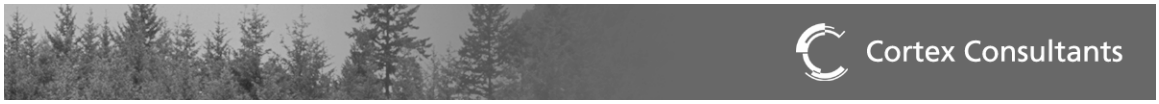

100 Mile House TSA Enhanced Type 2 Silviculture Strategy -

Data Package

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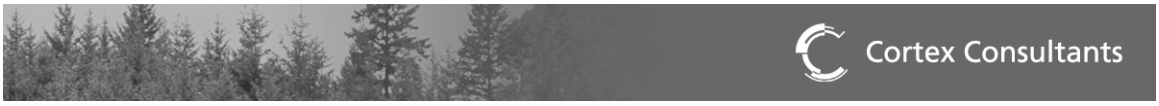

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1.0 Introduction

This data package represents the data and management assumptions that will be used in the 100 Mile House Type II Mitigation Analysis. The data and management assumptions are based on the most recent set of Timber Supply Reviews (TSR); most recently the 2006 100 Mile House Urgent Timber Supply Review (TSR3) and the 2001 TSR2.

The following sections describe and present the data and information used to determine the forested and timber harvesting land base, and to formulate the timber supply model for this analysis. The information used in the analysis is the most recent and best available.

In most cases the 2006 assumptions where applied and information gaps were filled in with the 2001 assumptions. This analysis will apply a revised base case that will bring in new information and assumptions. Data used in this analysis was supplied by ILMB and MoFR with vintages typically post 2001 TSR.

Table 1 summarizes the differences between the TSR analyses and this analysis.

Table 1. Summary of TSR versus Type 2 assumptions.

TSR Assumption	Revised Assumption
Analysis unit formulation did not include pine >= 70%	Added 2 analysis units to represent pine >= 70%
Chief Forester (CF) retention was not in TSR 2 or TSR 3	The revised base case will retain THLB according to CF documents
OGMA removal not found in TSR 2 but in TSR 3	All OGMA area was removed from the THLB
Utilization level for non-pine was 17.5cm	Utilization level for non-pine is 12.5cm
Harvest priority was oldest first in TSR 2	Harvest priority was by time since death following MPB attack and shelf-life
MPB attacked stands not harvested and past shelf-life regeneration back to age 30	MPB attacked stands not harvested and past shelf-life regenerate back according to regeneration potential (low, medium, high). Each regen potential class has a different regen delay and volume reduction
SIBEC estimates were not included in TSR 2 or 3	SIBEC estimates were included for the revised base case

2.0 Inventory Information

The inventory information used in this analysis was provided by MoFR and ILMB through the LRDW. Key datasets such as forest cover, depletion, overview flight data, and roads are vintage 2006 to 2007. Table lists the key datasets used in this analysis.

Table 2. Spatial data, source, and vintage used in the analysis.

Data	Source	Vintage	Update	Scale
Administrative Boundaries	LRDW			
Forest cover - VRI	LRDW	2006	2007	1:20,000
DEM	MoFR	2005		
TRIM roads	LRDW	2006		1:20,000
Forest tenure road lines	LRDW	2007		1:20,000
FDP roads	MoFR	2006		1:20,000
Ownership	LRDW	2006		1:20,000
First Nation reserves	LRDW			
Parks	LRDW			
Woodlots	LRDW			
RESULTS data	MoFR	2007		1:20,000
Change detection	MoFR	2007		
Fire history	MoFR	2007		
Beetle overview flight results - 1999 to 2007	MoFR	2007		
Watershed boundaries	LRDW			
3rd order watershed boundaries	LRDW			
Community watersheds	LRDW			
Terrain stability	100 Mile House SRMP ftp site	2001		
Biogeoclimatic variants	MoFR	2007		
OGMAs	LRDW	2005		
Grizzly bear habitat	100 Mile House SRMP ftp site	2005		
Caribou habitat	LRDW	2005		
MDWR	100 Mile House SRMP ftp site	2005		
Wildlife habitat areas	LRDW	2005		
Wildlife tree patches	MoFR	2006		
Riparian steam classifications	100 Mile House SRMP ftp site	2005		
Class A Lakes	SRMP ftp site	2005		
Landscape units	LRDW			
Visual quality objectives	LRDW			
Heritage trails	LRDW			

3.0 Management Zone and Analysis Unit Definition

Management zones are used to stratify the land base to ensure distinct management regimes and objective can be applied to specific portions of the land base. In the case of the 100 Mile House one of the key stratifications is between clearcut and selection harvesting systems. In most cases this results in overlapping regimes and objectives.

Table 3 lists the zones and objectives being met in the analysis. The forested land not available for timber harvesting (NCLB) is included for consideration in attaining forest cover objectives for landscape-level biodiversity, community watersheds, visual quality objectives and caribou habitat.

Table 3. Management zones using the analysis.

Zone	Management Regime or Objective
Landscape units	The group is used to apply forest cover objectives
MDWR	Modified harvest practices to manage for MDWR
Caribou habitat	Modified harvest practices to manage for caribou
Community watersheds	Subject to strict maximum disturbance limits applied to the Crown Forest area
Dry-belt selection harvesting	Model the system currently in the TSA
Multiple use zone	This zone cover areas in the THLB. A 3-metre green-up limit is applied to limit the rate of harvesting in each landscape unit

Analysis units are used to stratify the forest by tree species (leading species or inventory type group), productivity (inventory or SIBEC site index), and management regimes (clearcut or selection harvest system). Analysis units are then assigned to age dependant yield curves.

Yield curves for existing natural stands age 41+ are generated by the variable density yield prediction (VDYP) yield model. Yield tables for existing managed (<= 40 years) and future stands were derived using the table interpolation program for stand yields (TIPSY).

Table 4 list the analysis units used in this analysis.

Table 4. Analysis formulation for the 100 Mile House Mitigation Analysis.

AU Description	AU Number	ITG	Site Index	Species %	Age
Douglas-fir, poor	2	1-8,33,34	>7.6 <=13.5	all	>40
Douglas-fir, good/medium	3	1-8,33,34	>13.5	all	>40
Cedar-hemlock, poor	4	9-17	>7.6 <=13	all	>40
Cedar-hemlock, good/medium	5	9-17	>13	all	>40
Spruce-balsam, poor	6	18-26	>7.6 <=13	all	>40
Spruce-balsam, good/medium	7	18-26	>13	all	>40
Lodgepole pine, poor	8	28-31	>7.6 <=12.5	<70	>40
Lodgepole pine, good/medium	9	28-31	>12.5	<70	>40
Lodgepole pine, poor	80	28-31	>7.6 <=12.5	>=70	>40
Lodgepole pine, good/medium	90	28-31	>12.5	>=70	>40
Dry-belt fir, selection (IDF and SBPS)	10	1-8	>7.6	all	>40
MDWR habitat, selection, >=40% fir, low crown closure class (<4)	11	1-34	>7.6 <=12	all	>40
MDWR habitat, selection, >=40% fir, low crown closure class (<4)	12	1-34	>12	all	>40
MDWR habitat, selection, >=40% fir, mod to high crown closure class (>=4)	13	1-34	>7.6 <=12	all	>40
MDWR habitat, selection, >=40% fir, mod to high crown closure class (>=4)	14	1-34	>12	all	>40
MDWR habitat, even-aged, <40% fir	15	1-34	>7.6	all	>40
Pulpwood agreement AU - conifer	21	1-26,32	<=7.6	all	>40
Pulpwood agreement AU - conifer	22	27-31	<=7.6	all	>40
Pulpwood agreement AU - decid	23	35-36,40,41-42	<=7.6	all	>40
Pulpwood agreement AU - decid	24	35-36,40,41-42	>7.6	all	>40
Caribou habitat, modified harvest	31	all	>7.6	all	>40
Caribou habitat, no harvest	32	all	>7.6	all	>40
Yellow pine	50	32	all	all	>40
Douglas-fir, poor	102	1-8,33,34	>7.6 <=13.5	all	<=40
Douglas-fir, good/medium	103	1-8,33,34	>13.5	all	<=40

AU Description	AU Number	ITG	Site Index	Species %	Age
Cedar-hemlock, poor	104	9-17	>7.6 <=13	all	<=40
Cedar-hemlock, good/medium	105	9-17	>13	all	<=40
Spruce-balsam, poor	106	18-26	>7.6 <=13	all	<=40
Spruce-balsam, good/medium	107	18-26	>13	all	<=40
Lodgepole pine, poor	108	28-31	>7.6 <=12.5	all	<=40
Lodgepole pine, good/medium	109	28-31	>12.5	all	<=40
Dry-belt fir, selection (IDF and SBPS)	110	1-8	>7.6	all	<=40
MDWR habitat, selection, >=40% fir, low crown closure class (<4)	111	1-34	>7.6 <=12	all	<=40
MDWR habitat, selection, >=40% fir, low crown closure class (<4)	112	1-34	>12	all	<=40
MDWR habitat, selection, >=40% fir, mod to high crown closure class (>=4)	113	1-34	>7.6 <=12	all	<=40
MDWR habitat, selection, >=40% fir, mod to high crown closure class (>=4)	114	1-34	>12	all	<=40
MDWR habitat, even-aged, <40% fir	115	1-34	>7.6	all	<=40
Pulpwood agreement AU - conifer	121	1-26,32	<=7.6	all	<=40
Pulpwood agreement AU - conifer	122	27-31	<=7.6	all	<=40
Pulpwood agreement AU - decid	123	35-36,40,41-42	<=7.6	all	<=40
Pulpwood agreement AU - decid	124	35-36,40,41-42	>7.6	all	<=40
Caribou habitat, modified harvest	131	all	>7.6	all	<=40
Caribou habitat, no harvest	132	all	>7.6	all	<=40
Yellow pine	150	32	all	all	<=40

4.0 Definition of the Timber Harvesting Land Base

4.1 Non provincial crown area

This analysis excludes all private land which including Private Crown, Federal Reserve, Indian Reserve. Also excluded are woodlot licenses. Table 5 list the categories that do not contribute to the THBL or forest cover objectives; they were excluded from the land base modelled in the analysis.

Table 5. Ownerships that do not contribute to the modeling land base.

Ownership code	Definition
40N	Private Crown grant
50N	Federal reserve
52N	Indian reserve
77N	Woodlot licence

Using the supplied Woodlot coverage, 20,558 hectares of woodlot licences have been excluded from the modeling land base.

Table 6 lists the land under provincial Crown administration that may contribute to forest management objectives even if it is not available for timber harvesting. In this case provincial parks and reserves mat contribute to mid-seral/old biodiversity objectives.

Table 6. Ownership categories excluded from the THLB but included to achieve forest management objectives

Ownership code	Definition
60N	Crown / ecological reserves
61C, 61N	UREP (use, recreation, enjoyment of the public)
99C	Miscellaneous leases
63N	Class A parks
67N	Provincial parks, park equivalents, or reserves

This analysis used the updated quasi VRI (83% FIP role-over and 17% complete or incomplete VRI). The forested land base and THLB was determined by identifying polygons identified as "Vegetated" and "Treed". Additional polygons were identified as being NSR by having a linked RESULTS opening indicator not categorized as free-growing, or non-productive code NSR.

Table 7 shows the determination of the productive forest and THLB. Certain scenarios will alter the THLB to reflect current policy and practices.

Table 7. THLB determination for this analysis.

Classification	Area
Total TSA Area	1,237,656
Non provincial crown area	118,634
Non forest	160,748
Crown forest	**958,275**
Existing parks	38,697
Goal 2 areas	2,476
Woodlots	20,558
Forest Area managed by the Forest Service	**896,543**
Reductions	
Existing Roads	22,694
Non-commerical forest	862
Inoperable areas - 100% netdown	1,201
Class A Lakes	3,371
Riparian area	61,079
OGMA	134,982
WTP	5,029
Caribou	9,429
Sheep	3,779
Goat	132
Trail buffers	6,652
Inoperable areas - Partial netdown	4,579
Secondary roads	3,968
Total current reductions	**257,756**
Current timber harvesting land base	**638,787**
Future land base changes	
Future road reductions	31,361
Long-term timber harvesting land base	**607,426**

4.2 Land classified as non-forest

Land classified as non-vegetated and un-typed were excluded from the timber harvesting land base and forested area.

4.3 Existing parks and Goal 2 areas

Existing parks and Goal 2 areas were included as forested area and will be allowed to meeting mid-old seral forest cover objectives. Table 8 lists the parks and area found in the model.

Table 8. Protected areas in the modeling land base.

Protected Area Name	Area (ha)
Big Bar Lake Park	312
Bonaparte Park	0
Bridge Lake Park	12
Canim Beach Park	2
Cariboo Nature Park	60
Chasm Ecological Reserve	197
Chasm Park	3,089
Downing Park	87
Edge Hills Park	10,159
Emar Lakes Park	25
Flat Lake Park	2,595
Green Lake Park	283
Lac La Hache Park	21
Loon Lake Park	3
Marble Range Park	14,022
Moose Valley Park	1,506
Ruth Lake Park	26
Schoolhouse Lake Park	4,052
Wells Gray Park	2,246

4.4 Existing classified roads

Spatial data layers on existing classified roads were provided as separate layers. A buffering process was completed using the following total buffer widths supplied by MoFR staff:

1. Main road – 30m
2. Secondary – 20m
3. Operational – 15m
4. Trail – 8m

All land included in this layer were removed from the productive forest area.

4.5 Non-commercial forest

Inventory type group 32 (yellow-pine) were exluded from the THLB.

4.6 Inoperable areas

There has been as small amount of area classified under an operability study. These areas are classified as based on the physical or economic considerations that affect the ability to harvest stands. Also used in this analysis was slope that helped identify additional areas considered non-operational. All areas described as inoperable were excluded from the timber harvesting land base (Table 9).

Operability class	Reduction per cent (%)
Class 1 — slope < = 50%	0
Class 2 — slope > 50% < = 70% (cable yarding)	50
Class 3 — slope > 70% inoperable	100
Class 4 — Ministry of Forests defined areas (heli-logging)	50
Class 5 — no potential for producing forest crops	100

4.7 Lake buffers

This analysis used the 2005 100 Mile House SRMP Class-A lake information. The coverage applied a no-harvest zone of 200 metres to approximate the reserves to be established on the ground.

4.8 Riparian reserves and management zones

The 2005 100 Mile House SRMP stream classification was used in this analysis. The riparian reserves and riparian management zones were classified according to the Forest Practices Code Riparian Management Area Guidebook. This study used the SRMP 100% spatial netdown to represents riparian management zones

4.9 Old growth management areas (OGMA)

This analysis removed all old-growth management areas identified in the LRDW coverage. All OGMA types including rotational removed from the THLB. This equaled a netdown of 134,982 hectares.

4.10 Wildlife habitat areas

The Cariboo-Chilcotin Land-Use Plan (CCLUP) has identified Mountain Caribou habitat. Of this habitat 9,429 ha is considered no harvest, while 1,169 ha can be harvested using selection systems.

No special considerations were made for any other identified wildlife species.

4.11 Stand-level biodiversity reductions

Wildlife tree patches were modeled as a spatial THLB reduction as well as yield curve reductions of 6.3% for all even-aged analysis units. The spatial reduction for existing WTP's equaled 5,029 ha.

4.12 Trail buffers

Harvesting was excluded from all heritage trail buffers (100 m total) totalling 6,652 ha.

4.13 Unclassified roads, trails, and landings

This analysis used separate estimates are made to reflect the loss in productive forest land due to existing and future roads, trail sand landings (RTL). Existing RTL estimates are applied as reductions to the current productive forest considered available for harvesting and future RTL reductions are applied after stands are harvested for the first time during the modeling planning horizon. In this analysis 3,968 ha were removed for existing RTL while 3.8% was removed for future RTL.

5.0 Forest Management Assumptions

5.1 Utilization levels

Timber utilization levels define the maximum stump height, minimum top diameter inside bark (dib) and minimum diameter at breast height (dbh) by species and are used in the analysis to calculate merchantable volume. Table 10 shows the standards used in this analysis.

	Utilization		
Analysis unit	**Minimum dbh (cm)**	**Maximum stump height (cm)**	**Minimum top dib (cm)**
Pine leading	12.5	30	10
All other species	12.5	30	10
Pulpwood agreement 16 types	12.5	30	8

5.2 Volume exclusion for mixed species stands

All deciduous species were excluded from the estimation of volume in coniferous-leading mixed species stands or analysis units 1 to 22,31,70,80. These deductions do not apply to pulpwood agreement 16 analysis units.

5.3 Minimum harvestable requirements

Minimum harvestable requirements are specified to ensure stands are operationally eligible for harvest. In most cases stands are harvest above minimum requirements except during periods were available timber is scarce. For this analysis, stands were considered merchantable when

they attained a volume of 65 cubic metres per. These criteria applied to stands managed under the even-aged and selection systems.

5.4 Harvest scheduling priorities

For this analysis highest priority was given to stands attacked by the mountain pine beetle. The model selected stands based on shelf-life parameters.

For the first 10 years of the planning horizon only stands with >=70% pine content could be harvested. Following this time stands were sequenced according to shelf-life estimates.

A high priority was also given to stands managed under the selection harvesting system to ensure that the management prescription for these stands was followed.

5.5 Abnormal Infestations

5.5.1 Mountain Pine Beetle (MPB)

Mountain pine beetle has created a significant forest health, policy, and operational issue in the TSA.

It has been estimated that the area with red attack in the 100 Mile House Forest District is approximately 623,603 ha (2005 flight data). The intensity of infestation increased significantly in the moderate to severe categories, from 10% in 2004 to 41% (257,235 ha) in 2005.

The Eng et al's BCMPBv2 model has predicted that 36 million cubic metres is projected to be killed by 2015. Work completed prior to modeling projects that 34 million cubic metres will be killed and past shelf-life by 2013.

The model base case model used pine aged 60 years and older as affected by Mountain Pine Beetle. However, for the revised base case mortality could occur in younger stands with tree height >= 10m.

5.5.1.1 Shelf-life

Shelf-life estimates determine the amount of time that a stand is economically viable following death by MPB. For the base case only sawlog products were determined economically viable. Subsequent scenarios will test the alternate products shelf-life assumptions.

This analysis applied shelf lives for sawlogs to be 3, 5 and 10 years for wet, moist, and dry ecosystems. Table 11 lists the ecosystem grouping.

Table 11. Shelf-life assumptions for the base base and revised base case scenarios.

Ecosystem	BEC Zone
Wet	ESSFwc3, ESSFwk1, ICHmk3, ICHmw3, ICHdk
Moist	ESSFdc2, IDFmw2, SBPSmk, SBSdw1, SBSmc1, SBSmm, SBSun
Dry	BGxh2, BGxh3, BGxw2, ESSFxc, ESSFxcp, IDFdk1, IDFdk3, IDFxm, IDFxw, MSxk

5.5.1.2 Regeneration following shelf-life

For pine-leading stands regeneration following shelf-life was dependant on scenario. For the base case it was assumed that stands regeneration back to a natural yield curve at age 20.

For the revised base case regeneration was based on natural regeneration potential. It was assumed that stands regenerated back to natural yield curves. Stands with high regeneration potential had no regeneration delay and no yield curve reduction. Stands with moderate regeneration potential had a 15 year regeneration delay and a 25% yield curve reduction. Stands with low regeneration potential had a 25 year regeneration delay and a 75% yield curve reduction.

5.5.2 Western Spruce Budworm

The revised base case scenario modeled the impact of western spruce budworm. The 2007 flight data has estimated that approximately 20,000 hectares of forested area (~ 10,000 in the THLB) are projected to suffer from moderate to severe defoliation this year.

It is expected that this area will be treated by btk spraying. Separate scenario will test the assumption of if not treated mortality will be 40% for moderate attack and 75% for severe attack.

5.6 Basic silviculture and regeneration assumptions

Regeneration assumptions are based on the 100 Mile House TSA silviculture program. It is assumed that basic silviculture is undertaken on all sites, plus incremental silviculture on some sites. Table 12 lists the regeneration assumptions used in the analysis.

Table 12. Regeneration assumptions used in the analysis.

Existing AU	Future AU	Species	Regen Method	Density	Percent	OAF 1	OAF 2	Regen Delay
2	1102	Fdi	P	4444	100	0.85	0.95	3
3	1103	Fdi	P	4444	100	0.85	0.95	3
4	1104	Pli	P	4444	50	0.85	0.95	3
4	1104	Fdi	P	4444	15	0.85	0.95	3
4	1104	Sw	P	4444	25	0.85	0.95	3
4	1104	Hw	N	4500	10	0.85	0.95	3
5	1105	Pli	P	4444	50	0.85	0.95	3
5	1105	Fdi	P	4444	15	0.85	0.95	3
5	1105	Sw	P	4444	25	0.85	0.95	3
5	1105	Hw	N	4500	10	0.85	0.95	3
6	1106	Sw	P	4000	100	0.85	0.95	3
7	1107	Sw	P	4000	100	0.85	0.95	3
8, 80	1108	Pli	N	6000	90	0.85	0.95	5
8, 80	1108	Pli	P	4444	10	0.85	0.95	5
9, 90	1109	Pli	N	6000	90	0.85	0.95	5
9, 90	1109	Pli	P	4444	10	0.85	0.95	5
21	1121	Fdi	N	4500	40	0.85	0.95	5
21	1121	Bl	N	4500	20	0.85	0.95	5
21	1121	Sw	N	4500	40	0.85	0.95	5
22	1122	Pli	N	4500	90	0.85	0.95	5
22	1122	Pli	P	4444	10	0.85	0.95	5
23	1123	Ac	N	6000	50	0.85	0.95	3
23	1123	At	N	6000	50	0.85	0.95	3
24	1124	Ac	N	6000	50	0.85	0.95	3
24	1124	At	N	6000	50	0.85	0.95	3

All existing stands older than 40 years and were assigned to VDYP curves initially, then assigned to TIPSY managed stand yield curves following first harvest.

5.7 Existing managed stands

Existing managed stands are those areas that are assumed to be historically managed through some sort of stands tending. In this analysis the age assumed was <= 40 years of age.

Growth in existing managed stands and future stands was projected using the table interpolation program for stand yields (TIPSY) growth and yield model.

5.8 SIBEC Estimates

The revised base case incorporated SIBEC estimates for existing and future managed stands which are based on the projects ecosystem predictive model and SIBEC 2 estimates.

5.9 Not satisfactorily restock (NSR) areas

Results data provided by MoFR staff show 23,347 hectares of current NSR. Current NSR was assumed to regenerate back to the analysis unit and regeneration delays provided in Table 12.

5.10 Selection harvesting

A large proportion (24%) of the THLB is comprised of stands that will employ selection harvesting. The following types of selection harvesting are modeled in this analysis.

Dry-belt Douglas-fir selection (analysis unit 10) — the management prescription for these fir-leading stands is to remove 50% of the stand volume in the first entry, re-enter the stand every 30 years thereafter and remove only the growth that has occurred during the 30 year interval.

Mule deer winter range, greater than 40% Douglas-fir, low crown closure (analysis units 11, 12) — the management prescription for these stands is to remove 50% of the stand volume in the first entry, re-enter the stand every 30 years thereafter and remove only the growth that has occurred during the 30 year interval.

Mule deer winter range, greater than 40% Douglas-fir with moderate or high crown closure (analysis units 13, 14) — the management prescription for these stands is to remove 20% of the stand volume in the first entry, re-enter the stands every 50 years thereafter and remove only 66% of the growth that has occurred during the 50-year interval.

Caribou modified harvest (analysis unit 31) — in these areas the management prescription is to remove 33% of the stand volume in the first entry, re-enter the stand every 80 years thereafter and remove only 33% of the volume in the stand.

5.11 Forest cover requirements

This analysis applied constraints according to the "Management Zones" listed in Section 3.0. All forest cover requirements were modeled at the landscape unit level.

5.11.1 Landscape level biodiversity

The CCLUP required that landscape level biodiversity be maintained by meeting or exceeding mature+old (M+O) and old forest objectives by NDT-BEC subunits within landscape units. These were derived from the Biodiversity Guidebook as modified by the Biodiversity Conservation Strategy.

Old seral stage targets were not modeled due to the deployment of spatial OGMAs across the 100 mile TSA. "Mature plus old" seral stage targets were modeled across the entire crown forest

assuming the old portion of the target would be found within OGMAs and other areas outside of the THLB.

Mature plus old seral stage targets were modeled by landscape unit, NDT and BEC. The biodiversity emphasis percentages and minimum ages by NDT and BEC zone are represented in Table 13.

Table 13. Mid+old seral stage requirements.

			"Mature plus old" targets by biodiversity emphasis option(%)		
NDT	**BEC**	**Mature min. age(yrs)**	**Low**	**Intermediate**	**High**
1	ESSF	>120	19	36	54
1	ICH	>100	17	21	32
2	ESSF	>120	14	28	42
2	ICH	>100	15	31	46
2	SBS	>100	15	31	46
3	ESSF	>120	14	23	34
3	MS	>100	14	26	39
3	SBPS	>100	8	17	25
3	SBS	>100	11	23	34
3	ICH	>100	14	23	34
4	IDF-Fd grp.*	>100	22	43	33
4	IDF-Pl grp.*	>100	11	23	34

5.11.2 Resource management zones

This analysis applied forest cover requirements that specify both the maximum proportion of an area allowed in a disturbed condition, and the minimum required area of old-age forest. All forest cover requirements were applied by landscape unit as well as other combinations of factors such as BEC, NDT, and VQO. The following forest cover requirements were applied to each resource management zone within each landscape unit.

Table 14. Forest cover requirements applied in this analysis.

Zone	Height criterion (metres)	Maximum allowable disturbance (% area)	Land base constraints apply to
Multiple use areas	3	35	Timber harvesting land base
Scenic areas			
VQO = Preservation	3	0	Forested area
VQO = Retention	3	1.5	Forested area
VQO = Partial Retention	3	7.5	Forested area
VQO = Modification	3	18	Forested area
Clinton Creek community watershed	3	No more than 1% per year	Timber harvesting land base

The estimated age at which a stand reached green-up height (3 metres) was calculated using "SiteTools" Table 15 lists the estimated age at when a stand reaches green-up height.

Table 15. Green-up height estimates by landscape unit.

Landscape Unit	Green-up age(yrs)
McKinley	19
Deception Mountain	17
Spanish	14
Hendrix Lake	19
Murphy Lake	12
Bradley Creek	13
Helena Lake	17
108 Mile Lake	15
Canimred Creek	15
Canim Lake	13
Forest Grove	13
Bridge Lake	12
Bridge Creek	16
Dog Creek	16
Cunningham Lake	16
Meadow Lake	17
Green Lake	13
Bonaparte Lake	13
Big Bar	19
Chasm	18
Deadman *(East)*	14
Loon	17
Clinton	19
Kelly Lake	19
Deadman *(South)*	13