

Ecological site R021XY422OR
PINE-FIR/SEDGE
18-30 PZ

Accessed: 08/19/2026

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs in/on mountain slopes, rolling uplands, plateaus and valleys. Slopes range from 1-45 percent. Elevations range from 4900 to 6500 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope (2) Plateau (3) Valley floor
Elevation	1,490 – 1,980 m
Slope	0 – 50 %
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 18 to 30 inches which occurs mainly between the months of November and June, mostly in the form of rain and snow. The soil temperature regime is frigid. The average annual air temperature is 42-45 degrees F with extreme temperatures ranging from 85 to -30 degrees F. The frost free period is 20 to 50 days. The optimum period for plant growth is from May through late July or August.

Table 3 Representative climatic features

Frost-free period (average)	50 days
Freeze-free period (average)	80 days
Precipitation total (average)	760 mm

Influencing water features

Soil features

The soils of this site are moderately deep or deep, well drained, stony and medium (loam) textured. They are generally formed in/from tuff, breccia, rhyolite or basalt. Permeability is slow. The potential for water erosion ranges from low to high depending on the slope.

Table 4. Representative soil features

Surface texture	(1) Stony loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Slow
Soil depth	Not specified
Available water capacity (0-101.6cm)	Not specified
Calcium carbonate equivalent (0-101.6cm)	Not specified
Electrical conductivity (0-101.6cm)	Not specified
Sodium adsorption ratio (0-101.6cm)	Not specified
Soil reaction (1:1 water) (0-101.6cm)	10

Ecological dynamics

The potential native plant community is dominated by ponderosa pine and scattered overstory white fir. White fir reproduction is common but limited moisture and historic periodic understory fires limit the development of a full canopy of white fir from the reproduction available. Numerous understory shrubs are present such as snowberry, seserviceberry, green manzanita, wax currant, Oregon grape and squaw carpet. Herbaceous species include Ross sedge, long-stolon sedge, Wheeler bluegrass, heartleaf arnica, strawberry and numerous other species.

Marginal areas for the site (droughty, low elevation) and south aspects will have greater pine cover, less true fir and greater abundance of understory species that have high light requirements. The only true fir present ranges in characteristics from grand fir-like to white fir-like and is actually a cross between these two species (similar to much of SW Oregon).

White fir regeneration is reduced by understory burning. Pine regeneration is favored by heavy thinnings and patch cuts. Heavy grazing pressure by livestock may reduce bluegrass sedge, brome and palatable forbs. Rabbitbrush, snowbrush and manzanita invade after major fires.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	Dominant deep rooted perennial grasses			212-353	
	long-stolon sedge	CAIN9	<i>Carex inops</i>	78-118	–
	Wheeler's bluegrass	POWH2	<i>Poa wheeleri</i>	78-118	–
	Ross' sedge	CARO5	<i>Carex rossii</i>	39-78	–
	mountain brome	BRMA4	<i>Bromus marginatus</i>	39-78	–
Forb					
9	Other perennial forbs			8-39	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0-6	–
	agosaris	AGOSE	<i>Agoseris</i>	0-6	–
	western pearly everlasting	ANMA	<i>Anaphalis margaritacea</i>	0-6	–
	heartleaf arnica	ARCO9	<i>Arnica cordifolia</i>	0-6	–
	hawksbeard	CREPI	<i>Crepis</i>	0-6	–
	fawnlily	ERYTH3	<i>Erythronium</i>	0-6	–
	strawberry	FRAGA	<i>Fragaria</i>	0-6	–
	white hawkweed	HIAL2	<i>Hieracium albiflorum</i>	0-6	–
	desertparsley	LOMAT	<i>Lomatium</i>	0-6	–
	lupine	LUPIN	<i>Lupinus</i>	0-6	–
	Brown's peony	PABR	<i>Paeonia brownii</i>	0-6	–
	phacelia	PHACE	<i>Phacelia</i>	0-6	–
	sticky cinquefoil	POGL9	<i>Potentilla glandulosa</i>	0-6	–
	wintergreen	PYROL	<i>Pyrola</i>	0-6	–
	ragwort	SENEC	<i>Senecio</i>	0-6	–
	American vetch	VIAM	<i>Vicia americana</i>	0-6	–
	violet	VIOLA	<i>Viola</i>	0-6	–
Shrub/Vine					
11	Dominant evergreen shrubs			31-63	
	creeping barberry	MARE11	<i>Mahonia repens</i>	16-39	–
	prostrate ceanothus	CEPR	<i>Ceanothus prostratus</i>	16-24	–
13	Dominant deciduous (or 1/2 shrubs) shrubs			39-118	

	common snowberry	SYAL	<i>Symphoricarpos albus</i>	39-118	–
14	Sub-dominant deciduous (or 1/2 shrubs) shrubs			8-16	
	wax currant	RICE	<i>Ribes cereum</i>	8-16	–
15	Other shrubs			39-118	
	Saskatoon serviceberry	AMAL2	<i>Amelanchier alnifolia</i>	0-6	–
	curl-leaf mountain mahogany	CELE3	<i>Cercocarpus ledifolius</i>	0-6	–
	pipsissewa	CHUM	<i>Chimaphila umbellata</i>	0-6	–
	bitter cherry	PREM	<i>Prunus emarginata</i>	0-6	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	0-6	–
	sticky currant	RIV3	<i>Ribes viscosissimum</i>	0-6	–
	rose	ROSA5	<i>Rosa</i>	0-6	–
Tree					
16	Dominant evergreen trees			78-314	
	grand fir	ABGR	<i>Abies grandis</i>	39-157	–
	ponderosa pine	PIPO	<i>Pinus ponderosa</i>	39-157	–
17	Sub-dominant evergreen trees			8-16	
	incense cedar	CADE27	<i>Calocedrus decurrens</i>	8-16	–
19	Sub-dominant deciduous (or 1/2 shrubs) shrubs			8-16	
	willow	SALIX	<i>Salix</i>	8-16	–

Animal community

Livestock grazing- Use is minor in heavy forest except for rest, travel and bedding; most grazing is available in logged, burned or disturbed sites (except dense brush fields) and in plantations. Wildlife- Mule deer, elk, bobcat, coyote and grouse.

Hydrological functions

The soils of this site have low to medium infiltration rates and low to high runoff potential depending on slope. The hydrologic soil group is C.

Recreational uses

Hiking and hunting.

Wood products

Lumber, poles, and firewood.

Other information

For road stabilization or critical area stabilization where competition with tree seedlings is not a concern- choices include pubescent wheatgrass, intermediate wheatgrass, hard fescue, sheep fescue, smooth brome and orchardgrass.

Type locality

Location 1: Klamath County, OR	
Township/Range/Section	T39S R13E S6
General legal description	SE Klamath coutny at Goodlow Mtn. T39S, R13E, Sec 6 (NW, NE).

Location 2: Klamath County, OR	
Township/Range/Section	T39S R13E S22 29
General legal description	Bryant Mtn. near center of mtn. T39S, R13E, Sec 22 and 29

Contributors

BLM ESI Team

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	Jeff Repp
Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	09/05/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills: None to some (on steeper slopes - to 45%), moderate to significant sheet & rill erosion hazard

2. Presence of water flow patterns: None to some (on steeper slopes - to 45%)

3. Number and height of erosional pedestals or terracettes: None

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):
<1%

5. Number of gullies and erosion associated with gullies: None

6. Extent of wind scoured, blowouts and/or depositional areas: None, slight wind erosion hazard

7. Amount of litter movement (describe size and distance expected to travel): Fine - limited movement

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):
Moderately resistant to erosion: aggregate stability = 3-5

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Moderately deep to deep, well drained cobbly or stony loams: Low OM (1-2%)

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff: Significant vegetative cover of over 125% and gentle to moderate slopes (1-45%) effectively limit rainfall impact and overland flow; infiltration is moderate

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None

12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant: Long-stolon sedge = Wheeler bluegrass > Ponderosa Pine = Grand fir > Snowberry > other shrubs > Mountain brome > Ross sedge > other grasses > forbs > other trees

Sub-dominant:

Other:

Additional:

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):
Normal decadence and mortality expected

14. Average percent litter cover (%) and depth (in):

15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):
Favorable: 1000, Normal: 700, Unfavorable: 500 lbs/acre/year at high RSI (HCPC)

16. Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site: Perennial brush species will increase with deterioration of plant community (and after fire). Ponderosa Pine readily increases on the site (can be converted to woodland w/out fire). Cheatgrass and Medusahead invade sited that have lost deep rooted perennial grass functional groups.

17. Perennial plant reproductive capability: All species should be capable of reproducing annually
