SITKA SPRUCE SERIES
Picea sitchensis
PISI

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Sitka spruce extends in a narrow band along the west coast of North America from Alaska into northern California. Southwestern Oregon is near the southern end of the species range. Although the species extends further inland along major drainages, most of the Series can be found within one mile of the Pacific Ocean, in the wet and mild climate of the coastal plains and headlands. Tanoak replaces Sitka spruce, as the potential climax species, on inland sites as marine influence wanes. North of Port Orford, the Sitka Spruce Series widens and abuts the Western Hemlock Series on its eastern flank. South of Brookings, tanoak is climax on most sites now dominated by coast redwood, and the Sitka Spruce Series becomes narrow and discontinuous.

Two plant associations have been identified for the Series in southwestern Oregon: Sitka Spruce/Salal-Evergreen Huckleberry and Sitka Spruce-White Fir/ Salmonberry. The Sitka Spruce/Salal-Evergreen Huckleberry Association is similar to the Sitka Spruce/Salal-Coast Association identified in the Siuslaw National Forest Plant Association and Management Guide (Hemstrom and Logan 1986), but has much less western hemlock. The Siuslaw Guide's Sitka Spruce/Salal-Coast Association may occur on sites immediately north of Port Orford.

Average annual temperature is 54 degrees F and average annual precipitation is 86 inches, supplemented by fog drip. Average elevation is less than 420 feet. Sample sites are located entirely on private and state-owned land in Curry County. This Series is seldom found on Federal lands.

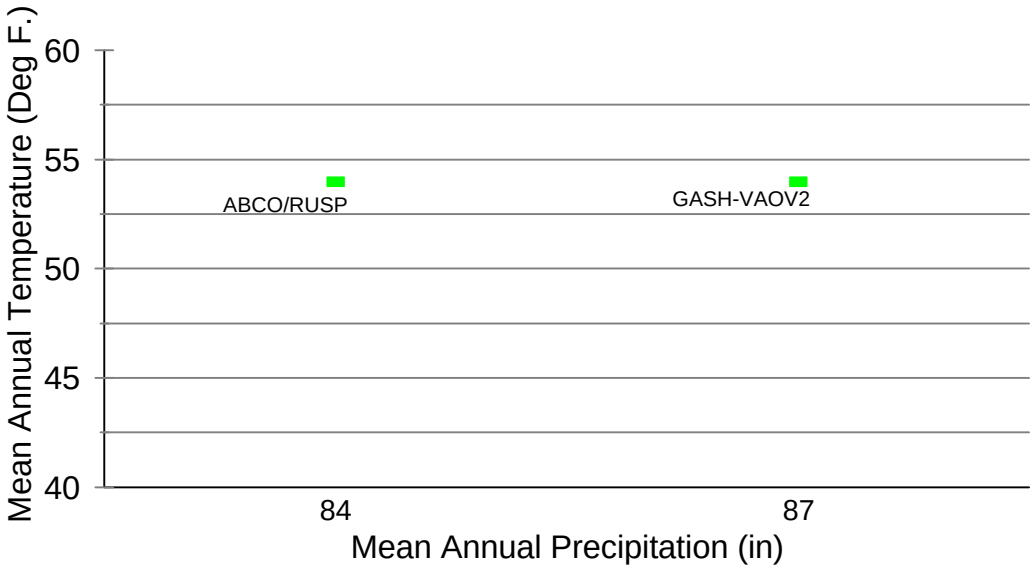
Soils tend to be deep over siltstone and sandstone parent material. Most of the soils mapped in this portion of the Curry County Soil Survey (18 sites were sampled) include well developed Ultisols mixed with less developed, sandier Inceptisols. Surface texture is loam with 5 to 40 percent gravel and 13 to 27 percent clay. Subsurface texture is loam, sandy loam, or clay loam, with 10 to 40 percent gravel and 7 to 35 percent clay. The Sitka Spruce Series occurs within the isomesic soil temperature regime, where the soil temperature does not vary significantly between summer and winter. Soil moisture regime is udic.

The relative environments of the plant associations are shown in the Environmental Graph on page PISI 2. Each association is plotted by average annual temperature and average annual precipitation.

Sitka spruce grows in dense stands dominating the overstory, or in association with red alder, white fir, and Douglas-fir. Occasionally, dense pockets of lodgepole pine (sometimes called shore pine) are interspersed among the spruce. The shrub layer is often salmonberry, salal, and evergreen huckleberry. Western swordfern is usually present in the herb layer. Average vascular plant species richness (total number of vascular species) for the Series ranges between 18 and 23.

PISI 2

Environmental Graph



Although the Series shows relatively little variation in annual precipitation, there may be a difference in soil water availability associated with soil texture. Although the difference may be subtle, it is likely to influence species composition. Greater cover of salal, as opposed to evergreen huckleberry, is usually associated with the drier end of the moisture gradient. Stands dominated by salal with Sitka spruce by itself in the overstory tend to occur on the sandy, well-drained Inceptisols at the southern end of the sample area (Brookings area) where fog drip is less common. Stands with more white fir and alder, and a significant component of salmonberry in the shrub layer, tend to be found in the soils with silt and clay loam in the subsurface, north of Cape Sebastian where fog more often occurs during the summer.

KEY TO THE SITKA SPRUCE PLANT ASSOCIATIONS

1a. White fir (ABCO) regeneration cover 10 percent or greater. PISI-ABCO/RUSP Page PISI 4

1b. White fir (ABCO) regeneration cover absent, or less than 10 percent. 2

2a. Salmonberry (RUSP) cover 10 percent or greater. PISI-ABCO/RUSP Page PISI 4

2b. Salmonberry (RUSP) cover less than 10 percent. 3

3a. Salal (GASH) cover 10 percent or greater. PISI/GASH-VAOV2 Page PISI 6

3b. Salal (GASH) cover less than 10 percent. PISI-ABCO/RUSP Page PISI 4

LITERATURE CITED

Hemstrom, M. A. And S. E. Logan. 1986. Plant association and management guide Siuslaw National Forest. USDA Forest Service. Pacific Northwest Region. E6-Ecol 220-1968a.

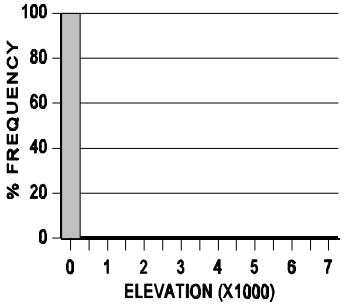
PISI 4

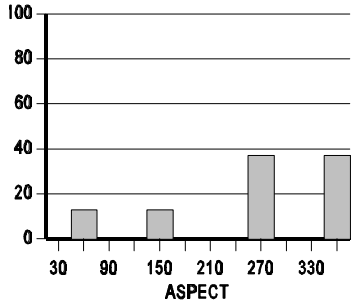
SITKA SPRUCE-WHITE FIR/SALMONBERRY
Picea sitchensis-Abies concolor/Rubus spectabilis
PISI-ABCO/RUSP (N=8; NRCS=8)

Distribution. This Association occurs on lands within one half mile of the Pacific Ocean between the Oregon-California border and Port Orford, Oregon. Most frequently this Association is found north of Cape Sebastian. The Siuslaw National Forest Plant Association Guide should be consulted for sites near Port Orford.

Distinguishing Characteristics. This Association is slightly more diverse and supports slightly more cover than the Sitka Spruce/Salal-Evergreen Huckleberry Association. The overstory usually includes white fir and red alder, as well as Sitka spruce. The shrub layer has high salmonberry cover, with evergreen huckleberry and salal commonly present. Soil textures tend to have higher moisture-holding capacity than the Sitka Spruce/Salal-Evergreen Huckleberry Association.

Soils. The dominant parent material is siltstone, with some sites underlain by sandstone. Surface rock (defined as greater than 7 centimeters in size) cover





Slope position data not available

averages16 percent, and is mostly gravel. Based on nine plots sampled, soils are deep and moderately well drained to well drained. Surface texture is loam with five to 40 percent gravel and 20 to 27 percent clay. Subsurface texture is clay loam with 10 to 45 percent gravel and cobbles and 30 to 35 percent clay. The soil moisture regime is probably xeric and the soil temperature regime is isomesic.

Environment. Elevation averages 412 feet. Slopes average 30 percent with a range of 1 to 50 percent. Both associations average 54 degrees F average annual temperature, but Sitka Spruce-White Fir/Salmonberry averages 84 inches of average annual precipitation.

Vegetation Composition and Structure. Species richness for this Association averages 23 species. The overstory generally includes more white fir, Douglas-fir and red alder than the Sitka Spruce/Salal-Evergreen Huckleberry Association. Western sword-fern and salmonberry dominate the herb and shrub layers respectively, with evergreen huckleberry commonly present on most sites, but at low covers. Salal, poison oak, red elderberry, and red huckleberry are also occasionally present, but at low covers.

Common name	Code	Constancy	Class**	Avg. Richness
Overstory trees				4
Sitka spruce	PISI	100	5	
White fir	ABCO	63	2	
Red alder	ALRU2	63	2	
Douglas-fir	PSME	50	3	
Understory trees				2
White fir	ABCO	75	1	
Sitka spruce	PISI	63	1	
Douglas-fir	PSME	38	1	
Shrubs				5
Salmonberry	RUSP	88	3	
Evergreen huckleberry	VAOV2	63	2	
Salal	GASH	50	2	
Western dewberry	RUVI	50	2	
Red huckleberry	VAPA	50	1	
Red elderberry	SARA2	38	2	
Herbs				11
Western sword-fern	POMU	100	4	
Mediterranean brome	BRMA2	88	2	
Iris species	IRIS	50	2	

**Cover is given in Daubenmire cover class codes (1-5)
See the Introduction.

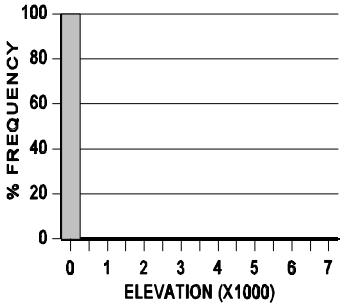
PISI 6

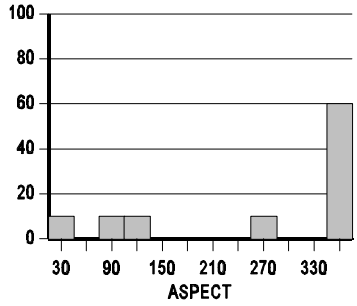
SITKA SPRUCE/SALAL-EVERGREEN HUCKLEBERRY
Picea sitchensis/Gaultheria shallon-Vaccinium ovatum
PISI/GASH-VAOV2 (N=10; NRCS=10)

Distribution. This Association occurs on lands within one half mile of the Pacific Ocean between the Oregon-California border and Port Orford, Oregon. Most frequently this Association is found south of Cape Sebastian.

Distinguishing Characteristics. This Association is slightly less diverse and supports slightly less vegetative cover than the Sitka Spruce-White Fir/Salmonberry Association. The overstory and shrub layer are dominated by Sitka spruce and salal, respectively. The soil textures are generally more well drained and have slightly less moisture-holding capacity than the Sitka Spruce-White Fir/Salmonberry Association.

Soils. The predominant parent material is sandstone. Surface rock (defined as greater than 7 centimeters in size) cover averages 3 percent, and is mostly gravel. Based on three pits sampled, soils are deep and well drained. Surface texture is





Slope position data is not available

loam with less than 5 percent gravel and 13 percent clay. Subsurface texture is loam and sandy loam, with 30 to 40 percent gravel and cobbles and 7 to 13 percent clay. The soil moisture regime is probably xeric and the soil temperature regime is isomesic.

Environment. Elevation averages 416 feet. Slopes average 20 percent with a range of 1 to 65 percent. This Association averages 54 degrees F and 86 inches of precipitation annually.

Vegetation Composition and Structure. Species richness for this Association averages 18 species. The overstory is slightly less diverse than the Sitka Spruce-White Fir/Salmonberry Association. It is dominated by Sitka spruce, with some red alder and Douglas-fir. Salal dominates the shrub layer. Western sword-fern and evergreen huckleberry are also almost always present but with less cover than salal. Salmonberry is commonly present, but with low cover.

Common name	Code	Constancy	Class**	Avg. Richness
Overstory trees				3
Sitka spruce	PISI	100	5	
Red alder	ALRU2	50	1	
Douglas-fir	PSME	40		
Understory trees				3
Sitka spruce	PISI	40	2	
Tanoak	LIDE3	40	1	
Douglas-fir	PSME	30	1	
Shrubs				4
Salal	GASH	100	3	
Evergreen huckleberry	VAOV2	100	2	
Western dewberry	RUVI	80	2	
Bracken	PTAQ	60	1	
Salmonberry	RUSP	50	1	
Red huckleberry	VAPA	30	2	
Herbs				8
Western sword-fern	POMU	100	2	
Fragrant bedstraw	GATR3	40	2	
Iris species	IRIS	30	1	
Rush species	RUSH	30	2	

**Cover is recorded as Daubenmire cover class (1-5).
See the Introduction.