

## **Appendix C: Expanded Legend**

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**KELOWNA EXPANDED LEGEND – IDFxh1**

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
AS	Trembling aspen – Snowberry – Kentucky bluegrass	IDFxb1	98
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, and m)</p> <p>This forest ecosystem commonly occurs in large, broad depressions in grassland areas. These sites collect moisture from surrounding grassland areas. They have an overstory of trembling aspen and a shrubby understory dominated by snowberry and roses.</p>			
<b>List of mapped units:</b>			
ASg	occurs in a gully		
ASk	cool aspect; slope >25%		
		ASw	warm aspect; slope >25%

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>morainal blankets, colluvial slopewash</li> </ul>	
<b>Slope position:</b>	lower, toe, depression, mid
<b>Slope (%):</b>	0 – 10 (30)
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich



Site Unit Symbol	Site Unit Name	BGC					Site Series Number	
AS	Trembling aspen – Snowberry – Kentucky bluegrass	IDFxh1						98

	Structural Stage	3	4	5	6	7	
<i>Trees</i>	<i>Populus tremuloides</i>	*	***	***	***	***	trembling aspen
<i>Shrubs</i>	<i>Crataegus douglasii</i>	***	*	*	*	*	black hawthorn
	<i>Acer glabrum</i>	**	**	**	**	**	Douglas maple
	<i>Symphoricarpos albus</i>	*****	*****	*****	*****	*****	common snowberry
	<i>Rosa spp.</i>	**	**	**	**	**	roses
<i>Grasses</i>	<i>Calamagrostis rubescens</i>	**	*	**	**	**	pinegrass
<i>Herbs</i>	<i>Osmorhiza berteroi</i>	*	*	*	**	**	mountain sweet-cicely
	<i>Thalictrum occidentale</i>	**	*	*	*	*	western meadowrue
<i>Mosses</i>	<i>Brachythecium sp.</i>	*	*	*	*	*	ragged moss
<b>PLOTS</b>		KV038					

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

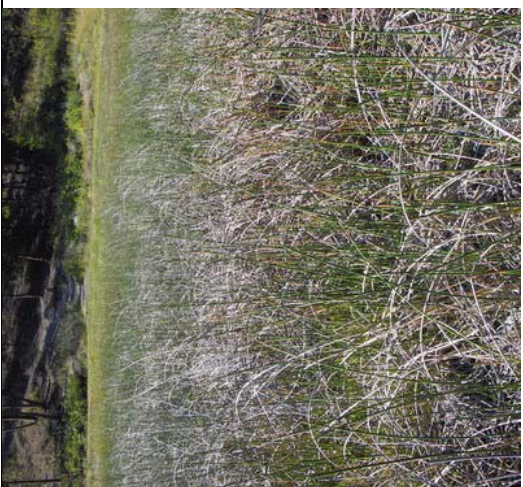
\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Wetter sites may have water birch, drier sites have more Oregon-grape and little or no Douglas maple.

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>BM</b>	<b>Bulrush Marsh</b>	<b>IDFxb1</b>	<b>Wm06</b>
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j). This unit is equivalent to the <i>Great bulrush marsh</i> association (Wm06) in the provincial classification<sup>69</sup>.</p> <p>This marsh wetland ecosystem commonly occurs on small ponds adjacent to shallow open water as a fringe along the shoreline. This unit is uncommon in the study area. It typically occurs as a complex with shallow open water (OW). Water depths are up to 1.5 m but water levels draw down significantly in the summer. These sites are most commonly dominated by hard-stemmed bulrush. Vegetation species diversity is typically low on these sites. Soils are typically mineral, sometimes with a thin organic veneer.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
• lacustrine veneer over morainal blanket	depression
<b>Slope position:</b>	0
<b>Slope (%):</b>	none
<b>Aspect:</b>	subhydic - hydric
<b>Soil Moisture Regime:</b>	rich
<b>Soil Nutrient Regime:</b>	

<b>Structural Stage</b>		<b>2</b>
<i>Rushes</i>	<i>Schoenoplectus acutus</i> or <i>S. tabernaemontani</i>	**** hard-stemmed or soft-stemmed bulrush
<i>Herbs</i>	<i>Lemna minor</i>	* common duckweed

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>69</sup> Mackenzie and Moran 2004

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
BN	Kentucky bluegrass – Stiff needlegrass	IDFxh1	96
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, and m)</p> <p>This ecosystem commonly occurs in moisture-collecting swales and depressions in grasslands and grassland openings. These sites are generally quite small and are dominated by Kentucky bluegrass with Columbian needlegrass and scattered forbs. This ecosystem is likely dominated by needlegrasses at climax but the presence of Kentucky bluegrass may prevent these ecosystems from returning to a climax state.</p>			

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>thick morainal blankets</li> </ul>
<b>Slope position:</b>	toe, depression
<b>Slope (%):</b>	0 – 15
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	medium – rich



<b>Structural Stage</b>		<b>2</b>
<b>Grasses</b>	<i>Poa pratensis</i>	**** Kentucky bluegrass
	<i>Achnatherum nelsonii</i>	** Columbian needlegrass
<b>Herbs</b>	<i>Taraxacum officinale</i>	** dandelion
	<i>Potentilla gracilis</i>	** graceful cinquefoil
	<i>Achillea millefolium</i>	** yarrow
	<i>Dodecatheon pulchellum</i>	** few-flowered shooting star
	<i>Ranunculus glaberrimus</i>	* sagebrush buttercup

**Species** – non-native species  
 \* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Comments: no late seral or climax sites were observed so it is not known what climax vegetation is but may be dominated by Columbia needlegrass and forbs.

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
BR	Baltic Rush Marsh-Meadow	IDF:xh1	Wm07
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j).</p> <p>This unit is equivalent to the <i>Baltic rush marsh</i> association (Wm07) in the provincial classification<sup>70</sup>.</p> <p>This marsh-meadow wetland ecosystem occurs in areas where water draws down below the soil surface most summers (seasonal flooding). This unit is rare in the study area. These sites are dominated by baltic rush. Field sedge occurred in slightly drier situations. Soils were mineral.</p>			

**SITE INFORMATION**

**Common Terrain Types:**

- lacustrine veneer over thick morainal or glaciofluvial materials

<b>Slope position:</b>	toe, depression, (lower)
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich

**Structural Stage 2**

Rushes	<i>Juncus balticus</i>	***	baltic rush
Sedges	<i>Carex praegracilis</i>	**	field sedge
Grasses	<i>Poa pratensis</i> <i>Elymus repens</i>	** *	Kentucky bluegrass quackgrass
Forbs	<i>Potentilla anserina</i>	**	common silverweed

Species – non-native species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CD	Black cottonwood/Douglas-fir –Common Snowberry – Red-osier Dogwood	IDFxh1	00
<p>Typic unit occurs on level or very gently sloping sites with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest ecosystem is rare but was found along creeks and along the edges of some ponds. Forests were dominated by black cottonwood, sometimes with Douglas-fir and paper birch. The understory was typically rich and shrubby, often dominated by Nootka rose, mock orange, snowberry and red-osier dogwood.</p>			
<b>List of mapped units:</b>			
CDc	coarse-textured soils	CDg	occurs in a gully
CDct	coarse-textured soils; occurs on a fluvial terrace adjacent to a creek	CDt	occurs on a fluvial terrace adjacent to a creek

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>fluvial and colluvial slopewash</li> </ul>	
<b>Slope position:</b>	lower and toe
<b>Slope (%):</b>	0-15
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich





<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CD	Black cottonwood/Douglas-fir –Common Snowberry – Red-osier Dogwood	IDFxh1	00

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	**	***	***	***	***	black cottonwood
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>		*	*	*	*	Douglas-fir
<b>Shrubs</b>	<i>Symphoricarpos albus</i>	***	**	***	***	***	common snowberry
	<i>Cornus stolonifera</i>	***	**	**	**	**	red-osier dogwood
	<i>Acer glabrum</i>	***	**	***	***	***	Douglas maple
	<i>Rosa nutkana</i>	**	*	**	**	**	Nootka rose
<b>Grasses</b>	<i>Elymus glaucus</i>	**	*	*	*	*	blue wildrye
<b>Herbs</b>	<i>Equisetum arvense</i>	**	*	*	*	**	common horsetail
	<i>Osmorhiza berteroi</i>	*	*	*	*	*	mountain sweet-cicely
<b>Mosses</b>	<i>Mnium</i> spp.	*	*	*	*	*	leafy mosses

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CF	Cultivated Field	IDFxh1	N/A
These are agricultural fields with tilled soils and planted crops or ground cover.			
<b>List of mapped units:</b>			
Cft	occurs on a terrace	CFx	drier than typical, retains some grassland habitat values

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CG	Reed Canarygrass Marsh	IDF:xh1	00
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j).</p> <p>This marsh-meadow wetland ecosystem occurs in areas where water draws down below the soil surface most summers (seasonal flooding). This unit was rare in the study area and is not included in the provincial wetland classification. These sites have thick, often continuous cover of reed canarygrass with few or no other species. These sites may have been dominated by other marsh species such as large water sedges previously. Soils are typically fine-textured and mineral.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>lacustrine veneer over thick morainal or glaciofluvial materials</li> </ul>	
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygic
<b>Soil Nutrient Regime:</b>	rich

<b>Structural Stage</b>	<b>2</b>
Grasses	<i>Phalaris arundinacea</i>
	****
	Reed canarygrass

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CL	Cliff	IDF:xh1	N/A
These are steep, vertical or overhanging rock faces. Typically there are scattered plants such as saskatoon and cliff ferns occurring in rock fractures or soil pockets.			
<b>List of mapped units:</b>			
CLq	very steep cool aspect	CLz	very steep warm aspect

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CS	Common Spikerush Marsh	IDF:xh1	00
<p>Typic unit occurs on level sites with deep, fine textured soils (assumed modifiers are d, f, and j)</p> <p>This unit is equivalent to the <i>Common spike-rush marsh</i> association in the provincial classification<sup>71</sup>. These marsh wetland ecosystems occur in standing water as a fringe around ponds, shallow open water and other marshes. This unit is rare in the study area. The water table often drops to the soil surface in late summer. These sites have a variable mixture of common spikerush, reed canary grass (probably due to disturbance) and some floating aquatic species. Soils are typically mineral, but may have a thin organic veneer on top.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	• lacustrine
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhydric
<b>Soil Nutrient Regime:</b>	rich – very rich

<b>Structural Stage</b>		<b>2</b>
Rushes	<i>Eleocharis palustris</i>	*** common spike-rush
Grasses	<i>Juncus balticus</i>	** ballic rush
Sedges	<i>Carex</i> spp.	** sedges
Herbs	<i>Polygonom amphibium</i>	** water smartweed
	<i>Lemna minor</i>	** common duckweed
	<i>Ranunculus sceleratus</i>	** celery-leaved buttercup

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>71</sup> Mackenzie and Moran 2004

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CT	Cattail Marsh	IDF:xh1	Wm05
<p>Typic unit occurs on level sites with deep, medium-textured soils (assumed modifiers are d, j, m).</p> <p>This unit is equivalent to the <i>Cattail marsh</i> association (Wm05) in the provincial classification<sup>72</sup>. This marsh wetland ecosystem occurs as a fringe on pond edges or in depressions, often adjacent to shallow open water (OW). This unit is rare in the study area. Water depths are typically up to 1 m in spring but draw down to the soil surface by late summer; soils remain saturated for most of the season. Some wetlands convert to cattail marshes when they are subject to nutrient loading. These sites are dominated by cattails with few other species. Soils are typically mineral, but may have a thin organic veneer on top.</p>			

SITE INFORMATION	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>thin organic veneer over lacustrine materials</li> </ul>
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhydic
<b>Soil Nutrient Regime:</b>	rich



**Structural Stage 2a**

Herbs	<i>Typha latifolia</i>	****	common cattail
Mosses	<i>Bryum</i> sp.	**	thread moss

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
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<b>DP</b>	<b>Douglas-fir/Ponderosa pine – Pinegrass</b>	<b>IDFxxh1</b>	<b>01</b>
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Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers). This forest ecosystem is commonly associated with mesic gently sloping sites. Forests are moderately closed with mixed Douglas-fir and ponderosa pine overstories, although historically they would have been quite open. The understory has abundant pinegrass with scattered snowberry, birch-leaved spirea, tall Oregon-grape, grasses, herbs and mosses. This unit is also common on cool aspects (DPk) where there is usually more of a moss layer. Mature (structural stage 6) and old (structural stage 7) forests are uncommon because most of the large trees historically present on these sites have been logged and because of the Okanagan Mountain Park fire. Because of fire exclusion, most sites have become ingrown with higher densities of smaller stems. Grazing and ingrowth have reduced the presence of bunchgrasses which were likely historically common.

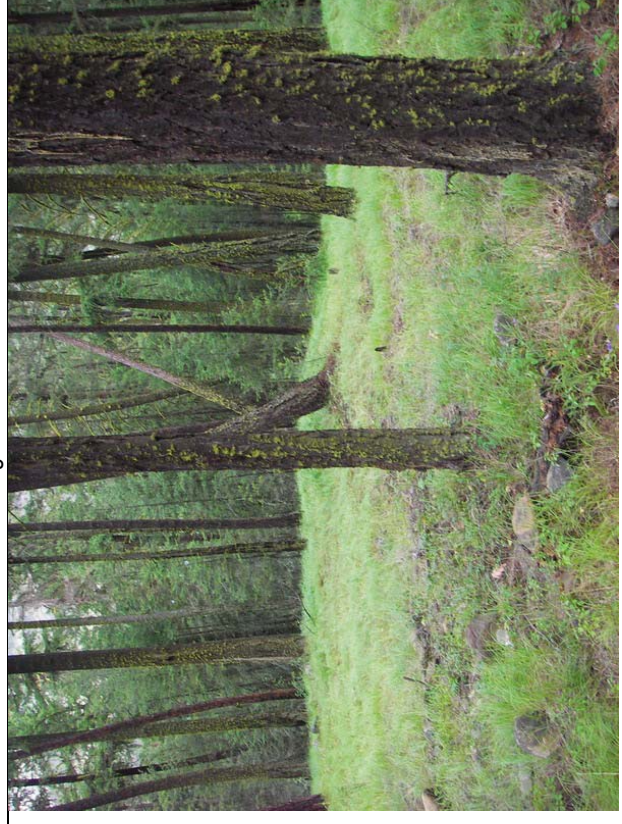
<b>List of mapped units:</b>			
DPc	coarse-textured soils (glaciofluvial)	DPk	cool aspect, slope <25%
DPck	coarse-textured soils (glaciofluvial), cool aspect, slope >25%	DPks	cool aspect (usually NW to E), shallow soils (generally 50-100cm)
DPct	coarse-textured soils on a glaciofluvial or fluvial terrace	DPS	shallow soils (generally 50-100cm)
DPfk	fine-textured soils, cool aspect, slope >25%	DPt	occurs on a fluvial or glaciofluvial terrace

**SITE INFORMATION**

**Common Terrain Types:**

- deep morainal materials on gentle slopes
- moderate to steep cool aspect morainal and colluvial slopes (deep or variable thickness)

<b>Slope position:</b>	level, middle
<b>Slope (%):</b>	0-30; up to 70% on cool aspects
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	mesic – submesic
<b>Soil Nutrient Regime:</b>	medium (poor)





<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
DP	Douglas-fir/Ponderosa pine – Pinegrass	IDFxh1	01

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	****	****	***	***	Douglas-fir
	<i>Pinus ponderosa</i>	**	***	***	**	**	ponderosa pine
<b>Shrubs</b>	<i>Ceanothus sanguineus</i>	***	*				redstem ceanothus
	<i>Mahonia aquifolium</i>	**	*	**	**	**	tall Oregon-grape
	<i>Spirea betulifolia</i>	***	*	**	**	**	birch-leaved spirea
	<i>Amelanchier alnifolia</i>	**	*	**	**	**	saskatoon
<b>Grasses</b>	<i>Calamagrostis rubescens</i>	***	*	**	***	***	pinegrass
	<i>Festuca idahoensis</i>	**		*	*	*	Idaho fescue
<b>Herbs</b>	<i>Arnica cordifolia</i>	**	*	*	*	**	heart-leaved arnica
	<i>Achillea millefolium</i>	**	*	*	*	*	yarrow
<b>Mosses and Lichens</b>	<i>Rhyidiadelphus triquetrus</i>			*	**	**	electrified cat's tail moss
	<i>Pleurozium schreberi</i>	*	*	*	**	**	red-stemmed feathermoss
	<i>Peltigera canina</i>	*		*	*	*	dog pelt
<b>PLOTS</b>		KG006	KG005				
		KG007					

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 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
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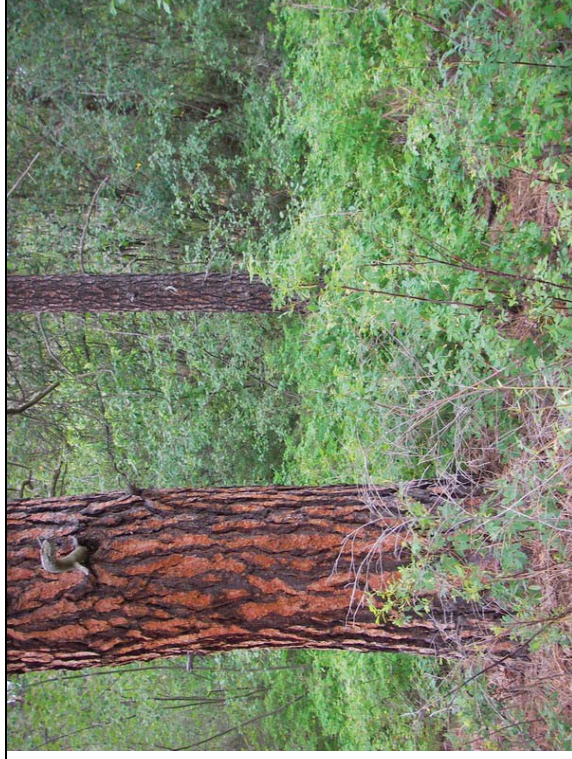
DS	Douglas-fir/Ponderosa pine – Snowberry – Spirea	IDFxh1	07
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Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers). This forest ecosystem is commonly associated with gently sloping sites that are receiving some moisture. This is an uncommon forested ecosystem in the study area. These forests typically have moderately closed Douglas-fir overstories with very shrubby understories dominated by snowberry with some Oregon-grape, Douglas maple, and saskatoon. Because these sites are moist, they may have had a longer fire-return interval than adjacent mesic and drier forests. These sites also tend to recover more quickly after disturbance (such as logging) because they are moister and more productive.

List of mapped units:	
DSc	coarse-textured soils
DScg	coarse-textured soils, gully
DSct	coarse-textured soils, fluvial terrace
DSg	gully
DSgw	warm aspect gully, slope >25%
DSk	cool aspect, slope >25%
DSn	occurs on a fluvial fan
DSs	shallow soils (generally 50-100cm)

**SITE INFORMATION**

Common Terrain Types:	
<ul style="list-style-type: none"> <li>gentle to moderate morainal slopes, fluvial benches, slope wash in gullies</li> </ul>	
<b>Slope position:</b>	lower and toe
<b>Slope (%):</b>	0-15% (up to 50% on cool aspects)
<b>Aspect:</b>	none, cool
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich



Site Unit Symbol	Site Unit Name	BGC							Site Series Number
DS	Douglas-fir/Ponderosa pine – Snowberry – Spirea	IDF:xh1							07

	Structural Stage	3	4	5	6	7	
<b>Trees</b>							
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	*****	****	****	***	Douglas-fir
	<i>Populus tremuloides</i>	**	*	**	*		trembling aspen
<b>Shrubs</b>							
	<i>Symphoricarpos albus</i>	*****	**	****	****	****	common snowberry
	<i>Acer glabrum</i>	***	**	**	***	***	Douglas maple
	<i>Mahonia aquifolium</i>	**		*	**	**	tall Oregon-grape
	<i>Spirea betulifolia</i>	***	*	**	**	**	birch-leaved spirea
<b>Grasses</b>							
	<i>Calamagrostis rubescens</i>	**		*	*	**	pinegrass
	<i>Elymus glaucus</i>	**		*	*	**	blue wildrye
<b>Herbs</b>							
	<i>Osmorhiza berteroi</i>	***	*	**	**	**	mountain sweet-cicely
<b>Mosses</b>							
	<i>Brachythecium</i> sp.			*	**	**	ragged moss

\* incidental cover (less than 1% cover); used as indicator species

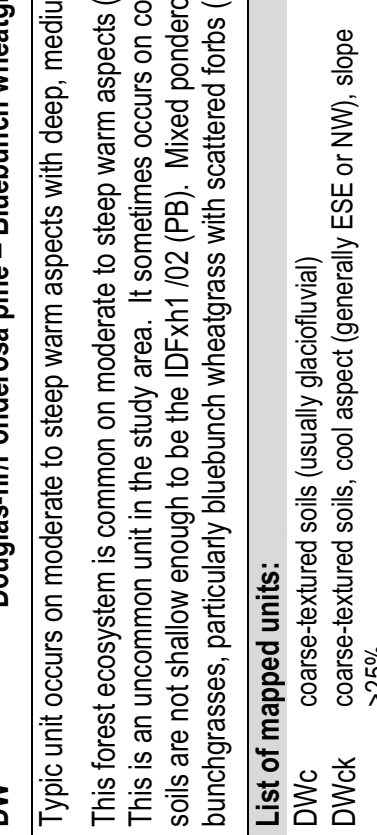
\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Amount of trembling aspen varies from none to a significant part of the overstory (mixed); Douglas maple is often more abundant in mixed and deciduous overstories.

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
DW	Douglas-fir/Ponderosa pine – Bluebunch wheatgrass - Pinegrass	IDFxb1	03
<p>Typic unit occurs on moderate to steep warm aspects with deep, medium textured soils (d, m and w are assumed modifiers).</p> <p>This forest ecosystem is common on moderate to steep warm aspects (excluding southeast and west aspects which are usually /04 sites). This is an uncommon unit in the study area. It sometimes occurs on cooler aspects where soils are shallower and on ridges and crests where soils are not shallow enough to be the IDFxb1 /02 (PB). Mixed ponderosa pine – Douglas-fir forests are open and dominated by bunchgrasses, particularly bluebunch wheatgrass with scattered forbs (mostly balsamroot).</p>			
<b>List of mapped units:</b>			
DWc	coarse-textured soils (usually glaciofluvial)	DWkv	cool aspect, very shallow soils (<20cm); exposed bedrock
DWck	coarse-textured soils, cool aspect (generally ESE or NW), slope >25%	DWr	ridge or crest
DWcr	coarse-textured soils, ridge or crest	DWs	shallow soils (20-100cm)
DWf	fine-textured soils	DWv	very shallow soils (<20cm)
DWjv	gentle slope, very shallow soils <20cm deep, exposed bedrock		
<b>SITE INFORMATION</b>			
<b>Common Terrain Types:</b>			
<ul style="list-style-type: none"> <li>• steep warm aspect thin to thick colluvial and morainal slopes</li> <li>• glaciofluvial and occasionally on glaciolacustrine slopes</li> </ul>			
<b>Slope position:</b>	middle and upper		
<b>Slope (%):</b>	(30) 35 – 60%		
<b>Aspect:</b>	south, southwest, west (also cool aspects on very shallow soils)		
<b>Soil Moisture Regime:</b>	subxeric (submesic)		
<b>Soil Nutrient Regime:</b>	poor – medium		
			

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
DW	Douglas-fir/Ponderosa pine – Bluebunch wheatgrass - Pinegrass	IDFxh1	03

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	***	***	***	***	Douglas-fir
	<i>Pinus ponderosa</i>	**	****	***	**	**	ponderosa pine
<i>Shrubs</i>	<i>Amelanchier alnifolia</i>	**	*	**	**	**	saskatoon
	<i>Symphoricarpos albus</i>	**	*	**	**	**	common snowberry
<i>Grasses</i>	<i>Pseudoroegneria spicata</i>	****	**	***	***	****	bluebunch wheatgrass
	<i>Festuca idahoensis</i>	**	*	**	**	**	Idaho fescue
	<i>Koeleria macrantha</i>	**	*	**	**	**	junegrass
<i>Herbs</i>	<i>Balsamorhiza sagittata</i>	***	*	**	***	***	arrowleaf balsamroot
	<i>Achillea millefolium</i>	*	*	*	*	*	yarrow
	<i>Antennaria microphylla</i> or <i>Antennaria parviflora</i> or <i>Antennaria umbrinella</i>	**	*	*	*	*	white pussytoes Nuttall's pussytoes umber pussytoes
<i>Mosses</i>	<i>Cladonia</i> spp.	**	*	**	**	**	clad lichens
<i>Lichens</i>	<i>Tortula ruralis</i>	**	*	**	**	**	sidewalk moss

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
ES	Exposed Soil	IDFxh1	N/A
These are areas of exposed soils and typically include recent disturbances such as soil erosion.			
<b>List of mapped units:</b>			
ESk	cool aspect	ESw	warm aspect



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FC	Rough fescue - Cladina	IDF>xh1	00
<p>Typic unit occurs on cool aspects with very shallow soils (assumed modifiers are k, v)</p> <p>This grassland ecosystem occurs on cool aspects of smooth, gentle to moderate cool aspects of gneiss formations. This unit is common in the South Slopes area but was not seen elsewhere. It was apparently restricted to the South Slopes area because of the distinctive nature of the gneiss rock outcrops in that area. The abundant light-yellow coloured reindeer lichen with rough fescue and some low-relief, unfractured bedrock outcrops make these sites distinctive. Many sites are relatively undisturbed but have been burned in the Okanagan Mountain Park fire.</p>			
<b>List of mapped units:</b>			
FCj gentle slopes (cool aspects, but less than 25% slope)			

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>very thin and thin colluvial and morainal veneers</li> </ul>	
<b>Slope position:</b>	middle to upper
<b>Slope (%):</b>	20-50%
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	subxeric
<b>Soil Nutrient Regime:</b>	poor



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FC	Rough fescue - Cladina	IDFxh1	00

	Structural Stage	2	FW
Grasses	<i>Festuca campestris</i>	***	rough fescue
	<i>Agrostis scabra</i>	**	hair bentgrass
	<i>Koeleria macrantha</i>	**	junegrass
	<i>Pseudoroegneria spicata</i>	**	bluebunch wheatgrass
Herbs	<i>Heuchera cylindrica</i>	*	round-leaved alumroot
	<i>Selaginella densa</i>	*	compact selaginella
	<i>Lomatium</i> spp.	*	desert-parsley
	<i>Fritillaria affinis</i>	*	chocolate lily
	<i>Galium aparine</i>	*	cleavers
	<i>Sedum stenopetalum</i>	*	worm-leaved stonecrop
	<i>Epilobium brachycarpum</i>	*	tall annual willowherb
	<i>Cladina mitis</i>	***	lesser green reindeer
Mosses	<i>Dicranum</i> spp.	**	

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\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FO	Douglas-fir / Ponderosa pine –Saskatoon – Mock orange	IDF:xh1	00
<p>Typic unit occurs on steep slopes with deep, coarse-textured (rocky) soils (c, and d are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with steep colluvial sites with rocky soils. This is an uncommon unit in the study area. It occurs on both cool (FOk) and warm (FOw) aspects. The soil matrix is a mixture of both angular rocks and sandy, silty material. The overstory is generally open and dominated by Douglas-fir with scattered ponderosa pine. Understories are often quite shrubby with snowberry, saskatoon and mock orange. There is usually scattered bluebunch wheatgrass. Small rocks dominate a large portion of the soil surface.</p>			
<b>List of mapped units:</b>			
FOk	cool aspect (>25%)		
		FOw	warm aspect (slope >25%)

SITE INFORMATION	
<b>Common Terrain Types:</b>	
•	moderate and steep rocky colluvial slopes
<b>Slope position:</b>	lower to upper
<b>Slope (%):</b>	60-75%
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	submesic – subxeric
<b>Soil Nutrient Regime:</b>	medium, poor



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FO	Douglas-fir / Ponderosa pine –Saskatoon – Mock orange	IDFxh1	00

	Structural Stage	3	4	5	6	7	
Trees	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	***	***	***	***	Douglas-fir
	<i>Pinus ponderosa</i>	**	**	**	**	**	ponderosa pine
Shrubs	<i>Symphoricarpos albus</i>	****	***	***	****	****	common snowberry
	<i>Spirea betulifolia</i>	***	*	*	**	**	birch-leaved spirea
	<i>Philadelphus lewisii</i>	**		*	**	**	mock-orange
	<i>Amelanchier alnifolia</i>	****	**	**	***	***	Saskatoon
Grasses	<i>Pseudoroegneria spicata</i>	***	**	**	***	***	bluebunch wheatgrass
	<i>Calamagrostis rubescens</i>	***	**	**	***	***	pinegrass
Herbs	<i>Lomatium dissectum</i>	*	*	*	*	*	fern-leaved desert parsley
Mosses	<i>Tortula ruralis</i>	*	*	*	*	*	sidewalk moss

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FW	Idaho fescue – Bluebunch wheatgrass	IDFxb1	91
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, m)</p> <p>This grassland ecosystem occurs on gentle and levels sites, and cool aspects. A mixture of Idaho fescue and bluebunch wheatgrass with balsamroot and other herbs dominates late seral sites, but late seral sites are uncommon in the study area and no climax sites were observed. Soils are typically dark brown or black chernozems. Most of these sites are highly disturbed and some have a significant component of invasive alien plants. These are described below.</p> <p><b>FW:kc \$Knapweed – Cheatgrass seral association</b> This is an early seral association dominated by knapweed, sulphur cinquefoil, and cheatgrass with few or no native bunchgrasses remaining on these sites.</p> <p><b>FW:wk \$Bluebunch wheatgrass – Knapweed seral association</b> This is a mid- to late-seral seral association. On these sites there is still a reasonable component of bluebunch wheatgrass with knapweed, sulphur cinquefoil, or cheatgrass.</p>			
<b>List of mapped units:</b>			
FWct	coarse-textures soils, terrace	FWks	cool aspect, shallow soils (50-100cm)
FWfk	fine-texture glaciolacustrine soils; cool aspect, slope >25%	FWs	shallow soils (50-100cm)
FWk	cool aspect (>25% slope)	FWt	terrace

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>morainal and glaciofluvial blankets, often with an eolian veneer (no coarse fragments, fine-sandy loam)</li> </ul>	
<b>Slope position:</b>	lower to upper
<b>Slope (%):</b>	0-35% (up to 60% on cool aspects)
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	mesic
<b>Soil Nutrient Regime:</b>	rich



	Structural Stage	2	2	FW:kc	FW:wk
Serai Association	FW	****	****	*	*
Grasses	<i>Festuca idahoensis</i>	**	Idaho fescue		
	<i>Festuca campestris</i>	**	rough fescue		
	<i>Pseudoroegneria spicata</i>	***	bluebunch wheatgrass		
	<i>Koeleria macrantha</i>	**	junegrass		
	<i>Bromus tectorum</i>	****	cheatgrass		
Herbs	<i>Balsamorhiza sagittata</i>	***	arrowleaf balsamroot		
	<i>Lupinus sericeus</i>	**	silky lupine		
	<i>Eriogonum heracleoides</i>	**	parsnip-flowered buckwheat		
	<i>Lithospermum ruderale</i>	*	lemonweed		
	<i>Calochortus macrocarpus</i>	*	sagebrush mariposa lily		
	<i>Centaurea diffusa</i>	***	diffuse knapweed		
	<i>Potentilla recta</i>	***	sulphur cinquefoil		
Mosses and Lichens	<i>Cladonia</i> spp.	**	clad lichens		
	<i>Tortula ruralis</i>	**	sidewalk moss		
	<i>Peltigera rufescens</i> or <i>Peltigera ponoiensis</i>	**	felt peit		
PLOTS				KV034	
				KV043	

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>GP</b>	<b>Gravel Pit</b>	<b>IDFxh1</b>	<b>N/A</b>
These are areas of used for extraction of gravel and sand.			

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>OW</b>	<b>Shallow Open Water</b>	<b>IDFxh1</b>	<b>N/A</b>
These are areas of permanent open water that are less than 2m deep. There is less than 10% emergent vegetation but floating aquatics such as bladderwort are often present. Shallow open water commonly occurs in association with marsh ecosystems.			



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
<b>PB</b>	<b>Douglas-fir/Ponderosa pine – Bluebunch wheatgrass – Balsamroot</b>	<b>IDFxbh1</b>	<b>02</b>
<p>Typic unit occurs on warm aspects with medium-textured shallow soils (m, s and w are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with shallow or very shallow soils and bedrock outcrops. This unit is uncommon in the study area. Forests are very open with scattered large trees, often growing in bedrock fractures. The understory is variable depending on soil depth with more vegetation occurring on deeper soil pockets. Scattered shrubs and bunchgrasses (usually bluebunch wheatgrass) dominate the understory. A lichen and moss crust may be present on soil pockets on undisturbed sites.</p>			
<b>List of mapped units:</b>			
PBc	coarse-textured soils (sandy glaciofluvial), surface soils	PBrv	ridge, very shallow soils (<20cm), exposed bedrock present
PBcd	coarse-textured soils (sandy glaciofluvial), deep soils, surface soils	PBv	very shallow soils (<20cm), exposed bedrock present
PBkv	cool aspect (usually NW or ESE), slope >25%, very shallow soils (<20cm), exposed bedrock present		

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>Thin and very thin colluvial, morainal, and weathered bedrock materials over bedrock</li> <li>Occasionally occurs on steep sandy glaciofluvial slopes</li> </ul>	
<b>Slope position:</b>	upper and crest
<b>Slope (%):</b>	0-70%
<b>Aspect:</b>	none, south, southwest
<b>Soil Moisture Regime:</b>	very xeric – subxeric
<b>Soil Nutrient Regime:</b>	poor (very poor, medium)



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PB	Douglas-fir/Ponderosa pine – Bluebunch wheatgrass – Balsamroot	IDFxh1	02

	Structural Stage	3	4	5	6	7	
Trees	<i>Pinus ponderosa</i>	**	****	***	***	***	ponderosa pine
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	**	Douglas-fir
Shrubs	<i>Amelanchier alnifolia</i>	**	*	**	**	**	saskatoon
	<i>Philadelphus lewisii</i>	***	*	**	**	**	mock orange
	<i>Symphoricarpos albus</i>	**	*	**	**	**	snowberry
	<i>Mahonia aquifolium</i>	*		*	*	*	tall Oregon-grape
Grasses	<i>Pseudoroegneria spicata</i>	****	**	***	***	****	bluebunch wheatgrass
	<i>Bromus tectorum</i>	*	*	*	*	*	cheatgrass
Herbs	<i>Balsamorhiza sagittata</i>	***	*	**	**	**	arrowleaf balsamroot
	<i>Selaginella densa</i>	*	*	*	*	*	compact selaginella
	<i>Penstemon fruticosus</i>	*	*	*	*	*	shrubby penstemon
Mosses and Lichens	<i>Cladonia</i> spp.	**	**	**	**	**	clad lichens
	<i>Tortula ruralis</i>	**	**	**	**	**	sidewalk moss
	<i>Polytrichum piliferum</i>	**	**	**	**	**	awned haircap moss

**Species – non-native species**

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

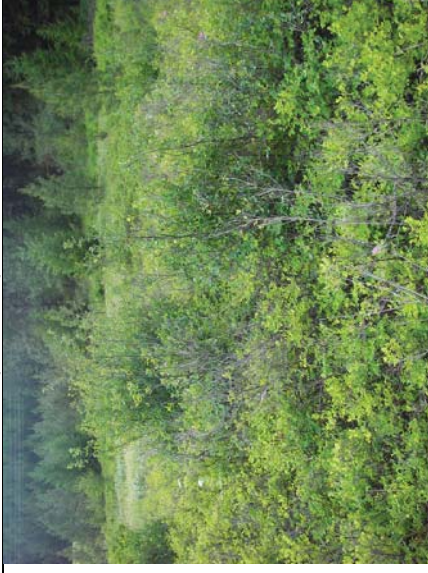
\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PD	Pond	IDFxh1	N/A
A small body of water greater than 2 m deep, but not large enough to be classified as a lake (e.g., less than 50 ha).			



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RF	Prairie Rose – Idaho fescue	IDFxb1	97
Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, and m)			
This shrubland ecosystem commonly occurs in moisture collecting depressions, seepage slopes and swales in grassland areas. This unit sometimes occurs as patches on grassland slopes. These sites are dominated by shrubs, primarily snowberry and roses, except where excessive grazing has reduced shrub cover. Forbs and grasses are scattered in openings between shrubs. Soils are very rich black chernozems.			
<b>List of mapped units:</b>			
RFg	gully	RFw	warm aspect, slope >25%

SITE INFORMATION	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>morainal blankets</li> </ul>
<b>Slope position:</b>	mid, toe, depression
<b>Slope (%):</b>	0-25
<b>Aspect:</b>	none, variable
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich



Structural stage		3a or 3b
Shrubs	<i>Symphoricarpos albus</i>	**** common snowberry
	<i>Rosa</i> spp.	*** roses
Grasses	<i>Poa pratensis</i>	** Kentucky bluegrass
<b>PLOTS</b>		CVG309 CW376

**Species** – non-native species

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\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RI	River	IDFxh1	N/A
A watercourse with water flowing between continuous, definable banks. Used for the river bed of Mission Creek.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RO	Rock Outcrop	IDFxh1	N/A
These are areas of exposed bedrock with less than 10% vegetation cover. On sites with fractured bedrock, some plants may be growing out of rock cracks.			
<b>List of mapped units:</b>			
ROk	cool aspect (slope >25%)	ROw	warm aspect
ROq	very steep cool aspect (slope >70%)	ROz	very steep warm aspect (slope >70%)
ROr	ridge		

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RS	Western redcedar / Douglas-fir – False Solomon's Seal	IDF:xh1	00
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with fluvial sites (terraces, slopes) and gullies which are influenced by cold air drainage. This is an uncommon unit in the study area. The overstory of these closed forests includes a mixture of western red cedar, Douglas-fir and paper birch. A diverse mixture of shrubs and forbs generally dominates the understorey although the understorey can be very sparse on sites with very closed canopies (pole sapling and young forests).</p>			
<b>List of mapped units:</b>			
RSa	active floodplain		
RSac	active floodplain; coarse-textured soils	RSg	occurs in a gully

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>• morainal gullies, fluvial plains and terraces</li> </ul>	
<b>Slope position:</b>	level, lower and toe
<b>Slope (%):</b>	variable
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric – hygric
<b>Soil Nutrient Regime:</b>	medium, rich



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
RS	Western redcedar / Douglas-fir – False Solomon's Seal	IDFhx1	00

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>							
	<i>Thuja plicata</i>	***	****	****	****	****	western redcedar
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	**	***	***	***	Douglas-fir
	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	***	*	**	**	*	black cottonwood
	<i>Betula papyrifera</i>	**	*	*	**	**	paper birch
<b>Shrubs</b>							
	<i>Acer glabrum</i> var. <i>douglasii</i>	***	**	**	**	**	Douglas maple
	<i>Paxistima myrsinites</i>	***	**	**	**	**	falsebox
	<i>Symphoricarpos albus</i>	**	*	*	**	**	common snowberry
	<i>Rosa nutkana</i>	**	*	*	*	*	Nootka rose
	<i>Ribes lacustre</i>	**	*	*	*	*	black gooseberry
	<i>Cornus stolonifera</i>	**	*	*	*	*	red-osier dogwood
<b>Grasses</b>	<i>Elymus glaucus</i>	***	*	*	*	*	blue wildrye
<b>Sedges</b>	<i>Carex</i> spp.	**	*				sedges
<b>Herbs</b>							
	<i>Maianthemum stellatum</i>	***	*	*	*	*	star-flowered Solomon's-seal
	<i>Equisetum arvense</i>	***	*	*	*	*	common horsetail
	<i>Aralia nudicaulis</i>	**	**	**	**	**	sarsaparilla
	<i>Osmorhiza berteroi</i>	**	*	*	*	*	mountain sweet-cicely
	<i>Viola canadensis</i>	*	*	*	*	*	Canada violet
<b>Mosses</b>							
	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
	<i>Mnium</i> sp.	*	**	**	**	**	leafy moss

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\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>RW</b>	<b>Rural</b>	<b>IDFxb1</b>	<b>N/A</b>
Rural areas of human settlement with scattered houses intermingled with native vegetation or cultivated areas.			

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>RZ</b>	<b>Road Surface</b>	<b>IDFxb1</b>	<b>N/A</b>
A gravel or paved road used for vehicular travel.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SA	Antelope Brush - Selaginella <sup>73</sup>	IDF>xh1	00
<p>Typic unit occurs on gentle slopes with shallow soils (assumed modifiers are j, m and s). However, in the study area, this unit more commonly occurs on steep slopes on rock outcrops with small ledges and pockets of soil. The bedrock is generally fractured. This is an uncommon unit in the study area. In contrast with areas in the South Okanagan, <b>there is no antelope brush on these sites</b>. Scattered ponderosa pine trees and saskatoon bushes occur in rock fractures. Soil pockets on ledges are dominated by bluebunch wheatgrass with balsamroot, selaginella, and a well-developed microbial crust on soil pockets.</p>			
<b>List of mapped units:</b>			
SAVw	very shallow soils, warm aspect	SAVz	very shallow soils, very steep warm aspect (>100% slope)

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>rock, very thin morainal and colluvial veneers</li> </ul>
<b>Slope position:</b>	crest, upper
<b>Slope (%):</b>	0 – 100
<b>Aspect:</b>	variable
<b>Soil Moisture Regime:</b>	very xeric – xeric
<b>Soil Nutrient Regime:</b>	very poor – poor



<sup>73</sup> Although the plant association name includes antelope brush, antelope brush does not occur in the study area.



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
SA	Antelope Brush – Selaginella	IDFxh1	00

	Structural Stage	2	3	4	5	6	7
<i>Trees</i>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	*	**	**	**	**
	<i>Pinus ponderosa</i>	*	*	**	**	**	**
<i>Shrubs</i>	<i>Amelanchier alnifolia</i>	**	**	**	**	**	**
	<i>Spirea betulifolia</i>	*	*	*	*	*	*
<i>Grasses</i>	<i>Pseudoroegneria spicata</i>	***	***	***	***	***	***
<i>Herbs</i>	<i>Selaginella densa</i>	**	**	**	**	**	**
	<i>Penstemon fruticosus</i>	*	*	*	*	*	*
	<i>Woodsia scopulina</i>	*	*	*	*	*	*
<i>Lichens</i>	<i>Cladonia</i> spp.	**	**	**	**	**	**
<i>Mosses</i>	<i>Polytrichum piliferum</i>	**	**	**	**	**	**
	Douglas-fir						
	ponderosa pine						
	saskatoon						
	birch-leaved spirea						
	bluebunch wheatgrass						
	compact selaginella						
	shrubby penstemon						
	mountain cliff fern						
	clad lichens						
	awned haircap moss						

\* incidental cover (less than 1% cover), used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

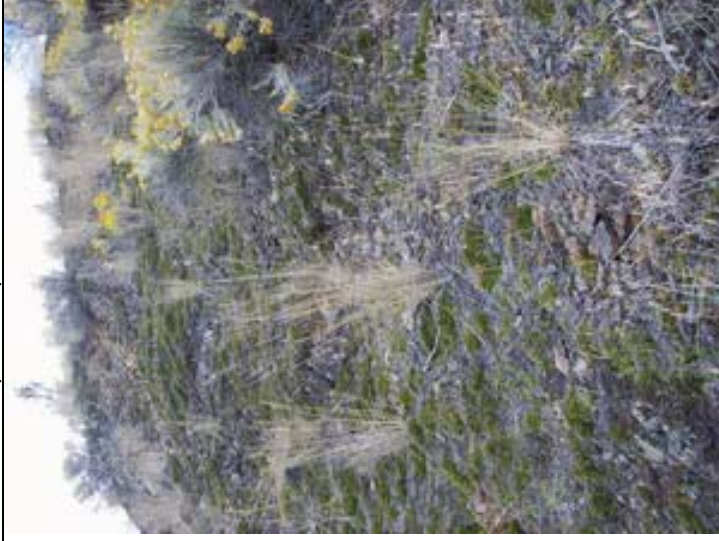
\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Comments: most sites do no progress through the structural stages. Some sites are more suitable for tree growth than others.

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SB	Selaginella – Bluebunch wheatgrass rock outcrop	IDF>xh1	00
<p>Typic unit occurs on gentle slopes with very shallow soils (assumed modifiers are j and v)</p> <p>This grassland ecosystem commonly occurs on bedrock outcrops. The bedrock is generally low relief and unfractured. This is an uncommon unit in the study area. Selaginella and rusty steppe moss with some grasses and forbs dominate these sites. This unit is commonly scattered as small sites in a grassland matrix.</p> <p><b>SB:cg Cheatgrass seral association</b>  This seral association is dominated by cheatgrass or sulphur cinquefoil with selaginella and rusty steppe moss.</p>			
<b>List of mapped units:</b>			
SBr	ridge	SBw	warm aspect, slope >25%

SITE INFORMATION	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>rock, very thin morainal and colluvial veneers and weathered bedrock</li> </ul>	
<b>Slope position:</b>	crest, upper
<b>Slope (%):</b>	0 – 50
<b>Aspect:</b>	variable
<b>Soil Moisture Regime:</b>	xeric – very xeric
<b>Soil Nutrient Regime:</b>	poor



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SB	Selaginella – Bluebunch wheatgrass rock outcrop	IDFxh1	00

	Structural Stage	2	2	SB:\$cg	
	Seral stage	SB	SB		
Shrubs	<i>Amelanchier alnifolia</i>	*	*		saskatoon
Grasses	<i>Pseudoroegneria spicata</i>	**	*		bluebunch wheatgrass
	<i>Poa secunda</i>	**	**		Sandberg's bluegrass
	<i>Bromus japonicus</i> or <i>tectorum</i>	*	***		Japanese brome or cheatgrass
Herbs	<i>Selaginella densa</i>	***	***		compact selaginella
	<i>Eriogonum heracleoides</i>	*	*		parsnip-flowered buckwheat
	<i>Potentilla recta</i>		**		sulphur cinquefoil
	<i>Centaurea diffusa</i>		**		diffuse knapweed
Lichens and Mosses	<i>Cladonia</i> spp.	**	*		clad lichens
	<i>Tortula ruralis</i>	***	**		sidewalk moss
	<i>Polytrichum piliferum</i>	***	*		awned haircap moss

\* incidental cover (less than 1% cover); used as indicator species

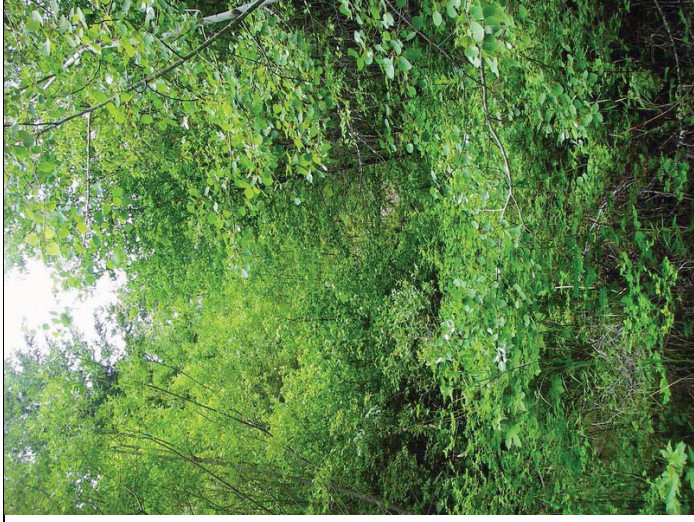
\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SD	Hybrid white spruce/Douglas-fir – Douglas maple – Dogwood	IDFxb1	08
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j, and m are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with gullies with intermittent or permanent streams or subsurface water flow. This is an uncommon unit in the study area. These are diverse, rich sites with mixed coniferous (Douglas-fir) and deciduous (paper birch and aspen) overstories. The understories are dominated by diverse mixture of shrubs. Forbs and mosses are scattered and uncommon on these sites. These moist sites likely had a longer fire return interval than adjacent upland areas.</p>			
<b>List of mapped units:</b>			
SDc	coarse-textured soils		
SDcg	coarse-textured soils ; gully		
		SDg	gully



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>gentle morainal, fluvial, and slopewash sites</li> </ul>	
<b>Slope position:</b>	lower, toe
<b>Slope (%):</b>	0-15%
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich (medium)

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
SD	Hybrid white spruce/Douglas-fir – Douglas maple – Dogwood	IDFxh1	08

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Betula papyrifera</i>	****	***	***	***	**	paper birch
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	****	***	***	***	Douglas-fir
	<i>Populus tremuloides</i>	**	**	**	**	*	trembling aspen
<i>Shrubs</i>	<i>Symphoricarpos albus</i>	****	***	***	****	***	common snowberry
	<i>Acer glabrum</i> var. <i>douglasii</i>	****	**	***	***	***	Douglas maple
	<i>Rosa nutkana</i>	**	**	**	**	**	Nootka rose
	<i>Cornus stolonifera</i>	**	*	**	**	**	red-osier dogwood
<i>Grasses</i>	<i>Elymus glaucus</i>	**	*	*	*	*	blue wildrye
<i>Herbs</i>	<i>Osmorhiza berteroi</i>	**	*	*	**	**	mountain sweet-cicely
	<i>Galium triflorum</i>	*	*	*	*	*	sweet-scented bedstraw
	<i>Maianthemum stellata</i>	*	*	*	*	*	star-flowered false Solomon's-seal
<i>Mosses</i>	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged-moss
	<i>Mnium</i> spp.	*	*	*	*	*	leafy moss

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SO	Saskatoon – Mock orange Talus	IDF:xh1	00
<p>Typic unit occurs on both warm and cool steep slopes with deep, coarse textured soils (blocky) (c and d are assumed modifiers).</p> <p>This ecosystem is commonly associated with steep, blocky talus slopes with minimal soil in pockets between blocks. This is a rare unit in the study area. Scattered trees (Douglas-fir, ponderosa pine or aspen) and scattered shrubs (mock orange, snowberry, saskatoon) grow in soil pockets between blocks. Often cliff ferns (a very characteristic species) and scattered grasses are found growing in soil pockets. Vegetation cover is generally higher on sites with smaller blocks and more soil. Cool aspects more commonly have trees on them. Sites that are dominated by shrubs will not necessarily develop into a forested structural stage.</p>			
<b>List of mapped units:</b>			
SOw warm aspect, slope 60-70%			

SITE INFORMATION	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>rubbly colluvial slopes</li> </ul>	
<b>Slope position:</b>	lower to upper
<b>Slope (%):</b>	60 – 70%
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	subxeric – xeric
<b>Soil Nutrient Regime:</b>	poor





<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
SO	Saskatoon – Mock orange Talus	IDFxh1	00

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>							
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	***	Douglas-fir
	<i>Pinus ponderosa</i>	*	**	**	**	**	ponderosa pine
<b>Shrubs</b>							
	<i>Amelanchier alnifolia</i>	***	**	**	***	***	saskatoon
	<i>Clematis ligusticifolia</i>	**	*	*	*	*	white clematis
	<i>Symphoricarpos albus</i>	**	**	**	**	**	snowberry
	<i>Prunus virginiana</i>	**	**	**	**	**	choke cherry
<b>Herbs</b>							
	<i>Woodsia scopulorum</i>	*	*	*	*	*	cliff fern
	<i>Lomatium</i> spp.	*	*	*	*	*	desert-parsely
<b>Plots</b>							
							KG009

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SP	Douglas-fir/Ponderosa pine – Snowbrush – Pinegrass	IDFxb1	04
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest ecosystem is associated with moderate to steep slopes on neutral aspects (SPk; northwest and east-southeast). This is a rare unit in the study area. It is also found on gently sloping sites with shallow soils (SPs). Occasionally it is found on warm aspects, but generally these are moderately sloping (25-35%) or on 'barely' warm aspects (west-northwest, southeast). The overstory is moderately closed, although historically frequent surface fires would have kept these stands very open and bunchgrasses such as rough fescue were more abundant. Understories are usually a mixture of bunchgrasses (bluebunch wheatgrass and rough fescue) and pinegrass with scattered shrubs, forbs and mosses.</p>			
<b>List of mapped units:</b>			
SPc	coarse-textured soils (usually glaciofluvial)	SPks	cool aspect (usually ESE or NW), slope >25%, shallow soils (20-100cm deep)
SPcr	ridge or crest, coarse-textured soils	SPr	crest or ridge
SPct	coarse textured soils, glaciofluvial terrace	SPrs	crest or ridge, shallow soils (20-100cm deep)
SPcw	coarse-textured soils, warm aspect, slope >25%	SPs	shallow soils (20-100cm deep)
SPk	cool aspect (usually ESE or NW), slope >25%		

**SITE INFORMATION**

<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>thin or thick colluvial and morainal slopes and ridges</li> </ul>	
<b>Slope position:</b>	middle and upper
<b>Slope (%):</b>	25 – 50%
<b>Aspect:</b>	east-southeast, west-northwest submesic
<b>Soil Moisture Regime:</b>	poor – medium
<b>Soil Nutrient Regime:</b>	



Site Unit Symbol	Site Unit Name	BGC							Site Series Number
SP	Douglas-fir/Ponderosa pine – Snowbrush – Pinegrass	IDFxh1							04

	Structural Stage	3	4	5	6	7	
<b>Trees</b>		**	***	***	***	***	Douglas-fir
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	**	ponderosa pine
	<i>Pinus ponderosa</i>	***	**	**	**	**	
<b>Shrubs</b>		***	**	**	**	**	birch-leaved spirea
	<i>Spirea betulifolia</i>	***	**	**	**	**	common snowberry
	<i>Symphoricarpos albus</i>	**	*	**	**	**	saskatoon
	<i>Amelanchier alnifolia</i>	**	**	***	***	**	pinegrass
<b>Grasses</b>		***	*	**	**	**	bluebunch wheatgrass
	<i>Calamagrostis rubescens</i>	**	*	**	**	**	rough fescue
	<i>Pseudoroegneria spicata</i>	**	*	**	**	**	arrowleaf balsamroot
	<i>Festuca campestris</i>	**	*	**	**	**	silky lupine
<b>Herbs</b>		**	*	*	*	*	clad lichens
	<i>Balsamorhiza sagittata</i>	**	*	**	**	**	sidewalk moss
	<i>Lupinus sericeus</i>	**	*	**	**	**	heron's-bill moss
<b>Lichens and Mosses</b>		**	*	*	*	*	
	<i>Cladonia</i> spp.	**	*	**	**	**	
	<i>Tortula ruralis</i>	**	*	**	**	**	
	<i>Dicranum</i> spp.	*	*	*	*	*	

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
TA	Talus	IDFxh1	N/A
Steep colluvial deposits of angular rock fragments that result from rockfall. These sites have less than 10% vegetation cover.			
<b>List of mapped units:</b>			
TAW	warm aspect, slope 60-70%		

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
UR	Urban/Suburban	IDFxh1	N/A
Residential areas with concentrated houses and buildings that almost continuously cover the area.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
WA	Big sage – Bluebunch wheatgrass – Balsamroot	IDF:xh1	92
<p>Typic unit occurs on warm aspects with deep, medium-textured soils (assumed modifiers are d, m, and w)</p> <p>This shrub steppe ecosystem occurs on warm aspects on glaciolacustrine slopes. It was very rare in the study area and was observed only on small, isolated sites along Mission Creek in the South Slopes area. Both big sage and rabbit-brush were common on these sites. The photo shows a degraded site infested by knapweed and affected by mountain biking.</p>			
<b>List of mapped units:</b>			
WAF	fine-textured soils		



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
• lacustrine slopes	upper, crest
<b>Slope position:</b>	40-60%
<b>Slope (%):</b>	south, southwest, west
<b>Aspect:</b>	xeric
<b>Soil Moisture Regime:</b>	poor
<b>Soil Nutrient Regime:</b>	

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
WA	Big sagebrush – Bluebunch wheatgrass – Balsamroot	IDFxh1	92

	Structural Stage	3	
Shrubs	<i>Artemisia tridentata</i>	***	big sagebrush
	<i>Ericameria nauseosus</i>	**	common rabbit-brush
Grasses	<i>Pseudoroegneria spicata</i>	***	bluebunch wheatgrass
	<i>Sporobolus cryptandrus</i>	**	sand dropseed
	<i>Hesperostipa comata</i>	**	needle-and-thread grass
	<i>Bromus tectorum</i>	**	cheatgrass
	<i>Aristida longisetata</i>	*	red three-awn
Herbs	<i>Balsamorhiza sagittata</i>	*	arrowleaf balsamroot
	<i>Erigeron</i> spp.	*	fleabanes and daisies
	<i>Lupinus sericeus</i>	*	silky lupine
	<i>Eriogonum heracleoides</i>	*	parsnip-flowered buckwheat
	<i>Lithospermum ruderale</i>	*	lemonweed
Lichens	<i>Cladonia</i> spp.	*	clad lichens
Mosses	<i>Tortula ruralis</i>	*	sidewalk moss

**Species** – non-native species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
WB	Bluebunch wheatgrass – Balsamroot	IDF:xh1	93
<p>Typic unit occurs on warm aspects with deep, medium-textured soils (assumed modifiers are d, m, and w)</p> <p>This grassland ecosystem commonly occurs on moderately steep to steep warm slopes. Often surface soils are actively ravelling on steeper slopes. Bluebunch wheatgrass and balsamroot dominate these sites. Bunchgrasses are more widely spaced than on gentler slopes. Disturbed sites with invasive plants are mapped as seral associations as described below.</p> <p><b>WB:kc \$Knapweed - Cheatgrass seral association</b>  These are early and very early seral sites. Although there are native forbs, there are few or no native bunchgrasses remaining on these sites. Sites are dominated by invasive plants including knapweed, cheatgrass and sulphur cinquefoil.</p> <p><b>WB:wk \$Bluebunch wheatgrass – Knapweed seral association</b>  This is a mid- to late-seral seral association. On these sites there is still a reasonable component of bluebunch wheatgrass with knapweed, sulphur cinquefoil, or cheatgrass.</p>			
<b>List of mapped units:</b>			
WBC	coarse-textured soils (generally glaciofluvial or rocky colluvial)	WBs	shallow soils (20-100cm)
WBrs	ridge or crest, shallow soils (20-100cm deep)		

SITE INFORMATION	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>• morainal and glaciofluvial blankets and veneers and colluvial veneers</li> </ul>
<b>Slope position:</b>	middle, upper, crest
<b>Slope (%):</b>	25 – 65%
<b>Aspect:</b>	south, southwest, west
<b>Soil Moisture Regime:</b>	subxeric – submesic
<b>Soil Nutrient Regime:</b>	medium – poor





<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
WB	Bluebunch wheatgrass – Balsamroot	IDFxh1	93

	2	2	2	2
Structural Stage	WB	WB:kc	WB:wk	
<b>Grasses</b>				
<i>Pseudoroegneria spicata</i>	****	*	***	bluebunch wheatgrass
<i>Koeleria macrantha</i>	**	*	*	junegrass
<i>Achnatherum nelsonii</i>	**		*	Columbia needlegrass
<i>Bromus tectorum</i> or <i>B. japonicus</i>	*	****	***	cheatgrass or Japanese brome
<b>Herbs</b>				
<i>Artemisia frigida</i>	**	*	**	pasture sage
<i>Balsamorhiza sagittata</i>	***	**	**	arrowleaf balsamroot
<i>Lupinus sericeus</i>	**	*	**	silky lupine
<i>Eriogonum heracleoides</i>	*	*	*	parsnip-flowered buckwheat
<i>Centaurea diffusa</i>		****	**	diffuse knapweed
<i>Potentilla recta</i>		***	**	sulphur cinquefoil
<b>Lichens</b>				
<i>Cladonia</i> spp.	**		*	clad lichens
<b>Mosses</b>				
<i>Tortula ruralis</i>	**		*	sidewalk moss
<b>PLOTS</b>				
				KG008

**Species** – invasive alien species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
Ws01	Mountain Alder – Skunk Cabbage – Lady Fern Swamp	IDFxb1	Ws01

Typic unit occurs on level sites with deep, mineral soils (d, j and m are assumed modifiers). This is the Ws01 unit in the provincial wetland classification<sup>74</sup>. This is a rare unit in the study area and was only observed within the area of the Okanagan Mountain Park fire. The picture below shows an unburned ecosystem in the North Okanagan.

This shrubby swamp ecosystem usually occurs along creeks or areas with poor drainage and continuous seepage near the surface. Soils are usually mineral with a thin organic veneer.

**SITE INFORMATION**

**Common Terrain Types:**

- morainal or fluvial with thin organic veneer

<b>Slope position:</b>	level
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric – hydric
<b>Soil Nutrient Regime:</b>	medium – rich



<sup>74</sup> MacKenzie and Moran 2004

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
Ws01	Mountain Alder – Skunk Cabbage – Lady Fern Swamp	IDFxh1	Ws01

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Thuja plicata</i>	*	****	****	***	***	Western redcedar
<i>Shrubs</i>	<i>Alnus incana</i>	****	***	****	****	****	mountain alder
	<i>Cornus stolonifera</i>	**	*	**	**	**	red-osier dogwood
<i>Sedges</i>	<i>Carex disperma</i>	**	**	**	**	**	soft-leaved sedge
<i>Herbs</i>	<i>Lysichiton americanus</i>	***	***	***	***	****	skunk cabbage
	<i>Equisetum arvense</i>	**	**	**	**	**	common horsetail
	<i>Dryopteris expansa</i>	***	**	**	**	**	spiny wood fern
	<i>Mitella nuda</i>	**	*	**	**	**	common mitrewort
<i>Mosses</i>	<i>Drepanocladus aduncus</i>	***	***	***	***	***	common hook-moss
	<i>Mnium</i> or <i>Plagiommium</i> spp.	*	*	*	**	**	ragged mosses
<b>PLOTS</b>		KG036					

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Comments: Very limited data; other sites are likely dominated by different species.

**KELOWNA EXPANDED LEGEND – PPxh1**

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
AK	Alkaline Pond	PPXh1	N/A
<p>A body of fresh water with a pH greater than 7 and a depth less than 2 m. Often have a white salt crust around the edge of the pond and is associated with the wetland ecosystems Gs01, Gs02 and Gs03.</p> <p><b>AKx</b> – ponds that may be dry by late summer leaving only a white crust of salts.</p>			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
AS	Trembling aspen – Snowberry – Kentucky bluegrass	PPXh1	00
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, and m)</p> <p>This ecosystem commonly occurs in large, broad depressions in grassland areas. These sites collect moisture from surrounding grassland areas. They have an overstory of trembling aspen and a shrubby understory dominated by snowberry and roses. This site unit was observed on the south-east side of the study area.</p>			

List of mapped units:	
ASg	gully
ASK	cool aspect, slope >25%
ASw	warm aspect, slope >25%

SITE INFORMATION	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>aeolian or slopewash (C1) veneer over morainal or glaciofluvial blankets</li> </ul>	
<b>Slope position:</b>	toe, depression
<b>Slope (%):</b>	0-15
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
AS	Trembling aspen – Snowberry – Kentucky bluegrass	PPxh1	00

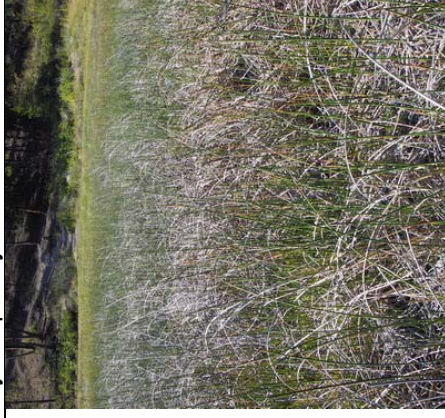
	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Populus tremuloides</i>	***	****	****	****	****	trembling aspen
<i>Shrubs</i>	<i>Symphoricarpos albus</i>	*****	****	****	****	****	common snowberry
	<i>Rosa nutkana</i>	***	**	**	**	**	Nootka rose
	<i>Prunus virginiana</i>	***	**	**	**	**	choke cherry
	<i>Amelanchier alnifolia</i>	**	*	*	*	*	saskatoon
	<i>Mahonia aquifolium</i>	**	*	*	*	*	tall Oregon-grape
<i>Grasses</i>	<i>Elymus glaucus</i>	*	*	*	*	*	blue wildrye
	<i>Poa pratensis</i>	*	*	*	*	*	Kentucky bluegrass
	<i>Elymus repens</i>	*	*	*	*	*	quackgrass
<i>Herbs</i>	<i>Maianthemum stellata</i>	*	*	*	*	*	star-flowered false Solomon's-seal
<i>Mosses</i>	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
<b>PLOTS</b>				KV061	KV145		

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
BE	Beach	PPxh1	N/A
The area that expresses sorted sediments reworked in recent time by wave action. Occurs at lake edges (Okanagan Lake).			



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>BM</b>	<b>Bulrush Marsh</b>	<b>PPxh1</b>	<b>Wm06</b>
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j). This unit is equivalent to the <i>Great bulrush marsh</i> association (Wm06) in the provincial classification<sup>75</sup>. This marsh wetland ecosystem commonly occurs on small ponds adjacent to shallow open water as a fringe along the shoreline. This unit is uncommon in the study area. These sites are most commonly dominated by hard-stemmed bulrush, but are sometimes dominated by Nevada bulrush. Vegetation species diversity is typically low on these sites. Soils are typically mineral, sometimes with a thin organic veneer.</p>			
<p><b>List of mapped units:</b>          BMx drier than typical, water table has dropped in recent years and flooding is very temporary.</p>			



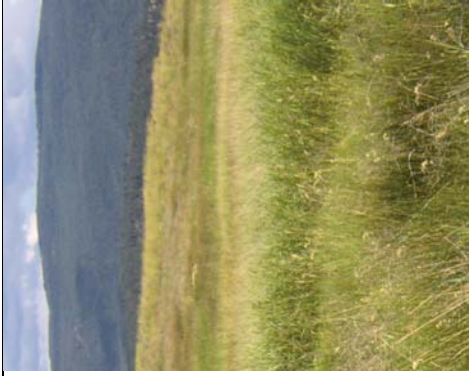
<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>lacustrine veneer over morainal blanket</li> </ul>
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhydic - hydric
<b>Soil Nutrient Regime:</b>	rich

<b>Structural Stage</b>		<b>2</b>
<i>Rushes</i>	<i>Schoenoplectus acutus</i> or <i>S. tabernaemontani</i> <i>Amphiscirpus nevadensis</i>	**** **
<i>Herbs</i>	<i>Lemna minor</i>	**
<b>PLOTS</b>		KG004, KG012, KV009, KV102, KV103, KV104

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>75</sup> Mackenzie and Moran 2004

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
BR	Baltic Rush Marsh	PPxh1	Wm07
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j).</p> <p>This unit is equivalent to the <i>Baltic rush marsh</i> association (Wm07) in the provincial classification<sup>76</sup>. This marsh-meadow wetland ecosystem occurs in areas where water draws down below the soil surface most summers (seasonal flooding). This unit is rare in the study area. These sites are dominated by baltic rush. Field sedge may also occur in slightly drier situations. Occurred on fine-textured mineral soils.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>lacustrine veneer over thick morainal or glaciofluvial materials</li> </ul>
<b>Slope position:</b>	toe, depression, (lower)
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygic
<b>Soil Nutrient Regime:</b>	rich

<b>Structural Stage</b>		<b>2</b>
<i>Rushes</i>	<i>Juncus balticus</i>	*** baltic rush
<i>Sedges</i>	<i>Carex praegracilis</i>	** field sedge
<i>Grasses</i>	<i>Poa pratensis</i> <i>Elymus repens</i>	** Kentucky bluegrass * quackgrass
<i>Forbs</i>	<i>Potentilla anserina</i>	** common silverweed
<b>PLOTS</b>		KV011

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>CB</b>	<b>Cutbank</b>	<b>PPxh1</b>	<b>N/A</b>
Edge of a road cut that is upslope or down slope of a road and was created by the excavation of a hillside. <b>CBk</b> – cool aspect, <b>CBw</b> – warm aspect.			

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>CD</b>	<b>Ponderosa pine / Black cottonwood – Snowberry Riparian</b>	<b>PPxh1</b>	<b>00</b>
Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).			
This forest type is commonly associated with floodplains and fluvial terraces with subsurface water. This unit is also found as a fringe along the Okanagan and Duck Lake foreshore and in some large gullies in the South Slopes area. Forests are often multi-layered with a mixture of black cottonwood, Douglas-fir, and Ponderosa pine. The understory is typically rich and shrubby			

<b>List of mapped units:</b>			
CDg	gully	CDt	fluvial terrace

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>gentle and level fluvial sites and active floodplains</li> <li>lacustrine lake shores</li> </ul>	
<b>Slope position:</b>	level, lower and toe
<b>Slope (%):</b>	0-15%
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich



Site Unit Symbol	Site Unit Name	BGC					Site Series Number	
CD	Ponderosa pine / Black cottonwood – Snowberry Riparian	PPxh1						00

	Structural Stage	3	4	5	6	7	
<b>Trees</b>							
	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	**	****	***	***	***	black cottonwood
	<i>Betula papyrifera</i>	*	**	**	**	**	paper birch
	<i>Pinus ponderosa</i>			*	**	**	ponderosa pine
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>			*	*	*	Douglas-fir
<b>Shrubs</b>							
	<i>Symphoricarpos albus</i>	****	****	****	****	****	common snowberry
	<i>Acer glabrum</i> var. <i>douglasii</i>	****	**	***	***	***	Douglas maple
	<i>Amelanchier alnifolia</i>	***	**	**	**	**	saskatoon
	<i>Mahonia aquifolium</i>	***	**	**	**	**	tall Oregon-grape
	<i>Prunus virginiana</i>	***	**	**	**	**	choke cherry
	<i>Rosa nutkana</i>	***	**	**	**	**	Nootka rose
	<i>Cornus stolonifera</i>	**	**	**	**	**	red-osier dogwood
<b>Grasses</b>	<i>Elymus glaucus</i>	**	*	*	*	*	blue wildrye
<b>Mosses</b>	<i>Brachythecium</i> sp.			*	*	*	ragged moss
<b>PLOTS</b>							
					KG011	KV144	
						KV146	

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CF	Cultivated Field	PPxh1	N/A
These are agricultural fields with tilled soils and planted crops or ground cover.			
<b>List of mapped units:</b>			
CFg	gully	CFx	dry, not recently cultivated, retains some grassland habitat values
CFgy	gully, seasonally flooded	CFy	formerly or presently seasonally flooded

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CG	Reed Canarygrass Marsh	IDF:xh1	00
<p>Typic unit occurs on level sites with deep, fine-textured soils (assumed modifiers are d, f, and j).</p> <p>This marsh-meadow wetland ecosystem occurs in areas where water draws down below the soil surface most summers (seasonal flooding). This unit was rare in the study area and is not included in the provincial wetland classification. These sites have thick, often continuous cover of reed canarygrass with few or no other species. These sites may have been dominated by other marsh species such as large water sedges previously. Soils are typically fine-textured and mineral.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>lacustrine veneer over thick morainal or glaciofluvial materials</li> </ul>	
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich

<b>Structural Stage</b>		<b>2</b>
Grasses	<i>Phalaris arundinacea</i>	**** KV093 KV130 KV142
<b>PLOTS</b>		Reed canarygrass

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CL	Cliff	PPxh1	N/A
These are steep, vertical or overhanging rock faces. Typically there are scattered plants such as cliff ferns occurring in pockets.			
<b>List of mapped units:</b>			
CLZ	very steep (>100%) warm aspect		

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CN	Canal	PPxh1	N/A
An artificial watercourse created for transport, drainage, and/or irrigation purposes. Often used to be a natural waterway within the city.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CO	Cultivated Orchard	PPxh1	N/A
Agricultural areas for growing fruit trees.			



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CT	Cattail Marsh	PPxh1	Wm05
<p>Typic unit occurs on level sites with deep, medium-textured soils (assumed modifiers are d, j, m).  This unit is equivalent to the <i>Cattail marsh</i> association in the provincial classification (Wm05)<sup>77</sup>.  This marsh wetland ecosystem occurs as a fringe on pond edges or in depressions, often adjacent to shallow open water (OW). This unit is rare in the study area. Water depths are typically up to 1 m in spring but draw down to the soil surface by late summer; soils remain saturated for most of the season. Some wetlands convert to cattail marshes when they are subject to nutrient loading. These sites are dominated by cattails with few other species. Soils are typically mineral, but may have a thin organic veneer on top.</p>			
<b>List of mapped units:</b>			
CTg	gully	CTx	drier than typical



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	• thin organic veneer over lacustrine materials
<b>Slope position:</b>	depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhydric
<b>Soil Nutrient Regime:</b>	rich

<b>Structural Stage</b>		<b>2a</b>
Herbs	<i>Typha latifolia</i>	**** common cattail
Mosses	<i>Bryum</i> sp.	** thread moss

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\*\*\* 6-25% cover; occurs in 60% or more of sites  
\*\*\*\* 26-50% cover; occurs in 60% or more of sites  
\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>77</sup> Mackenzie and Moran 2004

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CV	Cultivated Vineyard	PPxh1	N/A
Agricultural areas for growing grapes.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
CW	Choke cherry – Bluebunch wheatgrass rocky bluff	PPxh1	00

Typic unit occurs on gentle slopes with very shallow soils (assumed modifiers are j and v)

This ecosystem commonly occurs on bedrock bluffs where the bedrock is quite fractured. This unit is uncommon in the study area. Exposed bedrock usually occupies 30-50% of the area. Shrubs are common, typically occurring in cracks in the rocks. Grasses, forbs, lichens and mosses occur in small soil pockets scattered in amongst the bedrock.

**List of mapped units:**

CWk	cool aspect, slope >25%	CWw	warm aspect; slope >25%
CWr	ridge	CWz	very steep warm aspect; slope >70%

**SITE INFORMATION**

**Common Terrain Types:**

- rock and very thin colluvial and morainal veneers

**Slope position:**

crest, upper

**Slope (%):**

0 – 100+

**Aspect:**

all

**Soil Moisture Regime:**

very xeric – xeric

**Soil Nutrient Regime:**

very poor – poor



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
CW	Choke cherry – Bluebunch wheatgrass rocky bluff	PPxh1	00

	<b>Structural Stage</b>	<b>3</b>
<b>Shrubs</b>		
	<i>Amelanchier alnifolia</i>	** saskatoon
	<i>Symphoricarpos albus</i>	** common snowberry
	<i>Philadelphus lewisii</i>	** mock-orange
	<i>Prunus virginiana</i>	** choke cherry
<b>Grasses</b>	<i>Pseudoroegneria spicata</i>	** bluebunch wheatgrass
<b>Herbs</b>	<i>Woodсия scopulina</i>	* mountain cliff fern
	<i>Selaginella densa</i>	* compact selaginella
	<i>Balsamorhiza sagittata</i>	* arrowleaf balsamroot
<b>Mosses</b>	<i>Tortula ruralis</i>	* sidewalk moss

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
DM	Douglas-fir – Water birch - Douglas maple	PPxh1	08
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest type is commonly associated with gullies with intermittent or permanent streams or subsurface water flow. These are diverse, rich sites with mixed coniferous (Douglas-fir) and deciduous (paper birch and aspen) overstories. The understories are dominated by a diverse mixture of shrubs.</p>			
<b>List of mapped units:</b>			
DMg	gullies, usually associated with a creek	DMt	fluvial terraces
DMgk	gully, cool aspect, slope >25%	DMw	warm aspect, slope >25%
DMn	fluvial fan		

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>gentle fluvial and morainal sites</li> </ul>	
<b>Slope position:</b>	toe (depression)
<b>Slope (%):</b>	0-15%
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>	
DM	Douglas-fir – Water birch - Douglas maple	PPxh1	08	

	Structural Stage	3	4	5	6	7	
<b>Trees</b>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	**	Douglas-fir
	<i>Populus tremuloides</i>	**	***	***	***	*	trembling aspen
	<i>Betula papyrifera</i>	****	***	***	***	**	paper birch
<b>Shrubs</b>	<i>Symphoricarpos albus</i>	***	***	***	***	***	common snowberry
	<i>Acer glabrum</i> var. <i>douglasii</i>	****	***	***	***	***	Douglas maple
	<i>Cornus stolonifera</i>	**	**	**	**	**	red-osier dogwood
	<i>Mahonia aquifolium</i>	**	**	**	**	**	tall oregon-grape
	<i>Toxicodendron rydbergii</i>	**	**	**	**	**	poison-ivy
	<i>Rosa nutkana</i>	**	*	*	*	*	Nootka rose
	<i>Betula occidentalis</i>	**	*	*	*	*	water birch
<b>Grasses</b>	<i>Elymus glaucus</i>	**	*	*	*	*	blue wildrye
<b>Herbs</b>	<i>Osmorhiza berteroi</i>	**	*	*	*	*	mountain sweet-cicely
	<i>Galium triflorum</i>	*	*	*	*	*	sweet-scented bedstraw
	<i>Maianthemum stellatum</i>	*	*	*	*	*	star-flowered false Solomon's-seal
<b>Mosses</b>	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
	<i>Mnium</i> sp.	*	*	*	*	*	leafy moss
<b>PLOTS</b>							KG026

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
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DS	Douglas-fir / Ponderosa pine – Snowberry – Spirea	PPxh1	07
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Typic unit occurs on gentle slopes with deep, medium textured soils (d, j, and m are assumed modifiers).  
 This forest type is commonly associated with gently sloping sites that are receiving some moisture. It is also found on receiving sites where there is some sub-surface moisture. These forests are typically have moderately closed Douglas-fir overstories with very shrubby understories dominated by snowberry with some Oregon-grape, birch-leaved spirea, and saskatoon. Often there is scattered pinegrass or Kentucky bluegrass with some heart-leaved arnica and other scattered forbs. There is a minimal moss layer with patches of ragged mosses.

List of mapped units:	
DSg	gully
DSgk	gully; cool aspect (slope >25%)
DSgw	gully, warm aspect (slope >25%)
DSk	cool aspect (slope >25%)
DSn	fluvial fan
DSt	fluvial terrace
DSw	warm aspect (slope >25%)

**SITE INFORMATION**

**Common Terrain Types:**

- gentle morainal and glaciofluvial slopes, sites with slopewash (C1)

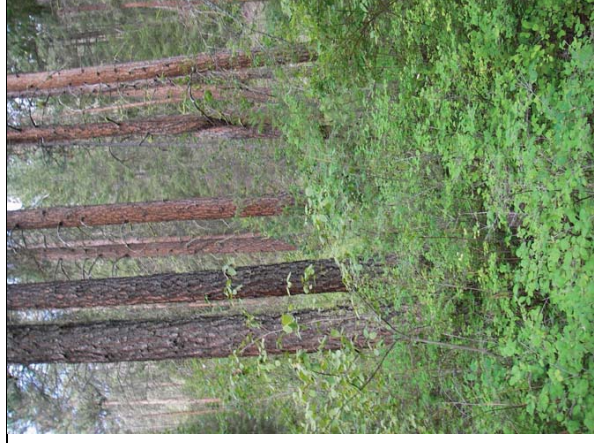
**Slope position:** lower, toe

**Slope (%):** 0-15% (and sometimes up to 60%)

**Aspect:** none

**Soil Moisture Regime:** subhygric

**Soil Nutrient Regime:** rich





Site Unit Symbol	Site Unit Name	BGC							Site Series Number
DS	Douglas-fir / Ponderosa pine – Snowberry – Spirea	PPxh1							07

	Structural Stage	3	4	5	6	7	
<i>Trees</i>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	**	***	****	***	Douglas-fir
	<i>Populus tremuloides</i>	***	***	***	**		trembling aspen
<i>Shrubs</i>	<i>Symphoricarpos albus</i>	****	***	***	***	***	common snowberry
	<i>Amelanchier alnifolia</i>	**	**	**	**	**	saskatoon
	<i>Mahonia aquifolium</i>	**	**	**	**	**	tall oregon-grape
	<i>Spirea betulifolia</i>	***	**	**	**	**	birch-leaved spirea
<i>Grasses</i>	<i>Elymus glaucus</i>	**	*	*	*	*	blue wildrye
<i>Herbs</i>	<i>Maianthemum stellatum</i>	*	*	*	*	*	star-flowered false Solomon's-seal
	<i>Vicia Americana</i>	**	*	*	*	*	American vetch
	<i>Prosartes trachycarpa</i>	**	*	*	*	*	rough-fruited fairy bells
<i>Mosses</i>	<i>Rhytidiadelphus triquetrus</i>	*	**	**	**	**	electrified cat's-tail moss
	<i>Brachythecium</i> sp.	**	**	**	**	**	ragged moss
<b>PLOTS</b>							
				KG010			
				KG030			

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 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
ES	Exposed Soil	PPxh1	N/A
These are areas of exposed soils and typically include recent disturbances such as soil erosion.			
<b>List of mapped units:</b>			
ESk	cool aspect, slope >25%	ESz	very steep warm aspect, slope >25%
ESw	warm aspect, slope >25%		

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FB	Fescue – Bluebunch wheatgrass	PPxh1	00
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, m)</p> <p>This ecosystem commonly occurs on gentle and level sites and cool aspects. A mixture of Idaho fescue and bluebunch wheatgrass with balsamroot and other forbs dominate late seral sites. Unfortunately, most of these sites are highly disturbed and have a significant component of invasive alien plants. Sites with more than 10% weeds are mapped as seral associations.</p> <p><b>FB:kc \$Knapweed – Cheatgrass seral association</b></p> <p>This is an early seral association dominated by knapweed, sulphur cinquefoil, and cheatgrass with few or no native bunchgrasses remaining on these sites.</p> <p><b>FB:wk \$Bluebunch wheatgrass – Knapweed seral association</b></p> <p>This is a mid-seral seral association. On these sites there is still a reasonable component of bluebunch wheatgrass with knapweed, sulphur cinquefoil, or cheatgrass.</p>			
<b>List of mapped units:</b>			
FBck	coarse-textured soils (glaciofluvial), cool aspect, slope >25%	FBs	shallow soils (generally 50-100cm)
FBk	cool aspects, slope >25%	FBt	glaciofluvial terrace
FBks	cool aspects, shallow soils (generally 50-100cm)		

SITE INFORMATION	
<p><b>Common Terrain Types:</b></p> <ul style="list-style-type: none"> <li>aeolian veneers overlying morainal or glaciofluvial blankets</li> </ul>	
<b>Slope position:</b>	middle to upper
<b>Slope (%):</b>	0-35%
<b>Aspect:</b>	none or cool
<b>Soil Moisture Regime:</b>	submesic – mesic
<b>Soil Nutrient Regime:</b>	medium – rich



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FB	Rough fescue – Bluebunch wheatgrass	PPxh1	00

Structural Stage	2	2	2	2
Seral Association	FB	FB:kc	FB:wk	FB:wk
<i>Shrubs</i>				big sagebrush
<i>Grasses</i>				Idaho fescue
	****			rough fescue
	**			bluebunch wheatgrass
	***		***	junegrass
	**		**	Columbian needlegrass
	*	*	*	cheatgrass or Japanese brome
	****	****	***	
<i>Herbs</i>				arrowleaf balsamroot
	***		**	silky lupine
	**	*	**	parsnip-flowered buckwheat
	**	**	**	lemonweed
	*	*	*	sagebrush mariposa lily
	*			diffuse knapweed
	***	***	**	sulphur cinquefoil
	***	***	*	clad lichens
<i>Mosses and Lichens</i>	**			sidewalk moss
	**		*	felt pelt
	**			felt pelt
<b>PLOTS</b>				
				KG003
				KG023
				KG025

\* Species – non-native species  
 \* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FO	Douglas-fir / Ponderosa pine –Saskatoon – Mock orange	PPxh1	00
<p>Typic unit occurs on steep slopes with deep, coarse-textured (rocky) soils (c, and d are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with steep colluvial sites with rocky soils. This is an uncommon unit in the study area. It occurs on both cool (FOk) and warm (FOw) aspects. The soil matrix is a mixture of both angular rocks and sandy, silty material. The overstory is generally open and dominated by Douglas-fir and ponderosa pine. Understories are often quite shrubby with snowberry, saskatoon and mock orange. There is usually scattered bluebunch wheatgrass. Small rocks dominate a large portion of the soil surface.</p>			
<b>List of mapped units:</b>			
FOk	cool aspect (slope >25%)	FOsw	shallow soils (generally 50-100 cm); warm aspect (slope >25%)
FOks	cool aspect (slope >25%); shallow soils (generally 50-100cm)	FOw	warm aspect (slope >25%)



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>• moderate and steep rocky colluvial slopes</li> </ul>	
<b>Slope position:</b>	lower to upper
<b>Slope (%):</b>	60-75%
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	submesic – subxeric
<b>Soil Nutrient Regime:</b>	medium, poor

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
FO	Douglas-fir / Ponderosa pine –Saskatoon – Mock orange	PPxh1	00

	Structural Stage	3	4	5	6	7	
<b>Trees</b>							
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	***	***	***	***	Douglas-fir
	<i>Pinus ponderosa</i>	*	**	**	**	**	ponderosa pine
<b>Shrubs</b>							
	<i>Symphoricarpos albus</i>	****	***	***	****	****	common snowberry
	<i>Spirea betulifolia</i>	***	*	*	**	**	birch-leaved spirea
	<i>Philadelphus lewisii</i>	**	*	*	**	**	mock-orange
	<i>Prunus virginiana</i>	***	*	*	**	**	choke cherry
	<i>Amelanchier alnifolia</i>	****	**	**	***	***	saskatoon
<b>Grasses</b>							
	<i>Pseudoroegneria spicata</i>	**	*	**	**	**	bluebunch wheatgrass
	<i>Calamagrostis rubescens</i>	**	*	**	**	**	pinegrass
<b>Herbs</b>							
	<i>Lomatium dissectum</i>	*	*	*	*	*	fern-leaved desert parsley
<b>Mosses</b>							
	<i>Tortula ruralis</i>	*	*	*	*	*	sidewalk moss
<b>PLOTS</b>							
							KG020

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
GC	Golf Course	PPxh1	N/A
Areas set aside for playing golf including grass-covered areas, and patches of trees or shrubs.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
GP	Gravel Pit	PPxh1	N/A
An area of exposed soil formed through the removal of sand and gravel			



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
Gs01	Alkali saltgrass	PPxh1	Gs01
<p>Typic unit occurs on gentle slopes with deep, fine-textured soils (assumed modifiers are d, f, and j).  This meadow ecosystem occurs at the fringes of alkaline ponds. It is equivalent to the unit of the same name and number in the provincial wetland classification<sup>78</sup>. These sites often have a white crust of salts on the soil surface. Vegetation is limited to species like saltgrass and foxtail barley that can tolerate alkaline conditions. These are dynamic ecosystems and their location and vegetation composition can change over the years with changing water levels. Foxtail barley tends to increase on drier sites This unit was uncommon and was found associated with several ponds in the Glenmore Highlands.</p>			



SITE INFORMATION	
<b>Common Terrain Types:</b>	
• lacustrine veneers	
<b>Slope position:</b>	depression, level
<b>Slope (%):</b>	0 – 5
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	very rich

Structural Stage		2
Grasses	<i>Distichlis spicata</i>	**** seashore saltgrass
	<i>Hordeum jubatum</i>	** foxtail barley
Herbs	<i>Aster ericoides</i>	* tufted white prairie aster
<b>PLOTS</b>		
		KV007
		KV081
		KV165

\* incidental cover (less than 1% cover); used as indicator species  
\*\* 1-5% cover; occurs in 60% or more of sites  
\*\*\* 6-25% cover; occurs in 60% or more of sites  
\*\*\*\* 26-50% cover; occurs in 60% or more of sites  
\*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
Gs02	Nuttall's alkaligrass – Foxtail barley	PPxh1	Gs02
<p>Typic unit occurs on gentle slopes with deep, fine-textured soils (assumed modifiers are d, f, and j)</p> <p>This meadow ecosystem occurs at the fringes of alkaline ponds. It is equivalent to the unit of the same name and number in the provincial wetland classification<sup>79</sup>. These sites often have a white crust of salts on the soil surface. Vegetation is limited to species like foxtail barley that can tolerate alkaline conditions. These sites were disturbed and mostly dominated by foxtail barley. These are dynamic ecosystems and their location and vegetation composition can change over the years with changing water levels. This unit was uncommon and was found associated with several ponds in the Glenmore Highlands.</p>			



SITE INFORMATION	
<b>Common Terrain Types:</b>	• lacustrine veneers
<b>Slope position:</b>	depression, level
<b>Slope (%):</b>	0 – 2
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich – very rich

Structural Stage		2
Grasses	<i>Distichlis spicata</i>	** seashore saltgrass
	<i>Hordeum jubatum</i>	*** foxtail barley
Herbs	<i>Potentilla anserina</i>	** common silverweed
	<i>Aster ericoides</i>	* tufted white prairie aster
<b>PLOTS</b>		KV008
		KV039
		KV082

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
Gs03	Field sedge	PPxh1	Gs03

Typic unit occurs on gentle slopes with deep, fine-textured soils (assumed modifiers are d, f, and j)

This meadow ecosystem occurs on moderately alkaline sites. It is equivalent to the unit of the same name and number in the provincial wetland classification<sup>80</sup>. Vegetation is limited dominated by field sedge on undisturbed sites. These sites were disturbed and mostly dominated by quackgrass. These are dynamic ecosystems and their location and vegetation composition can change over the years with changing water levels.

**SITE INFORMATION**

<b>Common Terrain Types:</b>	
• lacustrine veneers	
<b>Slope position:</b>	depression, level
<b>Slope (%):</b>	0 – 2
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric
<b>Soil Nutrient Regime:</b>	rich



<b>Structural Stage</b>		<b>2</b>
<b>Sedges and Grasses</b>	<i>Carex praegracilis</i>	**** field sedge
	<i>Elymus repens</i>	*** quackgrass
<b>Grasses</b>	<i>Agrostis gigantea</i>	** redtop
<b>Herbs</b>	<i>Aster ericoides</i>	** tufted white prairie aster
	<i>Mentha arvensis</i>	* field mint
<b>PLOTS</b>		
		KG014
		KV060
		KV075

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>80</sup> Mackenzie and Moran 2004

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
GW	Giant Wildrye	PPxh1	00
<p>Typic unit occurs on gentle slopes with deep, medium-textured soils (assumed modifiers are d, j, and m)</p> <p>This ecosystem occurs on slopes sites that are alkaline. These sites are generally quite small and are dominated by large clumps of giant wildrye. This is ecosystem was only observed once in the study area.</p>			

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>aeolian veneer over morainal or glaciofluvial blanket</li> </ul>	
<b>Slope position:</b>	lower, level, toe slopes
<b>Slope (%):</b>	0
<b>Aspect:</b>	None
<b>Soil Moisture Regime:</b>	subhygric
<b>Soil Nutrient Regime:</b>	rich



<b>Structural Stage</b>		<b>2b</b>
Grasses	<i>Leymus cinereus</i>	*** giant wildrye
and	<i>Poa pratensis</i>	** Kentucky bluegrass
Sedges	<i>Carex praegracilis</i>	** field sedge
<b>PLOTS</b>		KV010

**Species** – non-native species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
LA	Lake	PPxh1	N/A
These are areas of permanent open water that are greater than 2m deep and greater than 50ha. Duck Lake.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
MI	Mine	PPxh1	N/A
An unvegetated area used for the extraction of mineral ore and other materials.			
MIz – very steep warm slope of a mine			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
OW	Shallow Open Water	PPxh1	N/A
These are areas of permanent open water that are less than 2m deep. There is less than 10% emergent vegetation but floating aquatics such as bladderwort may be present.			
OWx – drier than typical, may only have water in spring and is usually dry during summer.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PC	Ponderosa pine – Bluebunch wheatgrass – Cheatgrass	PPxh1	04
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j, and m are assumed modifiers).</p> <p>This forest type is most common on moderate to steep warm aspects. It sometimes occurs on cooler aspects where soils are shallow. Occasionally found on ridges and crests where soils are not shallow enough to be the PPxh1.02 (PT). Forests are open and dominated by bunchgrasses, particularly bluebunch wheatgrass with scattered forbs. Mosses and lichens are scattered and uncommon.</p>			
<b>List of mapped units:</b>			
PCc	coarse-textured soils	PCrs	ridge, crest, shallow soils
PCck	coarse-textured soils, cool aspect (>25% slopes, typically southeast)	PCs	shallow soils (20-100cm deep)
PCcs	coarse-textured soils, shallow soils (20-100cm deep)	PCsw	shallow soils, warm aspect (25-50% slopes)
PCcw	coarse-textured soils, warm aspect (25-50% slopes)	PCw	warm aspect (25-50% slopes)
PCks	cool aspect (>25% slopes, typically southeast), shallow soils	PCz	very steep warm aspect (>70% slope)
PCr	ridge, crest		

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>• colluvial and morainal blankets and veneers</li> <li>• moderate glaciofluvial slopes</li> </ul>	
<b>Slope position:</b>	middle and upper
<b>Slope (%):</b>	(30) 40 – 60%
<b>Aspect:</b>	south, southwest, west (also southeast on glaciofluvial slopes and shallow soils)
<b>Soil Moisture Regime:</b>	subxeric – submesic
<b>Soil Nutrient Regime:</b>	medium - poor





<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>			
PC	Ponderosa pine – Bluebunch wheatgrass - Cheatgrass	PPxh1	04			

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Pinus ponderosa</i>	**	****	**	***	***	ponderosa pine
<i>Shrubs</i>	<i>Amelanchier alnifolia</i>	***	**	**	**	**	saskatoon
	<i>Ceanothus velutinus</i>	***					snowbrush
<i>Grasses</i>	<i>Pseudoroegneria spicata</i>	***	**	***	***	***	bluebunch wheatgrass
	<i>Koeleria macrantha</i>	*	*	*	*	*	junegrass
<i>Herbs</i>	<i>Balsamorhiza sagittata</i>	**	**	**	**	**	arrowleaf balsamroot
	<i>Antennaria</i> spp.	**	*	*	*	*	pussytoes
	<i>Achillea millefolium</i>	**	*	*	*	*	yarrow
	<i>Cladonia</i> spp.	**	**	**	**	**	clad lichens
<i>Mosses and Lichens</i>	<i>Tortula ruralis</i>	**	**	**	**	**	sidewalk moss
	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
<b>PLOTS</b>							
				KG013			
				KG019			
				KG021			
				KG031			
				KG038			

\* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites  
 Snowbrush may only occur on sites that have been burned.



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PD	Pond	PPxh1	N/A
A small body of water greater than 2 m deep, but not large enough to be classified as a lake (e.g., less than 50 ha).			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PF	<b>Ponderosa pine – Bluebunch wheatgrass – Rough fescue</b>	PPxh1	05
Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers). This forest type is commonly associated with moderate to steep slopes on cool aspects. It is also found on gently sloping sites with shallow soils. Occasionally it is found on warm aspects, but generally these are moderately sloping (25-35%) or on 'neutral' aspects (northwest, southeast). The overstory is moderately closed, although historically frequent surface fires would have kept these stands very open. Understories are usually a mixture of rough fescue and pinegrass with scattered shrubs, forbs and mosses.			

List of mapped units:			
PFck	coarse-textured soils, cool aspect (30-70% slopes)	PFks	cool aspect (30-70% slopes), shallow soils (50-100cm deep)
PFk	cool aspect (30-70% slopes)		

SITE INFORMATION	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>• colluvial and morainal blankets and veneers</li> <li>• moderate to steep glaciofluvial slopes</li> </ul>	
<b>Slope position:</b>	middle and upper
<b>Slope (%):</b>	30 – 75%
<b>Aspect:</b>	(northwest) north, northwest, east
<b>Soil Moisture Regime:</b>	mesic - submesic
<b>Soil Nutrient Regime:</b>	medium - poor



Site Unit Symbol	Site Unit Name	BGC							Site Series Number	
PF	Ponderosa pine – Bluebunch wheatgrass – Rough fescue	PPxh1								05

	Structural Stage	3	4	5	6	7		
Trees	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	***	***	***	***	Douglas-fir	
	<i>Pinus ponderosa</i>	**	***	***	***	***	ponderosa pine	
Shrubs	<i>Amelanchier alnifolia</i>	***	**	**	**	**	saskatoon	
	<i>Spiraea betulifolia</i>	***	**	**	**	**	birch-leaved spirea	
Grasses	<i>Festuca campestris</i>	**	**	***	***	***	rough fescue	
	<i>Pseudoroegneria spicata</i>	**	*	**	**	**	bluebunch wheatgrass	
	<i>Koeleria macrantha</i>	*	*	*	*	*	junegrass	
Herbs	<i>Balsamorhiza sagittata</i>	**	*	**	**	**	arrowleaf balsamroot	
	<i>Achillea millefolium</i>	**	*	*	*	*	yarrow	
	<i>Antennaria</i> spp.	**	*	*	*	*	pussytoes	
	<i>Hieracium scouleri</i>	*	*	*	*	*	Scouler's hawkweed	
Mosses and Lichens	<i>Cladonia</i> spp.	**	*	*	**	**	clad lichens	
	<i>Tortula ruralis</i>	*	*	*	**	**	rusty steppe moss	
	<i>Brachythecium albicans</i>	*	*	*	*	*	lawn moss	
<b>PLOTS</b>								
		KG018						
		KG022						

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
PT	Ponderosa pine – Red three-awn	PPxh1	02
<p>Typic unit occurs on warm aspects with deep, coarse-textured soils (c, d, and w are assumed modifiers).</p> <p>This forest type most commonly occurs on moderate to steep warm aspects, with shallow or very shallow soils (PTv). It is also commonly found on moderate to steep slopes of all aspects and ridge crests where the soils are extremely shallow. Forests are very open with scattered large trees, often growing in bedrock fractures. The understory is variable depending on soil depth with more vegetation occurring on deeper soil pockets. Scattered shrubs and bunchgrasses (bluebunch wheatgrass and rough fescue) dominate the understory. A lichen and moss crust may be present on undisturbed sites. This ecosystem also occurs on steep glaciofluvial slopes with ravelling, sandy surface soils (PT). Trees and other vegetation is usually widely spaced and scattered on these slopes.</p>			
<b>List of mapped units:</b>			
PTjv	gentle slopes, very shallow soils, exposed bedrock present	PTv	ridge, very shallow soils, exposed bedrock present
PTkv	cool aspect, very shallow soils, exposed bedrock present	PTv	very shallow soils, exposed bedrock present
PTqv	very steep cool aspect, very shallow soils, exposed bedrock present	PTvz	very shallow soils, exposed bedrock present , very steep warm aspect
<b>SITE INFORMATION</b>			
<b>Common Terrain Types:</b>			
<ul style="list-style-type: none"> <li>• thin and very thin colluvial, morainal and weathered bedrock veneers over bedrock</li> <li>• steep glaciofluvial slopes</li> </ul>			
<b>Slope position:</b>		upper and crest (and middle slopes on steep glaciofluvial sites)	
<b>Slope (%):</b>		0-70%	
<b>Aspect:</b>		none (crest), south, southwest	
<b>Soil Moisture Regime:</b>		very xeric to subxeric	
<b>Soil Nutrient Regime:</b>		poor (very poor, medium)	

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>						
PT	Ponderosa pine – Red three-awn	PPxh1	02						

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>		**	***	***	***	***	ponderosa pine
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>			*	**	**	Douglas-fir
<b>Shrubs</b>		**	**	**	**	**	saskatoon
	<i>Amelanchier alnifolia</i>	**	*	*	*	*	common snowberry
	<i>Symphoricarpos albus</i>	**	*	*	*	*	bluebunch wheatgrass
<b>Grasses and</b>	<i>Pseudoroegneria spicata</i>	***	***	***	***	***	<b>Japanese brome or cheatgrass</b>
<b>Sedges</b>	<i>Bromus japonicus</i> or <i>tectorum</i>	*	*	*	*	*	rough fescue
	<i>Festuca campestris</i>	*	*	*	**	**	compact selaginella
<b>Herbs</b>	<i>Selaginella densa</i>	***	**	**	**	**	arrowleaf balsamroot
	<i>Balsamorhiza sagittata</i>	**	**	**	**	**	shrubby penstemon
	<i>Penstemon fruticosus</i>	**	**	**	**	**	clad lichens
<b>Lichens</b>	<i>Cladonia</i> spp.	**	**	**	**	**	awned haircap moss
<b>Mosses</b>	<i>Polytrichum piliferum</i>	**	**	**	**	**	
<b>PLOTS</b>							KG001

**Species** – non-native species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

**Comments:** cover of Japanese brome or cheatgrass will usually increase with disturbance, spreading dogbane is often present on steep glacioluvial sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
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PW	Ponderosa pine – Bluebunch wheatgrass – Idaho fescue	PPxh1	01
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Typic unit occurs on gentle slopes with deep, medium-textured soils (d, j, and m are assumed modifiers). This forest type is commonly associated with gentle slopes. The overstory is generally open and dominated by ponderosa pine. Historically these sites would have been kept extremely open by frequent low-severity surface fires. Saskatoon, bluebunch wheatgrass, rough fescue and arrow-leaved balsamroot are most common in the understorey. This ecosystem type been altered extensively by selection logging and ingrowth of small trees into formerly open forests (as shown in picture below).

List of mapped units:			
PWc	coarse-textured soils (typically glaciofluvial materials)	PWks	cool aspect (NW or SE, 25-35% slopes, usually mid-upper slopes), shallow soils (generally 50-100cm deep)
PWf	fine-textured soils (glaciolacustrine)	PWs	shallow soils (50-100cm deep)
PWk	cool aspect (NW or SE, 25-35% slopes, usually mid-upper slopes),	PWw	warm aspect (usually WNW or SE, 25-35% slopes)

**SITE INFORMATION**

**Common Terrain Types:**

- Gently sloping glaciofluvial and morainal slopes and terraces

<b>Slope position:</b>	Level, mid to upper
<b>Slope (%):</b>	0-15 (25)%
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	submesic – mesic
<b>Soil Nutrient Regime:</b>	poor – medium



Site Unit Symbol	Site Unit Name	BGC					Site Series Number
PW	Ponderosa pine – Bluebunch wheatgrass – Idaho fescue	PPxh1	01				

	Structural Stage	3	4	5	6	7	
Trees	<i>Pinus ponderosa</i>	**	**	***	**	**	ponderosa pine
Shrubs	<i>Amelanchier alnifolia</i>	**	**	*	*	*	saskatoon
	<i>Mahonia aquifolium</i>	**	*	*	*	*	tall Oregon-grape
	<i>Ceanothus sanguineus</i> or <i>C. velutinus</i>	***	*	*	*	*	redstem ceanothus or snowbrush
Grasses	<i>Festuca campestris</i>	*	**	***	***	**	rough fescue
	<i>Pseudoroegneria spicata</i>	**	*	**	**	***	bluebunch wheatgrass
	<i>Bromus tectorum</i>	*	*	*	*	*	cheatgrass
Herbs	<i>Balsamorhiza sagittata</i>	***	**	**	**	**	arrow-leaved balsamroot
	<i>Antennaria</i> spp.	**	**	**	**	**	pussytoes
	<i>Achillea millefolium</i>	*	*	*	*	*	yarrow
	<i>Hieracium scouleri</i>	*	*	*	*	*	Scouler's hawkweed
Mosses and Lichens	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
	<i>Cladonia</i> spp.	*	*	*	**	**	clad lichens
	<i>Tortula ruralis</i>	*	*	*	**	**	sidewalk moss
PLOTS		KV172	KV002	KG037	KG029		

Species – non-native species  
 \* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RE	Reservoir	PPxh1	N/A
A man-made body of water created by impounding water behind a dam, berm, dyke, or wall. Older reservoirs may have wetland ecosystems associated with them.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RI	River	PPxh1	N/A
A watercourse with water flowing between continuous, definable banks. Used for the river bed of Mission Creek.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RN	Railway Surface	PPxh1	N/A
A railway with fixed rails for single or multiple rail lines.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RO	Rock Outcrop	PPxh1	N/A
These are areas of exposed bedrock with less than 10% vegetation cover. On sites with fractured bedrock, some plants may be growing out of rock cracks. Generally rock outcrops on the east side of the study area had more fractures than those on the west side of the study area.			
<b>List of mapped units:</b>			
ROw	warm aspect, slope >25%	ROz	very steep warm aspect, slope >70%

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
RS	Western redcedar / Douglas-fir – False Solomon's Seal	PPxh1	00
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest ecosystem is commonly associated with fluvial sites (terraces, slopes) and gullies which are influenced by cold air drainage. This is an uncommon unit in the study area. The overstory of these closed forests includes a mixture of western red cedar, Douglas-fir and paper birch. A diverse mixture of shrubs and forbs generally dominates the understorey although the understorey can be very sparse on sites with very closed canopies (pole sapling and young forests).</p>			
<b>List of mapped units:</b>			
RSg occurs in a gully			

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	<ul style="list-style-type: none"> <li>• morainal gullies, fluvial plains and terraces</li> </ul>
<b>Slope position:</b>	level, lower and toe
<b>Slope (%):</b>	variable
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric – hygric
<b>Soil Nutrient Regime:</b>	medium, rich



Site Unit Symbol	Site Unit Name	BGC							Site Series Number
RS	Western redcedar / Douglas-fir – False Solomon's Seal	PPXh1							00

	Structural Stage	3	4	5	6	7	
Trees	<i>Thuja plicata</i>	***	****	****	****	****	western red cedar
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	**	**	***	***	***	Douglas-fir
	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	***	*	**	**	*	black cottonwood
	<i>Betula papyrifera</i>	**	*	*	**	**	paper birch
Shrubs	<i>Acer glabrum</i> var. <i>douglasii</i>	***	**	**	**	**	Douglas maple
	<i>Paxistima myrsinites</i>	***	**	**	**	**	falsebox
	<i>Symphoricarpos albus</i>	**	*	*	**	**	common snowberry
	<i>Rosa nutkana</i>	**	*	*	*	*	Nootka rose
	<i>Ribes lacustre</i>	**	*	*	*	*	black gooseberry
	<i>Cornus stolonifera</i>	**	*	*	*	*	red-osier dogwood
Grasses	<i>Elymus glaucus</i>	***	*	*	*	*	blue wildrye
Sedges	<i>Carex</i> spp.	**	*	*	*	*	sedges
Herbs	<i>Maianthemum stellatum</i>	***	*	*	*	*	star-flowered Solomon's-seal
	<i>Equisetum arvense</i>	***	*	*	*	*	common horsetail
	<i>Aralia nudicaulis</i>	**	**	**	**	**	sarsaparilla
	<i>Osmorhiza berteroi</i>	**	*	*	*	*	mountain sweet-cicely
	<i>Viola canadensis</i>	*	*	*	*	*	Canada violet
Mosses	<i>Brachythecium</i> sp.	*	*	*	*	*	ragged moss
	<i>Mnium</i> sp.	*	**	**	**	**	leafy moss

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RW	Rural	PPXh1	N/A
Rural areas of human settlement with scattered houses intermingled with native vegetation or cultivated areas.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
RZ	Road Surface	PPXh1	N/A
A gravel or paved road used for vehicular travel.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SA	Antelope Brush - Selaginella <sup>81</sup>	PPxh1	00
<p>Typic unit occurs on gentle slopes with shallow soils (assumed modifiers are j, m and s). However, in the study area, this unit more commonly occurs on steep slopes on rock outcrops with small ledges and pockets of soil. The bedrock is generally fractured. This is an uncommon unit in the study area. In contrast with areas in the South Okanagan, there is no antelope brush on these sites. Scattered ponderosa pine trees and saskatoon bushes occur in rock fractures. Soil pockets on ledges are dominated by bluebunch wheatgrass with balsamroot, selaginella, and a well-developed microbial crust.</p>			
<b>List of mapped units:</b>			
SAkv	cool aspect, very shallow soils	SAwW	very shallow soils, warm aspect
SAqv	very steep cool aspect (>100% slope), very shallow soils	SAvZ	very shallow soils, very steep warm aspect (>100% slope)
SArv	ridge, very shallow soils		

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>rock, very thin morainal, weathered bedrock and colluvial veneers</li> </ul>	
<b>Slope position:</b>	crest, upper
<b>Slope (%):</b>	40 – 70
<b>Aspect:</b>	variable
<b>Soil Moisture Regime:</b>	very xeric – xeric
<b>Soil Nutrient Regime:</b>	very poor – poor



<sup>81</sup> Although the plant association name includes antelope brush, antelope brush does not occur in the study area.

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
SA	Antelope Brush – Selaginella	PPxh1	00

	Structural Stage	3	4	5	6	7		
<i>Trees</i>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	**	Douglas-fir	
	<i>Pinus ponderosa</i>	*	***	***	***	***	ponderosa pine	
<i>Shrubs</i>	<i>Amelanchier alnifolia</i>	**	**	**	**	**	saskatoon	
	<i>Philadelphus lewisii</i>	*	*	*	*	*	mock orange	
<i>Grasses</i>	<i>Pseudoroegneria spicata</i>	***	***	***	***	***	bluebunch wheatgrass	
<i>Herbs</i>	<i>Selaginella densa</i>	**	**	**	**	**	compact selaginella	
	<i>Penstemon fruticosus</i>	*	*	*	*	*	shrubby penstemon	
	<i>Woodsia scopulina</i>	*	*	*	*	*	mountain cliff fern	
<i>Lichens</i>	<i>Cladonia</i> spp.	**	**	**	**	**	clad lichens	
<i>Mosses</i>	<i>Polytrichum piliferum</i>	**	**	**	**	**	awned haircap moss	
<b>PLOTS</b>		KG002						

\* incidental cover (less than 1% cover); used as indicator species

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\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

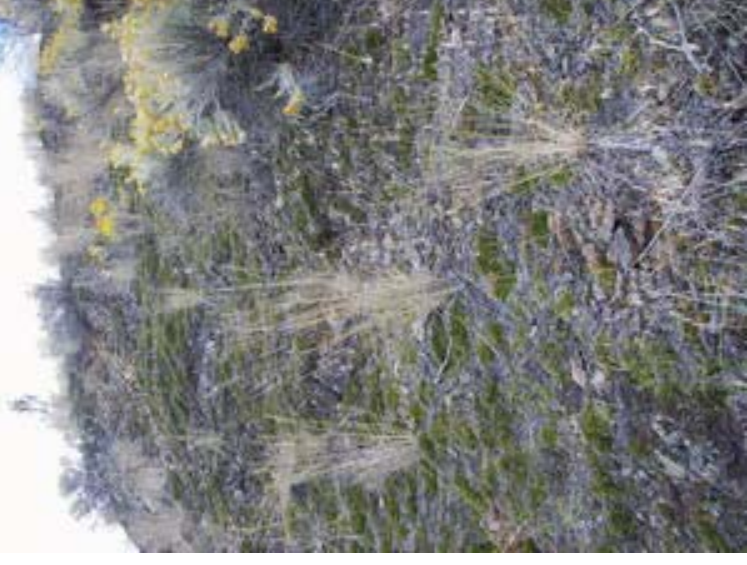
\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Comments: most sites do no progress through the structural stages. Rather some sites are more suitable for tree growth than others.



Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SB	Selaginella – Bluebunch wheatgrass rock outcrop	PPxh1	00
<p>Typic unit occurs on gentle slopes with very shallow soils (assumed modifiers are j and v)</p> <p>This ecosystem commonly occurs on bedrock outcrops with low relief, generally unfractured bedrock. Selaginella and rusty steppe moss with some grasses and forbs dominate these sites. Shrubs are sometimes present but are quite uncommon due to the lack of fractures in the bedrock.</p> <p><b>SB:cg Cheatgrass seral association</b> This seral association is dominated by cheatgrass.</p>			
<b>List of mapped units:</b>			
SBk	cool aspect, slope >25%	SBw	warm aspect (25-70% slope)
SBr	ridge	SBz	very steep warm aspect, slope >70%

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>Very thin morainal, glaciofluvial, weathered bedrock and colluvial veneers</li> </ul>	
<b>Slope position:</b>	crest
<b>Slope (%):</b>	0-20
<b>Aspect:</b>	all
<b>Soil Moisture Regime:</b>	very xeric
<b>Soil Nutrient Regime:</b>	poor, medium





Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SB	Selaginella – Bluebunch wheatgrass rock outcrop	PPXh1	00

Structural Stage	2	2
Seral stage	SB	SB:cg

Shrubs	<i>Amelanchier alnifolia</i>	*	*	saskatoon
Grasses	<i>Pseudoroegneria spicata</i>	**	*	bluebunch wheatgrass
	<i>Bromus tectorum</i>	*	***	cheatgrass
	<i>Poa secunda</i>	*	*	Sandberg's bluegrass
Herbs	<i>Selaginella densa</i>	***	***	compact selaginella
	<i>Eriogonum heracleoides</i>	**	*	parsnip-flowered buckwheat
	<i>Achillea millefolium</i>	*	*	yarrow
Lichens and Mosses	<i>Cladonia</i> spp.	**	*	clad lichens
	<i>Tortula ruralis</i>	**	*	sidewalk moss
Mosses	<i>Polytrichum piliferum</i>	**	*	awned haircap moss
PLOTS				KG017
				KG027
				KV200

- Species** – non-native species
- \* incidental cover (less than 1% cover); used as indicator species
  - \*\* 1-5% cover; occurs in 60% or more of sites
  - \*\*\* 6-25% cover; occurs in 60% or more of sites
  - \*\*\*\* 26-50% cover; occurs in 60% or more of sites
  - \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SO	Saskatoon – Mock orange Talus	PPxh1	00
<p>Typic unit occurs on both warm and cool steep slopes with deep, coarse textured soils (blocky soils; c, and d are assumed modifiers).</p> <p>This forest type is commonly associated with steep, blocky talus slopes with minimal soil in pockets between blocks. Scattered trees (Douglas-fir, ponderosa pine and/or aspen) and scattered shrubs (mock orange, snowberry, ocean spray) grow in soil pockets between blocks. Often cliff ferns (a very characteristic species) and scattered grasses are found growing in soil pockets. Vegetation cover is generally higher on sites with smaller blocks and more soil development, typically a mixture of both angular rocks and sandy, silty material. Cool aspects more commonly have trees on them. Sites that are dominated by shrubs will not necessarily succeed into a forested structural stage. Historically, these sites would not have enough fuel to burn. Thus they would be have been a seed source for some dry refugia species that are fire intolerant such as Rocky Mountain juniper.</p>			

List of mapped units:	
SOk	cool aspect
SOks	cool aspect, shallow soils
SOsw	shallow soils, warm aspect
SOw	warm aspect

SITE INFORMATION	
<p><b>Common Terrain Types:</b></p> <ul style="list-style-type: none"> <li>rubbly colluvium</li> </ul>	
<p><b>Slope position:</b></p> <p><b>Slope (%):</b></p> <p><b>Aspect:</b></p> <p><b>Soil Moisture Regime:</b></p> <p><b>Soil Nutrient Regime:</b></p>	<p>Lower to upper</p> <p>60-75%</p> <p>All</p> <p>subxeric to very xeric</p> <p>poor to medium</p>



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>	
SO	Saskatoon – Mock orange Talus	PPxh1	00	

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>							
	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	**	**	**	**	Douglas-fir
	<i>Pinus ponderosa</i>	*	**	**	**	**	ponderosa pine
<i>Shrubs</i>							
	<i>Philadelphus lewisii</i>	***	**	**	**	**	mock-orange
	<i>Amelanchier alnifolia</i>	**	**	**	**	**	saskatoon
	<i>Symphoricarpos albus</i>	**	**	**	**	**	common snowberry
	<i>Prunus virginiana</i>	**	*	**	**	**	choke cherry
<i>Grasses</i>	<i>Pseudoroegneria spicata</i>	*	*	*	*	*	bluebunch wheatgrass
<i>Herbs</i>	<i>Woodсия</i> sp.	*	*	*	*	*	cliff fern
	<i>Heuchera cylindrical</i>	*	*	*	*	*	round-leaved alumroot
<b>PLOTS</b>		KG035		KG033			

\* incidental cover (less than 1% cover); used as indicator species

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\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SP	Douglas-fir / Ponderosa pine – Snowberry - Pinegrass	PPxh1	06
<p>Typic unit occurs on gentle slopes with deep, medium textured soils (d, j and m are assumed modifiers).</p> <p>This forest type is commonly associated with gentle lower slopes and moderate to steep cool aspects that are receiving some subsurface moisture. Common on the lower slopes of gullies, adjacent to the wetter /08 (DM) unit mapped along the creeks and streams. Forests are moderately closed with mixed Douglas-fir and ponderosa pine overstories, although historically they would have been quite open, as fire would have been a frequent disturbance. The understory is dominated by snowberry and pinegrass. Mosses are prominent in the moss and lichen layer, especially on the cool aspects. Forbs are more abundant on the open sites that have been less subject to ingrowth (or have been thinned). This ecosystem also occurs on gentle glaciofluvial slopes or terraces where ponderosa pine is often more abundant than Douglas-fir but understories are very similar. Mature (structural stage 6) and old (structural stage 7) forests are uncommon because most of the large trees historically present on these sites have been logged. Because of fire exclusion, most sites have become ingrown with higher densities of smaller stems.</p>			
<b>List of mapped units:</b>			
SPck	coarse-textured soils, cool aspect, slope >25%	SPk	cool aspect, slope >25%
SPg	gully	SPw	warm aspect (lower slopes, often south, southeast)
SPgw	gully, warm aspect, slope >25%		
<b>SITE INFORMATION</b>			
<b>Common Terrain Types:</b>			
<ul style="list-style-type: none"> <li>gentle morainal and glaciofluvial slopes</li> <li>moderate to steep morainal and glaciofluvial slopes</li> <li>glaciofluvial terraces</li> </ul>			
<b>Slope position:</b>		lower or toe	
<b>Slope (%):</b>		0-30%; up to 70% on cool aspects	
<b>Aspect:</b>		All	
<b>Soil Moisture Regime:</b>		Mesic – subhygric	
<b>Soil Nutrient Regime:</b>		Medium – rich	



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
SP	Douglas-fir / Ponderosa pine – Snowberry - Pinegrass	PPxh1	06

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Trees</b>	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	*	****	***	***	***	Douglas-fir
	<i>Pinus ponderosa</i>	*	**	**	**	**	ponderosa pine
<b>Shrubs</b>	<i>Symphoricarpos albus</i>	***	***	***	***	***	common snowberry
	<i>Mahonia aquifolium</i>	**	**	**	**	**	tall oregon-grape
	<i>Spirea betulifolia</i>	**	**	**	**	**	birch-leaved spirea
	<i>Ceanothus sanguineus</i> or <i>velutinus</i>	****					redstem ceanothus or snowbrush
<b>Grasses</b>	<i>Calamagrostis rubescens</i>	***	***	****	****	****	pinegrass
	<i>Festuca campestris</i>	**	**	**	**	**	rough fescue
	<i>Elymus glaucus</i>	*	*	*	*	*	blue wildrye
<b>Herbs</b>	<i>Arnica cordifolia</i>	***	**	**	**	**	heart-leaved amica
	<i>Aster conspicuus</i>	**	*	*	*	*	showy aster
<b>Mosses</b>	<i>Dicranum</i> sp.	*	*	*	*	*	
<b>PLOTS</b>		KV201	KG032				

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

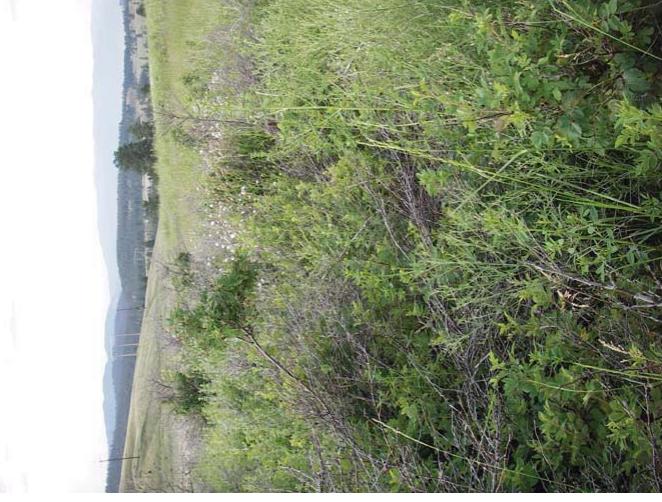
\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

**Comments:** Fireweed seems to be common only after burning (as opposed to logging)

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
<b>SR</b>	<b>Snowberry – Rose – Kentucky Bluegrass</b>	<b>PPxh1</b>	<b>00</b>
Typic unit occurs on gentle slopes with deep, medium textured soils (d, j, and m are assumed modifiers).			
Typically moist shrub dominated depressions in grassland mosaics (equivalent to the IDFxh1 RF /97 unit). Sites are dominated by snowberry and Nootka rose, with some Kentucky bluegrass in openings between the shrubs. These depressions are typically much smaller and shallower than those sites with trembling aspen.			
<b>List of mapped units:</b>			
SRgw	gully, warm aspect, slope >25%	SRw	warm aspect, slope >25%

<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>gentle and level slopewash sites (C1) or eolian veneers over till or glaciofluvial</li> </ul>	level, lower and toe
<b>Slope position:</b>	0-15%
<b>Slope (%):</b>	none
<b>Aspect:</b>	subhygric
<b>Soil Moisture Regime:</b>	rich
<b>Soil Nutrient Regime:</b>	





Site Unit Symbol	Site Unit Name	BGC	Site Series Number
SR	Snowberry – Rose - Kentucky bluegrass	PPxh1	00

<b>Structural Stage</b>		<b>3</b>
Shrubs	<i>Symphoricarpos albus</i>	**** common snowberry
	<i>Amelanchier alnifolia</i>	** saskatoon
	<i>Rosa nutkana</i> or <i>gymnorcarpa</i>	**** roses
	or <i>acicularis</i>	
Grasses	<i>Poa pratensis</i>	** Kentucky bluegrass

Species – non-native species  
 \* incidental cover (less than 1% cover); used as indicator species  
 \*\* 1-5% cover; occurs in 60% or more of sites  
 \*\*\* 6-25% cover; occurs in 60% or more of sites  
 \*\*\*\* 26-50% cover; occurs in 60% or more of sites  
 \*\*\*\*\* >50% cover; occurs in 60% or more of sites

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
TA	Talus	PPxh1	N/A
Steep colluvial deposits of angular rock fragments that result from rockfall. These sites have less than 10% vegetation cover.			
List of mapped units:			
TAK	cool aspect	TAW	warm aspect

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
UR	Urban/Suburban	PPxh1	N/A
Residential areas with concentrated houses and buildings that almost continuously cover the area.			

Site Unit Symbol	Site Unit Name	BGC	Site Series Number
WB	Bluebunch wheatgrass – Balsamroot	PPxh1	00
<p>Typic unit occurs on warm aspects with deep, medium-textured soils (assumed modifiers are d, w, and m)</p> <p>This ecosystem commonly occurs on moderately steep to steep warm slopes. Often surface soils are actively ravelling. Bluebunch wheatgrass and balsamroot dominate these sites. Bunchgrasses are more widely spaced than on more gentle slopes. Many of these sites have been disturbed by grazing and have been invaded by weeds (see seral association descriptions below).</p> <p><b>WB:kc \$Knapweed - Cheatgrass seral association</b>  These are early and very early seral sites. Although there are native forbs, there are few or no native bunchgrasses remaining on these sites. Invasive weeds including knapweed, cheatgrass and sulphur cinquefoil dominate these sites.</p> <p><b>WB:wk \$Bluebunch wheatgrass – Knapweed seral association</b>  This is a mid- to late-seral seral association. On these sites there is still a reasonable component of bluebunch wheatgrass with knapweed, sulphur cinquefoil, or cheatgrass.</p>			
<b>List of mapped units:</b>			
WBc	coarse-textured soils	WBk	cool aspect (usually NW or ESE), slope >25%
WBck	coarse-textured soils, cool aspect (NW or ESE)	WBks	cool aspect (usually NW or ESE), shallow soils (20-100cm)
WBcs	coarse-textured, shallow soils (20-200cm)	WBkv	cool aspect (NW, ESE), very shallow soils (<20cm)
WBf	fine-textured soils	WBrs	ridge or crest, shallow soils (20-100cm)
WBjs	gentle slope (<25%), shallow soils (20 -100cm)	WBs	shallow soils (20-100cm)
WBjv	gentle slope (<25%), very shallow soils (<20cm)	WBz	very steep warm aspect (slope >70%)
<b>SITE INFORMATION</b>			
<b>Common Terrain Types:</b>			
<ul style="list-style-type: none"> <li>morainal and glaciofluvial blankets and veneers</li> </ul>			
<b>Slope position:</b>	middle, upper		
<b>Slope (%):</b>	30-65%		
<b>Aspect:</b>	south, southwest, west		
<b>Soil Moisture Regime:</b>	subxeric		
<b>Soil Nutrient Regime:</b>	medium – poor		



cool aspect

	2	2	2	2
Structural Stage	WB	WB:kc	WB:wk	
<b>Grasses</b>				
<i>Pseudoroegneria spicata</i>	****	*	**	bluebunch wheatgrass
<i>Bromus tectorum</i>	*	****	***	cheatgrass
<i>Koeleria macrantha</i>	*	*	*	junegrass
<i>Poa secunda</i>	*	*	**	Sandberg's bluegrass
<b>Herbs</b>				
<i>Balsamorhiza sagittata</i>	**	*	*	arrowleaf balsamroot
<i>Lupinus sericeus</i>	**	*	**	silky lupine
<i>Artemisia frigida</i>	*	*	*	pasture sage
<i>Eriogonum heracleoides</i>	*	*	*	parsnip-flowered buckwheat
<i>Lithospermum ruderale</i>	*	*	*	lemonweed
<i>Centaurea diffusa</i>	*	***	**	diffuse knapweed
<i>Potentilla recta</i>	*	***	**	sulphur cinquefoil
<b>Mosses</b>				
<i>Cladonia</i> spp.	**			clad lichens
<b>Lichens</b>				
<i>Tortula ruralis</i>	**		*	sidewalk moss
<b>PLOTS</b>				
	KG016			
	KG028			

\* Species – non-native species

\* incidental cover (less than 1% cover); used as indicator species

\*\* 1-5% cover; occurs in 60% or more of sites

\*\*\* 6-25% cover; occurs in 60% or more of sites

\*\*\*\* 26-50% cover; occurs in 60% or more of sites

\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
WS	Willow – Sedge Wetland	PPxh1	00
Typic unit occurs in depressions with deep, medium-textured soils (assumed modifiers are d, j, and m)			
This unit is a generalized wetland unit equivalent to several swamp associations in the provincial classification <sup>82</sup> .			
This swamp wetland ecosystem occurs at the edges of ponds and wetlands, forming a shrubby fringe on mineral soils. This is a very rare unit in the study area. It is dominated by willows, usually with sedges where it occurs at the edge of a wetland. Willow species likely vary from site to site.			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	lacustrine veneer over morainal or glaciofluvial blanket
<b>Slope position:</b>	level, depression
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	subhygric – hygric
<b>Soil Nutrient Regime:</b>	medium, rich

**Structural Stage 3**

Shrubs	<i>Salix amygdaloides</i>	*****	peach-leaf willow
Sedges	<i>Carex</i> spp.	**	sedges
Forbs	<i>Polygonum amphibium</i>	**	water smartweed
<b>PLOTS</b>			KV143

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\*\*\*\*\* >50% cover; occurs in 60% or more of sites

<sup>82</sup> Mackenzie and Moran 2004



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>
Ws01	Mountain Alder – Skunk Cabbage – Lady Fern Swamp	PPxh1	Ws01
<p>Typic unit occurs on level sites with deep, mineral soils (d, j and m are assumed modifiers). Equivalent to Ws01 unit of the same name in the provincial wetland classification<sup>83</sup>. This is a rare unit in the study area. The picture below shows an ecosystem in the North Okanagan.</p> <p>This shrubby swamp ecosystem usually occurs along creeks or areas with poor drainage and continuous seepage near the surface. Soils are usually mineral with a thin organic veneer.</p>			



<b>SITE INFORMATION</b>	
<b>Common Terrain Types:</b>	
<ul style="list-style-type: none"> <li>• morainal or fluvial with thin organic veneer</li> </ul>	
<b>Slope position:</b>	level
<b>Slope (%):</b>	0
<b>Aspect:</b>	none
<b>Soil Moisture Regime:</b>	hygric – hydric
<b>Soil Nutrient Regime:</b>	medium – rich

<sup>83</sup> MacKenzie and Moran 2004



<b>Site Unit Symbol</b>	<b>Site Unit Name</b>	<b>BGC</b>	<b>Site Series Number</b>			
Ws01	Mountain Alder – Skunk Cabbage – Lady Fern Swamp	PPXh1	Ws01			

	<b>Structural Stage</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<i>Trees</i>	<i>Thuja plicata</i>	*	***	***	***	***	Western redcedar
<i>Shrubs</i>	<i>Alnus incana</i>	****	***	***	****	****	mountain alder
	<i>Cornus stolonifera</i>	**	*	**	**	**	red-osier dogwood
	<i>Carex disperma</i>	**	**	**	**	**	soft-leaved sedge
<i>Herbs</i>	<i>Lysichiton americanus</i>	***	***	***	***	****	skunk cabbage
	<i>Equisetum arvense</i>	**	**	**	**	**	common horsetail
	<i>Dryopteris expansa</i>	***	***	**	**	**	spiny wood fern
	<i>Mitella nuda</i>	**	*	**	**	**	common mitrewort
<i>Mosses</i>	<i>Drepanocladus aduncus</i>	***	***	***	***	***	common hook-moss
	<i>Mnium</i> or <i>Plagiomnium</i> spp.	*	*	*	**	**	ragged mosses

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