

Appendix C.1 LANDTYPE ASSOCIATIONS

The Study Area is divided into several components called Landtype Associations (LTAs) that have distinct physical and climatic characteristics. Each Landtype Association (LTA) is composed of various Soil Resource Inventory Mapping Units, or Landtypes that were described in the Siuslaw National Forest Soil Resource Inventory. The landtypes that make up each LTA are generally similar in geology, landform, soils, and hydrologic response. It is those similarities that guided the delineation of each LTA.

Though a wide spectrum of conditions exist between and across LTAs, four distinct physiographic categories and five climatic/productivity zones can be described. These general categories are useful for making Province-wide comparisons and analyses of 4th field watersheds. Detailed descriptions of each LTA are most useful for comparing physical conditions of 5th field watersheds. Each category of LTAs, as well as each LTA is categorized according to predominant landform, soil characteristics, erosion processes, general biologic productivity, and hydrology.

PHYSIOGRAPHIC CATEGORIES FOR LANDTYPE ASSOCIATIONS

I) STEEP, HIGHLY DISSECTED BEDROCK DOMINATED RIDGE SYSTEMS.

Characteristics: Hard, impermeable to slowly permeable sandstone or basalt bedrock; steep, short, angular, even faceted slopes; V-shaped ridge crests and stream channel bottoms; one to six foot deep, low cohesion, gravelly loam and clay loam soils; low to moderate water holding capacity (droughty mid to upper side slopes are common); high ratio of intermittent to perennial streams (perennial system typically begins at the lower end of second order or beginning of third order streams - often far below the ridge crest). Dominant hillslope erosion process is debris avalanche occasionally causing debris torrents where stream angles are obtuse.

LTAs/descriptions: 2P, 2PSR1, 2PSR2, 3B, 3C, 3C1, 3E1, 3F, 3F1, 3M, 3V, 4F, FG.

2P, 2PSR1, 2PSR2, 3V - Soils range from moderately deep to very deep where local areas of soft volcanic sedimentary rock occur. Steepest, most unstable soils/slopes are on upper portions of spur ridges that extend from long, broad backbone ridge systems. Debris slides are the primary hillslope erosion processes. Soils range from gravelly loams to clay where softer bedrock occurs. By central Coast Range standards, soils are moderately productive and have moderate to very high water holding capacities. Soil moisture does not limit plant growth or survival.

3B - Soils range from shallow on upper ridge crests to moderately deep in concave slope positions. Scattered ancient earthflow terrain occurs often in lower south west facing slope positions where soils are very deep. Steepest, most unstable slopes are on middle to upper portions of narrow spur ridge systems. Debris slides and debris

torrents are the primary hillslope erosion processes. Soils are usually gravelly loam to clay loam. Compared to other central Coast Range soils, these soils are moderately productive to very productive and have high waterholding capacities. Soil moisture rarely limits plant growth or survival.

3C - Soils are moderately deep on ridge systems to very deep where few scattered areas of ancient earthflows occur. Steepest, most unstable slopes are on upper portions of long ridge systems. Debris slides are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3C are moderately productive to very productive. They have moderate water holding capacities. Soil moisture limits plant growth or survival on steep south slopes less than 2 years in 20.

3C1 - Soils are moderately deep throughout most of the areas underlain by bedrock. River terraces and few ancient earthflows occur have deep loam to clay loam soils. Steepest, most unstable slopes are on upper portions of long ridge systems. Debris slides are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to clay where deeper soils occur. By central Coast range standards, soils are moderately productive to very productive. Soil moisture limits plant growth or survival on steep south slopes less than 2 years in 20.

3E1 - Soils are moderately deep on ridge systems to very deep where few scattered ancient earthflows occur. Steepest, most unstable slopes are on spur ridges below the gently rounded broad ridge systems that dominate the landscape. Debris slides are the primary hillslope erosion processes. Local deep seated landslides occur where earthflow terrain is incised by streams. Soils range from gravelly loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3E1 are moderately productive to very productive. They have moderate to high water holding capacities. Soil moisture rarely limits plant growth or survival.

3F & 3F1 - These LTAs transition the extremely steep, and extremely dissected terrain south of the Siuslaw River to the steep, moderately dissected backbone ridge systems to the north. Soils are moderately deep on main ridge systems to shallow on spur ridge crests. There are very deep soils where scattered areas of ancient earthflows occur. Steepest, most unstable slopes are on middle to upper portions of the spur ridge systems. Debris slides and debris torrents are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to gravelly clay loams where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3C are moderately productive. They have low to moderate water holding capacities. Soil moisture frequently limits plant growth or survival on all but north slopes.

3M, 3V - Soils are deep on ridge systems to very deep in concave middle and lower slope positions. Steepest, most unstable slopes are

on middle to upper portions of spur ridge systems. Backbone ridge crests are generally broad, and gently sloping. Debris slides and debris torrents are the primary hillslope erosion processes. Soils range from gravelly clay loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3M, and 3V are very productive. They have very high water holding capacities. Soil moisture probably never limits plant growth or survival.

4F & 4G - Soils are very shallow to moderately deep on flat to convex ridge slopes and moderately deep to deep in concave slope positions. Steepest, most unstable slopes are on upper portions of short, even faceted ridge systems. Debris slides and debris torrents are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to gravelly clay loams where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTAs 4f and 4g are moderately productive. They have low water holding capacities. Soil moisture limits plant growth or survival on all but north slopes in most summers.

II) GENTLE TO STEEP BEDROCK DOMINATED RIDGES AND VALLEYS.

Characteristics: hard, highly fractured moderately permeable to impermeable sandstone or basalt bedrock; gentle to moderately steep, slightly to moderately dissected, flat to convex slopes; rounded ridge crests and U-shaped valleys intermixed with steep, long, concave slopes and steep V-shaped stream channels; three to greater than six foot deep cohesive, gravelly clay loam soils; moderate water holding capacity; intermediate ratio of intermittent to perennial streams (perennial system typically begins in second order streams)

LTAs/descriptions: 2M, 2M1, 3A, 3D, 3E, 3K, 4A, 4R

2M & 2M1 - Soils are moderately deep on ridge systems to very deep on lower concave side slopes. Few steep unstable slopes are on spur ridges below the gently rounded broad ridge systems that dominate the landscape. Though infrequent, debris slides are the primary hillslope erosion processes. Soils range from gravelly clay loams on steep slopes to gravelly clay and clay loams where deeper soils occur. Compared to other soils in the central Coast Range, soils in these LTAs are very highly productive. They have moderate to high water holding capacities. Soil moisture probably never limits plant growth or survival.

3A - Soils are deep on ridge systems to very deep where scattered ancient earthflows occur. Steepest, most unstable slopes are on short spur ridges. Though infrequent, debris slides are the primary hillslope erosion processes. Local deep seated landslides may occur where earthflow terrain is incised by streams. Soils range from gravelly loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3A is moderately productive to very productive. They have moderate water

holding capacities. Soil moisture rarely limits plant growth or survival on steep south slopes.

3D - Soils are moderately deep on ridge systems to deep on lower side slopes and where scattered ancient earthflows occur. Steepest, most unstable slopes are on spur ridges below the gently rounded broad ridge systems that dominate the landscape. Though infrequent, debris slides are the primary hillslope erosion processes. Local deep seated landslides occasionally occur where earthflow terrain is incised by streams. Soils range from gravelly loams on steep slopes to clay loams where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3D are moderately productive to productive. They have moderate to high water holding capacities. Soil moisture rarely limits plant growth or survival.

3E, 3K - Soils are moderately deep on spur ridge systems to very deep on broad, backbone ridges. Steepest, most unstable slopes are on spur ridges below the gently rounded broad ridge systems that dominate the landscape. Though infrequent, debris slides are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3E, and 3K are moderately productive to productive. They have moderate water holding capacities. Soil moisture may limit plant growth or survival on steep south slopes.

4A - Soils are moderately deep to deep on ridge systems to very deep where scattered ancient earthflows occur. Steepest, most unstable slopes are on upper sideslopes and ridges. Though infrequent, debris slides are the primary hillslope erosion processes. Local deep seated landslides occasionally occur where earthflow terrain is incised by streams. Soils range from gravelly clay loams on steep slopes to clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 4A are moderately productive to very productive. They have moderate to high water holding capacities. Soil moisture rarely limits plant growth or survival.

4R - Soils are moderately deep on spur ridge systems to very deep on dominant broad ridge crests and toeslopes. Steepest, most unstable slopes are on spur ridges below the gently rounded broad ridges. Debris slides, though infrequent, are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to clay loams where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 4R are moderately productive to productive. They have moderate water holding capacities. Soil moisture may limit plant growth or survival on steep south slopes.

III) HUMMOCKY, MODERATE TO HIGH RELIEF, DEEPLY INCISED HILLS AND VALLEYS.

Characteristics: Soft, highly fractured, very permeable volcanic breccia, siltstone, and finely bedded volcanic sedimentary bedrock; lower elevations are characterized by uneven, hummocky convex slopes, very deep unconsolidated ancient earthflow debris that form deep, high cohesion, clay/clay loam soils that are deeply incised by streams;

very high waterholding capacity; very low ratio of intermittent to perennial streams (perennial system often begin in first order streams near ridge crest). Higher elevations are often dominated by broad, broken to continuous bedrock controlled ridge systems.

LTA/descriptions: 2B, 2C, 2PSR3, 2T, 2T1, 3Q, 3S, 3T

2B, 2C, 3S - Soils are deep to very deep on hummocky, incised ancient earthflows and moderately deep on remnant bedrock ridge systems. Hummocky terrain dominates on about half of the LTA. Unstable soils are on lower midslopes above incised channels and on upper midslopes that are earthflow escarpment faces. Slumps and small earthflows are the primary hillslope erosion processes. Soils range from gravelly clay loams on steep slopes to gravelly clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 2B are very productive. They have high to very high water holding capacities. Soil moisture is limiting only on upper south facing bedrock sideslopes.

2PSR3, 3Q - Soils are deep to very deep on hummocky, incised ancient earthflows and moderately deep on remnant bedrock ridge systems. Hummocky terrain occurs on little more than one third of the LTA. Unstable soils are on lower midslopes above incised channels and on upper midslopes that are earthflow escarpment faces. Unstable soils also may occur on steep headwalls on the upper backbone ridge systems that dominate the higher elevations. Slumps and small earthflows are the primary hillslope erosion processes at lower elevations. Debris slides occur infrequently at higher elevations. Soils range from gravelly clay loams on steep slopes to gravelly clay where soils are very deep. Compared to other soils in the central Coast Range, soils in LTA 2PSR3 are moderately productive. They have high to very high water holding capacities. Soil moisture is rarely limiting.

2T, 2T1 Soils are deep to very deep on hummocky, incised ancient earthflows and moderately deep on low, rounded remnant bedrock ridge systems. Hummocky terrain occurs on about one half of the LTA. Unstable soils are on lower slopes above incised channels. Slumps are the primary hillslope erosion processes. Soils range from gravelly clay loams to gravelly clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 2T, and 2T1 are moderately productive. They have high to very high water holding capacities. Soil moisture is rarely limiting.

3T - Soils are deep to very deep on hummocky, incised ancient earthflows and moderately deep on bedrock ridge systems. Hummocky terrain occurs on about one-fourth of the LTA. Unstable soils are on lower midslopes above incised channels and on upper midslopes that are ancient earthflow escarpment faces. Although earthflow terrain is the minor landform, slumps and small earthflows are the primary hillslope erosion processes. Soils range from gravelly clay loams on steep slopes to gravelly clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTA 3T are very productive. They have moderately high to high water holding

capacities. Soil moisture is limiting only on upper south facing bedrock sideslopes.

IV) ROLLING, LOW RELIEF, GENTLE TO MODERATELY SLOPING HILLS AND VALLEYS.

Characteristics: very soft, highly fractured, highly permeable bedrock; gentle, convex slopes with occasional moderately steep, concave slopes below higher ridge systems composed of hard, igneous intrusive and volcanic rocks; greater than 6 foot deep cohesive, clay to clay loam soils; very high water holding capacity; widely dispersed stream system with very low ratio of intermittent to perennial streams (perennial system typically begin in first and second order streams.

LTAs/descriptions: 2H, 2N, 2P2, 2Q, 2S, 2Z, 2Y, 2Z, 3H, 3L, 3W, 3Z, 4J, 4X

2N, 2P2 - Soils are deep to very deep on hummocky, gently rolling valley fill and scattered areas of ancient earthflow terrain. Soils are moderately deep to deep on bedrock ridge systems at the higher elevations. Unstable soils are not common. They may occur on lower midslopes above incised channels and on upper midslopes that are ancient escarpment faces. Although earthflow terrain is not common, slumps and small earthflows are the primary hillslope erosion processes. Soils range from gravelly clay loams on steep slopes to gravelly clay where deeper soils occur. Compared to other soils in the central Coast Range, soils in LTAs 23N and 2P2 are very productive. They have high to very high water holding capacities. Soil moisture probably never limits plant growth.

2Q, - Soils are moderately deep to deep on moderately steep hills and narrow valley bottoms. Soils are deep in lower slopes and valley bottoms to moderately deep on bedrock ridge systems at the higher elevations. Unstable soils are not common. They may occur on lower midslopes above incised channels and occasionally on upper convex sideslopes. Although earthflow terrain is not common, slumps and small earthflows are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to gravelly clay loams on lower slope positions. Compared to other soils in the central Coast Range, soils in LTAs 2Q and 2T1 are very productive. They have moderately high to high water holding capacities. Soil moisture rarely limits plant growth.

2S, 2H, 3H, 3W - Soils are moderately deep to deep on gently rolling gentle to moderately steep hills and broad valleys adjacent to the Willamette River Valley. Soils are moderately deep in lower slopes and valley bottoms to moderately deep on bedrock ridge systems at the higher elevations. Unstable soils are not common, but may occur on lower midslopes above incised channels and on upper convex sideslopes. Earthflow terrain is not common. Slumps and fluvial channel erosion are the primary hillslope erosion processes. Soils range from gravelly clay loams on steeper slopes to gravelly clays on lower slope positions. Compared to other soils in the central Coast Range, soils in LTAs 2S, 2H, 3H and 3W are moderately productive. They have moderately high to high water holding capacities. Soil

moisture limits plant growth on south facing upper sideslopes most years.

2Z, 2Y, 3Z, 4X - Soils are deep to very deep on low relief, gently rolling hills and wide valleys. LTA 4X is dominated by open sand, deflation plains and vegetated sand dunes. Soils are deep in lower slopes and valley bottoms to moderately deep on bedrock ridge systems at the higher elevations. Unstable soils are not common. They may occur on lower midslopes above incised channels. Although ancient earthflow terrain is common, slumps and small earthflows are uncommon. Fluvial erosion in channels is the primary hillslope erosion processes. Wind erosion is extensive on open sand areas. Soils range from clay loams to gravelly clay loams to sandy loams. Compared to other soils in the central Coast Range, soils in LTAs 2Z and 3Z are very productive. LTA 4X is moderately productive where soil water is sufficient to allow plant growth. Water holding capacities are high in all LTAs. Soil moisture probably never limits plant growth except during dry summers in the eastern portion of LTA 2Y, and on areas of open sand and high relief in LTA 4X.

3L - Soils are deep to very deep on gently rolling hills and broad, undulating valleys. Soils are moderately deep on ridges to very deep on valley bottoms. Unstable soils are not common. They may occur on lower midslopes above incised channels and rarely on upper convex sideslopes. Fluvial erosion in channels is the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to gravelly clay loams on lower slope and valley positions. Compared to other soils in the central Coast Range, soils in LTA 3L is moderately productive. They have moderately high water holding capacities. Soil moisture may limit plant growth during dry summers, and in all summers on south slopes.

4J - Soils are moderately deep to deep on short, steep, low relief densely dissected hills and narrow valley bottoms. Soils are deep in lower slopes and valley bottoms to moderately deep on bedrock ridge systems. Unstable soils may occur on lower midslopes above incised channels and on upper convex sideslopes. Earthflow terrain is not common. Fluvial erosion and small debris flows are the primary hillslope erosion processes. Soils range from gravelly loams on steep slopes to gravelly clay loams on lower slope positions. Compared to other soils in the central Coast Range, soils in LTA 4J is moderately productive. They have moderately high holding capacities. Soil moisture is limiting on south slopes most years.

LANDTYPE ASSOCIATIONS IN SOIL MOISTURE/CLIMATE ZONES

1) Coastal Fog Zone

LTAs - 2M, 2M1, 2N, 2Q, 2P2, 2T*, 2Z, 3A, 3M, 3T*, 3Z, 4A, 4X

* - 2T and 3T extend across Coastal and Coast Crest climatic sub-categories.

2) Northern Interior Zone

LTAs - 2B, 2P, 2PSR1, 2C, 2T*

* - 2T extends across Coastal and Coast Crest climatic sub-categories.

3) Central Interior Zone

LTAs - 2PSR2, 2PSR3, 2T1, 3A, 3B, 3C, 3C1, 3C2, 3D, 3E, 3E1, 3K, 3L, 3Q, 3T*, 3V.

* - 3T extends across Coastal and Coast Crest climatic sub-categories.

4) Southern Interior Zone

LTAs - 3F, 3F1, 4F, 4G, 4R

* - 2T and 3T extend across Coastal and Coast Crest climatic sub-categories.

5) Valley Margin Zone

LTAs - 2H, 2S, 2Y, 3H, 3S, 3W, 4J

Soil Moisture Zones, Fire Blocks and LTAs by 5th Field Watersheds			
RIVER BASINS and 5th Field Watersheds	Soil Moisture Zone	Predominant Fire Blocks	Predom. LTAs
WILSON-TRASK-NESTUCCA			
East Beaver	West - F, East - CN	1,2	2P, 2Z
Kilchis River	CN	2	2P
Little Nestucca	West - F, East - V	1,3,4	2T, 2Q
Lower Nestucca	West-F, East-CN	1,2,3	2C, 2N
Lower NF Trask River	CN	2	2PSR1
Lower Trask River	CN	2	2P
Neskowin	F	1	2M
Nestucca River	CN	3	2C
Sand Lake	F, East-CN	1	
Three Rivers	West-F, CN	1,3	2B
Tillamook	F, East-CN	1,2	2Z, 2P
Upper MF NF Trask	CN, East-V	2	2PSR1
Wilson River	CN	2	2P
YAMHILL*			
Willamina	CN	3	2T
Yamhill	CN	3	2T
SILETZ-YAQUINA			
Big Elk	CC	5	3V
Devils Lake	F	1	2Z, 2P2
Rock	CC	5	3V
Salmon	West-F, East-CC	1,5	2P2, 2T1
Schooner/Drift (Siletz)	West-F, CC	1,5	2PSR2, 2T1
Siletz	West-F, East-CC	1,5	2PSR2, 3Z
Toledo	CC	5	3D
Upper Siletz	CC	5	2T1, 2PSR2
Yaquina/Big Elk	CC	5,6	3V, 3E
UPPER WILLAMETTE*			
Marys Peak	CC	6,7	3Q, 3S
Turnum	CC	5,7	3Q, 3W, 3S
* – only a portion of the river basin is in the FWA study area			

Soil Moisture Zones, Fire Blocks and LTAs by 5th Field Watersheds			
RIVER BASINS and 5th Field Watersheds	Soil Moisture Zone	Predominant Fire Blocks	Predom. LTAs
ALSEA			
Alea	CC	5,6	3C1, 3C, 3D, 3E
Alea Frontal	CC	7	
Beaver	West-F, East-CC	1,5	3D, 3Z
Berry	F	1	3T, 3Z
Big/Rock/Cape	F, East-CC	1,6	3T, 3M
Blodgett	F	1	3Z
Drift (Alea)	CC	5,6	3D, 3E1
Fall	CC	6	3E
Five Rivers	CC	6	3C, 3C1
Lobster/Lobster_Cr	CC, South-CS	6,7,8	3C, 3L, 3F
Mercer	West-F, East-CC	1,6	3A, 3Z
North Fork Alea	CC	6,7	3Q, 3H, 3E
Seal Rock	F	1	3Z
South Fork Alea	CC, CS	7,8	3L, 3H, 3F
Tenmile/Cummins	West-F, East-CC	1,6	3M, 3T
Yachats	West-F, East-CC	1,6	3C
Unlabeled 5th field	F	1	
SIUSLAW			
Deadwood	West-CC, East-CS	6,8	3C, 3F
Esmo Whitt	CS, East-V	8,4	4F, 4G
Knowles	CS	8	4F, 3F
Indian	CC	6	3B, 3C
Lower Lake (includes Lake)	CS	8	3F
Lower Siuslaw	CS	8	3F, 4F
Middle Siuslaw	V	4	
North Fork Siuslaw	CC	6	3B, 3A
Upper Lake	CS	8	3F
Upper Siuslaw	V	4	
Wildcat Creek	North-CS, South-V	8,4	3F, 4J
Wolf Creek	V	4	4J
UMPQUA*			
Lower Umpqua	F, CS	1,8	4G, 4A
North Fork Smith	CS	8	4G, 4R
Smith	CS	8	4G, 4F
West Fork Smith	CS	8	4G
SILTCOOS			
Cleawox/Carter	F	1	4X
Siltcoos	West-F, East-CS	1,8	4F, 4A, 4X
Tahkenitch	F, East-CS	1,8	4F, 4A, 4X
Threemile	F	1	4A
COOS*			
Hauser			
Tenmile			
Umpqua Dunes			4X

Appendix C.3 An Overview of Plant Association Groups of the Siuslaw National Forest

Twenty-three Plant Associations (PAs) have been identified on the Hebo, Waldport, Alsea, and Mapleton Districts of the Siuslaw National Forest (Hemstrom and Logan, 1986). These twenty-three associations are named for plant communities that will dominate a site given hypothetical climax conditions. A combination of unique environmental conditions will often accompany a particular PA. Information describing these conditions can be obtained in formats such as digital elevation models. Such data can provide a framework for 'modeling' PAs, i.e. using a geographic information system (GIS) to predict the PA at a given location, based on known environmental conditions such as elevation, topographic moisture, and other variables. Frequently, however, different PAs will occur even though the environmental conditions appear similar at the scale of the data available in the GIS. Thus, the PAs must be reclassified into groups that can be accurately distinguished within the GIS. Plant Association Groups (PAGs) are the result.

There are eleven PAGs that cover the Siuslaw. Like PAs, PAGs are either of the *Picea sitchensis* (Sitka spruce) or *Tsuga heterophylla* (western hemlock) series. Within these series, PAGs are described by variables such as characteristic soil moisture, depth and composition, slope, slope position, aspect, and elevation, precipitation, and temperature. Table 1 lists the eleven PAGs, ordered from wetter to drier types, and the PAs that comprise each PAG. (see Hemstrom and Logan, 1986 for descriptions of taxa abbreviations). Note also that PAG names listed below correspond to Forest Wide Assessment Map # C-5: "Plant Association Groups".

Table 1. Plant association groups

<u>Plant Assoc. Group</u>	<u>Plant Associations</u>
a.) <i>Picea sitchensis</i> Series:	
Devil's Club (POP)	PISI/OPHO
Salmonberry (PRU)	PISI/RUSP
Oxalis, Swordfern (PPO)	PISI/OXOR, PISI/POMU
Salmonberry, Salal (PRG)	PISI/RUSP-GASH
Huckleberry (PMV)	PISI/MEFE-VAPA
Salal (PGA)	PISI/GASH
b.) <i>Tsuga heterophylla</i> Series:	
Salmonberry, Devil's Club (TRU)	TSHE/OPHO, TSHE/RUSP, TSHE/RUSP-ACCI
Oxalis, Swordfern (TPO)	TSHE/OXOR, TSHE/POMU, TSHE/ACCI-POMU
Salmonberry, Salal (TRG)	TSHE/RUSP-GASH
Salal (TGA)	TSHE/BENE, TSHE/BENE-GASH, TSHE/GASH, TSHE/ACCI-GASH
Rhododendron (TRH)	TSHE/RHMA-BENE, TSHE/RHMA-VAOV2, TSHE/RHMA-GASH, TSHE/RHMA-POMU, TSHE/VAOV2

Brief Descriptions of Plant Association Group Characteristics

a. *Picea sitchensis* Series:

Devil's Club (POP)--swampy, northern

Very moist soils, poorly drained, even swampy. Strong maritime climatic influences. More common in northern regions of the Siuslaw National Forest.

Salmonberry (PRU)--wet, but well drained sites

Abundant soil moisture, but well drained. Strong maritime climatic influences. Tends toward more northern regions, relatively gentle topography.

Oxalis, Swordfern (PPO)--mesic, deep soils, northern

Moist, but well drained soils with high organic content, gentle topography. More common in northern regions of the Siuslaw, and on north facing aspects.

Salmonberry, Salal (PRG)--mesic/well-drained, coastal, ridgetop

Thin well-drained soils on ridges/topographic rises near the coast. Drier than PRU, but not as dry as PGA.

Huckleberry (PMV)--moist transition, eastern edge of PISI zone

Relatively dry soils, gentle topography, lower to middle slopes, occurs often at the transition zone between PISI and TSHE types.

Salal (PGA)--well-drained, southwest facing

Well drained shallow soils, often southwest facing, relatively uniform temperatures, occurs in central/western region of the Siuslaw.

b. *Tsuga heterophylla* Series:

Salmonberry, Devil's Club (TRU)--wet, warm, inland

Abundant soil moisture, usually occurs at mid to lower slope positions, including riparian. Very moist soils, deep and rich in organic content. Commonly encountered on warm inland sites on the Alsea District.

Oxalis (TPO)--mesic, shaded, steeper slopes

Moist but well-drained soils, relatively steep slopes, can occur in riparian zones, most common on the Hebo and Alsea Ranger Districts.

Salmonberry, Salal (TRG)--an intermediate PAG, falling between TRU and TGA

Occurs in hummocky topography or near ridges. Soils are thinner and more moist than TRU, but not as dry as TGA. Temperatures, slope position, etc. also fall between TRU and TGA, and so might tend to occur geographically adjacent to one or both of these other PAGs, as well. Most common on the Waldport Ranger District.

Salal (TGA)--mesic/well-drained, warm, ridgetops

More common at higher elevations, at top of slopes and on ridgetops. Relatively dry, warm sites. Most likely encountered on Alsea and Mapleton Districts.

Rhododendron (TRH)--dry, warm, southern
Very dry, steep, ridgetop, south or southwest facing sites. High
temperatures, and high summer moisture-stress. Most prevalent on the
Mapleton district.

References:

Hemstrom, M.A. and S.E. Logan. 1986. Plant Association and Management Guide,
Siuslaw National Forest. USDA Forest Service, Pacific Northwest Region,
#R6-Ecol 220-1986a.

Appendix C.4 Landslide Risk by Watershed

	Acres in LTAs w/high risk	Acres in LTAs prone to slumping or earthflow	Sum: Total acres with high landslide risk	Total acres in fifth field	% of fifth field with high risk for...		
Fifth Field	slides	earthflow	landslide risk	in fifth field	debris slides	slumping or earthflow	landslides of either kind
	95,743	6,936	102,679				
ALSEA	38,058	0	38,058	55,788	68%	0%	68%
ALSEA_FRONTAL	22	4,674	4,695	14,758	0%	32%	32%
BEAVER	0	0	0	21,596	0%	0%	0%
BERRY	0	2,032	2,032	3,468	0%	59%	59%
BIG ELK	0	0	0	11,036	0%	0%	0%
BIG/ROCK/CAPE	13,214	11,512	24,726	24,628	54%	47%	100%
BLODGETT	11	0	11	13,806	0%	0%	0%
CLEAWOX/CARTER	0	0	0	3,875	0%	0%	0%
DEADWOOD	40,261	0	40,261	40,261	100%	0%	100%
DEVILS LAKE	134	0	134	10,396	1%	0%	1%
DRIFT (ALSEA)	14,074	0	14,074	44,204	32%	0%	32%
EAST BEAVER	8,353	3,811	12,164	18,644	45%	20%	65%
ESMO_WHITT	21,952	0	21,952	26,706	82%	0%	82%
FALL	4,217	0	4,217	19,268	22%	0%	22%
FIVE RIVERS	39,016	30	39,046	39,046	100%	0%	100%
HAUSER	0	0	0	20,634	0%	0%	0%
INDIAN	24,064	224	24,288	30,794	78%	1%	79%
KILCHIS_RIVER	9,105	0	9,105	16,119	56%	0%	56%
KNOWLES	3,636	0	3,636	3,636	100%	0%	100%
LITTLE NESTUCCA	0	17,011	17,011	37,642	0%	45%	45%
LOBSTER	24,130	0	24,130	37,313	65%	0%	65%
LOWER LAKE/LAKE	33,074	0	33,074	33,074	100%	0%	100%
LOWER NESTUCCA	10,172	58,925	69,097	91,140	11%	65%	76%
LOWER SIUSLAW	75,917	0	75,917	99,963	76%	0%	76%
LOWER UMPQUA	35,979	0	35,979	60,351	60%	0%	60%
LOWER_NF_TRASK_RIVER	12,933	0	12,933	12,933	100%	0%	100%
LOWER_TRASK_RIVER	12,765	0	12,765	12,777	100%	0%	100%

Appendix C.4

	Acres in LTAs	Acres in LTAs	Sum:				
	w/high risk	prone to	Total acres		% of fifth field with high risk for...		
	for debris	slumping or	with high	Total acres		slumping or	landslides of
Fifth Field	slides	earthflow	landslide risk	in fifth field	debris slides	earthflow	either kind
MARYS PEAK	0	12,544	12,544	15,840	0%	79%	79%
MERCER	215	690	906	10,284	2%	7%	9%
MIDDLE_SIUSLAW	8,021	0	8,021	61,959	13%	0%	13%
NESKOWIN	0	6,259	6,259	15,971	0%	39%	39%
NESTUCCA_RIVER	20	30,490	30,510	30,510	0%	100%	100%
NORTH_FORK_ALSEA	0	19,650	19,650	41,594	0%	47%	47%
NORTH FORK SIU SLAW	22,883	956	23,839	40,944	56%	2%	58%
NORTH FORK SMITH	30,810	0	30,810	43,891	70%	0%	70%
ROCK	0	0	0	27,622	0%	0%	0%
SALMON	0	13,356	13,356	47,530	0%	28%	28%
SANDLAKE	0	2,464	2,464	16,984	0%	15%	15%
SCHOONER/DRIFT (SILETZ)	20,367	0	20,367	38,059	54%	0%	54%
SEAL ROCK	0	0	0	6,766	0%	0%	0%
SILETZ	11,859	0	11,859	20,930	57%	0%	57%
SILT COOS	17,179	0	17,179	48,176	36%	0%	36%
SMITH	53,953	0	53,953	56,901	95%	0%	95%
SOUTH_FORK_ALSEA	6,998	0	6,998	40,367	17%	0%	17%
TAHKENITCH	6,739	0	6,739	27,323	25%	0%	25%
TENMILE	0	0	0	55,295	0%	0%	0%
TENMILE/CUMMINS	23,407	6,984	30,391	30,316	77%	23%	100%
THREEMILE	0	0	0	1,949	0%	0%	0%
THREE RIVERS	0	22,473	22,473	24,342	0%	92%	92%
TILLAMOOK	2,331	0	2,331	9,603	24%	0%	24%
TOLEDO	0	0	0	6,610	0%	0%	0%
TUMTUM	0	2,521	2,521	4,527	0%	56%	56%
UMPQUA DUNES	0	0	0	3,996	0%	0%	0%
UPPER_LAKE	31,474	0	31,474	31,562	100%	0%	100%
UPPER_MF_NF_TRASK	23,473	0	23,473	27,631	85%	0%	85%

	Acres in LTAs	Acres in LTAs	Sum:				
	w/high risk	prone to	Total acres		% of fifth field with high risk for...		
	for debris	slumping or	with high	Total acres		slumping or	landslides of
Fifth Field	slides	earthflow	landslide risk	in fifth field	debris slides	earthflow	either kind
UPPER_SILETZ	7,920	0	7,920	44,608	18%	0%	18%
UPPER SIUSLAW	0	0	0	42,720	0%	0%	0%
WILLAMINA	0	10,710	10,710	10,711	0%	100%	100%
WEST FORK SMITH	14,995	0	14,995	17,345	86%	0%	86%
WILDCAT_CREEK	23,801	0	23,801	43,811	54%	0%	54%
WILSON_RIVER	11,712	0	11,712	18,208	64%	0%	64%
WOLF CREEK	0	0	0	37,890	0%	0%	0%
YACHATS	24,457	1,163	25,620	27,741	88%	4%	92%
YAMHILL	0	23,687	23,687	23,846	0%	99%	99%
YAQUINA/BIG ELK	0	480	480	37,852	0%	1%	1%
TOTALS	859,441	259,582	1,119,023	1,896,070	45%	14%	59%

