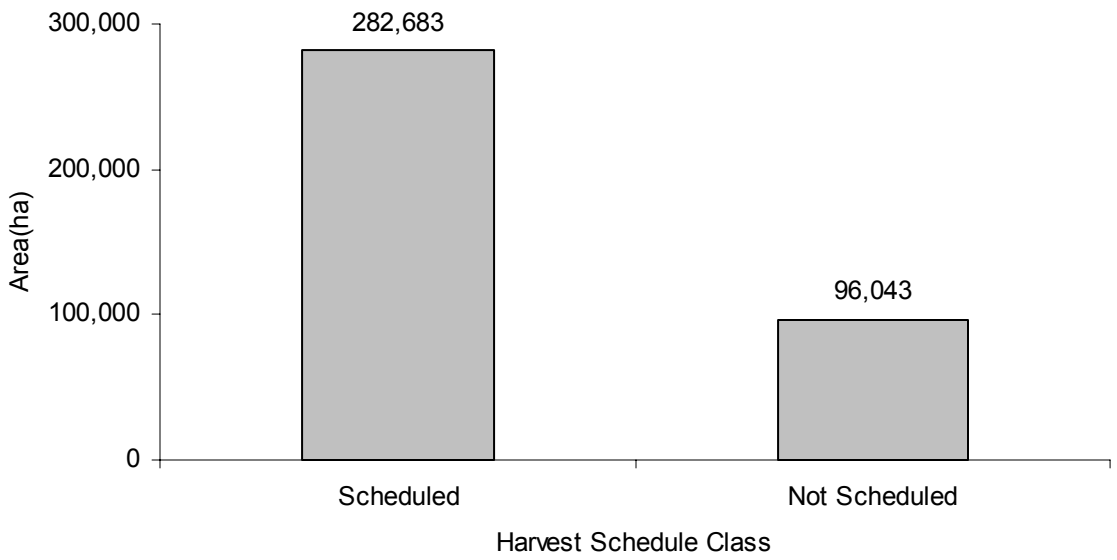


Figure 2.42 ANC's FMA Area that is Scheduled for Harvesting and Not Scheduled for Harvesting, Over the 180-year Planning Horizon

Category I - Softwood understorey

Softwood understorey category is delineated using spatially referenced AVI attribute data. All AVI stands in the harvest schedule are selected if softwood understorey is greater than or equal to 3 m. Stands are stratified by crown closure (AVI version 2.1 standards) and summarized by area in hectares.

Density classes are linked to each AVI polygon through a one-to-many relationship using yield strata as the link field. Figure 2.43 summarizes the results for habitat type 6.

About 109,900 ha (39%) of stands in the harvest schedule have no softwood understorey; 143,338 ha (50%) of stands in the harvest schedule have softwood understorey cover rated as average or less than average. However, because the softwood understorey residual type was derived solely from interpretations of leaf-on air-photo information (i.e., AVI), it is difficult to identify and describe below the overstorey layer. Available data probably do not represent the true extent and density of softwood understories in the FMA area. But, because standing dead deciduous trees were derived from TSP data, it is reasonable to assume that there are few of these structures available in the natural forest in the FMA area.

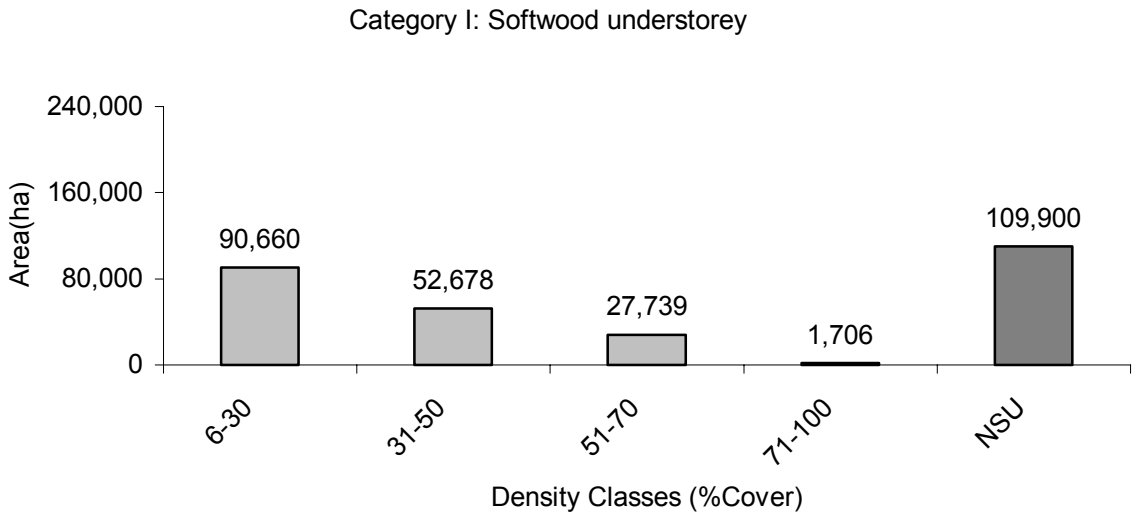


Figure 2.43 The FMA Area Summary for Category I

Figure 2.44 shows the spatial distribution of habitat type 6, Category I.

Category II -- Live balsam poplar or white birch trees

Category II residual type is the relationship between combined balsam poplar and white birch density and yield strata. Yield strata are described in ANC's TSA (Chapter 3). Density (stems per hectare) is calculated from the Temporary Sample Plot (TSP) data. The relationship is summarized as mean stems per hectare by yield strata, where yield strata are assigned to one of following density classes:

1. 0: zero stems per hectare
2. 0-39: greater than zero and less than 40 stems per hectare
3. 40-79: greater than or equal to 40 and less than 80 stems per hectare
4. 80-119: greater than or equal to 80 and less than 120 stems per hectare
5. 120+: greater than or equal to 120 stems per hectare

Figure 2.45 represents the area summary for Category II residual type. On average, most stands harvested will have the potential to leave live balsam poplar or white birch residual structure. Only 7,517 ha are predicted to have zero residual structure. About 207,773 ha (74%) of the area in Category II residual structure will have less than 40 stems per hectare.

Alberta Newsprint Company

Figure 2.44

ALBERTA NEWSPRINT COMPANY
FOREST MANAGEMENT AGREEMENT AREA

RESIDUAL STRUCTURE (HABITAT Type 6)

(1999) Potential for Softwood understorey (Category I)

Rge 5 Rge 4 Rge 3 Rge 2 Rge 1 6th MER Rge 27 Rge 26 Rge 25 Rge 24 Rge 23 Rge 22 Rge 21 Rge 20 Rge 19 Rge 18 Rge 17

Twp 64 Twp 63 Twp 62 Twp 61 Twp 60 Twp 59 Twp 58 Twp 57 Twp 56 Twp 55

N W E S

Fox Creek

Two Creeks

Muskeg River

CARIBOU ZONE

Provincial Location of FMA

Percent cover classes

- 6% to 30%
- 31% to 50%
- 51% to 70%
- 71% to 100%
- No softwood understorey
- Not in harvest schedule
- CARIBOU ZONE BOUNDARY
- ATS grid
- Recreation areas

Scale 1:425,000

10 0 10 km

Projection: Universal Transverse Mercator zone 11
NAD83 GRS80
Bymdesilets
GDC project ref: 20-0096
Date: 08/2001

GDC GEOGRAPHIC DYNAMICS CORP.

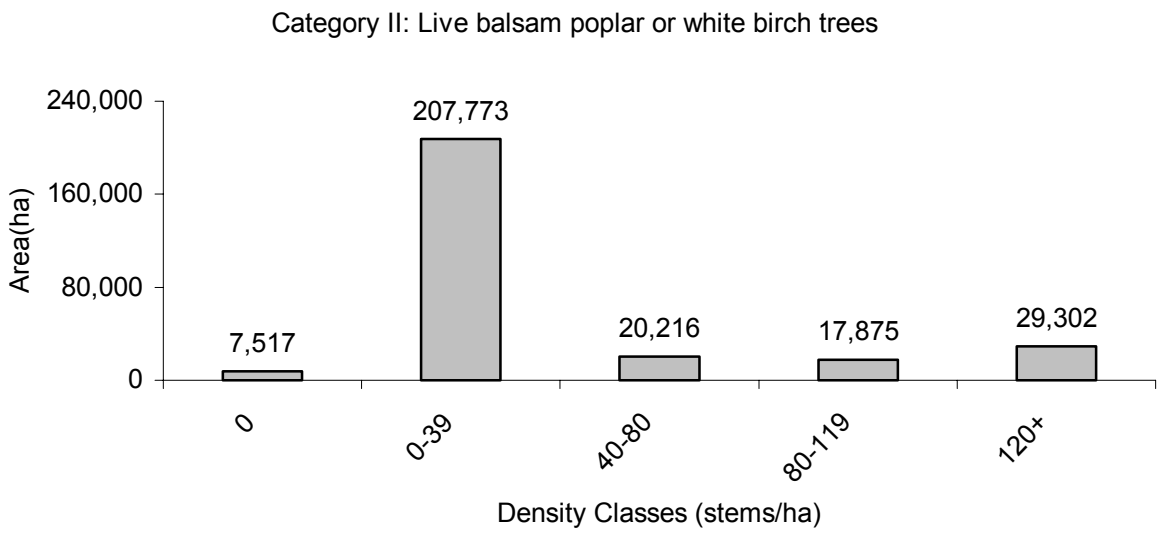


Figure 2.45 The FMA Area Summary for Category II

Figure 2.46 shows the spatial distribution of habitat type 6, Category II.

Categories III & IV. Standing dead conifer and deciduous trees

The residual stand structure categories III and IV are described by the relationship between respective snag densities and yield strata. Yield strata are described in the ANC's TSA (Chapter 3). Snag density (stems per hectare) is calculated from the TSP data. This relationship is summarized as mean stems per hectare by yield strata. Using a five-point system, yield strata are assigned to one of the following density classes:

1. 0: zero stems per hectare
2. 0-39: greater than zero and less than 40 stems-per-hectare
3. 40-79: greater than or equal to 40 and less than 80 stems-per-hectare
4. 80-119: greater than or equal to 80 and less than 120 stems-per-hectare
5. 120+: greater than or equal to 120 stems-per-hectare

Figure 2.47 represents the area summary for standing dead conifer. On average, the entire landbase scheduled for harvesting has dead conifer residual structure. About 80,684 ha (29%) of the area could yield greater than 120 stems per hectare of dead conifer residual structure while 93,661 ha (33%) of the area could leave between 80 and 119 stems per hectare. This represents 62% of the area scheduled for harvest that potentially could have residual structure in the higher density classes.

Figure 2.48 represents the area summary for standing dead deciduous trees. Of the landbase scheduled for harvest, about 282,683 ha (57%) has the potential for leaving dead deciduous structure. The average dead deciduous structure that could occur is expected to be less than 40 stems per hectare.

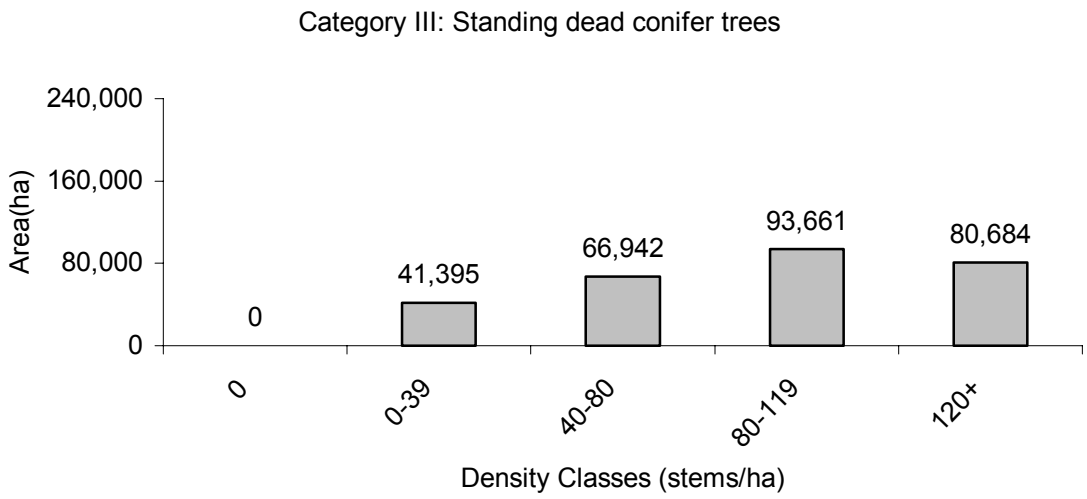


Figure 2.47 The FMA Area Summary for Category III

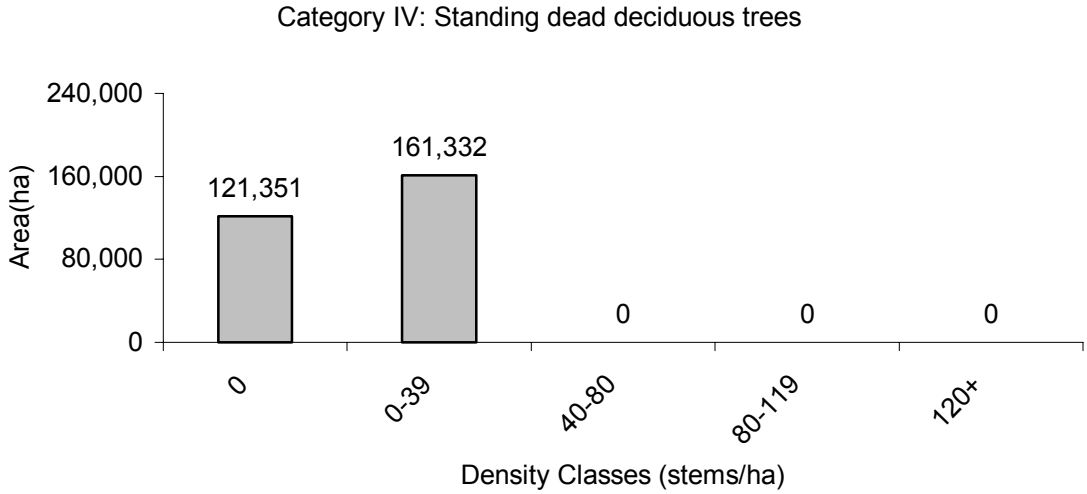


Figure 2.48 The FMA Area Summary for Category IV

Figure 2.49 and Figure 2.50 show the spatial distribution of habitat type 6, Categories III and IV.

Category V Undersized trees

Undersized trees are trees that have less than 13 cm diameter at breast height (DBH). The residual Category V represents the relationship between undersized tree density and yield strata. Yield strata are described in the ANC's TSA (Chapter 3). Density (stems per hectare) is calculated from the TSP data. The relationship is summarized as mean stems per hectare by yield strata. Yield strata are assigned to one of the density classes: