

DCO FSP Stocking Standards

Version 3.0

A person required to prepare a Forest Stewardship Plan (FSP) must include stocking standards as per Section 16 or the Forest Planning and Practices Regulation (FPPR).

The DCO Stocking Standards have been developed to ensure that the objectives set by government for timber [FPPR 6 (a)] are met. That is: the standards are designed to maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests. The remaining values of government as outlined in the FPPR should be achievable without compromising timber production.

These standards should be applied to an area based on the Silviculture System chosen for the site and the biogeoclimatic ecological classification zone (BEC Zone) that the area falls in.

Definitions:

Silviculture Systems

Silviculture systems terminology and definitions are as per the Silviculture Systems Guidebook April 1995 and the Silviculture Systems Handbook for British Columbia – October 2001.

The definition of an even-aged stand and an uneven aged stand is currently contained in the FPPR:

“Even-aged stand means a stand of trees consisting of only one or two age classes”

“Uneven-aged stand means a stand of trees consisting of three or more age classes”

Even aged Silviculture Systems are:

Clear Cut, Patch Cut, Seed Tree, and Shelterwood

Even aged Silviculture Systems have regeneration objectives. The intent is to remove enough of the existing stand so that an adequate density of regeneration may be achieved either naturally or artificially over a relatively short period of time. A new stand (crop) is created and managed for a future date (rotation). Table A contains stocking standards developed for areas managed with even aged Silviculture Systems. The stocking standard, regeneration date, free growing date and free growing height apply to the new crop of trees. In the stocking standard, density is a measure of trees per hectare.

Reserves may form a component of any even aged Silviculture System, but they do not contribute to crop tree stocking.

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A Clear Cut with Dispersed Retention cannot have more than 8M² BA in the MS dk, IDF dm2, ICH mw1, ICH mk1 and ESSF dk BEC Zones and still be classified as a Clear Cut. A Clear Cut with Dispersed Retention cannot have more than 12m² BA in all other BEC Zones and still be classified as a Clear Cut.

Dispersed retention is defined in the October 1, 2008 RESULTS INFORMATION SUBMISSION SPECIFICATIONS as: “trees that are retained individually or in unmapped groups (e.g., small clusters < 0.25ha) but are enclosed within the boundaries of the mapped polygon.

Uneven-aged Silviculture Systems are:

Single Tree Selection, Group Selection and occasionally Irregular Shelterwood

Uneven aged Silviculture Systems depend on the recruitment of trees into successive age classes over time (>3 age classes), including a regeneration layer. The stand is managed using regular, sustained harvesting entries in perpetuity by managing towards a balanced uneven-aged structure. The crop is made up of trees from several age classes of the existing stand, plus either artificial or natural regeneration. Table B stocking standards are developed for areas with Single Tree Selection systems in the IDF BEC Zone. The standards are layered, and the stocking level applicable to each layer is shown in Table B. The density is a measure of trees per hectare.

The groups within a Group Selection system should be large enough that they can be tracked within the stand and managed using even aged stocking standards and measured with classic stocking and free growing surveys. Groups are openings with a width of less than two times the height of adjacent mature trees.

Reserves may form a component of any Uneven-aged Silviculture System, but they do not contribute to crop tree stocking.

Intermediate Cut

Partial Cutting and Intermediate Cutting are not Silviculture Systems; they refer to harvesting methods and are generic to a stand entry that forms part of a Silviculture System. These cuts generally occur in even aged stands and imply even aged management objectives. However, they may be part of a plan to create an uneven aged stand which will eventually be managed using a selection system. An Intermediate Cut entry has no regeneration objectives; the crop is the existing stand as modified by the harvest entry. Table C contains standards for Intermediate Cuts with no Regeneration Obligation. There is no regeneration date, free growing date or free growing height. The stocking density is measured in terms of Basal Area per hectare. To qualify as an IC, a minimum of 40% of the stands original BA must be retained or the minimum BA required by BEC zone whichever is greater. Minimum BA requirements by BEC Zone are: 18m² BA of **merchantable** crop trees in the MS dk, IDF dm2, ICH mk1, ICH mw1 and ESSF dk BEC Zones and greater than 24m² of **merchantable** crop trees in all other BEC Zones.

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Beetle Proofing

To reduce the susceptibility of a stand to mountain pine beetle the merchantable BA of the stand may be reduced to 15m² in the following circumstances:

The stand is dominated by Pli – i.e. the Pli is >75% of the volume of the Layer 1 trees.

The stand is 80-120 yrs old and has reasonable vigour

The average stand diameter is >20cm dbh

The stand density is between 750 and 1500 total stems/ha

The stand is thinned from below

The height diameter ratio will not apply to these stands

Height to Diameter Ratio (HDR)

The HDR is calculated by taking the total height of the tree in meters and dividing it by the 1.3 m diameter (dbh) of the tree in centimetres. For example a 16 m tall tree that is 20.0 cm dbh has a HDR of $16/20 = 0.8$

Additional DCO Standards

This text portion of these standards constitutes approved variations to the Stocking Standards in the Tables that may be entered directly into RESULTS.

Note: in the FPPR the regeneration date, free growing date and free growing height are 'separate' from the stocking standard. The stocking standard will include: The BEC Zone, the preferred and acceptable crop tree species; the stocking densities (target, minimum preferred and minimum preferred and acceptable) as either stems/ha or Basal Area (BA)/ha; the minimum inter-tree distance for well spaced crop trees; maximum density requirements, post spacing densities minimums and maximums; and height of trees relative to competing vegetation.

Regeneration Period

The period to calculate the Regeneration Date is 4 years for Artificial Regeneration and 7 years for Natural Regeneration

Free Growing Period

The period to calculate the Free Growing Date is 20 years.

Free Growing Height

Minimum free growing heights are shown in Table A.

Maximum Density (all areas)

As per the Regional Executive Director's letter dated February 8, 2006

Re: Revised Maximum Density Number for Lodgepole Pine in the Southern Interior Forest Region

Max (countable sph) Pli = 25,000

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Max (countable sph) all other species = 10,000
 Post Spacing (sph) Min=1000, Max =4000

Minimum Inter-tree Distances (MITD)

Trees must be greater than or equal to the approved minimum inter-tree distance apart in order to be well spaced.

Minimum inter-tree distance (m)	Location/Condition
1.00	Planting on mechanically mounded sites
1.30	Planting on sites with elevated microsites (natural hummocks and mounds), problem vegetation areas (woody brush; Douglas maple; willow; alder), very rocky sites and planting on hygric or wetter sites,
1.50	Fill plants, areas with a significant number of advance regen, and areas with significant accumulations of untreatable slash.
1.7	Planting in the ICHwk1, ICHvk1, ICHmw1, ICHmw2, ICHmw3, ESSFvc, ESSFwc1, ESSFwc2 and ESSFwc4.
2.00	All other areas

Height of Trees Relative to Competing Vegetation

In addition to being the required minimum height, tree height must be greater than the following % relative to competing vegetation within a one metre radius of the trunk:

<u>% Ht above competing veg</u>	<u>BEC Zone</u>
125%	ESSF IDF MS
150%	all other areas

Note: Free growing status will be evaluated using the MOF procedures in place at the time of assessment. Current procedures are defined in Appendix 9 of the Establishment to Free Growing Guidebook: Nelson Region, May 2000. Use Appendix 9 as revised October 2007

Adjustments to Stocking Standards

Changes to target/minimum stocking levels will be considered as separate amendments to the forest stewardship plan on a site specific basis (one off). The amendment will be submitted using the MOF procedures in place at the time of the amendment submission. The current method for submitting a one off stocking standard is through the FSP Tracking System.

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Free Growing Damage Criteria

For even aged Silviculture Systems, damage to FG trees will be evaluated using the MOF procedure in place at the time of assessment. Current procedures are as per the April 2008 Free Growing Damage Criteria. These criteria are contained within Appendix 10 of the Stocking and Free Growing Survey Procedures Manual, April 2009.

For uneven aged Silviculture Systems damage to FG trees will be evaluated using the MOF procedure in place at the time of assessment. Current procedures are as per the May 16th 2008 Multi-Layer Free Growing Damage Criteria.

Further leave tree criteria for mature trees are listed in Tables A, B and C.

Minimum Leave Tree Characteristic for Advance Regeneration:

Advance regeneration must meet the requirements of Appendix 10 of the Establishment to Free Growing Guidebook: Nelson Region, May 2000 to be acceptable. In addition to Appendix 10:

When employing an Even aged Silviculture System with even-aged stocking standards (Table A) – to be an acceptable crop tree - advance regen are:

- Trees that existed in the under-story in the pre-harvest stand and were not removed during harvest
- No more than 40 years old at the time of harvest at dbh in all BEC Zones except the ESSF to be acceptable.

Dispersed retention of trees that were in the over-story in the pre-harvest stand are not considered to be advance regen.

Wildlife Trees

Dispersed wildlife trees in a block that contribute to Wildlife Tree Retention Areas required by the FSP to meet biodiversity requirements do not count towards crop tree stocking.

Dispersed Veteran Deciduous Wildlife Trees will not count as impeding to crop trees when conducting a Free Growing Survey where the BA of the total dispersed retention in the blocks is less than 8M2 in the MS dk, IDF dm2, ICH mk1, ICH mw1 and ESSF dk BEC Zones and less than 12 m2 BA in all other BEC Zones.

Dispersed Strata

On standards units where dispersed, non-mappable complexes of differing site series are noted, the preferred and acceptable species for the applicable site series (as per table A) shall apply. The target and minimum stocking standards shall be based on the dominant site series.

ESSF/ICH Transition Sites

Where it is not practical to separate a transitional site into standards units applicable to two BEC Zones the Stocking Standards from either BEC Zone may be used or a combination of both.

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Whitebark Pine

Whitebark pine (Pa) is a blue listed species. Pa will be considered a preferred species wherever it is found naturally. Minimum leave tree characteristics for advance regeneration do not apply to Pa.

Addition of new Biogeoclimatic zones in Golden

Until new stocking standards have been developed use the Table A, B and C stocking standards for the new BEC zones.

ICHdk5 – Use IDF dm2 standards

ICH mk4 – Use ICH mk1 standards

MS dk2 – Use the MS dk standard

ESSF dk2 – Use the ESSF dk standards or the ESSF wm (as per BEC Version 5) whichever is the best fit.

Relationship of Stocking Standards to Silviculture System

Even aged Silviculture systems

When denudation is reported into RESULTS, any area reported as an even aged Silviculture System must have Table A stocking standards. The exception is a Shelterwood preparatory cut which may have Intermediate Cut – No Regeneration Obligation Standards.

Classic stocking and free growing surveys should be used to measure even aged regenerated stands against the stocking standard. Where there is dispersed retention an even aged layered survey may be used.

Uneven aged Silviculture Systems

When denudation is reported into RESULTS, any area reported as an uneven aged Silviculture System in the IDF must have Table B stocking standards. Multi story survey methodology should be used to measure the stand against the standard. The basal area may be collected for layer 1 trees. For all other BEC Zones, Table B densities may be modified to fit existing stand conditions if the densities are developed using stand/stock tables and the BDq methodology outlined in the Silviculture Systems Handbook for British Columbia 2001. The exception may be group selection where the groups are mappable and managed as small even aged areas with Table A standards. If any harvesting occurs outside the groups but within the block (i.e. skid roads between groups) the area must have an Intermediate Cut Standard from Table C.

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Intermediate Cuts

When denudation is reported into RESULTS, any area reported as an Intermediate Cut must have Table C stocking standards.

The post harvest survey must measure the basal area of the crop trees for compliance with the standard. The stand description should not be layered – it should resemble the pre-harvest inventory label with an accurate portrayal of what the stand looks like post harvest.

When reporting the Forest Cover Inventory for an Intermediate Entry, report the **Total** BA retained in the Inventory label and the **Crop Tree** BA in the Silviculture Label

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FSP Even-Aged Stocking Standards**
Table A

BGC		ID#	Regeneration and Free Growing Stocking Standards					Min FG Height	
Classification			Species		Stocking				
			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINp a	MINp	Species	Ht m
ESSF dk	01,03,04	1033743	PI Sx (Fd Lw) ¹⁴	BI	1200	700	600	PI, Lw Fd Others	1.6 1.0 0.8
	02	1033744	(Fd Lw) ^{9,14} PI	Sx	1000	500	400	PI, Lw Fd Others	1.2 0.8 0.6
	05,06	1033745	(BI Sx) ³² PI		1200	700	600	PI Others	1.6 0.8
ESSFvc	01, 04	1033746	Sx BI Hm ^{71,34}		1200	700	600	All	0.8
	02, 03, 05	1033747	Sx BI Hm ^{71,34}		1000	500	400	All	0.8
ESSFwc1	01, 03, 04	1033748	BI Sx PI ^{23,34}	(CwHw) ^{9,32} Hm	1200	700	600	PI Others	1.6 0.8
	02	1033749	PI ³⁴ Sx BI	Cw ⁵⁵ Hm Hw	1000	500	400	PI Others	1.2 0.6
ESSFwc2	01, 04, 05,	1033750	BI Sx	PI ^{23,34} Hm	1200	700	600	PI Others	1.6 0.8
	02	1033751	PI Sx ^{10,13}	BI ¹⁰ Hm	1000	500	400	PI Others	1.2 0.6
	03	1033752	Sx BI PI ^{23,34}	Hm	1000	500	400	Pli Others	1.2 0.6
	06 07	1033753	(Sx BI) ³² PI ^{23,34}	Hm	1200	700	600	Pli Others	1.6 0.8
	08	1033754	(BI Sx) ^{1,32} PI ^{23,34}	Hm	1000	500	400	PI Others	1.2 0.6
	09*	1033755	PI ¹ Sx ^{1,32}	BI ^{1,32} Hm	400	200	200	PI Others	1.2 0.6
1,2 etc – see “Footnotes” Brackets indicate the footnote applies to all species within the brackets e.g. (Fd Lw) ^{9,14} *Avoid Logging **Additional information or requirements may be found in the text portion of these standards and/or in the FSP Stocking Standard Section									

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Classification			Species		Stocking				
			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINp a	MIN p	Species	Ht m
ESSF wc4	01 04 05	1033756	BI Sx PI ^{23,34}	Hm	1200	700	600	PI Others	1.6 0.8
	02 03	1033757	Sx BI ⁵⁴ PI ^{23,34} 54 02 only	Hm	1000	500	400	PI Others	1.2 0.6
	06	1033758	(Sx BI) ^{1,32}	Hm	1200	700	600	All	0.8
	07	1033759	(Sx BI) ¹ PI ^{23,1,34}	Hm	1000	500	400	PI Others	1.2 0.6
ESSF wm	01	1033760	BI Sx (FdLw) ¹⁴	PI ³⁴	1200	700	600	Lw,PI Others	2.0 1.0
	02	1033761	Sx PI ³⁴	BI Hw ¹⁴	1200	700	600	PI Others	2.0 1.0
	03	1033762	(Fd Lw) ^{9,32} Sx	BI PI ³⁴ PW ^{9,31,32,57} Hw	1200	700	600	Lw PI Pw Fd, Others	2.0 1.4 1.0
	04	1033763	BI Sx	PI ³⁴ Hw ¹⁴	1200	700	600	PI Others	2.0 1.0
ESSF mm1	01, 04, 05, 06	1033764	BI Sx	PI	1200	700	600	PI Others	1.6 0.8
	02, 03	1033765	(BI Sx) ²⁸ PI		1000	500	400	PI Others	1.2 0.6
	07*	1033766	(BI Sx) ^{1,32}	PI ¹	400	200	200	PI Others	1.2 0.6
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Classification			Species		Stocking				
			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINp a	MIN p	Species	Ht m
ICH mk1	01	1033767	(Fd Lw) ^{9, 14, 32} PI Sx ^{10,13}	BI ^{10,13} Cw ^{10,13,32}	1200	700	600	PI Lw Fd Others	2.0 1.4 1.0
	02	1033768	Fd PI	(Sx BI) ^{10,13} Py ^{9,14}	600	400	400	PI Fd Others	1.4 1.0 0.8
	03	1033769	Fd Lw PI Sx ^{10,13}	(Cw BI) ^{10,13}	1000	500	400	PI Lw Fd Others	1.4 1.0 0.8
	04	1033770	(Fd Lw) ³² PI Sx ^{10, 13}	BI ^{10, 13} Cw ^{10, 13, 32}	1200	700	600	PI Lw Fd Others	2.0 1.4 1.0
	05, 06	1033771	PI Sx Fd ^{9, 14, 32}	BI Lw ^{9,14,32} Cw ³²	1200	700	600	PI Lw Fd Others	2.0 1.4 1.0
	07	1033772	PI ¹ Sx ¹ Fd ^{1, 32}	BI ¹ Cw ³² Lw ^{1,32}	1000	500	400	PI Lw Fd Others	1.4 1.0 0.8
ICH mw1	01	1033773	Fd PI Cw Sx Lw ²³ Hw ⁷¹	BI Pw ^{31,57}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	02, 04	1033774	Fd PI Lw ²³	(Cw Sx) ²⁸ (BI Hw) ²⁸ Pw ^{31,57}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	03	1033775	Fd PI Hw ⁷¹ Sx ^{10, 13, 28} Lw ²³ Cw ²⁸	BI ²⁸ Pw ^{31, 57}	1200	700	600	PI Lw Pw Fd Others	2.0 1.4 1.0
	05	1033776	Cw ³² Fd ^{1, 32,} Hw ³² Sx Lw ^{9,14,23}	BI PI Pw ^{1, 32, 57}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	06	1033777	Cw Fd ^{9, 14} BI Hw Sx Lw ^{9, 14,23}	PI Pw ^{31, 57}	1200	700	600	PI Lw Pw Fd Others	2.0 2.0 1.4 1.0
	07	1033778	(Cw Hw) ³² Sx Fd ^{1,14,32}	BI PI	1000	500	400	PI Fd Others	1.4 1.0 0.8
<div>1,2 etc – see “Footnotes” Brackets indicate the footnote applies to all species within the brackets e.g. (Fd Lw)^{9,14}</div> <div>*Avoid Logging</div> <div>**Additional information or requirements may be found in the text portion of these standards and/or in the FSP Stocking Standard Section</div>									

2010-03-30

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FSP Even-Aged Stocking Standards**
Table A

BGC		ID#	Regeneration and Free Growing Stocking Standards					Min FG Height	
Classification			Species		Stocking				
			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINpa	MIN p	Species	Ht m
ICH mw2	01, 04	1033779	Fd Lw PI ⁷¹ Sx ^{10,13} Cw Hw	Pw ^{31,57} Bl ^{10,13} Py ^{9,14,23}	1200	700	600	PI Lw Pw Fd Others	2.0 1.4 1.0
	03	1033780	Fd Lw PI Cw	Pw ^{31,57} (SxBl) ^{10,13} Hw Py ^{9,14,23}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	05	1033781	Cw Sx PI ⁷¹ Hw (Fd Lw) ^{9,14,}	Bl Pw ^{31,57} Py ^{14,23}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	06	1033782	Cw ³² Sx PI ⁷¹ Hw ³² (Fd Lw) ^{1,32}	Bl Pw ^{31,57} Py ^{14,23}	1200	700	600	PI Lw Pw Fd, Others	2.0 1.4 1.0
	07 08	1033783	(Cw Hw) ^{1,32} Sx ¹ Fd ²³	(Bl PI) ¹ Pw ^{1,31,57}	1000	500	400	PI Pw Others	1.4 0.8
ICH mw3	01 04 05	1033784	Fd PI ⁷¹ Lw ²³ (Cw Sx Hw) ^{10,13}	Pw ^{31,57} Bl	1200	700	600	PI Lw Pw Fd Others	2.0 1.4 1.0
	02	1033785	Fd PI Lw ²³	Py ^{9,14,23} Pw ^{31,57}	1000	500	400	PI Lw Pw Fd Py	1.4 1.0 0.8
	03	1033786	Fd ³² PI Lw ^{23,32} Hw ²³ Cw ^{10,13}	Pw ^{31,57} (Sx Bl) ^{10,13}	1000	500	400	PI Lw Pw Fd Others	1.4 1.0 0.8
	06	1033787	Fd ¹⁴ PI ⁷¹ Lw ²³ Cw Sx Hw	Pw ^{31,57} Bl	1200	700	600	PI Lw Pw Fd Others	2.0 1.4 1.0
	07	1033788	(Cw Hw) ³² Sx Fd ^{1,32} PI ⁷¹	Bl Pw ^{31,57} Lw ^{1,23,32}	1200	700	600	PI Lw Pw Fd Others	2.0 1.4 1.0
	08	1033789	(Cw Hw) ^{1,32} (Sx PI) ¹	Bl ¹ Pw ⁵⁷	1000	500	400	PI Pw Others	1.4 0.8
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*Avoid Logging									
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			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINpa	MIN p	Species	Ht m
ICH vk1	01 04	1033790	(Cw Hw) ³² Sx Bl ²³ Fd ^{1,9,14,32,34,71} Lw ^{9, 14, 23}	Pw ^{31,57} Yc ²³	1200	700	600	Pw Lw Fd Others	2.0 1.4 1.0
	03	1033791	Fd ⁹ Cw Sx Hw Bl ²³ Lw ^{9,14,23}	Pw ^{31,57}	1200	700	600	Lw Pw Fd Others	2.0 1.4 1.0
	05 06	1033792	(Cw Hw) ^{1,32} Sx ¹	Bl ¹ Pw ^{1,31,57} Yc ²³	1000	500	400	Pw Others	1.4 0.8
ICH wk1	01 04	1033793	Cw Hw Sx ^{10,13} Fd ^{9,14} Bl ²³ Lw ^{9,14,23,32}	Pw ^{31,57} (Yc Pl) ²³	1200	700	600	Pl Lw Pw Fd Others	2.0 1.4 1.0
	03	1033794	Fd Pl	Bl Cw Hw Pw ⁵⁷ Sx	1000	500	400	Pl Pw Fd Others	1.4 1.0 0.8
	05	1033795	(Cw Hw) ³² Sx Bl ²³ Fd ^{1,9,14,32} Lw ^{1,14,23,32}	Pw ^{31,57} (Yc Pl) ²³	1200	700	600	Pl Lw Pw Fd Others	2.0 1.4 1.0
	06 07 08	1033796	(Cw Hw) ^{1,32} Sx ¹ Bl ^{1,23}	Pw ^{1,31,57} Pl ^{1,23,34}	1000	500	400	Pl Pw Others	1.4 0.8
1,2 etc – see “Footnotes” Brackets indicate the footnote applies to all species within the brackets e.g. (Fd Lw) ^{9,14}									
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			Conifer		Well-spaced/ha				
Zone/SZ	Series	ID#	Preferred p	Acceptable a	Target	MINpa	MIN p	Species	Ht m
IDF dm2	01	1033797	(Fd Lw) ³² Py	PI ^{10,13}	1000	500	400	PI Lw Fd Py	1.0 0.8 0.6
	03	1033798	Fd ²⁷ Py Lw ^{10,13}		600	400	400	Lw Fd Py	1.0 0.8 0.6
	04	1033799	(Fd Lw) ³² PI Sx		1200	700	600	PI Lw Fd Others	1.4 1.0 0.8
	05 07	1033800	PI Sx (Fd Lw) ^{1,32}		1000	500	400	PI Lw Fd Others	1.0 0.8 0.6
MS dk	01 05	1033801	(Fd Lw) ³² PI Sx	BI	1200	700	600	PI Lw Others	1.4 0.8
	03	1033802	Fd Lw PI	BI Sx	1000	500	400	PI Lw Others	1.0 0.6
	04	1033803	Fd Lw PI	BI Sx	1200	700	600	PI Lw Others	1.4 0.8
	06	1033804	Sx (Fd Lw) ^{1,32}	PI ¹ BI	1200	700	600	PI Lw Others	1.4 0.8
	1,2 etc – see “Footnotes” Brackets indicate the footnote applies to all species within the brackets e.g. (Fd Lw) ^{9,14}								
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FSP Stocking Standards Definitions and Footnotes for Table A B and C Stocking Standards

Conifer Tree Species	#	Footnotes
"Ba" means amabilis fir	1	Elevated microsites are preferred
"Bg" means grand fir	2	Suitable on thick forest floors
"Bl" means subalpine fir	3	Recommended for coarse-textured soils
"Bp" means noble fir	4	Recommended for medium-textured soils
"Cw" means western red cedar	6	Recommended on nutrient-very-poor sites
"Fd" means Douglas-fir	7	Recommended on nutrient-medium sites
"Hm" means mountain hemlock	8	Recommended on steep slopes
"Hw" means western hemlock	9	Recommended on southerly aspects (SSE to WSW)
"Lt" means tamarack	10	Recommended on northerly aspects (NW to ENE)
"Lw" means western larch	11	Recommended to crest slope positions
"Pa" means whitebark pine	12	Suitable on cold air drainage sties
"Pl" means lodgepole pine	13	Recommended in upper elevations of BGC Unit
"Pw" means white pine	14	Recommended on lower elevations of BGC Unit (species not recommended within 200m vertical of max elevation)
"Py" means ponderosa pine	15	Recommended in northern portion of BGC unit in region
"Sb" means black spruce	16	Recommended in southern portion of BGC unit in region
"Se" means Engelmann spruce	17	Recommended in western portion of BGC unit in region
"Ss" means Sitka spruce	18	Recommended in eastern portion of BGC unit in region
"Sw" means white spruce		19-22 Coastal only
"Sx" means hybrid spruce or interior spruce	23	Restricted to max 20% of well spaced P&A
"Sxs" means hybrid Sitka spruce	24	Suitable (as a major species) in wetter portion of BGC Unit
"Sxw" means hybrid white spruce	25	Suitable on sites lacking salal
"Yc" means yellow cedar	26	Suitable minor species on salal-dominated sites
Broadleaf Tree Species	27	Partial canopy cover required for successful establishment
"Acb" means balsam poplar	28	Limited by moisture deficit
"Act" means black cottonwood	29	Risk of heavy browsing by moose
"At" means trembling aspen	30	Risk of porcupine damage
"Dr" means red alder	31	Risk of white pine blister rust
"Ep" means common paper birch	32	Limited by growing –season frost
"Mb" means bigleaf maple	34	Risk of snow damage
"Qg" means garry oak	35	Risk of weevil damage
"Ra" means arbutus	36	Suitable major species on salal-dominated sites
Definitions	37	Risk of heart rots
"MIN" or "Min" means minimum	39	Avoid exposed and windy sites
"P" means Preferred	40	Risk of redheart
"A" means Acceptable	41	Limited by poorly drained soils
"Biogeoclimatic unit" or "BGC classification" means the zone, subzone, variant and site series described in the most recent field guide published by the MOF for the Identification and interpretation of ecosystems as applicable to a harvest area. Abbreviated BEC Zone in most of the DCO standards.	42	Restricted to fresh soil moisture regimes
		43-46 – Coastal only

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FSP Stocking Standards Definitions and Footnotes for Table A B and C Stocking Standards

Definitions	#	Footnote
	47	Risk of balsam woolly adelgid
	48	Risk of heavy browsing by deer
	49	Applies only to rust resistant, planted stock
Footnotes # 5, 33, and 38 retired	50	Restricted to sites where the species occurs as a major species in a pre-harvest, natural stand
Any reference to well spaced stems in the footnotes also applies to free growing stems	51	Restricted to areas with proven PI performance
	52	Restricted to sheltered microsites with deep soil
	53	minor component
	54	Risk of unsuccessful release of advance regeneration
	55	Acceptable in sx-sm portion of site series
#	Localized Footnotes	
57	Columbia forest district – Pw rust-resistant stock may be preferred to a max 50% of preferred and acceptable well-spaced stems. Natural provenance Pw – acceptable to a maximum of 50% per plot and 10% well spaced P&A. Minimum pruning height of 1.0 m applies to natural Pw if required to meet MSS P&A	
69	Species is restricted to upper elevations when used in the southern portion of the BGC Unit	
70	Restricted to a maximum of 20% of preferred and acceptable well-spaced stems on northerly aspects	
71	Restricted to a maximum of 50% of preferred and acceptable well-spaced stems	
	Broadleaf Management Constraints	
a	Productive, reliable, and feasible regeneration option	
b	Limited in productivity, reliability and/or feasibility	
	Additional information or requirements may be found in the text portion of these standards and/or in the FSP	

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Table B Stocking Standards

Uneven Aged Stocking Standards – Single –tree selection for the IDF BEC Zone only				
Target from Table A Standards*	Layer**	Stocking		
Stems/ha (Standards ID#)		Target pa***	MIN pa	MIN p***
		Well Spaced /ha		
1200	1	600	300	250
	2	800	400	300
IDF dm2 04 (1033933)	3	1000	500	400
	4	1200	700	600
1000	1	400	200	200
	2	600	300	250
IDF dm2 01 (1033931)	3	800	400	300
IDF dm2 05 07 (1033934)	4	1000	500	400
900	1	400	200	200
	2	500	300	250
No IDF with 900 target	3	700	400	300
In DCO	4	900	500	400
800	1	300	150	150
	2	400	200	200
No IDF with 800 target	3	600	300	300
In DCO	4	800	400	400
600	1	300	150	150
	2	400	200	200
IDF dm2 03 (1033932)	3	500	300	300
	4	600	400	400
400	1	200	100	100
No IDF with 400 target	2	300	125	125
In DCO	3	300	150	150
	4	400	200	200

*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.

**Stand Layer Definition

Layer 1	Mature	Trees > 12.5cm dbh
Layer 2	Pole	Trees 7.5cm to 12.4 cm dbh
Layer 3	Sapling	Trees >= 1.3 m ht to 7.4 cm dbh
Layer 4	Regeneration	Trees < 1.3 m ht

***pa and ***p Preferred and acceptable species and Target are as specified in Table A by Biogeoclimatic Ecosystem Classification (BEC) site series.

2010-03-30

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Table B Stocking Standard Definitions

For all BEC Zones except IDF:

Table B densities may be modified to fit existing stand conditions if the densities are developed using stand/stock tables and the BDq methodology outlined in the Silviculture Systems Handbook for British Columbia 2001. Target pa, min pa and min p must be achieved in each layer and measured with “non-nested” survey methodology.

Minimum Leave Tree Characteristics

Trees Age Class 6 and Younger:

Layer 1 trees must meet limits defined in the Tree Wounding and Decay guidebook (Feb 97)-Long Term Retention Objective to be acceptable.

Crop trees of all species must have a height to diameter ratio (HDR) of 1.0 or less to be acceptable - except Pli which must have a HDR of 1.2 or less to be acceptable.

All trees must meet criteria defined in Appendix 10, Establishment to Free Growing Guidebook: Nelson Region - May 2000.

Trees Age Class 7 and Older

Layer 1 trees must meet the limits defined in the Cruising Manual (effective June 1, 2008) for tree classes 1, 2, 5, and 8.

Crop trees of all species must have a height to diameter ratio of 1.0 (HDR) or less to be acceptable - except Pli which must have a HDR of 1.2 or less to be acceptable.

All trees must meet criteria defined in Appendix 10, Establishment to Free Growing Guidebook: Nelson Region - May 2000.

Trees Age Class 1

Note: Damage to FG trees will be evaluated using the MOF procedure in place at the time of assessment. Current procedures are as per the Multi-layer Free Growing Damage Criteria May 16, 2008

Additional information or requirements may be found in the text portion of these standards and/or in the FSP

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Table C Stocking Standards

Intermediate Cut - No Regeneration Obligation – Standards		
Minimum Crop Tree Basal Area Retained (M2/ha)	Standards ID	Additional Criteria (all areas)
50	1033935	To meet the minimum BA standard - retained crop tree basal area must be comprised of merchantable trees (Pli 12.5 cm DBH, other species 17.5 cm DBH) that meet or exceed the minimum leave tree characteristics outlined below. To qualify as an IC a minimum of 40% of the stands original BA must be retained or the minimum BA by BEC zone whichever is greater.
45	1033936	
40	1033937	
35	1033938	
30	1033939	
26	1033940	“NoRegen” Obligation Window is early 1 year and late 4 years
24 min for all other BEC Zones	1033941	
18 min for the MS dk, IDF dm2, ICH mk1, ICH mw1, ESSF dk BEC Zones only	1033942	
15 min for Beetle Proofing. HDR does not apply	1033943	When reporting the Forest Cover Inventory for an Intermediate Entry report the Total BA retained in the Inventory label and the Crop Tree BA in the Silviculture Label

Preferred and acceptable species to be retained are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series.

Table C Stocking Standard Definitions

Minimum leave tree characteristics:

Stands Age Class 6 and Younger:

Crop trees must meet limits defined in the Tree Wounding and Decay guidebook (Feb 97)-Long Term Retention Objective to be acceptable.

Crop trees of all species must have a height to diameter ratio (HDR) of 1.0 or less to be acceptable - except Pli which must have a HDR of 1.2 or less.

All trees must meet criteria defined in Appendix 10, Establishment to Free Growing Guidebook: Nelson Region - May 2000.

Stands Age Class 7 and Older

Crop trees must meet the limits defined in the Cruising Manual (effective June 1, 2008) for tree classes 1, 2, 5, and 8.

Crop trees of all species must have a height to diameter ratio of 1.0 (HDR) or less to be acceptable - except Pli which must have a HDR of 1.2 or less.

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Table C Stocking Standard Definitions

Stands Age Class 7 and Older cont'd

All trees must meet criteria defined in Appendix 10, Establishment to Free Growing Guidebook: Nelson Region - May 2000.

Minimum Strata Size for Reforestation Obligations:

Any contiguous strata greater than one hectare, that as a result of harvesting have a basal area less than 18 m² per ha for the MS dk, IDF dm2, ICH mk1, ICH mw1 and ESSF dk BEC Zones, and 24 m² for all other BEC Zones shall be reforested as specified in Table A by BEC site series.

Additional information or requirements may be found in the text portion of these standards and/or in the FSP