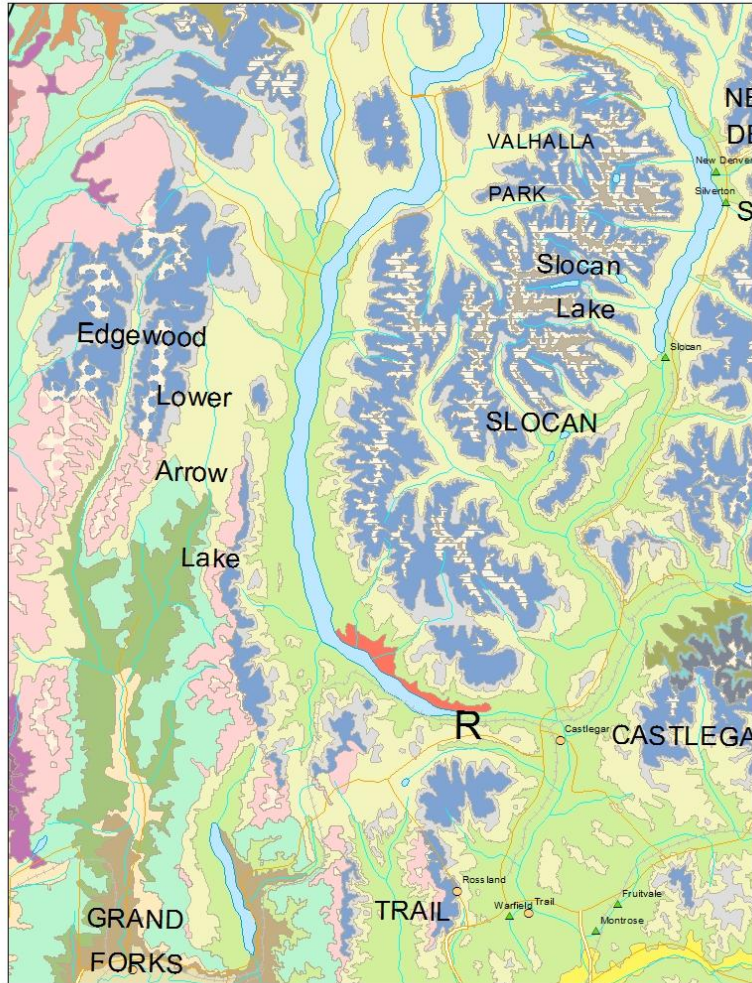
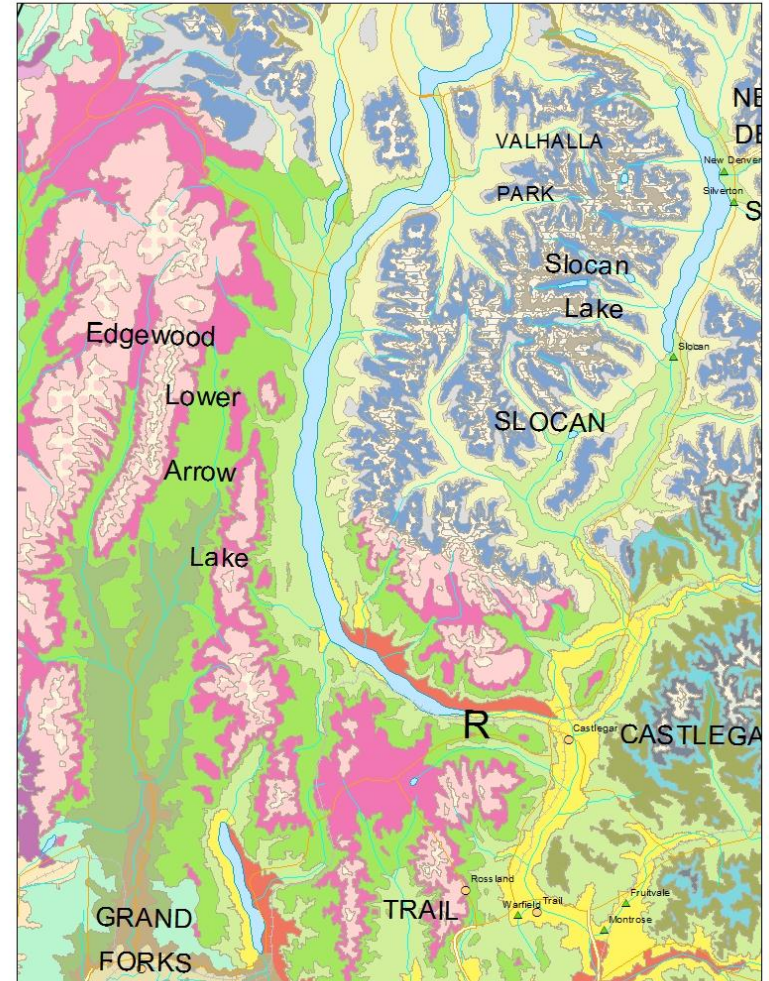


BEC: It's almost done... I promise!

Selkirk District Update – November 6, 2014
Deb MacKillop

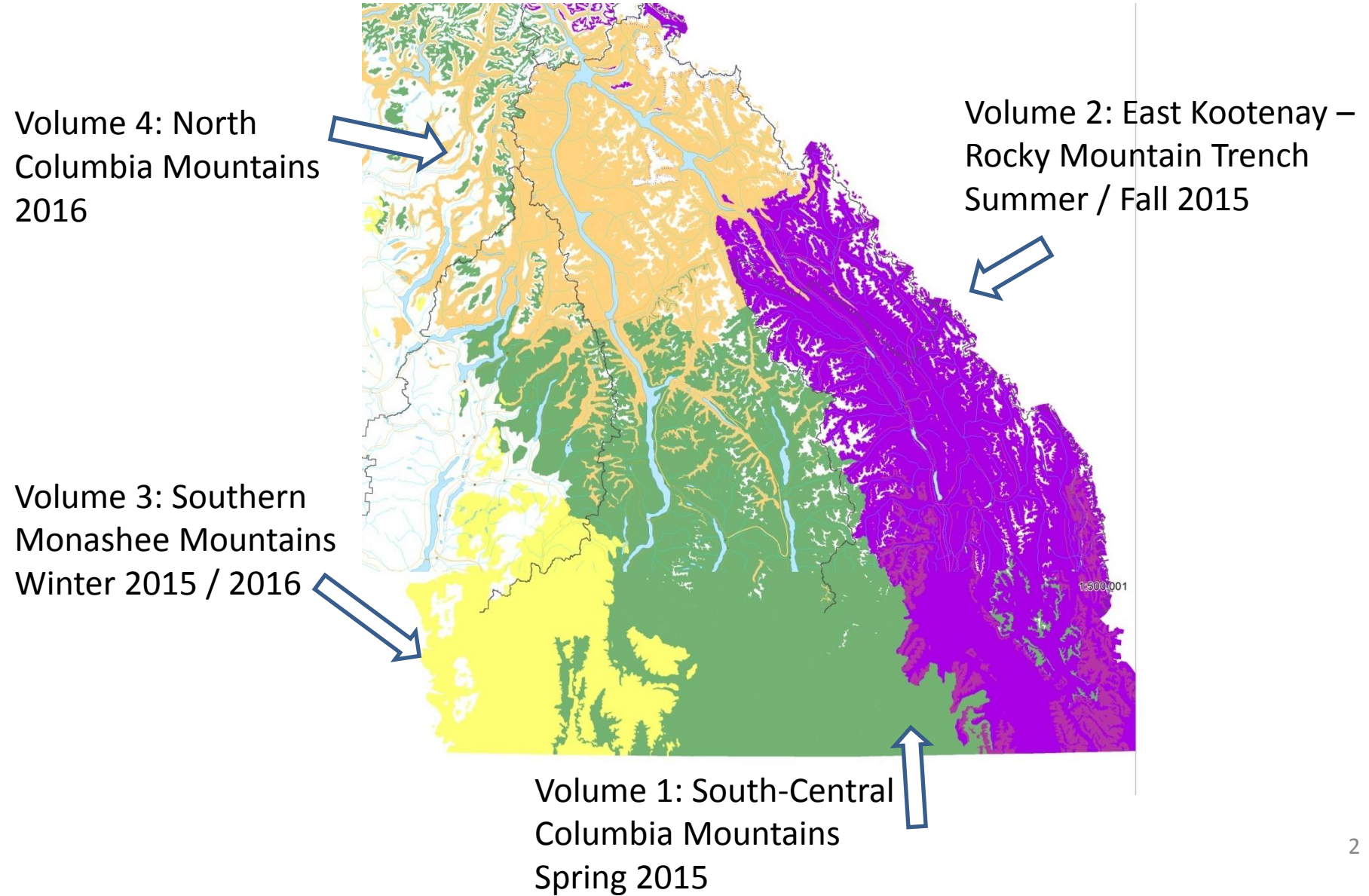


Official BEC (v9)



Draft BEC (in progress)

Field Guides and BGC Mapping



Management Applications: TSR, Wildlife Habitat Analysis, Cumulative Effects

PEM – Predictive Ecosystem Mapping



SIBEC – Site Index BEC Correlation

A40	Se									
	A	B	C	D	E	F	G	H	I	
1	SUMMARY OF # TREES / PLOT - NEEDED									
2	RED cells indicate higher priority samples either because several samples already exist, or because the tree spp is higher priority									
3	ORANGE cells indicate moderate priority species and should be targeted in plots where sampling for other spp is occurring									
4	YELLOW cells indicate lower priority species - only sample where it is easy to pick up an extra tree									
5	GREEN indicates a fully sampled cell, no more samples are required									
6										
7	Row Labels	unallocated	103	104	105	101	110			
40	Se		5	4		FULL	7			
41	ESSFwc 4									
42	Bl		1			2	6			
43	Pl		2			4				
44	Se		7			4	7			
45	ESSFwc 5									
46	Bl		3	FULL		1	4			
47	Cw					5				
48	Fd		3	4		7				
49	Hw			5		4	5			
50	Lw		3	5						
51	Pl		FULL	3		7				
52	Se		5	FULL		FULL	6			
53	ESSFwc 6									
54	Bl		7	1		3	3			
55	Pl			6						
56	Se		7	2		3	3			
57	ESSFwc 1									
58	Bl		7	7		6	7			
59	Pl		7	7		6				
60	Se		7	7		6	7			
61	ICH dm									
62	Bl		3			FULL	2			
63	Cw					4	3			
64	Fd		FULL			1	6			
65	Hw		4			1	2			
66	Lw		FULL			1				
67	Pl		FULL			FULL				
68	Pw					2				
69	Sx		5			1	2			
70	Bg					7				
71	ICH dw 1									
72	Rp					1				
Ready	Info	Priority-Matrix-APR2013	Matrix-x-age-APR2013	<20 tree spp						

How YOU Can Help

- Field Guides
 - Review the BGC units that you work in and provide feedback / comments
- Stocking Standards
 - Contract with Silviculture Specialist to help coordinate
 - Workshop in January to review
 - District / Chief Forester / FSP Standards ready in time for release of new BEC

How YOU Can Help

- Field Guides
 - Review the BGC units that you work in and provide feedback / comments

Volume	BGCv9	NEW-BGC	Reviewers
1	ESSFdm	ESSFwm 4	Nick McRae
1	ESSFdmw	ESSFwmw	Nick McRae
1	ESSFwc 1	ESSFwh 1	Kathy Smith; Kathy Howard
1	ESSFwc 4	ESSFwc 4	Kathy Smith; Kathy Howard
1	ESSFwc 5	ESSFwh 3	Doug T
1	ESSFwc 6	ESSFwm 3	Doug T
1	ESSFwcw	ESSFwcw	Doug T
1	ESSFwm	ESSFwm 2	Heidi, Nick
1	ESSFwm	ESSFwh 2	Heidi, Nick
1	ESSFwmw	ESSFwmw	Doug T
1	ICH dm	ICH dm	Heidi, Nick
1	ICH dw 1	ICH dw 1	Mark M, Doug T, BCTS
1	ICH mw 2	ICH mw 2	Kathy Smith; Kathy Howard
1	ICH mw 4	ICH mw 4	Mark M, Doug T, BCTS
1	ICH xw	ICH xw	Mark M, Doug T, BCTS
1	ICH xw	ICH xwa	Doug T
2	ESSFdk 1	ESSFdk 1	Kori V
2	ESSFdk 2	ESSFdk 2	Brian, Kori
2	ESSFdkw	ESSFdkw	Brian, Kori
2	ESSFwm	ESSFwm 1	Kori V
2	ICH mk 4	ICH mk 4	Kori V
2	IDF dm 2	IDF dm 2	Kari, Nick
2	MS dk 1	MS dw	Kori V
2	MS dk 2	MS dk	Brian, Kori
2	PP dh 2	IDF xx 2	Kari
3	ESSFdc 1	ESSFdc 1	Mark M, Randy W
3	ESSFdc1	ESSFmh	Mark M
3	ESSFdcw	ESSFdcw	Mark M
3	ICH mw 2	ICH mw 5	Mark M

New Field Guide Materials

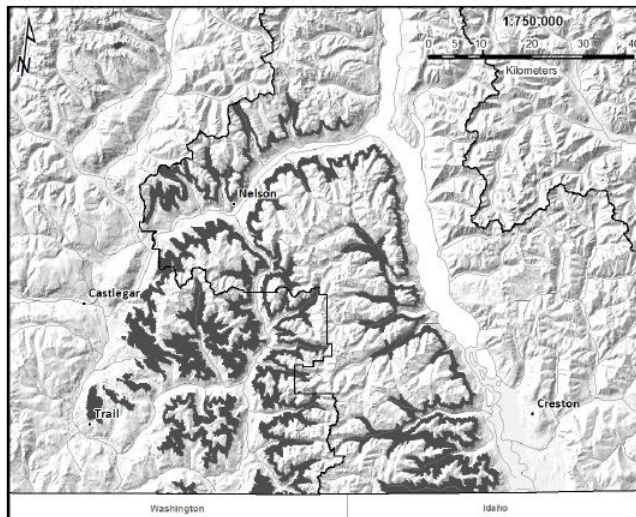
ICHmw4 - Ymir Moist Warm Interior Cedar - Hemlock

Geographic Distribution

The ICHmw4 occurs at mid elevations in the South Selkirk mountain ranges. It is bounded by the Columbia and Slocan Rivers to the west, the height of land in the West Arm's Kootenay Range to the north, and the west shores of Kootenay Lake to the east.

The ICHmw4 occurs between the ICHdw1 at lower elevations and the ESSFwc5 at higher elevations, except in the southeast portion of its range, from Cultus creek south to Dodge Creek, where the ICHmw4 occurs below the ESSFdm. The ICHmw4 abuts the ICHmw2 at the divide between Six Mile lakes and Lemon Creek and between Sproule and Winlaw Creeks.

Distribution Map



Elevation Range

The ICHmw4 ranges from between 1070 – 1530 m on cool aspects; 1150 – 1575 m on neutral aspects; and 1275 – 1600 m on warm aspects. Both lower and upper limits tend to occur at higher elevations in areas of the Columbia and Kootenay valleys across the southern half of its extent.

Climate

Moist Climatic Region; summers can be hot with moisture deficits experienced for brief periods on zonal sites and longer periods on drier sites. Snow cover is typically continuous throughout the winter months, although rain-on-snow events occur at moderate frequencies.

Forest and Vegetation Characteristics

Climax zonal sites are characterised by stands of Hw and Cw, often with sparse understories of black huckleberry, falsebox, foamflower, queen's cup, and pipecleaner moss. Mid-seral stands occur frequently, and include Fd, Lw, Hw and Cw, with occasional Pl and Pw. Bg occurs at lower elevations where the ICHmw4 is in close proximity to the ICHdw1, while Sxw and Bl occur as the ICHmw4 transitions to the ESSF and in areas with cold air. Drier sites have higher Fd, Lw, and Pl cover and may lack Cw and Hw in the overstorey of mature forests. Moist to wet sites are CwHw-dominated and typically lack Fd, Lw, and Pl; herb communities vary from oak fern to lady fern and devil's club, to horsetail. Ep and At are often abundant in early seral stands on dry to moist sites, and often remain as remnants in mature forests. Cottonwood floodplain stands are rare and are limited to small riparian areas along the bottoms of relatively steep valleys.

Disturbance

The ICHmw4 is grouped in the Natural Disturbance Type 2, characterised by infrequent stand replacing disturbances. Fire, insects, and pathogens are the primary agents of disturbance. Fire regimes have been characterised by a mixed severity regime with infrequent stand-replacing events, fire-maintained stands, and abundant veteran trees post-fire (Quesnel and Pinnell 1997, Nesbit 2010). Mountain pine beetle and Douglas-fir bark beetle are key disturbance factors. Birch decline due to a variety of factors is a more recent phenomenon. Abundant harvest has taken place in this subzone/variant.

Soils, Geology, and Landforms

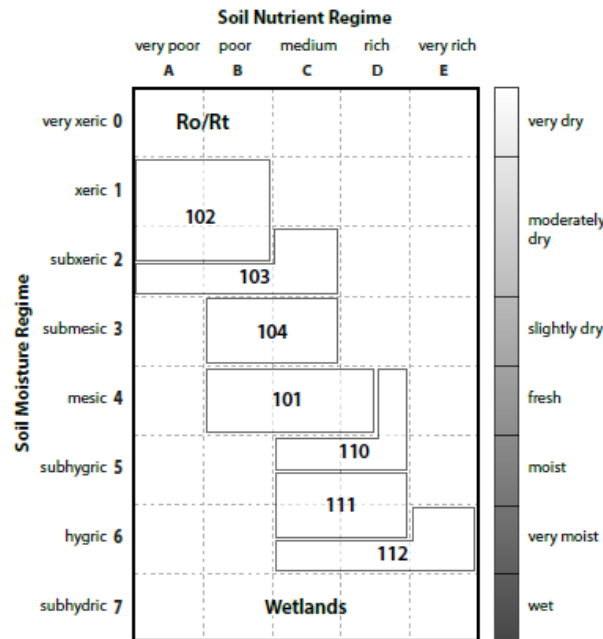
Complex geological history characterises the South Selkirk Mountains. Through much of the ICHmw4, soils are derived primarily from coarse-grained granodiorite rocks from the Nelson Batholith. Morainal soils are typically sandy loams with moderate coarse fragments and dominate much of the area. Andesites, phylites, and schists derived from fine sedimentary parent materials are interspersed as mineral-rich veins, particularly in the Bonnington and Nelson Ranges. Granite and quartzite are common in the older rock found east of Kootenay Pass.

Wildlife Habitat

The ICHmw4 provides important habitat for a wide range of wildlife species: mountain caribou; grizzly and black bears (huckleberries on earlier seral sites); cavity nesters (wildlife trees), old growth species. Large diameter Fd, Lw, and Cw trees that have survived previous severe fires provide important habitat

New Field Guide Materials

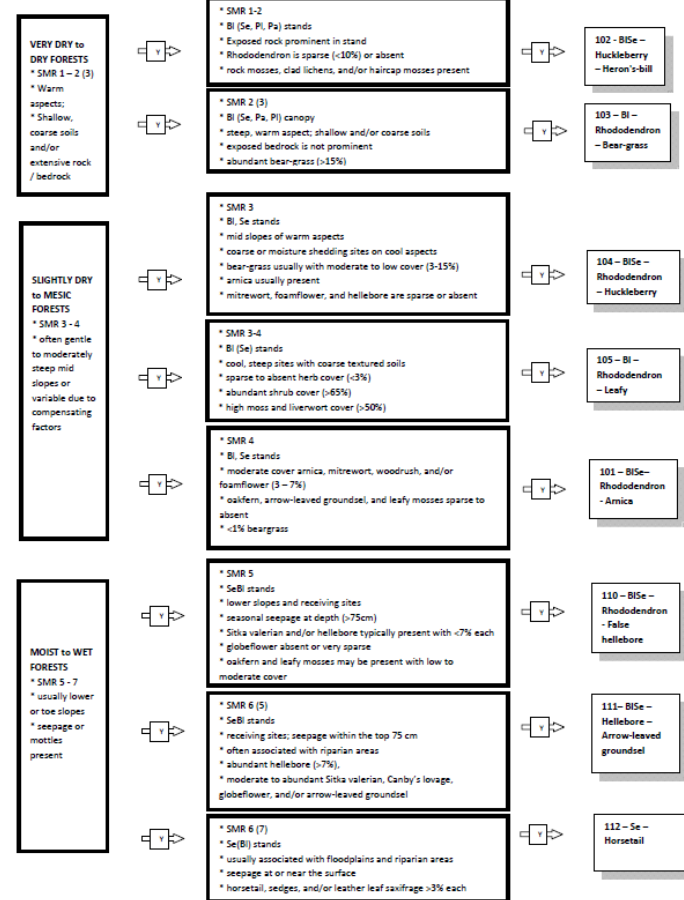
ESSFwc5 Site Series Edatopic Grid



Site Series

101 SeHw – Rhododendron – Foamflower
102 FdBl – Bear-grass – Rock moss
103 FdBl – Huckleberry – Bear-grass
104 Bl – Rhododendron – Bear-grass
110 BlCw – Oak fern
111 Bl – Devil's club – Lady fern
112 Bl – Horsetail – Leafy moss

ESSFwc6 Ecosystem Flowchart



New Field Guide Materials

Vegetation Table - ESSFdw

Number of plots		4	10	9	11	23	20	13	10	Common Name
Strata	Scientific Name	ESSFdw /102	ESSFdw /103	ESSFdw /104	ESSFdw /105	ESSFdw /101	ESSFdw /110	ESSFdw /111	ESSFdw /112	
TREES	<i>Pseudotsuga menziesii</i>	■■■■	■■■		■■■■	*				Douglas-fir
	<i>Pinus contorta</i>	■■■	■■■	■■■	■■■■	*				lodgepole pine
	<i>Larix occidentalis</i>	■■■	*		■■■■					western larch
	<i>Abies lasiocarpa</i>		■■■	■■■	■■■	■■■■	■■■	■■■	■■■	subalpine fir
	<i>Picea engelmannii</i> x <i>P. glauca</i>		■■■	■■■■	■■■■	■■■	■■■■	■■■■	■■■■	spruce
REGN	<i>Thuja plicata</i>		*		■■■	*	*	■■■■		western redcedar
	<i>Tsuga heterophylla</i>					*	*	*		western hemlock
	<i>Pseudotsuga menziesii</i>	■■■	*							Douglas-fir
	<i>Abies lasiocarpa</i>	■■■	■■■	■■■■	■■■	■■■	■■■	*	■■■	subalpine fir
	<i>Picea engelmannii</i> x <i>P. glauca</i>		■■■	■■■	*	■■■	■■■■	■■■	■■■	spruce
SHRUB	<i>Thuja plicata</i>		*		■■■		■■■	■■■		western redcedar
	<i>Tsuga heterophylla</i>			*	*	*	*	■■■	*	western hemlock
	<i>Vaccinium membranaceum</i>	■■■	■■■	■■■	■■■■	■■■■	■■■	■■■	■■■	black huckleberry
	<i>Paxistima myrsinites</i>	■■■	■■■■	■■■■	■■■■	■■■				falsebox
	<i>Juniperus communis</i>	■■■		*	■■■					common juniper
HERBS	<i>Spiraea betulifolia</i>	■■■	*	*	■■■					birch-leaved spirea
	<i>Amelanchier alnifolia</i>	■■■	■■■							saskatoon
	<i>Rubus parviflorus</i>				■■■	*	*	■■■	*	thimbleberry
	<i>Alnus viridis</i>				*		■■■■	■■■■		Sitka alder
	<i>Rhododendron albiflorum</i>					■■■■	■■■■	■■■	■■■	white-flowered rhododendron
HERBS	<i>Ribes lacustre</i>					■■■	■■■	■■■	■■■	black gooseberry
	<i>Oplopanax horridus</i>							■■■		devil's club
	<i>Calamagrostis rubescens</i>	■■■	■■■■							pinegrass
	<i>Arctostaphylos uva-ursi</i>	■■■								kinikinnick
	<i>Antennaria sp.</i>	■■■	■■■■							pussytoes
HERBS	<i>Carex concinnoides</i>	■■■	*							northwestern sedge
	<i>Achillea millefolium</i>	■■■								yarrow
	<i>Festuca saximontana</i>	■■■								Rocky Mountain fescue
	<i>Heuchera cylindrica</i>	■■■								round-leaved alumroot
	<i>Micranthes ferruginea</i>	■■■								Alaska saxifrage
HERBS	<i>Hieracium albiflorum</i>	*	■■■							white hawkweed
	<i>Urtica borealis</i>	*	*	■■■	■■■■					stinging nettle
	<i>Chimaphila umbellata</i>		■■■	■■■	■■■					prince's pine
	<i>Orthilia secunda</i>		*	■■■	■■■	■■■				one-sided wintergreen

ESSFwc5 /101

SxwHw - Rhododendron - Foamflower

General Description

SxwHw - Rhododendron - Foamflower forests typically occur on moraine blankets on mid slopes of neutral to cool aspects. Where they occur on warm aspects, compensating factors such as lower slopes with coarse soils, or gentle slopes lacking insolation create mesic conditions. Soils are typically Humo-ferric Podzols or Dystric Brunisols with hemimor humus forms, and well- to moderately well-drained silt loams, fine sandy loams, or sandy loams.

Sxw, BI, Hw, and occasionally Cw are the dominant tree species in both the overstorey and understorey. Rhododendron and black huckleberry comprise the majority of the shrub cover with lesser amounts of Utah honeysuckle and (often) small amounts of falsebox and/or false azalea. Herb layers are often variable in cover with considerable foamflower and queen's cup, moderate five-leaved bramble, and frequent low cover of oak fern (<1% to ~5% cover). Small amounts of beargrass (one or two plants), one-sided wintergreen, and violets are common. Pipecleaner moss is the most abundant and most common moss, and is typically found with moderate amounts of ragged-moss and heron's-bill moss, and occasionally with leafy mosses such as mountain moss (*Roellia roelia*) and naked moss (*Rhizomnium nudum*).

Differentiating from other site series

Drier sites tend to have abundant bear-grass and falsebox, and lack five-leaved bramble, oak fern, clasping twisted-stalk, and leafy mosses; PI is often abundant in earlier seral stages and Hw and Cw are usually less abundant in all seral stages of drier sites. Wetter sites typically have higher oak fern cover (>8%), contain hellebore, mitrewort, lady fern, and/or moderate cover of false azalea and have more leafy mosses (usually naked moss) and less pipecleaner moss. Wetter sites are moisture-receiving with seepage, indicated by mottles at depth.

Variability

Oak fern is sporadically present; beargrass can occur. Old-growth Hw-leading stands are common within the ESSFwc5. These stands look very similar to ICH forests, but are found within a landscape matrix that otherwise resembles the ESSFwc5 with abundant Se, BI, and/or rhododendron. Although it may seem odd to have a Hw forest in the ESSF, these old-growth forests may have initiated under different climatic conditions or disturbance histories and are not expected to regenerate to Hw if harvested or burned.

Management

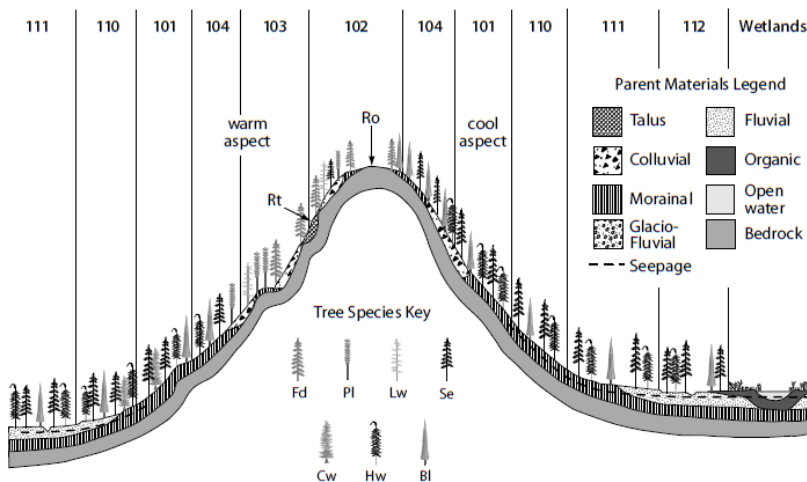
These sites have high productivity for the ESSF and few limiting factors for tree growth.



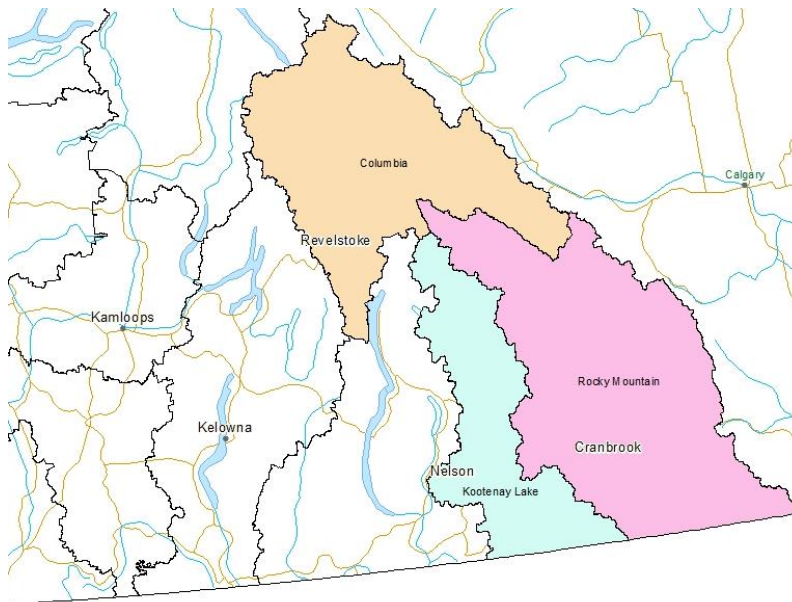
One-leaved foamflower
(*Tiarella trifoliata* var. *unifoliolata*)

How YOU Can Help

- Stocking Standards
 - Contract with Silviculture Specialist to help coordinate
 - Workshop in January to review
 - District / Chief Forester / FSP Standards ready in time for release of new BEC



Stocking Standards

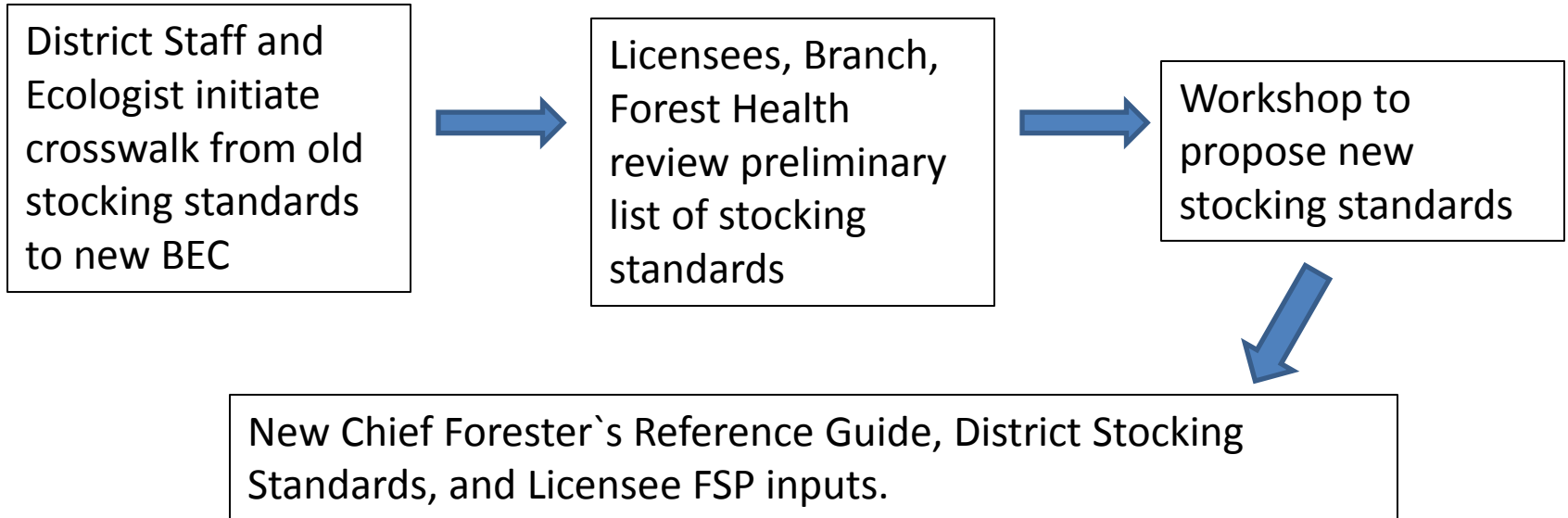


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A13		Regeneration Guide										Fire-Growing Guide				W. Slopes		2000-2010	
Zone	Series	Standards	Primary	Preferred (P)	Secondary	Alternative (A)	Tertiary	Residual	Long-term (L)	Short-term (S)	Repeal	Current	Future	Species	W	W			
Kamloops	01	0300	FGLW	PGLW-Cu-Pu-Lu	Cu-Pu-Lu	Pu-Lu	B ¹¹¹¹ Pu ¹¹ P ¹¹¹¹ Lu ¹¹	A ¹¹ A ¹¹ E ¹¹	1200	700	600	4	9	15	Pi Pu Lu P Others	2.0 2.0 1.4 1.0	0.0		
	02	-	non-forested	non-forested					-	-	-	-	-	-	-	-	0.0		
	03	0300	FGLW-Pi	PGLW		Pi-Cu-Pu-Lu	B ¹¹¹¹ Cu-Pu-Lu P ¹¹¹¹ Lu-Pu-Lu	A ¹¹ E ¹¹	1200	700	600	7	12	15	Pi Pu Lu P Others	2.0 2.0 1.4 1.0	0.0		
	04	0300	FGLW-Pi	PGLW-Cu-Lu	B ¹¹¹¹	Pi-Cu-Pu-Lu	B ¹¹¹¹ Cu-Pu-Lu P ¹¹¹¹ Lu-Pu-Lu	A ¹¹ E ¹¹	1200	700	600	7	12	15	Pi Pu Lu P Others	2.0 2.0 1.4 1.0	0.0		
	05	0300	Cu-PGLW-Lu-Lu ¹¹ Lu ¹¹	Cu-PGLW ¹¹¹¹ Lu-Lu ¹¹ Lu ¹¹	B ¹¹¹¹ Pi	B ¹¹¹¹ Pu ¹¹	Pu ¹¹	A ¹¹ A ¹¹ E ¹¹	1200	700	600	4	9	15	Pi Pu Lu P Others	2.0 2.0 1.4 1.0	0.0		

There is an opportunity to work together with Licensees, Districts, Branch, and Regional Scientists to develop new Chief Forester Reference Guide materials that can be applied in Forest Stewardship Plans. These new Stocking Standards will take climate change into account in their development and can be updated over time as new information becomes available.

Stocking Standards



Advantages are many – by working together, we can develop a consistent set of stocking standards that are supported by Districts. This will reduce overall workload since each licensee will not have to develop their own (unless they choose to), and District staff will have `pre-reviewed` standards in the development stage.

Licensees will still be able to propose alternatives where desired.

Districts will still have the ability to review and update Stocking Standards

Field Guides and BGC Mapping

