

Ecological site R023XY210OR

PUMICE 10-12 PZ

Accessed: 05/17/2024

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.

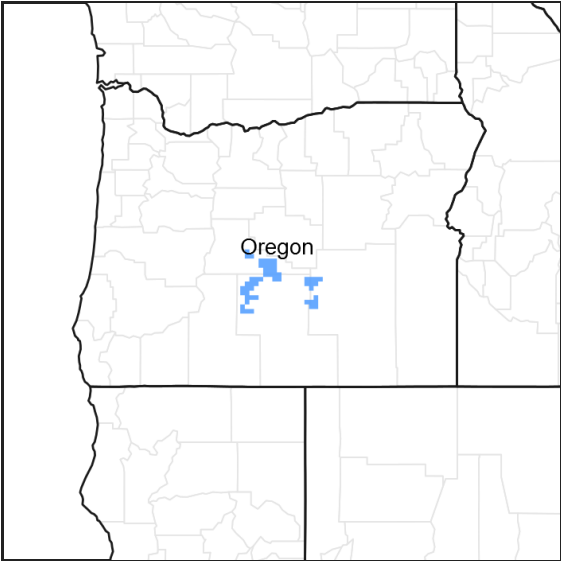


Figure 1. Mapped extent

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.

Associated sites

R023XY221OR	GRAVELLY TERRACE 10-12 PZ Gravelly Terrace 10-12" PZ
R023XY508OR	PUMICE FLAT 10-12 PZ Pumice Flat 10-12" PZ
R023XY514OR	PUMICE 8-10 PZ Pumice 8-10" PZ

Similar sites

R023XY508OR	PUMICE FLAT 10-12 PZ Pumice Flat 10-12" PZ
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on nearly level to gently sloping basin and low ridges. Slopes range from 0 to 20 percent. Elevations range from 4300 to 5000 feet.

Table 2. Representative physiographic features

Landforms	(1) Ridge
Elevation	1,311–1,524 m
Slope	0–20%
Water table depth	152 cm
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 10 to 12 inches. This 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 average 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 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 very deep pumice sand and are excessively drained. They are generally underlain with mixed sand and gravel and often contain weakly cemented pans. Permeability is moderately rapid and the available water holding capacity (AWC) is 7 to 10 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 sand
Family particle size	(1) Sandy
Drainage class	Excessively drained
Permeability class	Moderately rapid
Available water capacity (0-101.6cm)	17.78–25.4 cm

Ecological dynamics

Range in Characteristics:

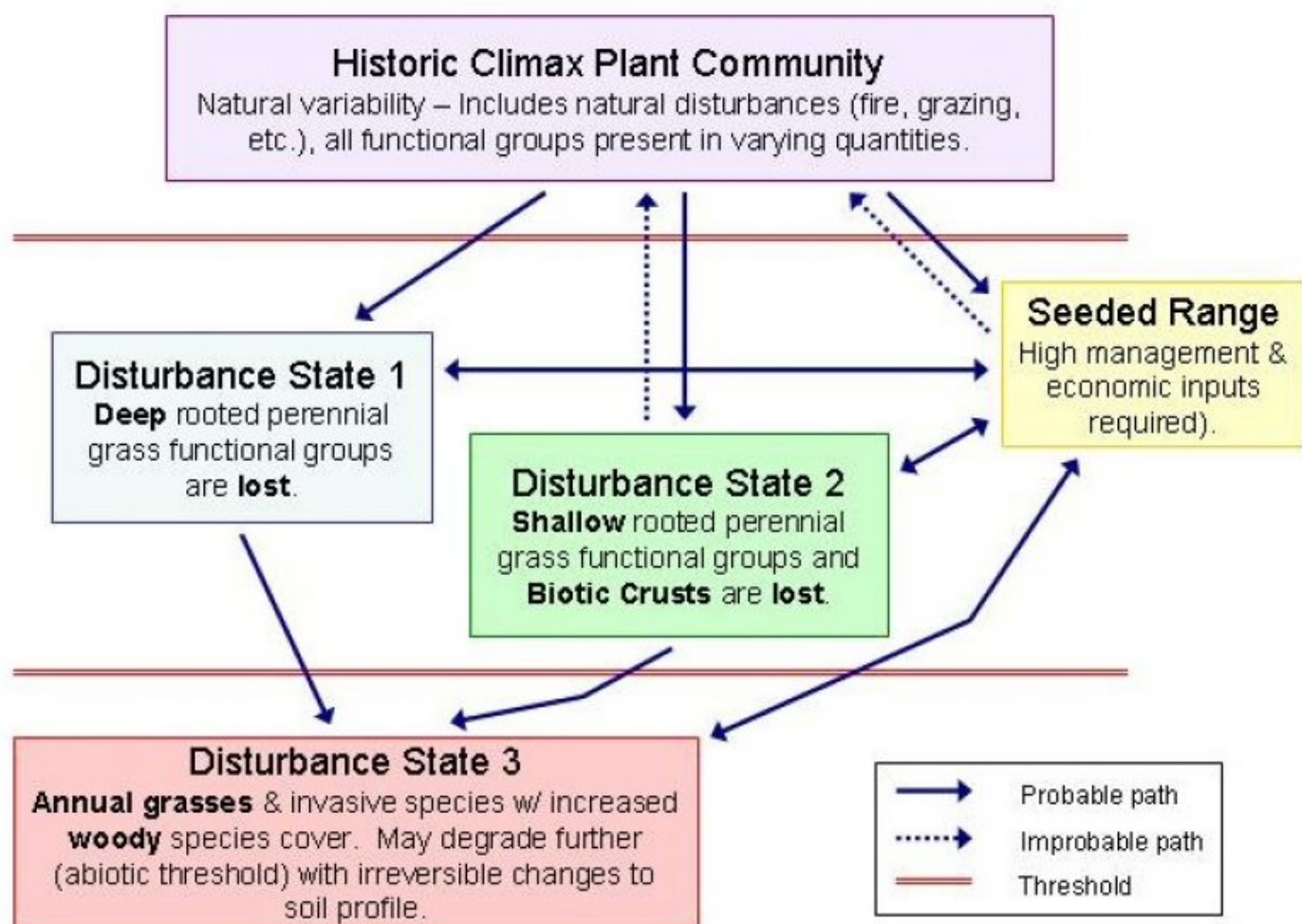
Western needlegrass is more abundant where there is more coarse textured and/or gravelly pumice material.

Response to Disturbance:

Burning will temporarily reduce both big sagebrush and bitterbrush while encouraging rabbitbrush. Composition

changes from overgrazing, are generally a decline in Idaho fescue and an increase in needlegrass.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

Historic Climax Plant Community

Community 1.1

Historic Climax Plant Community

The potential native plant community is dominated by Idaho fescue (about 50 percent). Other prominent species include Thurber needlegrass, western needlegrass, and Ross sedge (about 5 percent each). Bitterbrush dominates the aspect (about 15 percent) and big sagebrush is also common in the stand (10 percent). Vegetative composition is approximately 70 percent grasses, 5 percent forbs, and 25 percent shrubs. Total foliar cover is about 80 percent, of which 30 percent is shrub cover, and 50 percent is grass/forb cover.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	575	772	968
Shrub/Vine	212	272	333
Forb	50	76	101
Total	837	1120	1402

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial, deep-rooted, dominant			404–605	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	404–605	–
2	Perennial, deep-rooted, sub-dominant			151–323	
	western needlegrass	ACOC3	<i>Achnatherum occidentale</i>	101–202	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	20–50	–
	Ross' sedge	CARO5	<i>Carex rossii</i>	20–50	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	10–20	–
4	Perennial, shallow-rooted, sub-dominant			10–20	
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	10–20	–
5	Other perennial grasses, all			10–20	
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–10	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	0–10	–
Forb					
7	Perennial, all, dominant			40–81	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	10–20	–
	buckwheat	ERIOG	<i>Eriogonum</i>	10–20	–
	desertparsley	LOMAT	<i>Lomatium</i>	10–20	–
	lupine	LUPIN	<i>Lupinus</i>	10–20	–
9	Other perennial forbs, all			10–20	
	pussytoes	ANTEN	<i>Antennaria</i>	0–4	–
	Douglas' dustymaiden	CHDO	<i>Chaenactis douglasii</i>	0–4	–
	common starlily	LEMO4	<i>Leucocrinum montanum</i>	0–4	–
	phacelia	PHACE	<i>Phacelia</i>	0–4	–
	phlox	PHLOX	<i>Phlox</i>	0–4	–
Shrub/Vine					
11	Perennial, evergreen, dominant			202–303	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	151–202	–
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	50–101	–
15	Other perennial shrubs, all			10–30	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	0–8	–
	slender buckwheat	ERMI4	<i>Eriogonum microthecum</i>	0–8	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–8	–

Animal community

Livestock Grazing:

Water is not usually available on-site. Fall-winter grazing may create a conflict with deer over the use of bitterbrush.

Native Wildlife Associated with the Potential Climax Community:

Deer
Antelope
Rabbits

Deer are important users of bitterbrush for browse.

Hydrological functions

The soils of this site have rapid infiltration rates and low runoff potential. The hydrologic soil group is C.

Other information

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

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)	Jeff Repp
Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	08/15/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None, Moderate sheet & rill erosion hazard

2. **Presence of water flow patterns:** None

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):** 0-5%

5. **Number of gullies and erosion associated with gullies:** None
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None to some, High wind erosion hazard
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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Slightly resistant to erosion: aggregate stability = 1-3
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very deep, excessively drained pumice sands: Low OM (0-2%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (70-80%) and gentle to moderate slopes (0-20%) effectively limit rainfall and overland flow
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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: Idaho fescue > Western needlegrass > Antelope bitterbrush > other grasses = other shrubs > forbs
- 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
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14. **Average percent litter cover (%) and depth (in):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1100, Normal: 900, Unfavorable: 700 lbs/acre/year at high RSI (HCPC)
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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. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.
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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually
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