

ICBEMP Midscale Vegetation Data Key

Please refer all questions regarding these data to:

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Arc/INFO Database Items:

NOTE: All fields that contain a value of zero are considered empty.

ITEM NAME	ALIAS	TYPE	LENGTH
OBJECTID	OBJECTID	ObjectID	
Shape	Shape	Geometry	
PGON	PGON	Text	4
SUB_BASIN	SUB_BASIN	Short Integer	
SUBWATERSHED	20	2	
PHOTO-YEAR	10	11	C
TOTL_CC	3	4	I
OS_CC	3	4	I
US_CC	3	4	I
CLMP	3	4	I
CLMP_DENS	3	4	I
CLMP_SIZE	3	4	I
CRWN_DIFF	3	4	I
CNPY_LYRS	3	4	I
RIPR_WET	3	4	I
NON_FRST	3	4	I
LOG_TYPE	3	4	I
LOG_P_CC	3	4	I
DENS_OS	5	6	I
DENS_US	5	6	I
SIZE_OS	3	4	I
SIZE_OS-R	3	4	I 0
SIZE_US	3	4	I
SIZE_US-R	3	4	I 0
SPP_OS	3	4	I
SPP_US	3	4	I
DEAD_SNAG	3	4	I
ELEV_BELT	3	4	I
ELEVATION	4	5	B
ASPECT	4	5	B
SLOPE	4	5	B
ELEV_PCT	4	12	F 3
ASPECT_PCT	4	12	F 3
SLOPE_PCT	4	12	F 3
NON_FRST-SPP_OS	3	4	I
NON_FRST-TCC	3	4	I
NON_FRST-TCOV	3	4	I
COVER	20	21	C
SERIES	20	21	C
SERIES-CODE	4	5	I
SERIES_PCT	4	12	F 3
STRUCTURE	20	21	C
STRUCTURE_2	20	21	C
STRUCTURE_2-R	20	21	C 0
LSOF	3	4	I
LSOF-R	3	4	I 0
PHYS_TYPE	20	21	C
AROS_HAZ	3	4	I
DFB_HAZ	3	4	I
DFDM_HAZ	3	4	I
FE_HAZ	3	4	I
LPDM_HAZ	3	4	I
MPB1_HAZ	3	4	I
MPB2_HAZ	3	4	I
MPB3_HAZ	3	4	I
PHEAN_HAZ	3	4	I

PHWE_HAZ	3	4		
PPDM_HAZ	3	4		
RRSR_HAZ	3	4		
SB_HAZ	3	4		
SHEAN_HAZ	3	4		
SRBR_HAZ	3	4		
TRBR_HAZ	3	4		
WLDM_HAZ	3	4		
WPB1_HAZ	3	4		
WPB2_HAZ	3	4		
WPBR1_HAZ	3	4		
WPBR2_HAZ	3	4		
WSB_HAZ	3	4		
RATE_D	3	4		
RATE_N	3	4		
RATE_W	3	4		
FLAME_D	3	4		
FLAME_N	3	4		
FLAME_W	3	4		
INT_D	3	4		
INT_N	3	4		
INT_W	3	4		
FUEL	3	4		
CONS_D	3	4		
CONS_N	3	4		
CONS_W	3	4		
PM10_D	3	4		
PM10_N	3	4		
PM10_W	3	4		
PM2_5_D	3	4		
PM2_5_N	3	4		
PM2_5_W	3	4		
RCF_0	3	4		
RCF_D	3	4		
RCF_N	3	4		
RCF_W	3	4		
PT	3	4		
SS	10	12		
SS-R	10	12		0
PVT	10	12		
CT	10	12		
SIZE_MEDLG	3	4		
SIZE_MEDLG-R	3	4		
MEDLG_CC	3	3		
MEDLG_CC-R	3	4		0
RMNT_LG	3	4		
RMNT_LG-R	3	4		0
CC_CLASS	3	4		
CC_CLASS-R	3	4		0
US_FRST	3	4		
US_NF	3	4		
AWMECI	10	12		
AWMECI-R	10	12		0
REG_CT	10	12		
REG_SS	10	12		
REG_SS-R	10	12		0
REG_PVT	10	12		
SP_O	3	4		
SP_U	3	4		
AM_HAB	3	3		
NG_HAB	3	3		
SP_HAB	3	3		
SP1_HAB	3	3		
WH_HAB	3	3		
WH1_HAB	3	3		

AREA	Source:	Generated by Arc/Info.
	Description:	Area of each polygon, measured in coverage units (Square Meters)
PERIMETER	Source:	Generated by Arc/Info.
	Description:	Length of each polygon boundary, measured in coverage units (Square Meters)
[Coverage Name]#	Source:	Generated by Arc/Info.
	Description:	Internal arc number (values assigned by Arc/Info)
[Coverage Name]-ID	Source:	Generated by Arc/Info.
	Description:	User-ID (Values assigned by the Arc/Info User)
PGON	Source:	Recorded by the Photo Interpreter.
	Description:	All polygons should have been numbered in a continuous series for each subwatershed. This value was originally the unique value that tied a vegetation polygon to the data entry form.

NOTE: This number is not necessarily a unique value. During data conversion, the subwatersheds were clipped between the current and the historic in order to achieve identical sample areas. In the event that a horseshoe shaped polygon was cut-off at the boundary two polygons with the same PGON value occurred. See the next database item for a work around.

PGON#	Source:	Generated by the Wenatchee FSL.
	Description:	This item is a unique polygon number for each individual polygon. It was generated with $\text{calc PGON\#} = \text{\$RECNO} - 1$. This results in a global polygon with a pgon# value of zero, and sequential numbering from one through n polygons (where n is the maximum number of polygons).
ACRES	Source:	Generated by the Wenatchee FSL.
	Description:	This item was generated with: $\text{calculate acres} = \text{area} / 4046.856$
SUB_BASIN	Source:	Recorded by the Photo Interpreter.
	Description:	Name of the USGS 8-digit hydrologic unit code (subbasin).

- | | |
|--------------------------------|-------------------------------------|
| 1 = Deschutes (LCR, LDS, UDS) | 23 = Lower John Day (LJD) |
| 2 = Grande Ronde (GRO) | 24 = Medicine Lodge (MDL) |
| 3 = Methow (MET) | 25 = Palisades (PSD) |
| 4 = Pend Oreille (PEN) | 26 = Palouse (PLS) |
| 5 = Wenatchee (WEN) | 27 = Snake Headwaters (SHW) |
| 6 = Yakima (LYK, NAC, UYK) | 28 = South Fork Clearwater (SFC) |
| 7 = Kettle (KET) | 29 = South Fork Salmon (SFS) |
| 8 = San Poil (SPO) | 30 = Swan (SWN) |
| 9 = Silvies (SIL) | 31 = Upper John Day (UJD) |
| 10 = Big Wood (BWD) | 32 = Upper Klamath Lake (UKL) |
| 11 = Blackfoot Mtn. (BFM) | 33 = Upper Owyhee (UOW) |
| 12 = Boise-Mores (BOM) | 34 = Upper Coeur d' Alene |
| 13 = Burnt (BUR) | 35 = Upper Middle Fork Salmon (UMS) |
| 14 = Crooked Rattlesnake (CRT) | 36 = Yaak (YAA) |
| 15 = Donner und Blitzen (DUB) | 37 = Bitterroot (BTR) |
| 16 = Flint Rock (FLR) | 38 = North Fork Flathead (NFH) |
| 17 = Lake Walcott (LWC) | 39 = Middle Fork Flathead (MFH) |
| 18 = Lemhi (LMH) | 40 = South Fork Flathead (SFH) |
| 19 = Lochsa (LOC) | 41 = Stillwater (STW) |
| 20 = Lost (LST) | 42 = Flathead Lake (FHL) |
| 21 = Lower Flathead (LFH) | 43 = Franklin D. Roosevelt (FDR) |
| 22 = Lower Henrys (LHE) | 44 = Middle-Columbia/Hood (MCH) |
| | 45 = Entiat (ENT) |

SUBWATERSHED Source: Recorded by Photo Interpreter.
 Description: This is the number that references the subwatershed. This number does not contain any embedded information except in the third batch of data that is being developed. In the third batch the subwatershed number is an aggregation of the 5th and 6th field HUCs that the subwatershed is mostly contained within. For example if 90% of a subwatershed falls within the 6th field HUC # 016 which is in the 5th field HUC # 023, the subwatershed number would be 2316. The code is the 5th field with the preceding zero dropped concatenated to the 6th field HUC with the preceding zero dropped.

TOTL_CC-R Source: Recorded by the Photo Interpreter.
 Description: Estimated total crown closure (trees only) to the nearest ten percent.

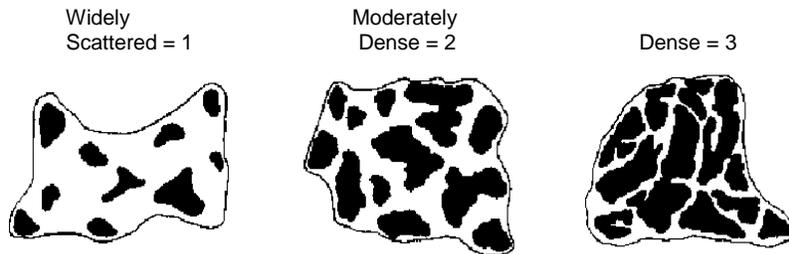
OS_CC-R Source: Recorded by the Photo Interpreter
 Description: Estimated Overstory crown cover (trees only) to the nearest ten percent.

US_CC-R Source: Generated by the Wenatchee FSL
 Description: Understory Crown Cover. This item was generated with $calc\ us_cc = totl_cc - os_cc$

CLMP Source: Recorded by the Photo Interpreter
 Description: Clumpiness. An answer to the question... "Is the tree cover naturally clumpy?"

 1 = Yes -- If yes, then **CLMP_DENS** and **CLMP_SIZE** were recorded.
 2 = No

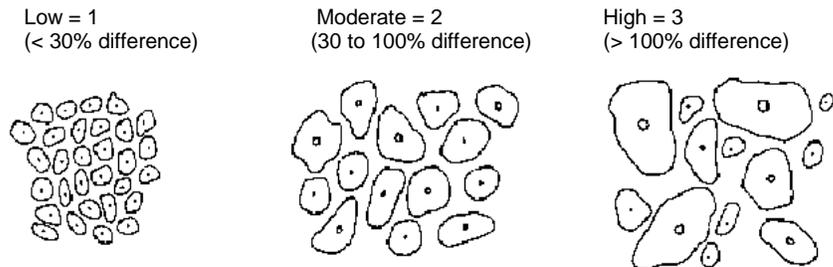
CLMP_DENS Source: Recorded by the Photo Interpreter.
 Description: Clump Density. Recorded only when **CLMP** = 1



CLMP_SIZE Source: Recorded by the Photo Interpreter
 Description: Recorded only where **CLMP** = 1

1 = small (< 1 ac)
 2 = medium (1-5 ac)
 3 = large (>5 ac and < 10 ac)

CRWN_DIFF Source: Recorded by the Photo Interpreter
 Description: Crown Differentiation. The degree of differentiation among overstory tree crowns.



CNPY_LYRS_R	Source: Recorded by the Photo Interpreter Description: Canopy Layers-Forest Types
	1 = Single canopy layer 2 = Two canopy layers 3 = More than two layers visible
RIPR_WET	Source: Recorded by the Photo Interpreter Description: Riparian or wetland? For both forested and non-forested polygons...
	1 = Riparian or Wetland area 2 = Not a Riparian or Wetland area
NON_FRST	Source: Recorded by the Photo Interpreter Description: Nonforest Type
	30 = rock (all) 31 = water (lake, pond) 32 = wet meadow, marsh (year-round saturated soils) ¹ 33 = alpine meadow ¹ 34 = dry meadow (only seasonally saturated soils) ¹ 35 = grass/forb (after logging) 36 = shrubland (with at least 5% canopy cover) ^{1,2} 37 = bare ground (burned or logged) 38 = bare ground (slumps, erosion) 39 = agricultural cropland 40 = urban/rural 41 = pasture (irrigated grasses/forbs) 42 = grassland (with at least 20% canopy cover) ^{1,2} 43 = woodland (< 10% total tree cover and at least 2 trees/ac) ¹ Note: (Used for LCR, LDS, UDS, GRO, MET, PEN, WEN, LYK, NAC, UYK, KET, SPO, SIL subbasins only;) Option 43 is <u>not used</u> for subbasins 10-42.) 44 = bare ground (roadcuts or sidecast adjacent to state or interstate highways). 45 = stream channel and nonvegetated floodplain 46 = grass/forb (after wildfire) 47 = sand dune 48 = glacier 49 = bare ground
	Note: Nonforest types have < 10% total tree crown cover. Items ripr_wet, non_frst, log_type, dead_snag, and elev_belt are also completed for these non-forested types.
	¹ If option 32, 33, 34, 36, 42, or 43 is selected, additional data entry may be included in non_frst-spp-os and non_frst-os_cc . ² If option 36 or 42 is selected, additional data entry may be included in non_frst-tcov .
LOG_TYPE	Source: Recorded by Photo Interpreter. Description: Logging Entry. All clearcut patches are < 10 acres.
	1 = no logging apparent 2 = regenerated (clearcut, shelterwood, seedtree harvests) 3 = selectively harvested (selective harvest, overstory removal, final removal) 4 = thinned (commercial, precommercial) 5 = patch clearcut (Where the clearcut patches are estimated to be less than 10 acres)
LOG_P_CC	Source: Recorded by the Photo Interpreter. Description: Logging percent crown cover. The percentage of clearcut patches within the polygon area rounded to the nearest ten percent.
DENS_OS	Source: Recorded by the Photo Interpreter. Description: The overstory trees per acre are given from reliable Data such as TSE stocking surveys, inventory plots, MSS, or NSS are used where available. Where no data was available, a 0 is recorded.

DENS_US Source: Recorded by the Photo Interpreter.
Description: The understory trees per acre are given from reliable data source (e.g., TSE stocking surveys, inventory plots, MSS, NSS) where available. Where no data was available, a 0 is recorded.

SIZE_OS.R Source: Recorded by the Photo Interpreter.
Description: Overstory Size

1 = seedlings and saplings (< 5.0" DBH)
2 = poles (5 to 8.9" DBH)
3 = small trees (9 to 15.9"DBH)
4 = medium trees (16 to 25.0" DBH)
5 = large trees (> 25.0" DBH)

SIZE_US.R Source: Recorded by the Photo Interpreter
Description: If there is more than one understory layer, the size class of the understory with the dominant crown closure was recorded.

1 = seedlings and saplings (< 5.0" DBH)
2 = poles (5 to 8.9" DBH)
3 = small trees (9 to 15.9"DBH)
4 = medium trees (16 to 25.0" DBH)

SPP_OS

Source: Recorded by the Photo Interpreter
 Description: The Dominant Overstory Species by BA per acre.

1 =	PIPO	ponderosa pine
2 =	LAOC	western larch
3 =	PICO	lodgepole pine
4 =	PSME	Douglas-fir
5 =	ABGR/ABCO	grand fir/white fir
6 =	ABAM	Pacific silver fir
7 =	ABLA2/PIEN	subalpine fir/Engelmann spruce
8 =	TSHE/THPL	western hemlock/western redcedar
9 =	TSME	mountain hemlock
10 =	PIAL/LALY	whitebark pine/subalpine larch
11 =	PIMO/PILA	western white pine/sugar Pine
12 =	Hardwood	maple, birch, poplar, etc (OR, WA only)
13 =	Juniper	JUOC, JUSC, etc.
14 =	ABPR	noble fir
15 =	ABMA	Shasta red fir
16 =	PIPO/PIMO/PILA	ponderosa pine /western white pine/sugar pine
17 =	PIPO/PSME	ponderosa pine/Douglas-fir
18 =	PSME/TSME	Douglas-fir/mountain hemlock
19 =	PICO/PIEN	lodgepole pine/Engelmann spruce
50 =	TSME/ABCO	mountain hemlock/white fir
51 =	PSME/PIEN	Douglas-fir/Engelmann spruce
52 =	CADE	incense cedar
53 =	LAOC/PICO	western larch/lodgepole pine
54 =	PSME/LAOC	Douglas-fir/western larch
55 =	PIFL	limber pine
56 =	PIPU	blue spruce
57 =	PIMO2	singleleaf pinyon pine
58 =	PIGL	white spruce
59 =	Maple	maple
60 =	Birch	birch
61 =	Aspen	aspen
62 =	Cottonwood	cottonwood
63 =	PSME/PIFL	Douglas-fir/limber pine
64 =	PIMO2/JUSC or PIMO2/JUOC	singleleaf pinyon pine/Rocky Mountain juniper or singleleaf pinyon pine/western juniper
65 =	PSME/PIMO	Douglas-fir/western white pine
66 =	ABGR/PIMO	grand fir/western white pine
67 =	ABLA2/PIMO	subalpine fir/western white pine
68 =	LAOC/PIMO	western larch/western white pine
69 =	LAOC/PICO/PIMO	western larch/lodgepole pine/ western white pine
70 =	LAOC/PIPO	western larch/ponderosa pine
71 =	LAOC/PIEN	western larch/Engelmann spruce
72 =	PICO/ABLA2	lodgepole pine/subalpine fir
73 =	PICO/PSME	lodgepole pine/Douglas-fir
74 =	PICO/ABGR	lodgepole pine/grand fir
75 =	PSME/ABGR	Douglas-fir/grand fir
76 =	ABLA2/PIFL	subalpine fir/limber pine
77 =	ABGR/PIEN	grand fir/Engelmann spruce
78 =	PSME/Aspen	Douglas-fir/aspen
79 =	PICO/Aspen	lodgepole pine/aspen
90 =	ABLA2/PSME	subalpine fir/Douglas-fir
91 =	ABGR/PIPO	grand fir/ponderosa pine
92 =	ABGR/ABLA2	grand fir/subalpine fir
93 =	ABGR/LAOC	grand fir/western larch
94 =	Russian olive	Russian olive
95 =	ABLA2/PIAL	subalpine fir/whitebark pine
96 =	ABLA2/LALY	subalpine fir/subalpine larch
97 =	ABLA2/LAOC	subalpine fir/western larch
98 =	PIAL/PICO	whitebark pine/lodgepole pine
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99 =	PIPO/PSME/LAOC	ponderosa pine/Douglas-fir/western larch
120 =	Alder	red alder (ALRU)
121 =	ABAM/PSME	Pacific silver fir/Douglas-fir
122 =	ABAM/ABPR and TSHE/PSME	Pacific silver fir/noble fir with western hemlock/Douglas-fir
123 =	TSHE/ABGR	western hemlock/grand fir
124 =	TSHE/PSME	western hemlock/Douglas-fir

SPP_US

Source: Recorded by the Photo Interpreter
 Description: The Dominant Understory Species by trees per acre.

20 =	PIPO	ponderosa pine
21 =	LAOC/PICO	western larch/lodgepole pine
22 =	PSME/ABGR/ABCO/ABAM	Douglas-fir/grand fir/white fir/Pacific silver fir
23 =	TSHE/THPL	western hemlock/western redcedar
24 =	TSME	mountain hemlock
25 =	ABLA2/PIEN	subalpine fir/Engelmann spruce
26 =	Hardwood	hardwood (OR/WA only)
27 =	Juniper	juniper
28 =	Grass/Forb	grass/forb
29 =	Shrub	shrub
30 =	Bare Ground	bare ground
31 =	PICO	lodgepole pine
32 =	PIPO/PICO	ponderosa pine/lodgepole pine
33 =	PIPO/PSME	ponderosa pine/Douglas-fir
34 =	ABGR/ABCO	grand fir/white fir
35 =	TSME/ABCO/PILA	mountain hemlock/white fir/sugar pine
36 =	TSME/PICO	mountain hemlock/lodgepole pine
37 =	PSME/TSME	Douglas-fir/mountain hemlock
38 =	PICO/PIEN	lodgepole pine/Engelmann spruce
39 =	PIAL/LALY	whitebark pine/subalpine larch
40 =	ABMA	Shasta red fir
41 =	CADE	incense cedar
42 =	PIMO	western white pine
43 =	PSME/LAOC	Douglas-fir/western larch
44 =	PSME/PIEN	Douglas-fir/Engelmann spruce
45 =	PIFL	limber pine
46 =	PIPU	blue spruce
47 =	PIMO2	singleleaf pinyon pine
48 =	PIGL	white spruce
49 =	PIEN/ABGR	Engelmann spruce/grand fir
80 =	Maple	maple
81 =	Birch	birch
82 =	Aspen	aspen
83 =	Cottonwood	cottonwood
84 =	PSME/PIFL	Douglas fir/limber pine
85 =	PICO/PSME	lodgepole pine/Douglas-fir
86 =	XETE	beargrass
87 =	ABAM	Pacific silver fir
<hr/>		
88 =	PICO/ABLA2	lodgepole pine/subalpine fir
89 =	ABLA2/PIAL	subalpine fir/whitebark pine
100 =	PICO/ABGR	lodgepole pine/grand fir
101 =	THPL/ABGR	western red cedar/grand fir
102 =	ABLA2/PSME	subalpine fir/Douglas-fir
103 =	PIAL/PICO	whitebark pine/lodgepole pine
104 =	ABLA2/LALY	subalpine fir/subalpine larch
105 =	PSME/ABGR	Douglas-fir/grand fir
106 =	ABGR/ABLA2	grand fir/subalpine fir
107 =	ABGR/PIEN	grand fir/Engelmann spruce
108 =	Alder	red alder (ALRU)
109 =	ABAM/ABPR and TSHE/PSME	Pacific silver fir/noble fir with western hemlock/Douglas-fir
110 =	TSHE/PSME	western hemlock/Douglas-fir

DEAD_SNAG

Source: Generated by Photo Interpreter
 Description: Estimated Dead tree and snag abundance

- 1 = none apparent
- 2 = < 10% of trees dead or snags
- 3 = 10 to 39% of trees dead or snags
- 4 = 40 to 70% of trees dead or snags
- 5 = > 70% of trees dead or snags

ELEV_BELT

Source: Generated by Photo Interpreter
 Description: Elevation Belt - Nonforested type

- 1 = Colline Below Lower Timberline
- 2 = Lower Montane Adjacent forest vegetation where applicable with PIPO or PSME and below subalpine forest type, e.g., ABLA2, PIEN, TSME, ABAM, and/or ABMA
- 3 = Upper Montane Adjacent forest vegetation where applicable with ABLA2, TSME, PIEN, ABAM, and/or ABMA and below continuous forest upper timberline
- 4 = Subalpine Above upper timberline but with trees as islands or krummholz
- 5 = Alpine Above upper timberline

ELEVATION

Source: Generated by Wenatchee FSL
 Description: 30-meter DEM data was used to generate 1000-foot elevation bands. These bands were then turned into a polygon coverage and used to attribute each individual vegetation polygon. Even though several polygons fell in 2, 3, 4, or even 5 elevation bands, the polygon were labeled with the elevation band that it overlapped the most.

- 1 = 0-1,000 feet
- 2 = 1-2,000 feet
- 3 = 2-3,000 feet
- 4 = 3-4,000 feet
- 5 = 4-5,000 feet
- 6 = 5-6,000 feet
- 7 = 6-7,000 feet
- 8 = 7-8,000 feet
- 9 = 8-9,000 feet
- 10 = 9-10,000 feet
- 11 = 10-11,000 feet
- 12 = 11-12,000 feet
- 13 = 12-13,000 feet
- 14 = 13-14,000 feet
- 15 = 14-15,000 feet

ASPECT

Source: Generated by Wenatchee FSL
 Description: 30-meter DEM data was used to generate 5 aspect classes. These 5 aspect classes were then converted into a polygon coverage and used to attribute each individual vegetation polygon. Even though most polygons fell into more than 1 aspect class, the polygon was labeled with the aspect class that it overlapped the most.

- 1 = 351 to 80 True North
- 2 = 81 to 170 True North
- 3 = 171 to 260 True North
- 4 = 261 to 350 True North
- 5 = No Aspect (Flat)

SLOPE	<p>Source: Generated by Wenatchee FSL</p> <p>Description: 30-meter DEM data was used to generate 6 slope classes. These 6 slope classes were then converted into a polygon coverage and used to attribute each individual vegetation polygon. Even though most polygons fell into more than one slope polygon, the vegetation polygon was labeled with the aspect class that it overlapped the most.</p> <p>1 = 0 to 12 percent slope 2 = 12 to 25 percent slope 3 = 25 to 40 percent slope 4 = 40 to 55 percent slope 5 = 55 to 75 percent slope 7 = >75 percent slope</p>
ELEV_PCT	<p>Source: Generated by Wenatchee FSL</p> <p>Description: Percentage of the polygon that overlaps with the elevation band that it was assigned.</p>
ASPECT_PCT	<p>Source: Generated by Wenatchee FSL</p> <p>Description: Percentage of the polygon that overlaps with the aspect class that it was assigned.</p>
SLOPE_PCT	<p>Source: Generated by Wenatchee FSL</p> <p>Description: Percentage of the polygon that overlaps with the slope class that it was assigned.</p>
NON_FRST-SPP_OS	<p>Source: Recorded by the Photo Interpreter</p> <p>Description: Nonforest Overstory Species</p> <p>1 = native bunchgrass (wild rye, bluebunch wheatgrass, Idaho fescue, alkali grass, bottlebrush, squirreltail, others) 2 = annual grass (cheatgrass, medusahead) 3 = seeded wheatgrasses (crested wheatgrass, other seeded dryland grasses) 4 = exotic forbs (spotted knapweed, yellowstar thistle, leafy spurge, others) 5 = native moist site herbs (sedges, rushes, moist site grasses, forbs, others) 6 = low sagebrush (black sage, low sage, salt desert shrub, others) 7 = low shrub alpine (mountain heathers) 8 = big sagebrush/bitterbrush (basin big sage, Wyoming sage, mountain big sage, silver sage, bitterbrush, rabbitbrush, others) 9 = mahogany (mountain and curleaf mahoganies) 10 = mountain Shrubs (serviceberry, rose, snowberry, mountain maple, Scouler's willow, buffaloberry, chokecherry, bittercherry, others) 11 = wet site shrubs (willow, alder, bog birch, dogwood, others) 12 = beargrass 13 = herbaceous (A combination of options 1,2, and 4) used in Historical data (In batch 3) only as a last resort where option 6 or 8 could not be interpreted 14 = Shrubs (A combination of options 6 and 8) used in Historic data (In batch 3) only as a last resort where option 6 or 8 could not be interpreted</p>
NON_FRST-TCC	<p>Source: Recorded by the Photo Interpreter</p> <p>Description: The Overstory Canopy Cover estimated to the nearest 1/3 cover for each non-forested polygon.</p> <p>1 = < 33% canopy cover (Used only in Batch 1 and Batch 2) 2 = 33 to 66% canopy cover 3 = >66% canopy cover 4 = < 15% canopy cover (Batch 3 only) 5 = 16 - 33% canopy cover (Batch 3 only)</p>
NON_FRST-TCOV	<p>Source: Recorded by the Photo Interpreter</p> <p>Description: When the total tree crown closure is < 10% and NON_FRST is option 36 (shrubland) or 42 (grassland) this field will indicate whether or not the shrubland or grassland polygon has tree cover present.</p> <p>1 = yes, tree cover is present on this non-forested polygon. 2 = no, tree cover is not present on this non-forested polygon.</p>

STRUCTURE

Source: Generated by Wenatchee FSL
 Description: The structural stage of the current cover type. The classification schema for structure was conceptualized by Latham et al, and revised in 2009 by Salter, Hessburg, and Dickinson. See dichotomous key in **Appendix A** for classification rules. Note: this field, and derivatives, has been used for all analyses using patch "structure" after the year 2009.

si	=	stand initiation
seoc	=	stem exclusion open canopy
secc	=	stem exclusion closed canopy
ur	=	understory re-initiation
yfms	=	young forest multi-story
ofms	=	old forest multi-story
ofss	=	old forest single story
oh	=	open herbland
ch	=	closed herbland
ols	=	open low-medium shrub
cls	=	closed low-medium shrub
ots	=	open tall shrub
cts	=	closed tall shrub
nf	=	rock, water, wet meadow/marsh, alpine meadow, dry meadow/grassland, shrubland, post logging bare ground - burned, post logging bare ground - slumps and erosion, post logging - grass/forb stage, cropland, urban/rural, pasture, grassland, woodland
w_si	=	woodland stand initiation
w_se	=	woodland stem exclusion
w_ur	=	woodland understory re-initiation
w_ymms	=	woodland young multi-story
w_oms	=	woodland old multi-story
w_oss	=	woodland old single story

STRUCTURE_2r

Source: Generated by Wenatchee FSL
 Description: The structural stage of the current cover type. Method of classification was developed by Latham et al. See key in **Appendix B** for classification rules. Note: this field was used for all analyses using "structure" for the years 1993-2009.

si	=	stand initiation
seoc	=	stem exclusion open canopy
secc	=	stem exclusion closed canopy
ur	=	understory re-initiation
yfms	=	young forest multi-story
ofms	=	old forest multi-story
ofss	=	old forest single story
oh	=	open herbland
ch	=	closed herbland
ols	=	open low-medium shrub
cls	=	closed low-medium shrub
ots	=	open tall shrub
cts	=	closed tall shrub
nf	=	rock, water, wet meadow/marsh, alpine meadow, dry meadow/grassland, shrubland, post logging bare ground - burned, post logging bare ground - slumps and erosion, post logging - grass/forb stage, cropland, urban/rural, pasture, grassland, woodland.
w_si	=	woodland stand initiation
w_se	=	woodland stem exclusion
w_ur	=	woodland understory re-initiation
w_ymms	=	woodland young multi-story
w_oms	=	woodland old multi-story
w_oss	=	woodland old single story

COVER

Source: Generated by Wenatchee FSL
 Description: Cover types

pipe	ponderosa pine (PIPO), SAF 237
laoc	western larch (LAOC), SAF 212
pico	lodgepole pine (PICO), SAF 218
psme	interior Douglas-fir (PSME), SAF 210
abgr/abco	grand fir or white fir (ABGR or ABCO), SAF 211 & 213
abam	Pacific silver fir (ABAM), SAF 226
abla2/pien	Engelmann spruce - subalpine fir (ABLA2/PIEN), SAF 206
tshe/thpl	western hemlock and western redcedar (TSHE/THPL), SAF 224,227, 228
tsme	mountain hemlock (TSME), SAF 205
pial/laly	whitebark pine & subalpine larch(PIAL & LALY), SAF 208
pila/pimo	western white pine & sugar pine(PILA & PIMO), SAF 215 (ID, MT, WA only)
aspen/cottonwood-willow	hardwood, SAF 217 (aspen), 221 (red alder), 222, 235 (cottonwood-willow), 233 (Oregon white oak)
juoc/jusc	western juniper and Rocky Mtn. juniper (JUOC & JUSC); SAF 238 (JUOC), 220 (JUSC)
abma	red fir (ABMA, ABMAS), SAF 207
pifl	limber pine (PIFL), SAF 219
pied	pinyon pine
pimo2/jusc	pinyon pine (PIED), juniper, SAF 239
russian olive	Russian olive
rock	rock
water	water
wet meadow/marsh	wet meadow, marsh
alpine meadow	alpine meadow
dry meadow/grassland	dry meadow, grassland
shrubland	shrubland
bg/roadcut	bare ground (roadcuts or sidecast adjacent to highways)
bare ground	bare ground
pl-bg/burned	post logging- bare ground, burned
pl-bg/slumps & erosion	post logging - bare ground, slumps and erosion
pl-grass/forb stag	post logging - grass/forb stage
stream/floodplain	stream channel and nonvegetated floodplain
pf-grass/forb	post fire grasses/forbs
sand dune	sand dune
glacier	glacier
cropland	cropland
urban/rural	urban/rural
pasture	pasture
grassland	grassland
woodland	woodland
non_frst1_1	colline bunchgrass (AGSP, FEID in part)
non_frst1_2	montane bunchgrass (FEID mostly)
non_frst1_3	subalpine & alpine bunchgrass (FEID in part, FEOV, FEVI)
non_frst2_1	colline exotic grasses and forbs
non_frst2_2	montane exotic grasses and forbs
non_frst2_3	subalpine and alpine exotic grasses and forbs
non_frst3_1	colline moist herbaceous
non_frst3_2	montane moist herbaceous
non_frst3_3	subalpine and alpine moist herbaceous
non_frst4_1	colline low-med. shrublands (sagebrush, spp., greasewood)
non_frst4_2	montane low-medium shrublands (dry sagebrush spp. and bitterbrush)
non_frst4_3	subalpine & alpine low-med. shrubland (mountain heaths)
non_frst5_1	colline mahogany
non_frst5_2	montane mahogany
non_frst5_3	subalpine and alpine mahogany
non_frst6_1	colline tall shrub
non_frst6_2	montane tall shrub
non_frst6_3	subalpine & alpine tall shrub
non_frst7_1	colline wet shrub
non_frst7_2	montane wet shrub
non_frst7_3	subalpine and alpine wet shrub
non_frst8_2	montane beargrass (<u>Xerophyllum tenax</u>)
non_frst8_3	subalpine beargrass (<u>Xerophyllum tenax</u>)

SERIES

Source: Generated by Missoula Fire Lab & Wenatchee FSL for the [Interior Columbia Basin Ecosystem Management Project](#)

Description: Potential natural vegetation type based on physiographic setting, as well as historical and current vegetation types. For more information regarding the development of series see – [Classifying Plant Series-Level Forest Potential Vegetation Types: Methods for Subbasins Sampled in the Midscale Assessment of the Interior Columbia Basin.](#)

Forested Series Codes

wd-psme/abgr/abco	Warm/dry - Douglas-fir/grand fir/white fir
cm-psme/abgr/abco	Cool/moist - Douglas-fir/grand fir/white fir
wd-abla2/pien	Warm/dry - Engelmann spruce-subalpine fir
cm-abla2/pien	Cool moist - Engelmann spruce-subalpine fir
hc-abla2/pien	Harsh/cold - Engelmann spruce-subalpine fir
wd-potr	Warm/dry - aspen
cm-potr	Cool/moist - aspen
wd-tshe/thpl	Warm/dry - western redcedar-western hemlock
cm-tshe/thpl	Cool/moist - western redcedar-western hemlock
potr2	cottonwood
pial/laly	whitebark pine/subalpine larch
pipo	ponderosa pine
juoc/jusc	juniper
quga	Oregon white oak
tsme	mountain hemlock
pico	lodgepole pine
abam	Pacific silver fir
abma	red fir
pifl	limber pine
acgl	maple

Non-forested Series Codes

agst	agropyron steppe
putr	purshia tridentata
bsbw	basin big sage/wildrye
lsme	low sage – mesic
lsmj	low sage – mesic w/juniper
lsxe	low sage – xeric
lsxj	low sage – xeric w/juniper
wbsa	Wyoming big sage – warm
wbsc	Wyoming big sage – cool
ctrv	cottonwood riverine
fesc	fescue grassland
bsme	mountain big sage – mesic, east > 20 (slope)
bsmc	mountain big sage – mesic, east w/conifer encroachment
bsmw	mountain big sage – mesic, west
bsmj	mountain big sage – mesic, west with juniper
sarp	salt brush riparian
sdsh	salt desert shrub
ttsa	threetip sage
salx	Salix/Carex
cew1	ce le woodland without Art Rva
cew2	ce le woodland with Art Rva
mtsh	mountain shrub
rigr	riparian graminoid
bsml	mountain big sage – mesic, east < 20 (slope)
ircr	irrigated cropland
drcr	dry crop
mrls	mountain riparian low shrub
mrsd	mountain riparian sedge (no salix)
ahls	alpine herbland/low shrub
fes2	fescue with conifer encroachment
ags2	agropyron steppe with conifer encroachment
rock	rock
water	water
dune	sand dune
glacr	glacier
urban	urban

SERIES-CODE

Source: Generated by Missoula Fire Lab & Wenatchee FSL
 Description: Same as 'series' item (above). Represented here with a numeric code. As currently defined, the series-code label contains 2 parts:

- Potential vegetation class
- Habitat modifier (warm-dry, cool-moist, etc.)

Potential Vegetation Class

<u>Code</u>	<u>Forested Series Group</u>
1100	ABAM
1200	ABLA2/PIEN
1300	ABMA
1400	JUOC/JUSC
1500	PICO
1600	PIFL
1700	PIPO
1800	POTR
1900	POTR2
2000	PSME/ABGR/ABCO
2100	QUGA
2200	TSHE/THPL
2300	TSME
2400	ACGL
2500	PIAL

Code **Non-forested Series Group**

1000	Non-forest
5000	AGST
5100	FESC
5200	MRSO
5300	RIGR
5400	SALX
5500	IRCR
5600	DRCR
5700	MRLS
5800	SDSH
5900	SARP
6000	MTSH
6100	CEW1
6200	CEW2
6300	BSBW
6400	LSME
6500	LSMJ
6600	LSXE
6700	LSXJ
6800	PUTR
6900	LSML
7000	BSME
7100	BSMC
7200	BSMW
7300	BSMJ
7400	TTSA
7500	WBSA
7600	WBSC
7700	URBAN
7800	AHLS
7900	AGS2
8000	FES2
9000	WATER
9100	ROCK
9200	DUNE
9300	GLACR

Habitat Modifier

<u>WET/DRY Code</u>	<u>Description</u>
10	none assigned
20	warm-dry
30	cool-moist
40	harsh-cold (short, cold growing season)

SERIES_PCT	Source:	Generated by Wenatchee FSL
	Description:	Series was developed as a raster map independent of the vegetation database polygons. Series percentage is that percentage of the polygon that overlaps with the series class that it was assigned.
LSOF_R	Source:	Wenatchee FSL
	Description:	Late successional structural class: See Appendix C for classification rules.
		1 = late successional
		2 = old forest multi-story
		3 = old forest single-story
		4 = other forest
		5 = non-forest
PHYS_TYPE	Source:	Wenatchee FSL
	Description:	Physiognomic type
	forest	forest with >30% tree canopy cover
	herbland	herb, grass, or forb dominant
	shrubland	shrub dominant
	woodland	forest with 10%-30% tree canopy cover
	nonforest	nonforest/nonrange and other anthropogenic types

INSECT AND PATHOGEN ITEMS

The following is a list of item descriptions for insects and pathogens. For information on specific criteria used to derive item values, please refer to ["Assessing change in watershed susceptibility to major forest insect and pathogen disturbances: methods for forested subwatersheds sampled in the Interior Columbia River Basin Assessment"](#) (Hessburg et. al.).

Source: Wenatchee FSL
Description: List of insects/pathogens and the item code.

WSB = western spruce budworm
DFB = Douglas fir beetle
WPB1 = western pine beetle - type 1
WPB2 = western pine beetle - type 2
MPB1 = mountain pine beetle - type 1
MPB3 = mountain pine beetle - type 3
FE = fir engraver
SB = spruce beetle
DFDM = Douglas fir dwarf mistletoe
WLDM = western larch dwarf mistletoe
PPDM = ponderosa pine dwarf mistletoe
LPDM = lodgepole pine dwarf mistletoe
AROS = Armillaria ostoyae (Armillaria root disease)
PHWE = Phellinus weirii (laminated root rot)
SHEAN = S (spruce) - group Heterobasidion annosum
PHEAN = P (pine) - group Heterobasidion annosum
TRBR = tomentosus root and butt rot
SRBR = Schweinitzii root and butt rot
WPBR1 = white pine blister rust - type 1
WPBR2 = white pine blister rust - type 2
RRSR = rust-red stringy rot

"Insect/Pathogen"_HAZ

Source: Wenatchee FSL
Description: Susceptibility based on sum of all applicable susceptibility variables.

1 = low
2 = moderate
3 = high

WILDLIFE HABITAT ITEMS

The following is a list of item descriptions for wildlife habitat.

Source: Wenatchee FSL
Description: List of wildlife species and the item code.

AM = American marten
NG = northern goshawk
SP = northern spotted owl
SP1 = northern spotted owl (future-potential replacement)
WH = white-headed woodpecker (broad definition)
WH1 = white-headed woodpecker (narrow definition)

"Species"_HAB

Source: Wenatchee FSL
Description: Source habitat classification: "does the polygon contain suitable source habitat for the species of interest?"

1 = yes
2 = no

FIRE ITEMS

The following is a list of item descriptions for fire variables. Refer to "Assessing change in fire hazard and smoke production: methods for the midscale subwatersheds sampled in the Interior Columbia River Basin" (Ottmar and Alvarado, 1995) for methodology.

Note: Fire items are embedded with a weather condition descriptor.

W = wet conditions (Prescribed burn)
 N = normal conditions
 D = Dry conditions (Wildfire)

CONS_ Source: Generated by Seattle Fire Lab
 Description: Fuel consumption classes and ranges in megagrams/hectare.

	Megagrams/hectare	tons/acre
1 = very low	0.0 - 22.4	0.0 – 10.0
2 = low	22.5 - 44.9	10.1 – 20.0
3 = moderate	45.0 - 56.1	20.1 – 25.0
4 = high	56.2 - 67.3	25.1 – 30.0
5 = very high	>67.3	>30.0

INT_ Source: Generated by Seattle Fire Lab
 Description: Fire line intensity classes and ranges in kilowatts/meter and BTU/foot/second.

	Kilowatts/meter	BTU/foot/second
1 = very low	0.0 - 172.9	0.0 – 50.0
2 = low	173.0 - 345.9	50.1 – 100.0
3 = moderate	346.0 - 1,037.8	100.1 – 300.0
4 = high	1,037.9 - 1,729.6	300.1 – 500.0
5 = very high	1,729.7 - 2,594.4	500.1 – 750.0
6 = severe	2,594.5 - 3,459.2	750.1 – 1000.0
7 = extreme	>3,459.2	>1000.0

RATE_ Source: Generated by Seattle Fire Lab
 Description: Rate of spread classes and ranges in meters/minutes.

	Meters/minute	feet/minute
1 = very low	0.0 - 0.6	0.0 – 1.9
2 = low	0.7 - 2.4	2.0 – 7.9
3 = moderate	2.5 - 9.1	8.0 – 29.9
4 = high	>9.1	>29.9

FLAME_ Source: Generated by Seattle Fire Lab
 Description: Flame length classes and ranges in meters.

	Meters	Feet
1 = very low	0.0 - 0.6	0.0 – 1.9
2 = low	0.7 - 1.2	2.0 – 3.9
3 = moderate	1.3 - 1.8	4.0 – 5.9
4 = high	1.9 - 2.4	6.0 – 7.9
5 = very high	2.5 - 3.4	8.0 – 11.0
6 = extreme	> 3.4	>11.0

RCF_ Source: Generated by Seattle Fire Lab
 Description: Running of crown fire (Crown fire potential).
Note: RCF_0 is based on vegetation attributes only.

1 = none
 2 = very low
 3 = low
 4 = moderate
 5 = high
 6 = very high
 7 = severe
 8 = extreme

PM2_5_ Source: Generated by Seattle Fire Lab
 Description: Smoke emissions classes (PM 2.5) and ranges in kilograms/hectare.

	Kilograms/hectare	pounds/acres
1 = very low	0.0 - 224.2	0.0 – 200.0
2 = low	224.3 - 448.3	200.1 – 400.0
3 = moderate	448.4 - 672.5	400.1 – 600.0
4 = high	672.6 - 896.6	600.1 – 800.0
5 = very high	>896.6	>800.0

PM10_ Source: Generated by Seattle Fire Lab
 Description: Smoke emissions classes (PM 10) and ranges in kilograms/hectare.

	Kilograms/hectare	pounds/acres
1 = very low	0.0 - 224.2	0.0 – 200.0
2 = low	224.3 - 448.3	200.1 – 400.0
3 = moderate	448.4 - 672.5	400.1 – 600.0
4 = high	672.6 - 896.6	600.1 – 800.0
5 = very high	>896.6	>800.0

FUEL Source: Generated by Seattle Fire Lab
 Description: Fuel loading classes and ranges in megagrams/hectare.
Note: Fuel loading does not contain a weather descriptor.

	Megagrams/hectare	tons/acre
1 = very low	0.0 – 22.4	0.0 – 10.0
2 = low	22.5 – 44.9	10.1 – 20.0
3 = moderate	45.0 – 56.1	20.1 – 25.0
4 = high	56.2 – 67.3	25.1 – 30.0
5 = very high	>67.3	>30.0

PT

Source: Wenatchee FSL
Description: Physiognomic type code item.

10 = shrubland
11 = herbland
12 = woodland
13 = forest
14 = nonforest/nonrange and other anthropogenic types

SS.R

Source: Generated by Wenatchee FSL
Description: Numeric codes for structure classes.

10	si	stand initiation
11	seoc	stem exclusion open canopy
12	secc	stem exclusion closed canopy
13	ur	understory re-initiation
14	yfms	young forest multi-story
15	ofms	old forest multi-story
16	ofss	old forest single story
17	oh	open herbland
18	ch	closed herbland
20	ols	open low-medium shrub
21	cls	closed low-medium shrub
22	ots	open tall shrub
23	cts	closed tall shrub
24	nf	rock, water, wet meadow/marsh, alpine meadow, dry meadow/grassland, shrubland, post logging bare ground - burned, post logging bare ground - slumps and erosion, post logging - grass/forb stage, cropland, urban/rural, pasture, grassland, woodland.
25	w_si	woodland stand initiation
26	w_se	woodland stem exclusion
27	w_ur	woodland understory re-initiation
28	w_yms	woodland young multi-story
29	w_oms	woodland old multi-story
30	w_oss	woodland old single story

CT

Source: Description:	Generated by Wenatchee FSL Numeric code for cover types.	
10	pipe	ponderosa pine (PIPO), SAF 237
11	laoc	western larch (LAOC), SAF 212
12	pico	lodgepole pine (PICO), SAF 218
13	psme	interior Douglas-fir (PSME), SAF 210
14	abgr/abco	grand fir or white fir (ABGR or ABCO), SAF 211 & 213
15	abam	Pacific silver fir (ABAM), SAF 226
16	abla2/pien	Engelmann spruce - subalpine fir (ABLA2/PIEN), SAF 206
17	tshe/thpl	western hemlock and western redcedar (TSHE/THPL), SAF 224, 227, 228
18	tsme	mountain hemlock (TSME), SAF 205
19	pial/laly	whitebark pine & subalpine larch (PIAL & LALY), SAF 208
20	pila/pimo	western white pine & sugar pine (PILA & PIMO), SAF 215 (ID, MT, WA only)
21	aspen/cottonwood-willow	hardwood, SAF 217 (aspen), 221 (red alder), 222, 235 (cottonwood-willow), 233 (Oregon white oak)
22	juoc/jusc	western juniper and Rocky Mtn. juniper (JUOC & JUSC); SAF 238 (JUOC), 220 (JUSC)
23	abma	red fir (ABMA, ABMAS), SAF 207
24	pifl	limber pine (PIFL), SAF 219
25	pied	pinyon pine
26	pimo2/jusc	pinyon pine (PIED), Juniper, SAF 239
27	Russian olive	Russian olive
28	rock	rock
29	water	water
30	wet meadow/marsh	wet meadow, marsh
31	alpine meadow	alpine meadow
32	dry meadow/grassland	dry meadow, grassland
33	shrubland	shrubland
34	bg/roadcut	bare ground (roadcuts or sidecast adjacent to highways)
35	bare ground	bare ground
36	pl - bg/burned	post logging- bare ground, burned
37	pl - bg/slumps & erosion	post logging - bare ground, slumps and erosion
38	pl - grass/forb stag	post logging - grass/forb stage
39	stream/floodplain	stream channel and nonvegetated floodplain
40	pf - grass/forb	post fire grasses/forbs
41	sand dune	sand dune
42	glacier	glacier
43	cropland	cropland
44	urban/rural	urban/rural
45	pasture	pasture
46	grassland	grassland
47	woodland	woodland
48	non_frst1_1	colline bunchgrass (AGSP, FEID in part)
49	non_frst1_2	montane bunchgrass (FEID mostly)
50	non_frst1_3	subalpine & alpine bunchgrass (FEID in part, FEOV, FEVI)
51	non_frst2_1	colline exotic grasses and forbs
52	non_frst2_2	montane exotic grasses and forbs
53	non_frst2_3	subalpine and alpine exotic grasses and forbs
54	non_frst3_1	colline moist herbaceous
55	non_frst3_2	montane moist herbaceous
56	non_frst3_3	subalpine and alpine moist herbaceous
57	non_frst4_1	colline low-med. shrublands (sagebrush spp., greasewood)
58	non_frst4_2	montane low-med. shrublands (dry sagebrush spp. and bitterbrush)
59	non_frst4_3	subalpine & alpine low-med. shrubland (mountain heaths)
60	non_frst5_1	colline mahogany
61	non_frst5_2	montane mahogany
62	non_frst5_3	subalpine and alpine mahogany
63	non_frst6_1	colline tall shrub
64	non_frst6_2	montane tall shrub
70	non_frst6_3	subalpine and alpine tall shrub
65	non_frst7_1	colline wet shrub
66	non_frst7_2	montane wet shrub
67	non_frst7_3	subalpine and alpine wet shrub
68	non_frst8_2	montane beargrass (<u>Xerophyllum tenax</u>)
69	non_frst8_3	subalpine beargrass (<u>Xerophyllum tenax</u>)

PVT

Source: Generated by Missoula Fire Lab & Wenatchee FSL
 Description: Potential natural vegetation type based on physiographic setting, as well as current and historic vegetation types.

10	wd-psme/abgr/abco	Warm/dry - Douglas-fir/grand fir/white fir
11	cm-psme/abgr/abco	Cool/moist - Douglas-fir/grand fir/white fir
12	wd-abla2/pien	Warm/dry - Engelmann spruce-subalpine fir
13	cm-abla2/pien	Cool moist - Engelmann spruce-subalpine fir
14	hc-abla2/pien	Harsh/cold - Engelmann spruce-subalpine fir
15	wd-potr	Warm/dry - aspen
16	cm-potr	Cool/moist-aspen
17	wd-tshe/thpl	Warm/dry - western redcedar-western hemlock
18	cm-tshe/thpl	Cool/moist - western redcedar-western hemlock
19	potr2	cottonwood
20	pial/laly	whitebark pine/subalpine larch
21	pipa	ponderosa pine
22	juoc/jusc	juniper
23	quga	Oregon white oak
24	tsme	mountain hemlock
25	pico	lodgepole pine
26	abam	Pacific silver fir
27	abma	red fir
28	pifl	limber pine
29	acgl	maple
30	nf	non-forested
31	agst	agropyron steppe
32	putr	purshia tridentata
33	bsbw	basin big sage/wildrye
34	lsme	low sage – mesic
35	lsjm	low sage – mesic w/juniper
36	lsxe	low sage – xeric
37	lsxj	low sage – xeric w/juniper
38	wbsa	Wyoming big sage – warm
39	wbsc	Wyoming big sage – cool
40	ctrv	cottonwood riverine
41	fesc	fescue grassland
42	bsme	mountain big sage – mesic, east > 20 (slope)
43	bsmc	mountain big sage – mesic, east w/ conifer encroachment
44	bsmw	mountain big sage – mesic, west
45	bsmj	mountain big sage – mesic, west w/juniper
46	sarp	salt brush riparian
47	sdsh	salt desert shrub
48	ttsa	threetip sage
49	salx	Salix/Carex
50	cew1	ce le woodland without Art Rva
51	cew2	ce le woodland with Art Rva
52	mtsh	mountain shrub
53	rigr	riparian graminoid
54	bsml	mountain big sage – mesic, east < 20 (slope)
55	ircr	irrigated cropland
56	drcr	dry crop
57	mrls	mountain riparian low shrub
58	mrsd	mountain riparian sedge (no salix)
59	ahls	alpine herbland/low shrub
60	fes2	fescue with conifer encroachment
61	ags2	agropyron steppe with conifer encroachment
62	rock	rock
63	water	water
64	dune	sand dune
65	glacr	glacier
66	urban	urban

PVG

Source: Wenatchee FSL
 Description: Potential natural vegetation group is a reclassification of the potential natural vegetation type into 15 broad groups.

10	DF	Dry forest
11	MF	Moist forest
12	CF	Cold forest
13	Wd	Woodland
14	RW	Riparian woodland
15	DS	Dry shrub
16	CS	Cool shrub
17	RS	Riparian shrub
18	DG	Dry grass
19	Al	Alpine
20	RG	Riparian grass
21	Ag	Agriculture
22	Ba	Barren
23	Ur	Urban
24	Wa	Water

SIZE_MEDLG_R

Source: Wenatchee FSL
 Description: Large and medium tree classes.

- 1 = other (size_os < 4)
- 2 = Medium trees only (size_os = 4)
- 3 = Large trees only (size_os = 5 and size_us < 4)
- 4 = Large and medium trees (size_os = 5 and size_us = 4)

MEDLG_CC

Source: Wenatchee FSL
 Description: Canopy closure classes of large and/or medium trees.

- 10 = Non-forest
- 11 = Other forest (no medium or large trees present)
- 22 = Medium trees only, 10-30% crown closure
- 23 = Medium trees only, 40-60% crown closure
- 24 = Medium trees only, 70-100% crown closure
- 32 = Large trees only, 10-30% crown closure
- 33 = Large trees only, 40-60% crown closure
- 34 = Large trees only, 70-100% crown closure
- 42 = Large and Medium trees, 10-30% crown closure
- 43 = Large and Medium trees, 40-60% crown closure
- 44 = Large and Medium trees, 70-100% crown closure

RMNT_LG

Source: Wenatchee FSL
 Description: Large tree classes.

- 1 = Remnant large trees in structural classes other than old forest.
- 2 = Large trees in old forest multistory structural class.
- 3 = Large trees in old forest single story structural class.
- 4 = No large trees present.

CC_CLASS

Source: Wenatchee FSL
 Description: Canopy closure classes. (Reclassification of totl_cc)

- 1 = <10% total crown closure
- 2 = 10-30% total crown closure
- 3 = 40-50% total crown closure
- 4 = 60-80% total crown closure
- 5 = 90-100% total crown closure

US_FRST

Source: Wenatchee FSL
Description: Forest and woodland understory species.

- 10 = ponderosa pine
- 11 = western larch/lodgepole pine
- 12 = Douglas fir/grand fir/Pacific silver fir
- 13 = western hemlock/western redcedar
- 14 = mountain hemlock
- 15 = subalpine fir/Engelmann spruce
- 16 = whitebark pine/subalpine larch
- 17 = hardwood
- 18 = juniper
- 19 = other species (including grass/forb; shrub; bareground understories; and those comprised of Shasta red fir, incense cedar, western white pine, limber pine, pinyon pine and beargrass)
- 20 = nonforest/nonwoodland

US_NF

Source: Wenatchee FSL
Description: Nonforest understory species.

- 1 = grass/forb, shrubland and bareground
- 2 = nonforest/nonwoodland
- 3 = conifer and hardwood

AWMECI_R

Source: Wenatchee FSL
Description: Item for calculating Area Weighted Edge Contrast Index (AWMECI)

- 10 = shrubland
- 11 = herbland
- 12 = woodland
- 13 = nonforest/nonrange
- 14 = forest - si
- 15 = forest - seoc/secc
- 16 = forest - ur/yfms
- 17 = forest - ofss
- 18 = forest - ofms

FRST_SS_R Source: Generated by Wenatchee FSL
 Description: A forest-centric reclassification of structural class

10 si stand initiation
 11 seoc stem exclusion open canopy
 12 secc stem exclusion closed canopy
 13 ur understory re-initiation1
 14 yfms young forest multi-story
 15 ofms old forest multi-story
 16 ofss old forest single story

17 herb herbland structures
 ch closed herbland
 oh open herbland

18 shrub shrubland structures
 cls closed low-medium shrub
 cts closed tall shrub
 ols open low-medium shrub
 ots open tall shrub

19 wood woodland structures (juniper or Oregon white oak forest types)
 w_oms woodland old multi-story
 w_oss woodland old single story
 w_se woodland stem exclusion
 w_si woodland stand initiation
 w_ur woodland understory re-initiation
 w_ym woodland young multi-story

20 nf nonforest/nonrange and other anthropogenic structure classes
 rock, water, wet meadow/marsh, alpine meadow, dry meadow/grassland, shrubland, post logging bare ground - burned,
 post logging bare ground - slumps and erosion, post logging - grass/forb stage, cropland, urban/rural, pasture, grassland,
 woodland

REG_CT (FRST_CT)

Source: Generated by Wenatchee FSL
 Description: A forest-centric reclassification of cover type

10	pipo	ponderosa pine (PIPO), SAF 237
11	laoc	western larch (LAOC), SAF 212
12	pico	lodgepole pine (PICO), SAF 218
13	psme	interior Douglas-fir (PSME), SAF 210
14	abgr/abco	grand fir or white fir (ABGR or ABCO), SAF 211 & 213
15	abam	Pacific silver fir (ABAM), SAF 226
16	abla2/pien	Engelmann spruce - subalpine fir (ABLA2/PIEN), SAF 206
17	tshe/thpl	western hemlock and western redcedar (TSHE/THPL), SAF 224, 227, 228
18	tsme	mountain hemlock (TSME), SAF 205
19	pial/laly	whitebark pine & subalpine larch (PIAL & LALY), SAF 208
20	pila/pimo	western white pine & sugar pine (PILA & PIMO), SAF 215 (ID, MT, WA only)
21	aspen/cottonwood-wil	hardwood, SAF 217 (aspen), 222, 235 (cottonwood-willow), 233 (Oregon white oak)
22	juoc/jusc	western juniper and Rocky Mtn. juniper (JUOC & JUSC); SAF 238 (JUOC), 220 (JUSC)
23	abma	red fir (ABMA, ABMAS), SAF 207
24	pifl	limber pine (PIFL), SAF 219
25	pied	pinyon pine
26	pimo2/jusc	pinyon pine (PIED), Juniper, SAF 239
27	Russian olive	Russian olive

28 herbland

alpine meadow	alpine meadow
dry meadow/grassland	dry meadow/grassland
grassland	grassland
non_frst1_1	colline bunchgrass (AGSP, FEID in part)
non_frst1_2	montane bunchgrass (FEID mostly)
non_frst1_3	subalpine & alpine bunchgrass (FEID in part, FEOV, FEVI)
non_frst2_1	colline exotic grasses and forbs
non_frst2_2	montane exotic grasses and forbs
non_frst2_3	subalpine and alpine exotic grasses and forbs
non_frst3_1	colline moist herbaceous
non_frst3_2	montane moist herbaceous
non_frst3_3	subalpine and alpine moist herbaceous
pasture	pasture
pf - grass/forb	post fire grasses/forbs
wet meadow/marsh	wet meadow, marsh

29 shrubland

non_frst4_1	colline low-med. shrublands (sagebrush spp., greasewood)
non_frst4_2	montane low-med. shrublands (dry sagebrush spp. and bitterbrush)
non_frst4_3	subalpine & alpine low-med. shrubland (mountain heaths)
non_frst5_1	colline mahogany
non_frst5_2	montane mahogany
non_frst5_3	subalpine and alpine mahogany
non_frst6_1	colline tall shrub
non_frst6_2	montane tall shrub
non_frst6_3	subalpine & alpine tall shrub
non_frst7_1	colline wet shrub
non_frst7_2	montane wet shrub
non_frst7_3	subalpine and alpine wet shrub
non_frst8_2	montane beargrass (Xerophyllum tenax)
non_frst8_3	subalpine beargrass (Xerophyllum tenax)
shrubland	shrubland

30 woodland**31 nonforest/nonrange and other anthropogenic types**

bare ground	bare ground
bg/roadcut	bare ground (roadcuts or sidecast adjacent to highways)
cropland	cropland
glacier	glacier
pl - bg/burned	post logging - bare ground, burned
pl - bg/slumps & ero	post logging - bare ground, slumps and erosion
pl - grass/forb stag	post logging - grass/forb stage
rock	rock
sand dune	sand dune
stream/floodplain	stream channel and nonvegetated floodplain
urban/rural	urban/rural
water	water

REG_PVT

Source: Generated by Missoula Fire Lab & Wenatchee FSL
 Description: A forest/range centric reclassification of series (Potential Vegetation Type)

10	wd-psme/abgr/abco	Warm/dry - Douglas-fir/grand fir/white fir
11	cm-psme/abgr/abco	Cool/moist - Douglas-fir/grand fir/white fir
12	wd-abla2/pien	Warm/dry - Engelmann spruce-subalpine fir
13	cm-abla2/pien	Cool moist - Engelmann spruce-subalpine fir
14	hc-abla2/pien	Harsh/cold - Engelmann spruce-subalpine fir
15	wd-potr	Warm/dry - aspen
16	cm-potr	Cool/moist - aspen
17	wd-tshe/thpl	Warm/dry - western redcedar-western hemlock
18	cm-tshe/thpl	Cool/moist - western redcedar-western hemlock
19	potr2	cottonwood
20	pial/laly	whitebark pine/subalpine larch
21	pipo	ponderosa pine
22	juoc/jusc	juniper
23	quga	Oregon white oak
24	tsme	mountain hemlock
25	pico	lodgepole pine
26	abam	Pacific silver fir
27	abma	red fir
28	pifl	limber pine
29	acgl	maple
30	agst	agropyron steppe
31	putr	purshia tridentata
32	bsbw	basin big sage/wildrye
33	lsme	low sage – mesic
34	lsjm	low sage – mesic with juniper
35	lsxe	low sage – xeric
36	lsxj	low sage – xeric with juniper
37	wbsa	Wyoming big sage – warm
38	wbsc	Wyoming big sage – cool
39	ctrv	cottonwood riverine
40	fesc	fescue grassland
41	bsme	mountain big sage – mesic, east > 20 (slope)
42	bsmc	mountain big sage – mesic, east with conifer encroachment
43	bsmw	mountain big sage – mesic, west
44	bsmj	mountain big sage – mesic west with juniper
45	sarp	salt brush riparian
46	sdsh	salt desert shrub
47	ttsa	threetip sage
48	salx	Salix/Carex
49	cew1	ce le woodland without Art Rva
50	cew2	ce le woodland with Art Rva
51	mtsh	mountain shrub
52	rigr	riparian graminoid
53	bsml	mountain big sage – mesic, east < 20 (slope)
54	mrls	mountain riparian low shrub
55	mrsd	mountain riparian sedge (no salix)
56	ahls	alpine herbland/low shrub
57	fes2	fescue with conifer encroachment
58	ags2	agropyron steppe with conifer encroachment
59	nf	nonforest/nonrange and other anthropogenic types
	drcr	dry crop
	dune	sand dune
	glacr	glacier
	ircr	irrigated cropland
	nf	non-forested
	rock	rock
	urban	urban
	water	water

SPP_CODE: Revised species codes where overstory and understory do not have unique values for each species.

spp_code	species	spp_os	spp_us
10	abam	6	87
11	abgr/abco	5	34
12	abgr/abla2	92	106
13	abgr/laoc	93	0
14	abgr/pien	77	107
15	abgr/pimo	66	0
16	abgr/pipo	91	0
17	abla2/laly	96	104
18	abla2/laoc	97	0
19	abla2/pial	95	89
20	abla2/pien	7	25
21	abla2/pifl	76	0
22	abla2/pimo	67	0
23	abla2/psme	90	102
24	abma	15	40
25	abpr	14	0
26	aspen	61	82
27	bare-ground	0	30
28	birch	60	81
29	cade	52	41
30	cottonwood	62	83
31	grass-forb	0	28
32	hardwood	12	26
33	juniper	13	27
34	laoc	2	0
35	laoc/pico	53	21
36	laoc/pico/pimo	69	0
37	laoc/pien	71	0
38	laoc/pimo	68	0
39	laoc/pipo	70	0
40	maple	59	80
41	non-forest	0	0
42	pial/laly	10	39
43	pial/pico	98	103
44	pico	3	31
45	pico/abgr	74	100
46	pico/abla2	72	88
47	pico/aspen	79	0
48	pico/pien	19	38
49	pico/psme	73	85

spp_code	species	spp_os	spp_us
50	pien/abgr	0	49
51	pifl	55	45
52	pigl	58	48
53	pimo	0	42
54	pimo2	57	47
55	pimo2/jusc	64	0
56	pimo/pila	11	0
57	pipo	1	20
58	pipo/pico	0	32
59	pipo/pimo/pila	16	0
60	pipo/psme	17	33
61	pipu	56	46
62	psme	4	0
63	psme/abgr	75	105
64	psme/abgr/abco	0	22
65	psme/aspen	78	0
66	psme/laoc	54	43
67	psme/pien	51	44
68	psme/pifl	63	84
69	psme/pimo	65	0
70	psme/tsme	18	37
71	russian-olive	94	0
72	shrub	0	29
73	thpl/abgr	0	101
74	tshe/thpl	8	23
75	tsme	9	24
76	tsme/abco	50	0
77	tsme/abco/pila	0	35
78	tsme/pico	0	36
79	xete	0	86
80	pipo/psme/laoc	99	0
81	alder	120	108
82	abam/psme	121	0
83	abam/abpr-tshe/psme	122	109
84	tshe/psme	123	110
85	tshe/abgr	124	0

Appendix A

Forest Structural Classification Dichotomous Key (Salter, Dickinson, Hessburg) following on (Latham et alia)

Note: This key is based on hypothesized definitions and size class distributions for forest structural classes as found in the fields *structure*, *ss*, and *first_ss*.

- A1. large tree cover $\geq 10\%$
- B1. large tree cover $\geq 30\%$
 - C1. seedlings/saplings, poles, small, or medium trees $> 20\%$ OFMS
 - C2. seedlings/saplings, poles, small, or medium trees $\leq 20\%$ OFSS
- B2. large tree cover $>0\%$ and < 30
 - D1. seedling/sapling cover $\geq 10\%$ SI
 - D2. seedling/sapling cover $< 10\%$
 - E1. large tree cover plus poles, small, or medium tree cover $> 70\%$
 - F1. small or medium tree cover $\geq 10\%$
 - G1. canopy layers = 2 SECC
 - G2. canopy layers > 2 YFMS
 - F2. small or medium tree cover $< 10\%$
 - H1. canopy layers = 2 SECC
 - H2. canopy layers > 2 UR
 - E2. large tree cover plus poles, small, or medium tree cover $\leq 70\%$
 - I1. pole, small, or medium tree cover $< 30\%$
 - J1. canopy layers ≤ 2 SEOC
 - J2. canopy layers > 2 UR
 - I2. pole, small, or medium tree cover $\geq 30\%$
 - K1. small or medium tree cover $< 10\%$ SEOC
 - K2. small or medium tree cover $\geq 10\%$
 - L1. canopy layers = 2 UR
 - L2. canopy layers > 2 YFMS
 - A2. large tree cover $< 10\%$ (Continued on the next page)

A2.	large tree cover < 10%	
M1.	seedling/sapling cover < 10%	
N1.	pole, small, and/or medium tree cover > 70%	
O1.	canopy layers < 2	SECC
O2.	canopy layers ≥ 2	
P1.	medium tree cover < 10%	SECC
P2.	medium tree cover ≥ 10%	
Q1.	small tree cover < 10%	UR
Q2.	small tree cover ≥ 10%	YFMS
N2.	pole, small, and/or medium tree cover ≤ 70%	
R1.	pole, small, and/or medium tree cover < 40%	SEOC
R2.	pole, small, and/or medium tree cover ≥ 40%	
S1.	canopy layers < 2	SEOC
S2.	canopy layers ≥ 2	
T1.	medium tree cover < 10%	UR
T2.	medium tree cover ≥ 10%	YFMS
M2.	seedling/sapling cover ≥ 10%	
U1.	pole, small, or medium tree cover < 10%	SI
U2.	pole, small, or medium tree cover ≥ 10%	
V1.	pole, small, or medium tree cover > 60%	UR
V2.	pole, small, or medium tree cover ≤ 60%	
V1.	pole, small, or medium tree cover < 40%	
W1.	seedling/sapling cover < pole, small, or medium tree cover	SEOC
W2.	seedling/sapling cover ≥ pole, small, or medium tree cover	SI
V2.	pole, small, or medium tree cover ≥ 40%	
X1.	canopy layers = 2	UR
Y2.	canopy layers > 2	YFMS

Appendix B

Forest Structural Classification Dichotomous Key (Latham, Brewer, O'Hara, Hessburg, Miller)

Note: This key is based on hypothesized definitions and size class distributions for structural classes and formed the conceptual framework of the forest structural class field **structure_2**. However, *structure_2* is defined by a more complex set of classification rules that cannot be dichotomized. For the complete classification scheme, please see the script *genstructure_2.aml*

A1.	large tree cover \geq 30%	OF
B1.	seedlings/saplings, poles, small, or medium trees in any one size class or combination of size classes \geq 30% cover	OFMS
B2.	seedlings/saplings, poles, small, or medium trees in any one size class or combination of size classes \leq 20% cover	OFSS
A2.	large tree cover < 30%	Go to C
C1.	seedling/sapling cover < 10%	SE
D1.	pole, small, and medium tree cover > 70%	SECC
D2.	pole, small, and medium tree cover \leq 70%	SEOC
C2.	seedling/sapling cover \geq 10%	Go to E
E1.	pole, small, and medium tree cover > 60%	UR
E2.	pole, small, and medium tree cover \leq 60%	Go to F
F1.	pole, small, and medium tree cover \geq 20%	Go to G
F2.	pole, small, and medium tree cover < 20%	SI
G1.	small or medium tree cover \geq 10%	YFMS
G2.	small and medium tree cover < 10%	SI

Appendix C

Criteria for defining late-successional structures in the eastern Washington Cascades: (adapted by Hessburg, Lehmkuhl, and Gaines from Forsman demography studies and Washington State Department of Natural Resources Regulations)

Late successional

Total crown cover (cc) \geq 60%

AND

Overstory 30% > LgT_cc \geq 10% **and** understory (PoleT_cc **or** SmT_cc **or** MedT_cc) \geq 40%

OR

Overstory 90% > MedT_cc \geq 10% **and** understory size class (PoleT_cc **or** SmT_cc) \geq 10%

AND

Canopy layers \geq 2

AND

PVT = (wd_PSME **or** cm_PSME **or** wd_ABGR **or** cm_ABGR **or** wd_TSHE/THPL **or** cm_TSHE/THPL **or** ABAM)

Note: the expression requiring "dead tree or snag abundance > 1" was removed due to inconsistent coding by photo-interpreters during data acquisition.

Old forest multi-story

Total crown cover (cc) \geq 60%

AND

Overstory LgT_cc \geq 30% **and** understory (SeedSapT_cc **or** SmT_cc **or** PoleT_cc **or** MedT_cc) \geq 30%

Old forest single-story

Total crown cover (cc) \geq 60%

AND

Overstory LgT_cc \geq 30% **and** understory (SeedSapT_cc **or** SmT_cc **or** PoleT_cc **or** MedT_cc) \leq 20%

Other forest

Forest types not classified as "late successional", "old forest multi-story", or "old forest single-story"

Non-forest

Herbland, shrubland, non-vegetated, and other anthropomorphic patch types