

Ecological site R023XY508OR PUMICE FLAT 10-12 PZ

Accessed: 05/13/2025

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.

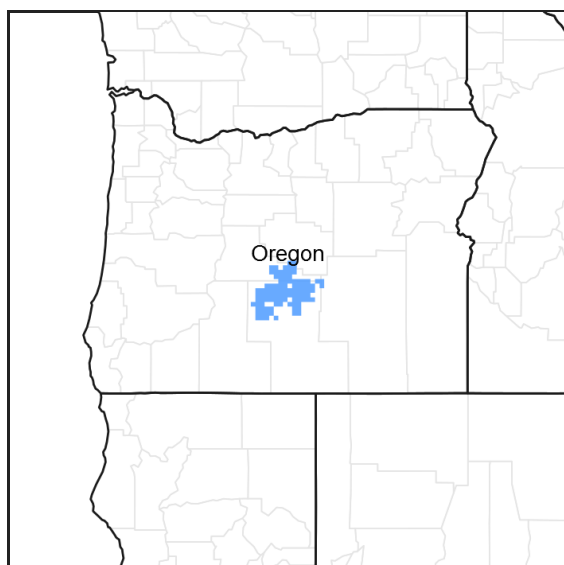


Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
Herbaceous	(1) <i>Stipa occidentalis</i> (2) <i>Carex rossii</i>

Physiographic features

This site occurs on nearly level to gently sloping areas within basins. Slopes range from nearly flat to 5 percent. Elevations range from 4,300 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Lava plain (2) Lake terrace (3) Lava plateau
Flooding frequency	None
Ponding frequency	None
Elevation	396–1,524 m

Slope	0–5%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 10 to 12 inches which occurs mainly between the months of November and June, mostly in the form of snow and spring-fall rains. The soil temperature regime is frigid. The annual air temperature is 43 degrees F with extreme temperatures ranging from -30 to 103 degrees F. The frost free period is 50 to 90 days. The optimum period for plant growth is from mid-April through early July.

Table 3. Representative climatic features

Frost-free period (average)	90 days
Freeze-free period (average)	0 days
Precipitation total (average)	305 mm

Influencing water features

Soil features

The soils of this site are moderately deep to very deep and well to somewhat excessively drained. They are generally formed from volcanic ash over residuum or alluvium. Permeability is moderately slow and the available water holding capacity (AWC) is 6.0 to 10.0 inches for the profile. The potential for water erosion is low and for wind erosion is high.

Table 4. Representative soil features

Surface texture	(1) Gravelly loamy sand (2) Ashy loamy sand (3) Gravelly coarse sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to rapid
Soil depth	51–152 cm
Surface fragment cover <=3"	15–40%
Surface fragment cover >3"	0–5%
Available water capacity (0-101.6cm)	3.3–20.07 cm
Calcium carbonate equivalent (0-101.6cm)	0%
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	6.6–7.8
Subsurface fragment volume <=3" (Depth not specified)	6–35%
Subsurface fragment volume >3" (Depth not specified)	0–7%

Ecological dynamics

Areas with greater amounts of gravel and coarse textured soil will have more needlegrass. Other areas higher in ash with less coarse material support greater amounts of Idaho fescue and less needlegrass.

With overgrazing by cattle, Junegrass, Thurber needlegrass, and Ross sedge can be reduced or eliminated from the stand. Burning reduces cover of sagebrush and increases rabbitbrush.

Cheatgrass, gray rabbitbrush, annual phlox, and collinsia may invade this site.

State and transition model

Ecosystem states

1. Reference Plant Community

State 1 submodel, plant communities

1.1. Reference Plant Community

State 1
Reference Plant Community

Community 1.1
Reference Plant Community

The reference native plant community is dominated by big sagebrush and western needlegrass. Ross sedge, squirreltail, buckwheat, and green rabbitbrush are also common in the stand. Vegetative composition is approximately 65% grasses, 5% forbs, and 30% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	291	364	437
Shrub/Vine	135	168	202
Forb	22	28	34
Total	448	560	673

Table 6. Canopy structure (% cover)

Height Above Ground (M)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.15	—	0-2%	—	—
>0.15 <= 0.3	—	—	5-10%	0-2%
>0.3 <= 0.6	—	—	30-35%	0-3%
>0.6 <= 1.4	—	10-15%	—	—
>1.4 <= 4	—	—	—	—
>4 <= 12	—	—	—	—
>12 <= 24	—	—	—	—
>24 <= 37	—	—	—	—
>37	—	—	—	—

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial, bunch grass, deep-rooted			168–280	
	western needlegrass	ACOCO	<i>Achnatherum occidentale</i> ssp. <i>occidentale</i>	168–280	–
2	Upland sedge			56–84	
	Ross' sedge	CARO5	<i>Carex rossii</i>	56–84	–
3	Perennial, bunch-grass, moderately deep-rooted			28–56	
	squirreltail	ELEL5	<i>Elymus elymoides</i>	28–39	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	11–28	–
4	Perennial, rhizomatous			6–11	
	thickspike wheatgrass	ELLA3	<i>Elymus lanceolatus</i>	6–11	–
8	Other perennial grasses			6–11	
	sedge	CAREX	<i>Carex</i>	0–6	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–6	–
	mat muhly	MURI	<i>Muhlenbergia richardsonis</i>	0–6	–
Forb					
10	Perennial forb			6–11	
	buckwheat	ERIOG	<i>Eriogonum</i>	6–11	–
15	Other perennial forbs			6–11	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–6	–
	western pearly everlasting	ANMA	<i>Anaphalis margaritacea</i>	0–6	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–6	–
	rockcress	ARABI2	<i>Arabis</i>	0–6	–
	woollypod milkvetch	ASPU9	<i>Astragalus purshii</i>	0–6	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–6	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–6	–
	starlily	LEUCO	<i>Leucocrinum</i>	0–6	–
	Lewis flax	LILE3	<i>Linum lewisii</i>	0–6	–
	lupine	LUPIN	<i>Lupinus</i>	0–6	–
Shrub/Vine					
20	Evergreen			112–140	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	112–140	–
21	Evergreen			22–34	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	22–34	–
22	Sub-shrub			0–6	
	granite prickly phlox	LIPU11	<i>Linanthus pungens</i>	0–6	–

Animal community

Winter grazing is possible in mild winters with little snow. Protection from cold is limited due to limited tall cover.

Wildlife include Pronghorn Antelope, Mule Deer, and various rodents.

Hydrological functions

Natural water is not usually available on this site.

The soils of this site have high infiltration rates and low runoff potential.

Other information

Adapted species for seedings include crested wheatgrass, Siberian wheatgrass, and thickspike wheatgrass.

Contributors

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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)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

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

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**
-
7. **Amount of litter movement (describe size and distance expected to travel):**
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
-
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:
- Sub-dominant:
- Other:
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
-
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):**
-
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:

17. **Perennial plant reproductive capability:**
