

## Lillooet PEM Attribute Legend – March, 2004

<b>Ranking of Values in the KB's</b>	Each of the site series within the BEC subzone are given a weighting of the likelihood that this particular feature or combination of features will occur there. The normal weighting system is 0 to 3, meaning no chance of occurrence to high chance of occurrence. However, variations of –1, –2, –10, or –100 are also used to counter unwanted effects of cumulative scores due to various features occurring within the PEM polygon.		
<b>Category</b>	<b>Value</b>	<b>Description</b>	<b>Notes:</b>
<b>FOREST COVER NON-PRODUCTIVE CODES:</b>			
NP	0	Forested	Forested stands
NP	1	icefield	
NP	2	alpine	
NP	3	rock	Program a 50-m buffer around these polygons for future adjacency searches
NP	7	sand	
NP	9	clay bank	
NP	10	alpine forest	
NP	11	NPBr	Program a 50-m buffer around these polygons for future adjacency searches
NP	12	NP	Program a 50-m buffer around these polygons for future adjacency searches
NP	13	burn	
NP	15	lakes	Merge Forest Cover and TRIM lakes - determine new perimeter and snap FC polygons to edge
NP	18	Gravel Bar	
NP	25	River	
NP	35	wetlands	Merge Forest Cover and TRIM wetlands/depressions - new perimeter & area (TRIM marsh polygons are displayed within the wetland complexes.) Program a 50-m buffer around these polygons for future adjacency searches
NP	42	Clearing	
NP	50	Roads	
NP	54	Urban	
NP	60	hayfield	
NP	62	meadows	
NP	63	open range	Program a 50-m buffer around these polygons for future adjacency searches
NP	64	salt water	
<b>PERCENTAGE OF AREA ANALYSIS: (Qualifying Analysis - Applied to some features only)</b>			
<u>_</u> P	1	5-20%	greater than or equal to 5% and less than 20% of the polygon area
<u>_</u> P	2	21- 50%	greater than 21% and less than 50% of the polygon area
<u>_</u> P	3	>50%	greater than 51% of the polygon area
<b>STREAM DENSITY:</b>			
W	0		No streams found in polygon (0 to 10 m/ha)
W	1		10 m/ha to 30 m/ha (low soil moisture influence)
W	2		30 m/ha to 60 m/ha (moderate soil moisture influence)
W	3		60 m/ha or greater (high soil moisture influence)
<b>SLOPE:</b>			
S	1	0 – 8%	
S	2	8 – 25%	(** aspect applies from this slope class on)
S	3	25 – 45%	
S	4	45 – 65%	
S	5	65 - 85%	
S	6	85 – 130%	
S	7	130 + %	
SF	f	Flat	slope class 1

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SF	s	Steep	slope classes 2 to 5
SF	hs	Hyper-steep	slope classes 6 to 7
SFc	g	Gentle	slope classes 1 and 2
SFc	vs	Very steep	slope classes 3 to 5
<b>ASPECT:</b> (Changed to match aspect breaks noted during Lillooet field work)			
As	0	No aspect	Aspect does not apply
As	1	Hot	90.1 to 235 degrees
As	2	Warm	235.1 to 290 degrees
As	3	Cool	290.1 to 90 degrees
<b>ADJACENCY FEATURES: 50-metre buffer searches</b>			
Adj1	1		Adjacent to streams - search around NP or NPBr polygons only
Adj2	1		Adjacent to wetlands - search around NP or NPBr polygons only
Adj3	1	All polygons	Adjacent to rock
Adj4	1	All polygons	Adjacent to alpine polygons
Adj5	1	All polygons	Adjacent to OR polygons
Adj1+Adj2+Adj3+Adj4+Adj5 = 0		Not adjacent to any of these features	
<b>RIPARIAN BENCHES:</b>			
<b>Lakes and Wetlands</b> (Begin bench search from perimeter of combined lakes and wetlands)			
LB	1		0-5% slope adjacent to the water body, to a maximum distance of 100 m
LB_P	1		between 5 and 20% of PEM polygon area
LB_P	2		between 21 and 50% of PEM polygon area
LB_P	3		greater than 51% of the PEM polygon area
<b>Stream Low Benches:</b> (Calculated from double-line streams)			
SLB	1		0-5% slope adjacent to a double-line stream to a maximum distance of 100m
SLB_P	1		between 5 and 20% of PEM polygon area
SLB_P	2		between 21 and 50% of PEM polygon area
SLB_P	3		greater than 51% of the PEM polygon area
<b>Stream High Benches:</b> (Calculated from double-line streams)			
SHB	1		- 0-5% slope from the edge of the SLB to a max distance of 500 m, or - 0-5% slope adjacent to a small rise up from the river's edge (a slope of 6-20% within 50 m from the river edge) to a max distance of 500 m
SHB_P	1		between 5 and 20% of PEM polygon area
SHB_P	2		between 21 and 50% of PEM polygon area
SHB_P	3		greater than 51% of the PEM polygon area
<b>Stream Terraces:</b> (Calculated from double-line streams)			
ST	1		- 0-10% slope adjacent to a large rise up from the river's edge (a greater than 20% slope within a 400 m distance) to a max distance of 1000 m; or - 0-10% slope adjacent to a small rise up from the edge of the SLB or SHB (a greater than 6% slope within a 400 m distance to a max distance of 1000 m)
ST_P	1		between 5 and 20% of PEM polygon area
ST_P	2		between 21 and 50% of PEM polygon area
ST_P	3		greater than 51% of the PEM polygon area
<b>GULLY BOTTOMS and GULLY BUFFERS:</b> (on single-line streams)			
G	1		This is a 20-m buffer on either side of the single-line stream, and search for slope of 30% + (allows for flat-bottom gully and eliminates gully mouths)
G_P	1		between 5 and 20% of PEM polygon area
G_P	2		between 21 and 50% of PEM polygon area
G_P	3		greater than 51% of the PEM polygon area
GB	1		This is a 40-m buffer up the 30%+ slopes starting from edge of the gully bottom polygon (G)

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GB_P	1		between 5 and 20% of PEM polygon area
GB_P	2		between 21 and 50% of PEM polygon area
GB_P	3		greater than 51% of the PEM polygon area
<b>HILL TOPS and HILL BUFFERS (upper slope positions):</b>			
HT	1		Hill top is the largest outside contour line less than 1200 m in length and not a depression
HT_P	1		between 5 and 20% of PEM polygon area
HT_P	2		between 21 and 50% of PEM polygon area
HT_P	3		greater than 51% of the PEM polygon area
HB	1		40-m buffer where slope is > or = 20%, starts from edge of HT
HB_P	1		between 5 and 20% of PEM polygon area
HB_P	2		between 21 and 50% of PEM polygon area
HB_P	3		greater than 51% of the PEM polygon area
<b>RIDGE TOPS and RIDGE BUFFERS (defines upper slope positions):</b>			
RT	1		20-m buffer around the ridge break line where slopes are > or = 30%
RT_P	1		between 5 and 20% of PEM polygon area
RT_P	2		between 21 and 50% of PEM polygon area
RT_P	3		greater than 51% of the PEM polygon area
RTL	1		Little ridge tops between 10 and 30% slopes
RTL_P	1		between 5 and 20% of PEM polygon area
RTL_P	2		between 21 and 50% of PEM polygon area
RTL_P	3		greater than 51% of the PEM polygon area
RB	1		40-m buffer from edge of RT if slopes are > or = 30%
RB_P	1		between 5 and 20% of PEM polygon area
RB_P	2		between 21 and 50% of PEM polygon area
RB_P	3		greater than 51% of the PEM polygon area
<b>TOES OF SLOPES</b>			
ToS	1		Interface of >40% slopes above and <25% slopes below, that are within 100 m of each other
ToS_P	1		between 5 and 20% of PEM polygon area
ToS_P	2		between 21 and 50% of PEM polygon area
ToS_P	3		greater than 51% of the PEM polygon area
<b>ELEVATION</b>			
E	1		MHmm1&2 subzone lower band of higher productivity below 920 m
E	2		MHmm1&2 subzone upper band of lower productivity above 920 m
E	20		ESSF <sub>xv2</sub> below 1900 m
E	21		ESSF <sub>xv2</sub> above 1900m
E	22		ESSF <sub>dv2</sub> and ESSF <sub>xc4</sub> below 1840 m
E	23		ESSF <sub>dv2</sub> and ESSF <sub>xc4</sub> above 1840 m
E	24		ESSF <sub>dv1</sub> below 1600 m
E	25		ESSF <sub>dv1</sub> above 1600 m
E	26		ESSF <sub>xc3</sub> below 1840 m
E	27		ESSF <sub>xc3</sub> above 1840 m
<b>TRIM 2 LANDFORM FEATURES: (These are assumed to be within a FC forested polygon and influence differently than the NP code)</b>			
L1_P		Rock polygon	TRIM 2 HB25400000 (only 43 identified in the District) (same percent of area calculations)
L2		Esker	TRIM 2 HB10200000 (only 31 identified in the District) (same linear calculation as water content)

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L3		Cliff/scarp	TRIM 2 HB05650000
L4_P		Slide	TRIM 2 HB27900000
L5		Beaver dam	TRIM 2 GA08450110
L6_P		Flooded area	TRIM 2 GB11350110 (only one area in the District)
L7		Spring	TRIM 2 - does not occur in this Forest District
L8_P		Moraine	TRIM 2 HB18700000
L9_P		Skree	TRIM 2 HB26150000
L10		Avalanche	Forest Cover ESA area (not actually the avalanche track)
L11_P		Glacier	TRIM 2 GD12300000
L12_P		Snow/ice	TRIM 2 (does not occur in this Forest District)
L13		Ridge	TRIM 2 HB06650100
L14_P		Islands	TRIM 2 GE14850000
L15_P		Sand Bars	TRIM 2 GE25850000
L16_P		Pit	TRIM 2 AG21550000
L17		Rock Bluffs	TRIM 2 HB25000100
L19		Cliff drop off	TRIM 2 HB05650100 (this is the majority of the cliffs identified)
L20		Cliff drop off indefinite	TRIM 2 HB05650200
<b>BEDROCK TYPE</b>			
BR	1	Rich	Metamorphic – i.e. gneissic diorites, gabbro, hornblende schists, hornblende biotite, limestone
BR	2	Poor	Igneous (Intrusive) – i.e. granodiorites, quartz diorites, diorites
BR	3	Moderate	Sedimentary – i.e. sandstone, siltstone, shale and slates – Fraser River deposits
BR	4 or 0	Not useful	Undivided – everything from volcanic, to sedimentary, to metamorphic, to intrusive
<b>FOREST COVER CHARACTERISTICS:</b>			
<b>Disturbance History:</b>			
D	1	Past burn	(not used in Lillooet project)
<b>Species:</b>			
Sp		FC codes	1st, 2nd or 3rd species listed - SP1, SP2, or SP3 – use capital letters
SpL		lead species	SP1 only
SpS		Second	SP2 only
<b>Height:</b>			
H	s		HST grouping of height classes 1-2
H	t		HST grouping of height classes 4-8
HC	1	FC codes	height class 1 = 0.1 to 10.4 m from Forest Cover (HCTL_PR)
HC	2		class 2 = 10.5 to 19.4 m
HC	3		class 3 = 19.5 to 28.4 m
HC	4		class 4 = 28.5 to 37.4 m
HC	5		class 5 = 37.5 to 46.4 m
HC	6		class 6 = 46.5 to 55.4 m
HC	7		class 7 = 55.5 to 64.4 m
HC	8		class 8 = 64.5 +
<b>Crown Closure:</b>			
CC	o	Open	CC grouping classes 0 to 3
CC	c	closed	CC grouping classes 4+
CRN	0		Crown class 0-5%
CRN	1		6-15%
CRN	2		16-25%
CRN	3		26-35%

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CRN	4		36-45%
CRN	5		46-55%
CRN	6		56-65%
CRN	7		66-75%
CRN	8		76-85%
CRN	9		86-95%
CRN	10		96-100%
<b>Age:</b>			
A	m	mature	age classes 4 to 9, grouped together
AGE	1		FC age class 1 (1-20)
AGE	2		FC age class 2 (21-40)
AGE	3		FC age class 3 (41-60)
AGE	4		FC age class 4 (61-80)
AGE	5		FC age class 5 (81-100)
AGE	6		FC age class 6 (101-120)
AGE	7		FC age class 7 (121-140)
AGE	8		FC age class 8 (141-250)
AGE	9		FC age class 9 (250+)
<b>TERRAIN MAPPING FEATURES:</b>			
<b>Terrain Decile:</b> (all T are labeled "Tdec_1" in the terrain database)			
		majority	Decile grouping of 7, 8, 9 and 10 This is done automatically since only those terrain polygons of decile 7 or greater are included in the PEM database. Note that in the Matrix database, the TS column can be "0" due to the terrain polygons having less than decile 7 for the first label.
<b>Terrain Surface Materials:</b> (the TS layer is created from the "Surfm_1" column in the terrain database)			
TS	A		Anthropogenic
TS	C		Colluvial
TS	D		Weathered bedrock
TS	E		Eolian
TS	F		Fluvial
TS	FA		Active Fluvial
TS	FG		Glaciofluvial
TS	I		Ice
TS	L		Lacustrine
TS	LG		Glaciolacustrine
TS	M		Morainal
TS	MI		Morainal
TS	O		Organic
TS	R		Rock
TS	U		Undifferentiated
TS	V		Volcanic
<b>Terrain Surface Expression:</b> (the TE layer is created from the "Surf_E1" column in the terrain database)			
(There are 452 code combinations, only the following will be included in the TE layer )			
TE	1	b, br, bv, w, wv,	Blanket, blanket-ridge, blanket-veneer, variable thickness, variable-veneer
TE	2	c, cb, cf, cv, vc	Cone, cone-blanket, cone-fan, cone-veneer, veneer-cone
TE	3	f, fp, ft, vf	Fan, fan-plain, fan-terrace, veneer-fan
TE	4	h, hr, m, u, uh, uj, ur	Hummocky, hummocky-ridged, rolling, undulating, undulating-hummocky, undulating-gentle, undulating-ridged

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TE	5	p, pj, pt	Fluvial, lacustrine or organic plains, plain-gentle slope, plain-terrace
TE	6	r, rs, sr, rv, vr, kr	Strongly ridged: ridge-veneer, ridge-steep slope, steep-ridge, veneer-ridge, moderately steep-ridged
TE	7	ra, rj, rm, rh, rt, ru	Lightly ridged (i.e. eskers or drumlins): ridge-moderate slope, ridge-gentle slope, ridge-rolling, ridge-hummocky, ridge-terrace, ridge-undulating,
TE	8	t, tj, tp	Terrace, terrace-gentle, terrace-plain
TE	9	v, vb, vk, kv, vw, vx, x, xv	Veneer, veneer-blanket, veneer-moderate slope, moderate slope-veneer, veneer-variable, veneer-very thin veneer, very thin veneer, very thin veneer-veneer
<b>Terrain Subsurface Materials:</b> (the TU layer is created from the “Ssurfm_1” column in the terrain database)			
TU	R		Rock
TU	V		Volcanic
<b>Terrain Geological Processes:</b> (the TG layer is created from the “Geop_1” column in the terrain database) Other labels are available in the terrain database but won't be used in the KB's			
TG	A		Avalanche
TG	F		Slow Mass Movement
TG	R		Rapid Mass Movement
<b>Terrain Drainage:</b> (the TD layer is created from the “Drain_1” column in the terrain database)			
TD	r		Rapid (the second drainage label is present in only a few cases so therefore won't be used in the KB's)
TD	w		well
TD	m		moderate
TD	i		imperfect
TD	p		poor
TD	v		very poor
<b>Terrain Texture:</b> (the TX layer is created from the “Ttex_1” column in the terrain database)			
TX	a, b, k, p, s, \$, c		Blocks, boulders, cobbles, pebbles, sand, silt, clay
TX	d, x, g, r, m, y		Mixed fragments, angular fragments, gravel, rubble, mud, shells
TX	e, u, h		Fibric, mesic, humic
<b>SOIL DESCRIPTION:</b> (not used in this PEM Project)			
<b>SATELLITE IMAGERY:</b> (the PEM polygons only include the SA values that are > 50% of the polygon)			
SA	1		Forest - closed
SA	2		Krumholtz-Parkland Forest
SA	3		Big Sage Grassland (cutblocks)
SA	4		Open Forest – Fescue Grassland mix
SA	5		Alpine Heathland
SA	6		Herbaceous Meadow (Alpine)
SA	7		Open Forest – Pinegrass Grassland / Deciduous Shrub
SA	8		Landslide
SA	9		Talus (high elevation exposed soil and rock)
SA	10		Rock
SA	11		Snow
SA	12		Water
SA	13		Unclassified
<b>SOLAR RADIATION RANGES:</b> (highest value assigned to the PEM polygon – avoids “noise” of several pixel classes)			
SR	1		Full South-facing, no obstructions – Intensive solar radiation
SR	2		Warm aspects – east or west – moderate solar radiation
SR	3		Full North-facing, no variations – Cool solar radiation
<b>Post Processing to avoid Input database complications</b>			

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<b>TEM Structural Stage:</b>			
TSS	1		Shrub (1 to 20 years)
TSS	2		Pole/sapling (20 to 40 years)
TSS	3		Young (40 to 80 years)
TSS	4		Mature (80 to 240 years)
TSS	5		Old (240+ years)