

FSP Stocking Standards - Columbia Forest District

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

Text - Additional standards, and instructions on using some Excel features associated with the guide.

DCO - Stocking standards for the Columbia Forest District.

Sgl Tree Sel'n - Stocking standards for the Columbia Forest District - single tree selection silvicultural system

Intermediate - Standards for the Columbia Forest District - Intermediate Cut, no regeneration objectives

Footnotes - contains definitions and footnotes for the stocking standards.

Additional Standards

Maximum Density (all areas)

Max (sph) - 10,000

Post Spacing (sph): Min=700, Max=2500

Reductions in stocking standards

Reductions in target/minimum stocking levels will be considered as separate amendments to the forest stewardship plan on a site specific basis (one off).

Minimum Inter-tree Distance

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

<u>Minimum inter-tree distance (m)</u>	<u>Location/condition</u>
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), and very rocky sites.
1.50	planting on hygric or wetter sites, fill plants, areas with a significant number of residuals, and areas with significant accumulations of untreatable slash.
1.70	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 at least 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>Location/condition</u>
125%	ESSF IDF MS zones
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

Minimum Leave Tree Characteristics:

Advanced Regeneration:

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

Wildlife Trees:

Wildlife trees must be in accordance with the BC wildlife tree classification system as defined in the "Wildlife/Danger Tree Assessor's Course Workbook" revised February 2000.

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 ESSF and ICH standards units the following shall apply:

From Table A stocking standards:

Preferred species shall be based on the ESSF standards.

Acceptable species shall be a combination of the ICH standards (preferred and acceptable) and the ESSF standards (acceptable species).

Stocking, Regen Delay and Free Growing requirements shall be based on the ESSF standards.

WORKSHEET FEATURES

Using the Macro Buttons on the Worksheet

Each regional 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 PPrimary, SSecondary and TTertiary columns.

Show P/A - shows only the PPreferred and AAcceptable 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.

Please note: if the Macros are enabled and one of the above buttons is used, column C and D will be reformatted to narrow width. To view/print the columns column width for column C must be manually re-formatted.

FSP Even-Aged Stocking Standards**

Table A

See the 'Instructions' worksheet (click on tab at bottom of screen)
for tips on using features in this workbook.

BGC		ID #	Regeneration					Free Growing			
Classification			Species		Stocking(i)		Regen Date (yrs)	Date (yrs)	FG Height		
Zone/SZ	Series		Conifer		Target	MIN pa		MIN p	Species	Ht (m)	
			Preferred (p)	Acceptable (a)	(well-spaced/ha)						
ESSFdk	01, 03, 04	8501	PI Sx Fd Lw ¹⁴	BI	1200	700	600	4	20	PI, Lw Fd Others	1.6 1.0 0.8
	02	8502	Fd Lw ¹⁴ PI	Sx	1000	500	400	4	20	PI, Lw Fd Others	1.2 0.8 0.6
	05, 06	8505	BI PI Sx		1200	700	600	4	20	PI Others	1.6 0.8
ESSFvc	01, 04	8511	Sx BI Hm ⁷¹		1200	700	600	4	20	All	0.8
	02, 03, 05	8512	Sx BI Hm ⁷¹		1000	500	400	4	20	All	0.6
ESSFwc1	01, 03, 04	8521	BI Sx PI ²³	Cw Hm Hw	1200	700	600	4	20	PI Others	1.6 0.8
	02	8522	PI Sx BI	Cw Hm Hw	1000	500	400	4	20	PI Others	1.2 0.6
ESSFwc2	01, 04, 05, 06, 07	8531	BI Sx	PI ²³ Hm	1200	700	600	4	20	PI Others	1.6 0.8
	02	8532	PI Sx	BI Hm	1000	500	400	4	20	PI Others	1.2 0.6
	03, 08	8533	BI Sx PI ²³	Hm	1000	500	400	4	20	PI Others	1.2 0.6
	09*	8539	PI Sx	BI Hm	400	200	200	4	20	PI Others	1.2 0.6
ESSFwc4	01, 04, 05	8541	BI Sx PI ²³	Hm	1200	700	600	4	20	PI Others	1.6 0.8
	02, 03, 07	8542	Sx PI BI	Hm	1000	500	400	4	20	PI Others	1.2 0.6
ESSFwm	01	8551	BI Sx Fd ¹⁴ Lw ¹⁴	PI	1200	700	600	4	20	Lw, PI Others	2.0 1.0
	02	8552	Sx PI	BI Hw ¹⁴	1200	700	600	4	20	PI Others	2.0 1.0
	03	8553	Fd Lw Sx	BI PI Pw ⁵⁷ Hw	1200	700	600	4	20	PI Lw Fd, Pw Others	2.0 2.0 1.4 1.0
	04	8554	BI Sx	PI Hw ¹⁴	1200	700	600	4	20	PI Others	2.0 1.0
ESSFmm1	01, 04, 05, 06	8561	BI Sx	PI	1200	700	600	4	20	PI Others	1.6 0.8
	02, 03	8562	BI ²⁸ Sx ²⁸ PI		1000	500	400	4	20	PI Others	1.2 0.6
	07*	8567	BI Sx	PI	400	200	200	4	20	PI Others	1.2 0.6
ESSFmv1	01	8561	BI Sx	PI	1200	700	600	4	20	PI Others	1.6 0.8
	02	8572	PI	BI	1000	500	400	4	20	PI Others	1.2 0.6
	03, 04, 05	8573	BI PI Sx		1000	500	400	4	20	PI Others	1.2 0.6
ESSFmv2	01, 04, 05	8561	BI Sx	PI	1200	700	600	4	20	PI Others	1.6 0.8
	02*	8582	BI PI Sx		1200	700	600	4	20	PI Others	1.6 0.8
	03	8583	BI PI Sx	Sb	1000	500	400	4	20	PI Others	1.2 0.6
	06*	8586	BI Sx	PI	400	200	200	4	20	PI Others	1.2 0.6

1,2 etc - see "Footnotes"

*Avoid logging

** Additional information or requirements may be contained in the text portion of the reference guide.

Table A

BGC		ID #	Regeneration					Free Growing		
Classification			Species		Stocking(i)		Regen Date (yrs)	Date	FG Height	
Zone/SZ	Series		Conifer		Target	MIN pa		MIN p	(yrs)	Species
			Preferred (p)	Acceptable (a)	(well-spaced/ha)					
ESSFmv3	01, 04, 05, 06		8561	BI Sx	PI	1200	700	600	4	20
	02*	8592	PI	BI ²⁸ Sx ²⁸	1000	500	400	4	20	PI 1.2 Others 0.6
	03, 07	8593	BI Sx	PI	1000	500	400	4	20	PI 1.2 Others 0.6
ESSFmv4	01	8561	BI Sx	PI	1200	700	600	4	20	PI 1.6 Others 0.8
	02*	8602	BI ²⁸ PI Sx ²⁸		1000	500	400	4	20	PI 1.2 Others 0.6
	03	8603	BI PI Sx	Sb	1000	500	400	4	20	PI 1.2 Others 0.6
	04	8604	BI PI Sx		1200	700	600	4	20	PI 1.6 Others 0.8
	05*	8605	BI Sx	PI	400	200	200	4	20	PI 1.2 Others 0.6
ESSFwc3	01	8561	BI Sx	PI	1200	700	600	4	20	PI 1.6 Others 0.8
	02	8612	BI Sx	PI	1000	500	400	4	20	PI 1.2 Others 0.6
	03*	8613	BI Sx		400	200	200	4	20	All 0.6
ESSFwk1	01, 04, 05	8561	BI Sx	PI	1200	700	600	4	20	PI 1.6 Others 0.8
	02*	8622	BI Sx	PI	1000	500	400	4	20	PI 1.2 Others 0.6
	03	8623	Sx	BI PI	1200	700	600	4	20	PI 1.6 Others 0.8
	06, 07	8626	BI Sx		1000	500	400	4	20	All 0.6
ESSFwk2	01, 02, 03, 04, 05, 06	8631	BI Sx		1200	700	600	4	20	All 0.8
		8636	BI Sx		1000	500	400	4	20	All 0.8
ESSFv	01	8641	BI Sx	Hm	1200	700	600	4	20	All 0.8
	02, 04	8642	BI Sx	Hm, PI	600	400	400	4	20	PI 1.2 Others 0.6
	03	8643	BI Sx	Hm	1000	500	400	4	20	All 0.6
ICHmk1	01, 04	8651	Fd ¹⁴ Lw ¹⁴ PI Sx	BI Cw	1200	700	600	4	20	PI, Lw 2.0 Fd 1.4 Others 1.0
	02	8652	Fd PI	Sx Py ^{9,14} BI	600	400	400	4	20	PI 1.4 Fd 1.0 Others 0.8
	03	8653	Fd Lw PI Sx	Cw BI	1000	500	400	4	20	PI, Lw 1.4 Fd 1.0 Others 0.8
	05, 06	8655	PI Sx Fd ¹⁴	BI Lw ¹⁴ Cw	1200	700	600	4	20	PI, Lw 2.0 Fd 1.4 Others 1.0
	07	8657	PI Sx Fd	BI Cw Lw	1000	500	400	4	20	PI, Lw 1.4 Fd 1.0 Others 0.8

1,2 etc - see "Footnotes"

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FSP Even-Aged Stocking Standards**

Table A

BGC		ID #	Regeneration					Free Growing		
Classification			Species		Stocking(i)		Regen Date	Date	FG Height	
Zone/SZ	Series		Conifer	Decid	Target	MIN pa			MIN p	Species
			Preferred (p)	Acceptable (a)	(well-spaced/ha)		(yrs)	(m)		
ICHmw1	01, 03	8661	Fd PI Cw Sx Lw ²³ Hw ⁷¹	BI Pw ⁵⁷	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	02, 04	8662	Fd PI Lw ²³	Cw ²⁸ Sx ²⁸ BI ²⁸ Hw ²⁸ Pw ⁵⁷	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	05, 06	8665	Cw Fd Hw Sx Lw ^{14,23}	BI PI Pw ⁵⁷	1200	700	600	4	20	PI, Lw 2.0 Fd, Pw 1.4 Others 1.0
	07	8667	Cw Hw Sx Fd ¹⁴	BI PI	1000	500	400	4	20	PI 1.4 Fd 1.0 Others 0.8
ICHmw2	01, 04, 05, 06	8671	Fd Lw Cw Sx Hw PI ⁷¹	Pw ⁵⁷ BI Py ^{14,23}	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	03	8673	Fd Lw PI Cw	Pw ⁵⁷ Sx BI Hw Py ^{14,23}	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	07, 08	8677	Cw Sx Hw Fd ²³	BI Pw ⁵⁷ PI	1000	500	400	4	20	PI 1.4 Others 0.8
ICHmw3	01, 01-YC, 04, 05, 06	8681	Fd Cw Sx Hw Lw ²³ PI ⁷¹	Pw ⁵⁷ BI	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	02	8682	Fd PI Lw ²³	Py ^{14,23} Pw ⁵⁷	1000	500	400	4	20	PI, Lw 1.4 Fd, Pw 1.0 Py 0.8
	03	8683	Fd PI Lw ²³ Cw Hw ²³	Pw ⁵⁷ Sx BI	1000	500	400	4	20	PI 1.4 Lw 1.4 Fd, Pw 1.0 Others 0.8
	07	8687	Cw Sx Fd Hw PI ⁷¹	BI Pw ⁵⁷ Lw ²³	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	08	8688	Cw Hw Sx PI	BI Pw ⁵⁷	1000	500	400	4	20	PI 1.4 Others 0.8
ICHvk1	01, 04	8691	Cw Sx Hw BI ²³ Fd ^{14,70}	Pw ⁵⁷ Yc ²³	1200	700	600	4	20	Lw 2.0 Fd, Pw 1.4 Others 1.0
	03	8693	Fd ⁷⁰ Cw Sx Hw BI ²³	Pw ⁵⁷	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	05, 06	8695	Cw Sx Hw	BI Pw ⁵⁷ Yc ²³	1000	500	400	4	20	PI 1.4 Others 0.8
ICHwk1	01, 04, 05	8701	Cw Fd Hw Sx Lw ^{14,23} BI ²³	Pw ⁵⁷ Yc ²³ PI ²³	1200	700	600	4	20	PI 2.0 Lw 2.0 Fd, Pw 1.4 Others 1.0
	03	8703	Fd PI	BI Cw Hw Pw ⁵⁷ Sx	1000	500	400	4	20	PI Pw 1.4 Fd 1.0 Others 0.8
	06, 07, 08	8706	Cw Sx Hw BI ²³	Pw ⁵⁷ PI ²³	1000	500	400	4	20	PI 1.4 Others 0.8

1,2 etc - see "Footnotes"

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Table A

BGC		ID #	Regeneration					Free Growing		
Classification			Species		Stocking(i)		Regen Date (yrs)	Date (yrs)	FG Height	
Zone/SZ	Series		Conifer		Target	MIN pa			MIN p	Species
			Preferred (p)	Acceptable (a)	(well-spaced/ha)					
ICHmm	01	8711	Fd PI Sx	Cw Hw BI	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
	02	8712	Fd PI	Hw Sx Cw BI	1000	500	400	4	20	PI Fd 1.4 Others 0.8
	03	8713	Fd Hw PI	Sx Cw BI	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
	04, 05	8714	Sx Cw Hw	PI Pw ⁵⁷ Fd BI	1200	700	600	4	20	PI 2.0 Fd, Pw 1.4 Others 1.0
	06	8716	Cw Hw PI Sx	BI	1000	500	400	4	20	PI 1.4 Others 0.8
	07*	8717	PI Sb Sx		400	200	200	4	20	PI 1.4 Others 0.8
	08*	8718	Cw Hw Sx	PI BI	400	200	200	4	20	PI 1.4 Others 0.8
	ICHvk2	01, 04	8721	Sx	BI Fd ⁹ PI Cw Hw	1200	700	600	4	20
02*		8722	Fd Hw	PI Cw Sx	1000	500	400	4	20	PI 1.4 Others 0.8
03		8723	Fd	PI BI Cw Hw Sx	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
05		8725	BI Sx	PI Cw Hw	1200	700	600	4	20	PI 2.0 Others 1.0
06*		8726	BI Sx	PI Cw Hw	1000	500	400	4	20	PI 1.4 Others 0.8
07*		8727	PI	Sb Sx	400	200	200	4	20	PI 1.4 Others 0.8
ICHwk3		01, 05	8731	Sx Cw Fd	BI Hw PI	1200	700	600	4	20
	02	8732	PI	Hw Sx	1000	500	400	4	20	PI 1.4 Others 0.8
	03	8733	Fd	BI Cw Hw PI Sx	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
	04	8734	Fd PI	Hw BI Cw Sx	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
	06	8736	Sx Cw	BI Hw PI	1000	500	400	4	20	PI 1.4 Others 0.8
	07	8737	PI	Hw Cw Sx	1000	500	400	4	20	PI 1.4 Others 0.8
	08*	8738	Sx Cw	BI Hw	1000	500	400	4	20	All 0.8
	09*	8739	PI	BI Sb	400	200	200	4	20	PI 1.4 Others 0.8
	ICHwk4	01, 04, 05	8741	Fd PI Sx	BI Hw Cw	1200	700	600	4	20
02*, 03*		8742	Fd PI	BI ²⁸ Hw ²⁸ , Sx ²⁸	1000	500	400	4	20	PI 1.4 Fd 1.0 Others 0.8
06		8746	PI Sx	BI Hw	1200	700	600	4	20	PI 2.0 Others 1.0
07		8747	Fd Sx	BI Cw Hw PI	1200	700	600	4	20	PI 2.0 Fd 1.4 Others 1.0
08		8748	Sx	BI Cw PI	1000	500	400	4	20	PI 1.4 Others 0.8

1,2 etc - see "Footnotes"

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FSP Even-Aged Stocking Standards**

Table A

BGC		ID #	Regeneration					Free Growing			
Classification			Species		Stocking(i)			Regen Date (yrs)	Date	FG Height	
Zone/SZ	Series		Conifer		Target	MIN pa	MIN p		(yrs)	Species	Ht
			Preferred (p)	Acceptable (a)	(well-spaced/ha)				(yrs)		(m)
IDFdm2	01	8751	Fd Lw Py	PI	1000	500	400	4	20	PI, Lw	1.0
										Fd	0.8
										Py	0.6
	03	8753	Fd ²⁷ Py Lw		600	400	400	4	20	PI, Lw	1.0
									Fd	0.8	
									Py	0.6	
	04	8754	Fd Lw PI Sx		1200	700	600	4	20	PI, Lw	1.4
									Fd	1.0	
									Others	0.8	
	05, 07	8755	PI Sx Fd Lw		1000	500	400	4	20	PI, Lw	1.0
									Fd	0.8	
									Sx	0.6	
MSdk	01, 04, 05, 06	8761	Fd Lw PI Sx	BI	1200	700	600	4	20	PI, Lw	1.4
										Others	0.8
	03	8763	Fd Lw PI	Sx BI	1000	500	400	4	20	PI, Lw	1.0
										Others	0.6

1,2 etc - see "Footnotes"

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Intermediate Cut, No Regeneration Objectives-Standards

Minimum Basal Area Retained (M ² /ha)	Standards ID #	Additional Criteria (all areas)
70	8770	<p>Retained basal area is comprised of merchantable (Pli 12.5 cm DBH, other species 17.5 cm DBH) trees that meet or exceed the minimum leave tree characteristics.</p> <p>"No Regen" Obligation window - early 1 year, late 4 years.</p>
65	8771	
60	8772	
55	8773	
50	8774	
45	8775	
40	8776	
35	8777	
30	8778	
25	8779	
20	8880	
15	8881	

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

Minimum leave tree characteristics:

Stands Age Class 6 and Younger:

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

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

Stands Age Class 7 and Older

Layer 1 trees must meet the limits defined in the Cruising Manual (effective December 5, 2002) for tree classes 1, 2, 5, and 8.

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 15 m2 per ha, shall be reforested as specified in Table A by BEC site series.

FSP Stocking Standards

Single Tree Selection
Columbia Forest District
Version 2.0

Uneven-aged Stocking Standards* -- Single-tree selection only¹

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
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/(Standards ID #)		(well-spaced/ha)			(stems/ha)/Standards ID #		(well-spaced/ha)		
1200-(8900)	1	600	300	250	800-(8903)	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-(8901)	1	400	200	200	600-(8904)	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-(8902)	1	400	200	200	400-(8905)	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 >= 12.5 cm dbh
Layer 2	Pole	trees 7.5 cm to 12.4 cm dbh
Layer 3	Sapling	trees >= 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

Preferred and acceptable species and "Target from Table A standards" are as specified in Table A by biogeoclimatic ecosystem classification (BEC) site series.

¹The practice of Single Tree Selection is as defined in the Silviculture Systems Guidebook (Apr 1995) and the Silviculture Systems Handbook for British Columbia (October 2001).

