



File: 19500 01; 19510 01; 19620 01

May 2, 2003

Major Licensees
NRFL Licensees
BC Timber Sales, Babine Timber Sales Office

Dear Licensee:

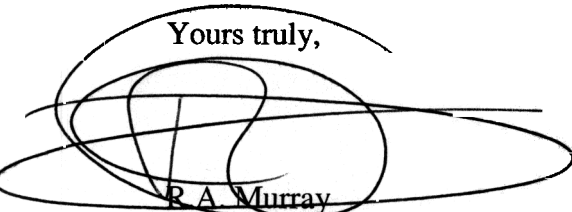
The passage of Bill 75 on December 17, 2002 has brought into effect a requirement to include stocking standards in a forest development plan (fdp). The stocking standards are applicable to different site types and conditions.

A unique standards id number is assigned to each stocking standard. This id allows the tracking of the stocking standard from the site plan and MLSIS Form A (FS708A 02/11) to the fdp. I have established a set of default standards with corresponding id numbers that are to be used within the Nadina Forest District. The stocking standards are applicable on a TSA basis; they differ between the Morice and Lakes TSAs. The id numbers must be included in the forest development plan.

If you, as a licensee, propose stocking standards that are different from those of the default values then the variance must be supported by a rationale within the fdp. I will consider each variance on its individual merit. When a variance is approved it will be assigned its own unique id number and will be added to the set of default standards. The district manager default standards will be maintained on the Nadina District ftp site located at DND\external\publish.

If you require any further information on this matter, please contact Alison Patch, Tenures Forester at 692-2200.

Yours truly,



R. A. Murray

District Manager
Nadina Forest District



IT'S OUR TIME
TO SHINE

Ministry of
Forests

Nadina Forest District

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Nadina Forest District - District Manager Default Stocking Standards

Worksheets Included

The following worksheets are included with this workbook (see tabs at the bottom of the screen):

Introduction - introductory material including the background and purpose of the reference guide, how to use the guide, additional reference standards, and instructions on using some Excel features associated with the guide.

Nadina BEC Zones with PST & PA - table shows full range of BEC zones/subzones/site series present in the Nadina Forest District.

Morice TSA DM Regime Codes - District Manager default standards for the Morice TSA

Lakes TSA DM default standards - District Manager default standards for the Lakes TSA

MITD - Minimum Inter Tree Distance - policy outlining use of minimum intertree distance (MITD) in the Nadina Forest District.

Uneven Aged Standards

Leave Tree Characteristics

Damage Criteria

Wildlife Regimes - currently there are no wildlife regimes in the Nadina Forest District.

Footnotes - contains definitions and footnotes for the regional reference guides.

Update History - tracks additions to the standards.



Background

Bill 75 eliminates the requirement for a silviculture prescription to be submitted for approval by a district manager prior to harvest. Instead stocking standards must be specified by licensees and approved by the district manager in a forest development plan. Site plans must link to the approved standards in a forest development plan. The applicable standards form a legal obligation of the licensee. The standards id provides the link from the forest development plan to the site plan and the MLSIS Form A (FS708A).

Existing approved silviculture prescriptions continue.

Additional Reference Standards

Broadleaf Species

The Chief Forester's letter of August 22, 2000 and the "Establishment to Free Growing Guidebook" (May 2000) reintroduced the use of broadleaf species as an acceptable regeneration option. The footnotes allow for certain species to be feasible on specific site series. The feasibility has been included in the Nadina BEC Zone charts but will not be included in the district manager default standards. The acceptability of broadleaf species will require the approval of a variance by the district manager and a new stocking standard will be added to the list.

Exotic Species

The use of exotic species as part of a reforestation strategy must be consistent with the desired timber and non-timber objectives of the site. Consideration must be given to the silvics of the species and how it will interact with the characteristics of the intended site series. Exceeding the transfer limits for that species may decrease its productivity or increase its susceptibility to damaging agents.

Minimum Inter-tree Distance

Please refer to MITD Sheet that outlines the Nadina District policy on MITD. Currently there are two different policies between the Lakes TSA and the Morice TSA.

Uneven Aged Stands

The sheet titled Uneven-Aged Standards is to be used as a guideline to developing site specific stocking standards. The standards must be approved as a variance by the district manager.

Maximum Density and Post Spacing Regimes

The DM default standard for maximum density on all site series in the Nadina District is 10,000 countable conifers per hectare. The prescribed minimum post spacing density should not be lower than the minimum stocking standard (MSS) for the site series. The prescribed maximum post spacing density should not be more than 600 well spaced trees above the target stocking standard (TSS) of the site series.

Deviations in the Nadina District can be made for plantations in areas of High risk of stem rust incidence. In these areas, the recommended prescribed maximum post spacing density should not be more than three times (3X) the target stocking standard of

recommended prescribed maximum post spacing density should not be more than three times (3X) the target stocking standard of the site series.

Leave Tree Characteristics

Please refer to Leave Tree Characteristic Sheet. It has been copied from the "Establishment to Free Growing Guidebook: Prince Rupert Region" guidebook dated May 2000.

Damage Criteria

Refer to "Establishment to Free Growing Guidebook: Prince Rupert Forest Region" guidebook; Appendix 5, Table A5-1

Height of Trees Above Brush

In addition to being at least the required minimum height, trees must be greater than the approved minimum percentage height above brush in order to be free growing:

<u>% Ht above brush</u>	<u>Location</u>
125%	ESSF BCG zones
150%	SBS BCG zones

WORKSHEET FEATURES

Using the Macro Buttons on the Nadina BEC Worksheet

The Nadina worksheet has four macro buttons in the upper left-hand corner. Clicking on a button will initiate the following:

Show P/S/T - shows all columns of the worksheet, particularly the Primary, Secondary and Tertiary columns.

Show P/A - shows only the Preferred and Acceptable species columns (i.e. hides the PST columns).

Clicking on either of the above buttons will result in the same column display on all regional worksheets. The worksheets will all display the upper left-hand corner of the worksheet.

Print P/S/T - prints the P/S/T view of the current regional worksheet in landscape orientation.

Print P/A - prints the P/A view of the current regional worksheet in portrait orientation.

	Regeneration Guide								Free Growing Guide					
	Species						Stocking			Regen Delay	Assessment		Minimum Height	
	Primary	Preferred (p)	Secondary	Acceptable (a)	Tertiary	Broadleaf	Target	MIN pa	MIN p		Earliest	Latest	Species	Ht
							(well-spaced/ha)			(Max yrs)	(yrs)	(yrs)		(m)
	BI Se	BI Sx	Pl ³⁴	Pl ³⁴			1200	700	600	7	15	20	PI	1.60
	PI	PI	BI Se	BI Sx			1000	500	400	7	15	20	Others	0.80
	PI	PI	BI Se	BI Sx			1000	500	400	7	15	20	PI	1.20
	PI BI	PI BI	Se	Sx			1200	700	600	7	15	20	Others	0.60
	BI Se	BI Sx	Pl ³⁴	Pl ³⁴			1200	700	600	4	12	20	PI	1.60
	BI Se	BI Sx	Pl ³⁴	Pl ³⁴			1200	700	600	4	12	20	Others	0.80
	BI ³² Se ³²	BI ³² Sx ³²			Pl ³⁴		1200	700	600	4	12	20	PI	1.60
	BI ³² Se ³²	BI ³² Sx ³²			Pl ³⁴		1000	500	400	4	12	20	Others	0.80
	BI ^{1,32} Se ^{1,32}	BI ^{1,32} Sx ^{1,32}			Pl ³⁴		1000	500	400	4	12	20	All	0.60
	BI ^{1,32} Se ^{1,32}	BI ^{1,32} Sx ^{1,32}			Pl ³⁴		1000	500	400	4	12	20	All	0.60
	non-forested	non-forested			Pl ³⁴									
	non-forested	non-forested			Pl ³⁴									
		BI Se	BI Se	Hm Pl ³⁴	Ba ¹⁷ Hm Pl ³⁴	Ba ¹⁷		1200	700	600	7	15	20	PI
Pa PI		Pa PI	BI Hm Se	BI Hm Se			1000	500	400	7	15	20	Others	0.80
Pa PI		Pa PI	BI Hm Se	BI Hm Se Ba ¹⁷	Ba ¹⁷		1200	700	600	7	15	20	PI	1.20
BI Se		BI Se	Hm Pl ³⁴	Ba ¹⁷ Hm Pl ³⁴	Ba ¹⁷		1200	700	600	4	12	20	Others	0.60
BI Se ³²		BI Se ³²	Hm	Hm Ba ¹⁷	Ba ¹⁷ Pl ³⁴		1200	700	600	4	12	20	PI	1.60
BI ¹ Se ^{1,32}		BI ¹ Se ^{1,32}		Hm Ba	Ba Hm		1000	500	400	4	12	20	Others	0.80
BI ¹ Se ^{1,32}		BI ¹ Se ^{1,32}		Ba	Ba		1000	500	400	4	12	20	All	0.80
non-forested		non-forested												
non-forested		non-forested												

Regeneration Guide										Free Growing Guide			
Species										Assessment		Minimum Height	
Primary	Preferred (p)	Secondary	Acceptable (a)	Tertiary	Broadleaf	Target	MIN pa (well-spaced/ha)	MIN p	Regen Delay (Max yrs)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
BI Se	BI Se	PI	PI			1200	700	600	4	12	20	PI	1.60
PI	PI		BI	BI		1000	500	400	7	12	15	Others	0.80
BI PI Se	BI PI Se					1000	500	400	7	15	20	PI	1.20
BI Se	BI Se	PI	PI			1000	500	400	7	15	20	Others	0.60
BI ^{1,32} Se ^{1,32}	BI ^{1,32} Se ^{1,32}	PI ¹	PI ¹			1000	500	400	4	12	20	Others	0.60
BI Se	BI Se	PI ³⁴	PI ³⁴			1200	700	600	4	12	20	PI	1.60
PI ³⁴	PI ³⁴ Se ²⁸	BI ²⁸ Se ²⁸	BI ²⁸			1000	500	400	4	12	20	Others	0.80
BI Se	BI Se	PI ³⁴	PI ³⁴	Sb		1000	500	400	4	12	20	Others	0.60
BI Se	BI Se		PI ³⁴	PI ³⁴		1200	700	600	4	12	20	Others	0.60
BI Se	BI Se		PI ³⁴	PI ³⁴		1200	700	600	4	12	20	PI	1.60
BI Sx	BI Sx	PI ³⁴	PI ³⁴			1200	700	600	4	12	20	Others	0.80
BI ^{1,32} Se ^{1,32}	BI ^{1,32} Se ^{1,32}	PI ^{1,34}	PI ^{1,34}			1000	500	400	7	12	15	Others	0.80
						1000	500	400	4	12	20	PI	1.20
												Others	0.60

Regeneration Guide										Free Growing Guide				
Species							Stocking			Regen Delay (Max yrs)	Assessment		Minimum Height	
							Target	MIN pa	MIN p		Earliest	Latest	Species	Ht
								(well-spaced/ha)			(yrs)	(yrs)		(m)
	PI Sx	PI Sx	Fd ^{9,18}	Fd ^{9,18}		At ^a Ep ^a	1200	700	600	7	12	15	PI	2.00
													Fd	1.40
													Others	1.00
	PI	PI	Sx ²⁸	Sx ²⁸		At ^b Ep ^b	1000	500	400	7	12	15	PI	1.40
													Others	0.80
	PI	PI	Sb ²⁸ Sx ²⁸	Sb ²⁸ Sx ²⁸		At ^b	1200	700	600	7	12	15	PI	2.00
													Others	1.00
	Fd PI	PI Fd	Sx ²⁸	Sx ²⁸		At ^b Ep ^a	1200	700	600	7	12	15	PI	2.00
													Fd	1.40
													Others	1.00
	PI Sx ²⁸	PI Sx ²⁸	Fd ^{9,18}	Fd ^{9,18}		At ^a Ep ^a	1200	700	600	7	12	15	PI	2.00
													Fd	1.40
													Others	1.00
	PI Sx	PI Sx		Fd ^{9,18}	Fd ^{9,18}	Act ^a At ^a Ep ^a	1200	700	600	4	9	15	PI	2.00
													Others	1.00
Sx ^{1,32}	Sx ^{1,32}	PI ¹	PI ¹		Act ^b At ^b Ep ^b	1000	500	400	4	9	15	PI	1.40	
												Others	0.80	
Sx ^{1,32}	Sx ^{1,32}			PI ¹	Act ^a At ^a Ep ^a	1200	700	600	4	9	15	PI	2.00	
												Others	1.00	
PI ¹ Sb ¹	PI ¹ Sb ¹		Sx ¹	Sx ¹		400	200	200	4	9	15	PI	1.40	
												Others	0.80	
PI ¹ Sb ¹ Sx ^{1,32}	PI ¹ Sb ¹ Sx ^{1,32}					400	200	200	4	9	15	PI	1.40	
												Others	0.80	
non forested	non forested													
non forested	non forested													
non forested	non forested													
non forested	non forested													

Free Growing Guide									
Regeneration Guide						Assessment			
Species						Stocking		Regen Delay (Max yrs)	
						Target	MIN pa (well-spaced/ha)	MIN p	
Primary	Preferred (p)	Secondary	Acceptable (a)	Tertiary	Broadleaf				
PI Sx	PI Sx	BI ²⁹	BI ²⁹		AI ^a	1200	700	600	7
PI	PI		BI ³² SX ³²	BI ³² SX ³²	AI ^b	1000	500	400	7
PI	PI	BI ²⁹ Sb SX ³²	BI ²⁹ Sb SX ³²		AI ^b	1200	700	600	7
PI Sx	PI Sx	BI ²⁹	BI ²⁹		Act ^a AI ^a	1200	700	600	4
PI Sx	PI Sx	BI ²⁹	BI ²⁹		Act ^b AI ^a	1200	700	600	4
PI Sb SX ³²	PI Sb SX ³²		BI	BI	AI ^b	1000	500	400	4
Sx	Sx BI ²⁹	BI ²⁹ PI	PI		Act ^b AI ^a	1200	700	600	4
Sx ^{1,32}	Sx ^{1,32}	BI ^{1,29,32}	BI ^{1,29,32} PI ¹		Act ^b AI ^b	1000	500	400	4
Sb ¹ Sx ^{1,32}	Sb ¹ Sx ^{1,32}	PI ¹	PI ¹ BI ¹	BI ¹		400	200	200	4
PI Sx	PI Sx	BI ²⁹	BI ²⁹	Act ^b AI ^a Ep ^a		1200	700	600	4
PI	PI		BI ²⁹ SX ²⁸	BI ²⁹ SX ²⁸		1000	500	400	7
Fd ¹⁶ PI	Fd ¹⁶ PI	SX ²⁸	SX ²⁸	AI ^b Ep ^b		1200	700	600	7
PI Sx	PI Sx	BI	BI	AI ^a Ep ^a		1200	700	600	7
PI	PI		Sb Sx	AI ^b		1200	700	600	7
PI Sx	PI Sx	BI ²⁹	BI ²⁹	Act ^b AI ^a Ep ^a		1200	700	600	4
Sx ³²	Sx ³²	BI ^{29,32} PI	BI ^{29,32} PI	Act ^b AI ^a Ep ^a		1200	700	600	4
Sx ^{1,32}	Sx ^{1,32}	BI ^{1,29,32} PI ¹	BI ^{1,29,32} PI ¹	Act ^a AI ^a		1000	500	400	4
				</					

Morice TSA - DM Default Standards

Regime	BGC	Regeneration Guide						Regen	Free Growing Guide			
ID	Classification	Species		Stocking			Delay	MITD	Assessment		Minimum Height	
	Zone/SZ	Series	Preferred (p)	Acceptable (a)	Target	MIN pa	MIN p		Earliest	Latest	Species	Ht
					(well-spaced/ha)			(Max yrs)	(m)	(yrs)	(yrs)	(m)
26000	ESSFmc	01	Bl Sx	Pl ³⁴	1200	700	600	7	2.0"	15	20	Pl 1.60
26001		02* 03*	Pl	Bl Sx	1000	500	400	7	2.0"	15	20	Others 0.80
26002		04	Pl Bl	Sx	1200	700	600	7	2.0"	15	20	Pl 1.20
26003		05 06	Bl Sx	Pl ³⁴	1200	700	600	4	2.0"	15	20	Others 0.60
26004		07	Bl Sx ³²		1200	700	600	4	1.5	12	20	Pl 1.60
26005		08*	Bl Sx ³²		1000	500	400	4	1.5	12	20	Others 0.80
26007		09 10	Bl ¹ Sx ^{1,32}		1000	500	400	4	1.5	12	20	All 0.60
26100	ESSFmk	01	Bl Se	Ba ¹⁷ Hm Pl ³⁴	1200	700	600	7	2.0"	15	20	Pl 1.60
26101		02*	Pa Pl	Bl Hm Se	1000	500	400	7	2.0"	15	20	Others 0.80
26102		03*	Pa Pl	Bl Hm Se Ba ¹⁷	1200	700	600	7	2.0"	15	20	Pl 1.20
26103		04	Bl Se	Ba ¹⁷ Hm Pl ³⁴	1200	700	600	4	2.0"	15	20	Others 0.60
26104		05	Bl Se ³²	Hm Ba ¹⁷	1200	700	600	4	1.5	12	20	Pl 1.60
26105		06	Bl ¹ Se ^{1,32}	Hm Ba	1000	500	400	4	2.0"	12	20	Others 0.80
26106		07	Bl ¹ Se ^{1,32}	Ba	1000	500	400	4	1.5	12	20	All 0.80

*avoid logging

**additional information may be found in the text portion of the reference guide or the footnotes sheet

Morice TSA - DM Default Standards

Regime	BGC		Regeneration Guide					Regen	Free Growing Guide				
ID	Classification		Species		Stocking			Delay	MITD	Assessment		Minimum Height	
	Zone/SZ	Series	Preferred (p)	Acceptable (a)	Target	MIN pa	MIN p			Earliest	Latest	Species	Ht
					(well-spaced/ha)			(Max yrs)	(m)	(yrs)	(yrs)		(m)
26200	ESSFmv3	01	BI Sx	PI ³⁴	1200	700	600	4	2.0''	12	20	PI	1.60
26201		02*	PI ³⁴	Sx28 BI ²⁸	1000	500	400	4	2.0''	12	20	Others	0.80
26202		03	BI Sx	Sb PI ³⁴	1000	500	400	4	2.0''	12	20	PI	1.20
26203		04	BI Sx	PI ³⁴	1200	700	600	4	2.0''	12	20	Others	0.60
23204		05	BI Sx	PI ³⁴	1200	700	600	4	1.5	12	20	PI	1.60
26205		06	BI Sx	PI ³⁴	1200	700	600	7	2.0''	12	15	Others	0.80
26206		07	BI ¹ Sx ^{1,32}	PI ^{1,34}	1000	500	400	4	1.5	12	20	PI	1.20
												Others	0.60
26300	SBSdk	01	PI Sx		1200	700	600	7	2.0''	12	15	PI	2.00
26301		02*	PI	Sx ²⁸	1000	500	400	7	2.0''	12	15	Others	1.00
26302		03*	PI	Sx ²⁸ Sb ²⁸	1200	700	600	7	2.0''	12	15	PI	1.40
26303		04	PI	Sx ²⁸	1200	700	600	7	2.0''	12	15	Others	0.80
26304		05	PI Sx ²⁸		1200	700	600	7	2.0''	12	15	PI	2.00
26305		06	PI Sx		1200	700	600	4	2.0''	12	15	Others	1.00
26306		07	Sx ^{1,32}	PI ¹	1000	500	400	4	1.5	9	15	PI	2.00
26307		08	Sx ^{1,32}		1200	700	600	4	1.5	9	15	Others	1.00
26308		09*	PI ¹ Sb ¹	Sx ¹	400	200	200	4	1.5	9	15	PI	1.40
26309		10*	PI ¹ Sb ¹ Sx ^{1,32}		400	200	200	4	1.5	9	15	Others	0.80
												PI	1.40
												Others	0.80

*avoid logging

**additional information may be found in the text portion of the reference guide or the footnotes sheet

Morice TSA

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updated February 20, 2003

Morice TSA - DM Default Standards

Regime	BGC		Regeneration Guide					Regen	Free Growing Guide				
ID	Classification		Species		Stocking			Delay	MITD	Assessment		Minimum Height	
	Zone/SZ	Series	Preferred (p)	Acceptable (a)	Target (well-spaced/ha)	MIN pa	MIN p	(Max yrs)	(m)	Earliest (yrs)	Latest (yrs)	Species	Ht (m)
26400	SBSmc2	01	PI Sx	BI ²⁹	1200	700	600	7	2.0''	12	15	PI Others	1.60 0.80
26401		02*	PI	BI ³² Sx ³²	1000	500	400	7	2.0''	12	15	PI Others	1.20 0.60
26402		03	PI	BI ²⁹ Sb Sx ³²	1200	700	600	7	2.0''	12	15	PI Others	1.60 0.80
26403		05 06	PI Sx	BI ²⁹	1200	700	600	4	2.0''	9	15	PI Others	1.60 0.80
26404		07*	PI Sb Sx ³²	BI	1000	500	400	4	1.5	9	15	PI Others	1.20 0.60
26405		09	Sx BI ²⁹	PI	1200	700	600	4	1.5	9	15	PI Others	1.60 0.80
26406		10	Sx ^{1,32}	PI ¹ BI ^{1,29,32}	1000	500	400	4	1.5	9	15	PI Others	1.20 0.60
26407		12*	Sb ¹ Sx ^{1,32}	PI ¹ BI ¹	400	200	200	4	1.5	9	15	PI Others	1.20 0.60
26500	SBSwk3	01	PI Sx	BI ²⁹	1200	700	600	4	2.0''	9	15	PI Others	2.00 1.00
26501		02	PI	BI ²⁸ Sx ²⁸	1000	500	400	7	2.0''	12	15	PI Others	1.40 0.80
26502		03	PI	Sx ²⁸	1200	700	600	7	2.0''	12	15	PI Sx	2.00 1.00
26503		04	PI Sx	BI	1200	700	600	7	2.0''	12	15	PI Others	2.00 1.00
26504		05	PI	Sb Sx	1200	700	600	7	2.0''	12	15	PI Others	2.00 1.00
26505		06	PI Sx	BI ²⁹	1200	700	600	4	2.0''	9	15	PI Others	2.00 1.00
26506		07	Sx ³²	PI BI ^{29,32}	1200	700	600	4	1.5	9	15	PI Others	2.00 1.00
26507		08	Sx ^{1,32}	PI ¹ BI ^{1,29}	1000	500	400	4	1.5	9	15	PI Others	1.40 0.80

*avoid logging

**additional information may be found in the text portion of the reference guide or the footnotes sheet

Lakes TSA - DM Default Standards

Regime		BGC		Regeneration Guide					Regen		Free Growing Guide			
ID		Classification		Species		Stocking			Delay	MITD	Assessment		Minimum Height	
		Zone/SZ	Series	Preferred (p)	Acceptable (a)	Target	MIN pa	MIN p			Earliest	Latest	Species	Ht
						(well-spaced/ha)			(Max yrs)	(m)	(yrs)	(yrs)		(m)
20000		ESSFmc	01	BI Sx	PI ³⁴	1200	700	600	7	1.5	15	20	PI	1.60
20001			02* 03*	PI	BI Sx	1000	500	400	7	1.5	15	20	Others	0.80
20002			04	PI BI	Sx	1200	700	600	7	1.5	15	20	PI	1.20
20003			05 06	BI Sx		1200	700	600	4	1.5	15	20	Others	0.60
20004			07	BI ³² Sx ³²	PI ³⁴	1200	700	600	4	1.5	12	20	PI	1.60
20005			08*	BI ³² Sx ³²		1000	500	400	4	1.0	12	20	Others	0.80
20006			09 10	BI ^{1,32} Sx ^{1,32}		1000	500	400	4	1.0	12	20	All	0.60
20100		ESSFmv1	01	BI Se	PI	1200	700	600	4	1.5	12	20	PI	1.60
20101			02	PI	BI	1000	500	400	7	1.5	12	15	Others	0.80
20102			03	BI PI Se		1000	500	400	7	1.5	15	20	PI	1.20
20103			04	BI Se	PI	1000	500	400	7	1.5	15	20	Others	0.60
20104			05	BI ^{1,32} Se ^{1,32}	PI ¹	1000	500	400	4	1.5	12	20	PI	1.20
													Others	0.60

*avoid logging

**additional information may be found in the text portion of the reference guide or on the footnotes sheet

Lakes TSA - DM Default Standards

Regime	BGC	Regeneration Guide						Regen	Free Growing Guide			
ID	Classification	Species			Stocking			Delay	MITD	Assessment		Minimum Height
20200	ESSFmv3	01 04 05	BI Se	PI ³⁴	1200	700	600	4	1.5	12	20	PI 1.60 Others 0.80
20201		02*	PI ³⁴	Se ²⁸ BI ²⁸	1000	500	400	4	1.5	12	20	PI 1.20 Others 0.60
20202		03	BI Se	PI ³⁴ Sb	1000	500	400	4	1.5	12	20	PI 1.20 Others 0.60
20203		06	BI Sx	PI ³⁴	1200	700	600	7	1.5	12	15	PI 1.60 Others 0.80
20204		07	BI ^{1,32} Se ^{1,32}	PI ^{1,34}	1000	500	400	4	1.5	12	20	PI 1.20 Others 0.60
20300	SBSdk	01	PI Sx	Fd ^{9,18}	1200	700	600	7	1.5	12	15	PI 2.00 Fd 1.40 Others 1.00
20301		02*	PI	Sx ²⁸	1000	500	400	7	1.5	12	15	PI 1.40 Others 0.80
20302		03*	PI	Sb ²⁸ Sx ²⁸	1200	700	600	7	1.5	12	15	PI 2.00 Others 1.00
20303		04	PI Fd ^{9,18}	Sx ²⁸	1200	700	600	7	1.5	12	15	PI 2.00 Fd 1.40 Others 1.00
20304		05	PI Sx ²⁸	Fd ^{9,18}	1200	700	600	7	1.5	12	15	PI 2.00 Fd 1.40 Others 1.00
20305		06	PI Sx	Fd ^{9,18}	1200	700	600	4	1.5	9	15	PI 2.00 Others 1.00
20306		07	Sx ^{1,32}	PI ¹	1000	500	400	4	1.0	9	15	PI 1.40 Others 0.80
20307		08	Sx ^{1,32}		1200	700	600	4	1.0	9	15	PI 2.00 Others 1.00
20308		09*	PI ¹ Sb ¹	Sx ¹	400	200	200	4	1.0	9	15	PI 1.40 Others 0.80
20309		10*	PI ¹ Sb ¹ Sx ^{1,32}		400	200	200	4	1.0	9	15	PI 1.40 Others 0.80

avoid logging

*additional information may be found in the text portion of the reference guide or on the footnotes sheet

Lakes TSA - DM Default Standards

Regime	BGC	Regeneration Guide						Regen	Free Growing Guide			
ID	Classification	Species			Stocking			Delay	MITD	Assessment		Minimum Height
20400	SBSmc2	01	PI Sx	BI ²⁹	1200	700	600	7	1.5	12	15	PI 1.60 Others 0.80
20401		02*	PI	BI ³² Sx ³²	1000	500	400	7	1.5	12	15	PI 1.20 Others 0.60
20402		03	PI	BI ^{29, 32} Sb Sx ³²	1200	700	600	7	1.5	12	15	PI 1.60 Others 0.80
20403		05 06	PI Sx	BI ²⁹	1200	700	600	4	1.5	9	15	PI 1.60 Others 0.80
20404		07*	PI Sb Sx ³²	BI	1000	500	400	4	1.0	9	15	PI 1.20 Others 0.60
20405		09	Sx BI ²⁹	PI	1200	700	600	4	1.0	9	15	PI 1.60 Others 0.80
20406		10	Sx ^{1,32}	BI ^{1,29,32} PI ¹	1000	500	400	4	1.0	9	15	PI 1.20 Others 0.60
20407		12*	Sb ¹ Sx ^{1,32}	PI ¹	400	200	200	4	1.0	9	15	PI 1.20 Others 0.60
20500	SBSwk3	01	PI Sx	BI ²⁹	1200	700	600	4	1.5	9	15	PI 2.00 Others 1.00
20501		02	PI	BI ²⁸ Sx ²⁸	1000	500	400	7	1.5	12	15	PI 1.40 Others 0.80
20502		03	Fd ¹⁶ PI	Sx ²⁸	1200	700	600	7	1.5	12	15	PI 2.00 Fd 1.40 Sx 1.00
20503		04	PI Sx	BI	1200	700	600	7	1.5	12	15	PI 2.00 Others 1.00
20504		05	PI	Sb Sx	1200	700	600	7	1.5	12	15	PI 2.00 Others 1.00
20505		06	PI Sx	BI ²⁹	1200	700	600	4	1.5	9	15	PI 2.00 Others 1.00
20506		07	Sx ³²	BI ^{29,32} PI ¹	1200	700	600	4	1.0	9	15	PI 2.00 Others 1.00
20507		08	Sx ^{1,32}	BI ^{1,29,32} PI ¹	1000	500	400	4	1.0	9	15	PI 1.40 Others 0.80

*avoid logging

**additional information may be found in the text portion of the reference guide or on the footnotes sheet

Nadina District Minumum Intertree Distance Guidelines.

Lakes TSA

The MITD on artificially regenerated stands is 1.5 metres.

It may be reduced to 1.0 metres on site series SBSdk 07, 08, 09 and 10; SBSmc2 07, 09, 10 and 12; and ESSFmc 07, 08, 09 and 10. This does not include complexes of these site series with those site series that have a higher MITD.

The MITD on naturally regenerated stands is 2.0 metres.

Morice TSA

*The following information is a result of a co-operative effort between Houston Forest Products Co., Canadian Forest Products and MoF District Staff.
Dated: February 9th, 2001 (Morice Silviculture Committee)*

TSS/MSS/MSSp (spha)	MITD (m)	ESSFmc	ESSFmk***	ESSFmv3***	SBSmc2	SBSdk	SBSwk3
1200/700/600	2.0**	>50% 01 & 04, 05 & 06	>50% 01, 03 & 04	>50% 01 & 03 & 04	>50% 01 & 03 to 06	>50% 01 & 03 to 06	>50% 01 & 03 to 06
1000/500/400			≥50% 02	≥50% 02	≥50% 02	≥50% 02	≥50% 02
1200/700/600	1.5	≥50% 07	≥50% 05	≥50% 05	≥50% 09	≥50% 08	≥50% 07
1000/500/400	1.5		≥50% 06 or 07	≥50% 06 or 07	≥50% 07 or 10	≥50% 07	≥50% 08
400/200/200	1.5						
		≥70% 10	≥70% 06	≥70% 07			
					≥70% 09 or 10		

****** Each survey plot may have one pair of well spaced trees at 1.6m MITD as long as one other pair, in that same plot, has at least 2.5m MITD. NB: This statement must appear in the comments section of the stocking standards, of the SP, in order to use this option during the stocking or free growing survey.

******* ESSF mk & mv3 were not included in the original DM policy. For the purposes of these standards, site associations in these two variants were compared with the ESSFmc

Example:

BEC Classification: SBSmc2 05/30%, 06/30% and 10/40%

Stocking Standard: 1200/700/600 with 2.0" MITD.

MITD = Minimum Intertree Distance in metres.

Uneven-aged Stocking Standards* Single-tree selection only

Target from Table A standards	Layer**	Stocking***				Target from Table A standards	Layer**	Stocking***		
		Target pa	MIN pa	MIN p				Target pa	MIN pa	MIN p
(stems/ha)		(well-spaced/ha)				(stems/ha)		(well-spaced/ha)		
1200	1	600	300	250		800	1	300	150	150
	2	800	400	300			2	400	200	200
	3	1000	500	400			3	600	300	300
	4	1200	700	600			4	800	400	400
1000	1	400	200	200		600	1	300	150	150
	2	600	300	250			2	400	200	200
	3	800	400	300			3	500	300	300
	4	1000	500	400			4	600	400	400
900	1	400	200	200		400	1	200	100	100
	2	500	300	250			2	300	125	125
	3	700	400	300			3	300	150	150
	4	900	500	400			4	400	200	200

MIN - minimum

* Maximum regeneration delay is seven years. For a seven-year regeneration delay, the early free growing is 12 years and the late free growing is 15 years. Regeneration delay can be met immediately following harvest if the residual stand has no significant damage or pest problems and meets minimum stocking standards. If regeneration is achieved immediately following harvest, earliest free growing date is 12 months after completion of harvest and the latest date is 24 months after completion of harvest.

**Stand Layer Definition

Layer 1	Mature	trees $\geq$ 12.5 cm dbh
Layer 2	Pole	trees 7.5 cm to 12.4 cm dbh
Layer 3	Sapling	trees $\geq$ 1.3 m height to 7.4 cm dbh
Layer 4	Regeneration	trees < 1.3 m height

*** pa - preferred and acceptable species p - preferred species

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Appendix 5. Free growing damage criteria for British Columbia

Introduction

Before a stand can be declared free growing, it must have adequate stocking of healthy, well-spaced trees of a preferred or acceptable species. The free growing damage criteria identified in the attached guidelines are not legislated regulations. The guidelines are based on the most current knowledge of forest-damaging agents, and are provided to help users exercise their professional judgment in identifying “healthy” trees. The district manager may allow or require deviations from these guidelines, as long as the legal requirement to produce a healthy tree is met.

These free growing damage criteria are intended to help users uniformly define “healthy” as part of “healthy, well-spaced trees” used in the *Forest Practices Code of British Columbia Act* and regulations. These damage criteria are designed for use at the free growing assessment to determine the damage to, and acceptability of, individual trees (conifers only) across the province. Acceptability of a stand will depend on several factors including thresholds of damage and stocking standards agreed to in the prescription.

The table lists various types of damage, causal agents, and species of trees. Agents and damage are often referred to by their codes listed on the Ministry of Forests Integrated Data Dictionary Pest_Species_Code list (partly listed on the *Silviculture Damage Agent and Condition Codes* (FS 747) field form). Tree species abbreviations are listed in the Forest Productivity Council publication *Minimum Standards for the Establishment and Remeasurement of Permanent Sample Plots in British Columbia* (1999).

There are two key points to keep in mind when using these criteria:

1. These criteria apply **only** at the time the free growing survey is conducted and are specific to even-aged, age class 1 stands that are being regenerated primarily to coniferous species for the production of timber. The assumptions made on the impact of pest damage to potential crop trees are founded on these factors.
2. Broadleaf species are noted in these criteria (usually as non-susceptible host species) but there are no damage criteria listed for these species. This is because the characteristics of most broadleaf species (e.g., pests and growth habits) are sufficiently different from those of conifers that creating a single table would be difficult and confusing. It is envisioned that broadleaf species, and partial-cut stands (age class 2 and older), will be covered by separate tables in the future.

These criteria are based on best available data and professional opinion, and are expected to be revised in future with newly available knowledge or information.

Table A5-1. Free growing damage criteria for even-aged (age class 1) coniferous trees

PLEASE READ the preceding introduction before using the following table and figures.

Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Likely damage agents & damage agent codes	Comments
Stem	Wound (including sunscald and girdling)	<ul style="list-style-type: none"> the tree has any wound which is greater than 33% of the stem circumference, or the tree has a wound which is greater than 20% of the total length of the stem, or the tree has a wound centred on an infection caused by a stem rust, canker, or dwarf mistletoe (See Note under Stem: Infection). 	All	squirrel AS, beaver AZ, vole AV, porcupine AP, hare AH, Warrens root collar weevil IWW, sequoia pitch moth ISQ, fire NB, windthrow NW, sunscald NZ, logging TL, mechanical TM.	<p>A wound is defined as an injury in which the cambium is dead (e.g., sunscald) or completely removed from the tree exposing the sapwood. Measure the wound across the widest point of the exposed sapwood (or dead cambium when the tree is damaged by sunscald).</p> <p>Healed over wounds (=scars) are acceptable. See Figure A5-1.</p>
Stem	Insect mining at root collar	<ul style="list-style-type: none"> the tree is currently attacked by a bark-mining insect such as a weevil or a beetle and exhibits symptoms such as foliage discoloration, thinning, and/or reduced height growth increments 	PI, Sx	root collar weevil IWW.	Only trees that are symptomatic should be checked for insect infestation or mining damage. Non-symptomatic trees are presumed to be unaffected by insect mining.
Stem	Deformation (including crook, sweep, fork, browse, and dead or broken top)	<ul style="list-style-type: none"> the pith is horizontally displaced more than 30 cm from the point of defect and originates above 30 cm from the point of germination. the tree leader has been killed three or more times in the last five years (weevil only). the tree has two or more leaders with no dominance expressed after five years growth and the fork originates above 30 cm from the point of germination. the tree has a dead or broken top at a point that is >2 cm (>3 cm for the coast) in diameter. 	<p>For sweep, all except Cw and Hw</p> <p>Sx, Ss, PI</p> <p>All</p> <p>All</p>	<p>Defoliators ID, white pine (spruce) weevil IWS, lodgepole pine terminal weevil IWP, northern pitch twig moth ISP, sequoia pitch moth ISQ, cattle AC, deer AD, elk AE, moose AM, frost NG, hail NH, snow NY, drought ND, logging TL, mechanical TM.</p> <p>White pine (spruce) weevil IWS, lodgepole pine terminal weevil IWP.</p> <p>terminal weevils (IWS, IWP), frost NG, animal damage A.</p>	<p>For horizontal displacement see Figure A5-2.</p> <p>This criterion applies only for terminal weevil damage.</p> <p>Leader dominance occurs when the tallest leader is at least 5 cm taller than the second tallest leader. See Figure A5-3.</p>
Stem	Infection (including cankers and galls)	<ul style="list-style-type: none"> any infection occurs on the stem. 	All	comandra blister rust DSC, stalactiform blister rust DSS, white pine blister rust DSB, western gall rust DSG, atropellis canker DSA.	Note: Wounds caused by rodent feeding around rust cankers should have stem rust recorded as the causal agent.
Branch	Infection (cankers)	<ul style="list-style-type: none"> an infection occurs on a live branch less than 60 cm from the stem. 	Pw, PI, Py	white pine blister rust DSB, comandra blister rust DSC, stalactiform blister rust DSS.	See Figure A5-4.
Branch	Galls	<ul style="list-style-type: none"> a gall rust infection occurs on a live branch less than 5 cm from the stem. 	PI, Py	western gall rust DSG.	See Figure A5-4.

Table A5-1. Continued

Location of damage	Type of damage	Tree being assessed is UNACCEPTABLE if:	Host species	Likely damage agents & damage agent codes	Comments
	Gouting	<ul style="list-style-type: none"> any adelgid gouting occurs on a branch. 	Ba, Bg, Bl	balsam woolly adelgid IAB.	Gouting is defined as excessive swelling of a branch or shoot caused by balsam woolly adelgid, and is often accompanied by misshapen needles and buds. It is most common on branch tips and at nodes near the ends of branches. Consult a recent distribution map to identify the geographic extent of this pest.
Foliage	Defoliation	<ul style="list-style-type: none"> >80% of tree foliage has been removed due to defoliating insects or foliage disease. 	All	defoliators ID, foliage diseases DF.	
Stem or Branch	Dwarf mistletoe infection	<ul style="list-style-type: none"> any infection occurs on the stem or a live branch, or a susceptible tree is located within 10 m of an overtopping tree, which is infected with dwarf mistletoe. 	Hw, Pl, Lw, Fd	hemlock dwarf mistletoe DMH, lodgepole pine dwarf mistletoe DMP, larch dwarf mistletoe DML, Douglas-fir dwarf mistletoe DMF.	<p>Note: To confirm infection, the surveyor must observe mistletoe aerial shoots or basal cups on regeneration or on live or dead fallen brooms.</p> <p>Overtopping tree is a tree that is three or more times taller than the median height of the trees being assessed.</p>
Roots	Root disease	<ul style="list-style-type: none"> sign(s) or a definitive combination of symptoms of root disease are observed. infected tree found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRA is two, except in BEC zones PPdh1 and 2, IDFxh1, IDFdm1 and 2, MSdk1, and MSdm1 where the multiplier is one. infected conifer found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRL is four. infected conifer or stump found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRT is two. infected conifer found in plot. See comments for well-spaced tree net down calculation. The multiplier for DRN is two. 	<p>All</p> <p>All</p> <p>Fd, Sx, Se, Lw, Ba, Bg, Se, Sx, Ba, Hw, Ss</p>	<p>armillaria root disease DRA, laminated root rot DRL, tomentosus root rot DRT, annosus root disease DRN, blackstain root disease DRB.</p> <p>armillaria root disease DRA.</p> <p>laminated root rot DRL.</p> <p>tomentosus root rot DRT.</p> <p>annosus root rot DRN.</p>	<p>Signs are direct evidence of the pathogenic fungus including fruiting bodies, distinctive mycelium or rhizomorphs.</p> <p>Symptoms include foliar chlorosis or thinning, pronounced resin flow near the root collar, reduced recent leader growth, a distress cone crop, and wood decay or stain. An individual symptom is not sufficient to identify a root disease.</p> <p>Note: All conifer species are considered susceptible. Broadleaf species are considered not susceptible for survey purposes only.</p> <p>Example: How to apply net down for root disease.</p> <p>If root disease-infected trees are found in the plot:</p> <ol style="list-style-type: none"> 1. In the first sweep, determine the total number of healthy, well-spaced trees using the prescribed minimum inter-tree distance (MITD) (e.g., 12 trees) ignoring the M-value; 2. In a second independent sweep, determine the number of well-spaced infected trees (including dead infected trees and for DRT only, infected stumps) using MITD (e.g., one infected tree); 3. Multiply the number from step 2 by the multiplier for the specific root disease and subtract this number from the number of susceptible healthy well-spaced trees found in step 1 (e.g., for DRA: $12 - 1(2) = 10$). The result is the maximum number of free growing trees tallied for the plot. <p>Note: Bl, Cw, Pl, Pw, Py, and broadleaf species are considered not susceptible for survey purposes only.</p> <p>Note: Ba, Bl, Cw, Fd, Pl, Pw, Py and broadleaf species are considered not susceptible for survey purposes only.</p> <p>Note: Bg, Bl, Cw, Cy, Fd, Hm, Pl, Pw, Py, Sx and broadleaf species are considered not susceptible for survey purposes only.</p>

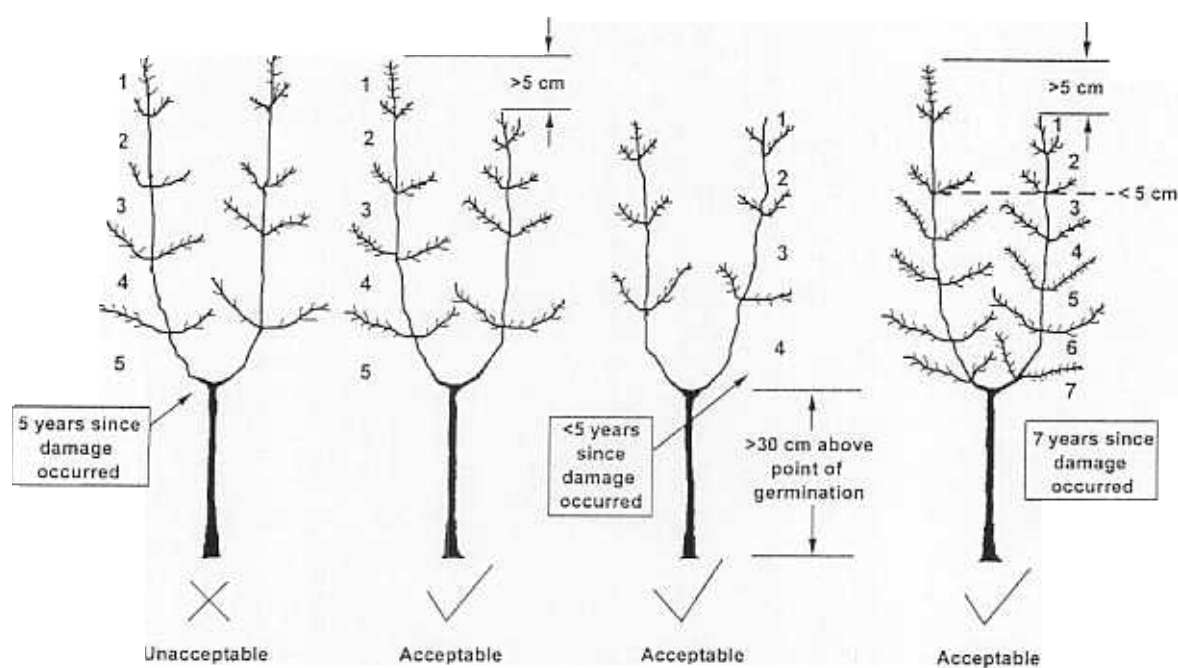


Figure A5-3. Acceptable and unacceptable forks.

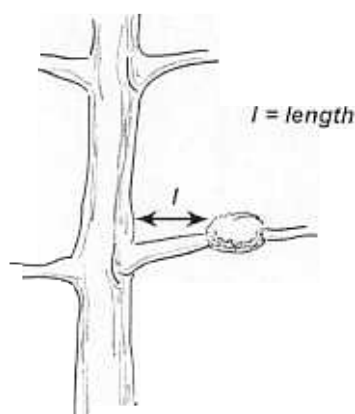


Figure A5-4. Distance measurement from point of infection by canker or gall to main stem.

Definitions

decay: the disintegration of plant tissue. The process by which sound wood is decomposed by the action of wood-destroying fungi and other microorganisms.

fork: two or more leaders have originated from the loss of a leader or apical shoot. At free growing age, a fork is considered persistent if it has not differentiated in height between competing leaders by more than 5 cm after five years of growth since the leader damage occurred. Forks may provide entry points for decay fungi, are points of weakness during felling, and may create waste in the highest value first log.

gall: nodule or lump of malformed bark or woody material caused by a variety of damaging agents, such as western gall rust and some insects.

gouting: excessive swelling of a branch or shoot, often accompanied by misshapen needles and buds. Most common at nodes on branches and frequently caused by balsam woolly adelgid on true firs (*Abies* spp.).

infection: characterized by a lesion or canker on stem or branches or by swelling around the entrance point of a pathogen.

injury: damage to a tree by a biological, physical, or chemical agent.

scar: a wound completely healed over with callus tissue

wound: an injury where cambium is dead (e.g., sunscald) or completely removed. Wounds often serve as entry points for decay fungi.

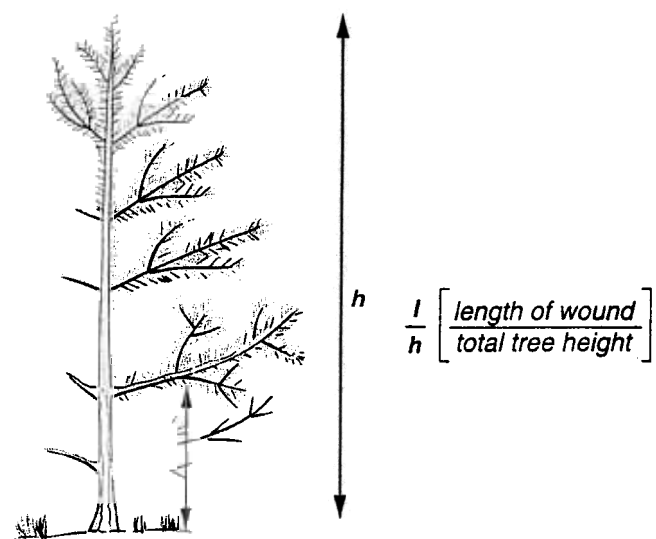


Figure A5-1. Calculation of wound along stem length.

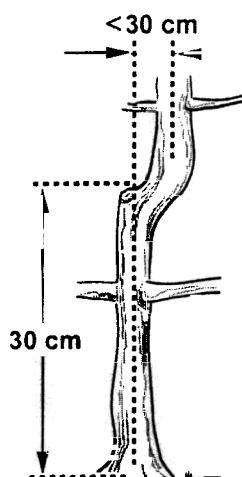


Figure A5-2. Determining horizontal displacement and height above point of germination when assessing stem deformation.

Leave Tree Characteristics *

Where available, and if required to meet stand level biodiversity targets as outlined in this FDP, deciduous and coniferous trees will be retained throughout the planned harvest area in site plans. Trees meeting the requirements of the following tables, subject to the following Balsam Acceptability criteria, will be considered crop trees in a free growing survey for a standard unit.

	Free growing acceptability guidelines for layer three and four advance regeneration:				
Species	Ba, BI	Hm.	Hw	Sx, Se, Sw	Pa, Pli.
BEC Zones	All	Not applicable for Morice TSA		All zones	All
Height at time of release	No height limitations for the Morice TSA.				
Scars and Damage	All species: No open (unhealed injuries, no closed (healed injuries with a horizontal width at the widest points(s) which is greater than 25% of the circumference of the tree at that point. No closed injuries that exceed 10% of the total length of the stem. No stem infection caused by a stem rust or dwarf mistletoe; no other externally visible pathological indicators including broken top, frost crack, conk, extreme basal sweep or unacceptable forks and crooks (see free growing damage criteria in Appendix 5 for description of unacceptable forks and crooks)				
Continuous Live Crown	All species: An acceptable tree has greater than 30% continuous live crown. Continuous live crown is the length of continuous green foliage on a tree expressed as a percentage of its total height. Continuous live crown refers to foliage on adjacent live green branches that forms the main part of the crown of a tree and extends over at least half of the circumference of the tree.				
Vigour	All species: Evidence of release (i.e. generally good post-harvest height increment) – increased leader growth is not a requirement for trees in layer three and four in partial cut situations with low basal area removal where the trees remain heavily shaded by layer one and two trees.				

TABLE *	Acceptability Guidelines for Residual Mature & Pole Layer Crop Trees
Scars and Damage:	The impact that decay fungi have on residual trees depends largely on the retention period for the trees left behind. The management objectives determine how decay fungi should be managed. The <i>Tree Wounding and Decay Guidebook</i> provides recommended damaged criteria by management regime. A tree is not acceptable as a residual crop tree if it meets or exceeds the applicable level of damage as determined by the stand management regime defined in Table 4
Continuous Live Crown:	An acceptable tree should generally have greater than 30% continuous live crown. However, for trees greater than 17.5 cm dbh (>12.5 dbh for Pli), greater than 20% live crown will be acceptable.
Vigour:	Evidence of release.
Other Considerations:	Destructive sampling of a few stems is encouraged to ensure that most of the retained stems are sound. This is critical when heart rot susceptible species are retained as pole/mature residual crop trees and are listed as <i>preferred</i> in the SP.

* From to

* Amended for Morice TSA; From Appendix 10 table A10-1 and Table A10-2 of the *Establishment to Free Growing Guidebook: Prince Rupert Forest Region May 2000*, For additional information regarding decay fungi and advance regeneration refer to the *Tree Wounding and Decay Guidebook*.

Conifer Tree Species

"Ba" means amabilis fir;
 "Bg" means grand fir;
 "Bl" means subalpine fir;
 "Bp" means noble fir;
 "Cw" means western red cedar;
 "Fd" means Douglas-fir;
 "Hm" means mountain hemlock;
 "Hw" means western hemlock;
 "Lt" means tamarack;
 "Lw" means western larch;
 "Pa" means whitebark pine;
 "Pl" means lodgepole pine;
 "Pw" means white pine;
 "Py" means ponderosa pine;
 "Sb" means black spruce;
 "Se" means Engelmann spruce;
 "Ss" means Sitka spruce;
 "Sw" means white spruce;
 "Sx" means hybrid spruce or interior spruce;
 "Sxs" means hybrid Sitka spruce;
 "Sxw" means hybrid white spruce;
 "Yc" means yellow cedar.

Broadleaf Tree Species

"Acb" means balsam poplar;
 "Act" means black cottonwood;
 "At" means trembling aspen;
 "Dr" means red alder;
 "Ep" means common paper birch;
 "Mb" means bigleaf maple;
 "Qg" means garry oak;
 "Ra" means arbutus;

"Biogeoclimatic unit" or "BGC classification" means the zone, subzone, variant and site series described in the most recent field guide published by the Ministry of Forests for the identification and interpretation of ecosystems, as applicable to a harvested area.

"MIN" or "Min" means minimum

* Avoid Logging

** See MITD Tab

Footnote #	Footnote	Footnote #	Footnote
1	elevated microsites are preferred	46	restricted to area north of the Dean Channel
2	suitable on thick forest floors	47	risk of balsam wooly adelgid
3	restricted to coarse-textured soils	48	risk of heavy browsing by deer
4	restricted to medium-textured soils	49	applies only to rust resistant, planted stock.
5	footnote retired	50	restricted to sites where the species occurs as a major species in a pre-harvest, natural stand
6	restricted to nutrient-very-poor sites	51	restricted to areas with proven PI performance
7	restricted to nutrient-medium sites	52	restricted to sheltered microsites with deep soil
8	restricted to steep slopes	53	minor component
9	restricted to southerly aspects	54	risk of unsuccessful release of advance regeneration
10	restricted to northerly aspects	55	acceptable in sx-sm portion of site series
11	restricted to crest slope positions		
12	suitable on cold air drainage sites		
13	restricted to upper elevations of biogeoclimatic unit		
14	restricted to lower elevations of biogeoclimatic unit		
15	restricted to northern portion of biogeoclimatic unit in region		
16	restricted to southern portion of biogeoclimatic unit in region		
17	restricted to western portion of biogeoclimatic unit in region		
18	restricted to eastern portion of biogeoclimatic unit in region		
19	restricted, not in Queen Charlotte Islands		
20	restricted, not near outer coast		
21	restricted to mainland		
22	restricted to southern Gardner Canal-Kitlope area		
23	restricted to trial use		
24	suitable (as a major species) in wetter portion of biogeoclimatic unit		
25	suitable on sites lacking salal		
26	suitable minor species on salal-dominated sites		
27	partial canopy cover required for successful establishment		
28	limited by moisture deficit		
29	risk of heavy browsing by moose		
30	risk of porcupine damage		
31	risk of white pine blister rust		
32	limited by growing-season frosts		
33	footnote retired and replaced with footnote 'a'		
34	risk of snow damage		
35	risk of weevil damage		
36	suitable major species on salal-dominated sites		
37	risk of heart rots		
38	footnote retired		
39	avoid exposed and windy sites		
40	risk of redheart		
41	limited by poorly drained soils		
42	restricted to fresh soil moisture regimes		
43	suitable on mainland coast only (QCI only)		
44	suitable in areas with stronger maritime influence		
45	suitable in areas with stronger continental influence		

Broadleaf Management Constraints

productive, reliable, and feasible regeneration option limited in productivity, reliability and/or feasibility

Localized Footnotes