

Ecological site R010XA026OR Juniper Pumice North 10-12 PZ

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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.

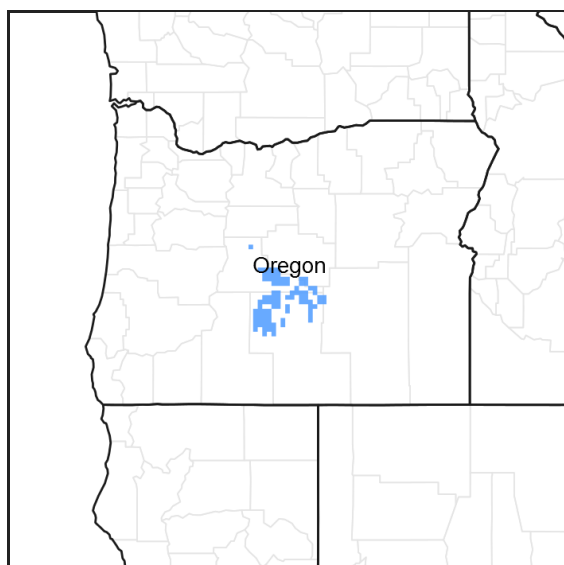


Figure 1. Mapped extent

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

R010XA007OR	Juniper Pumice South 9-12 PZ
R010XA025OR	Juniper Shallow North 10-12 PZ

Similar sites

R010XA083OR	Juniper Shrubby North 9-12 PZ
R010XA025OR	Juniper Shallow North 10-12 PZ

Table 1. Dominant plant species

Tree	(1) <i>Juniperus occidentalis</i> var. <i>occidentalis</i>
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
Herbaceous	(1) <i>Festuca idahoensis</i> (2) <i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>

Physiographic features

This site occurs on moderate to steep, north facing slopes of buttes and ridges.

Table 2. Representative physiographic features

Landforms	(1) Butte (2) Ridge
Flooding frequency	None
Ponding frequency	None
Elevation	853–1,676 m
Slope	20–65%
Aspect	N

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 rain and snow. 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 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 moderately deep and well drained. They contain volcanic ash in the surface and have medium textured subsoils. They are generally formed from volcanic ash and the underlying residuum or bedrock. Permeability is moderately slow and the available water holding capacity is 2 to 4 inches for the profile. The potential for water erosion is low, and for wind erosion low to high.

Table 4. Representative soil features

Drainage class	Well drained
Permeability class	Moderately slow
Soil depth	102 cm
Available water capacity (0-101.6cm)	5.08–10.16 cm

Ecological dynamics

Juniper and sagebrush decrease following burning while rabbitbrush increases after burning. Overgrazing causes a decline in Idaho fescue and bluebunch wheatgrass, and an increase in squirreltail.

Increasers and invaders on this site include cheatgrass, mustard, collinsia, micosteris, woolypod milkvetch, rock cress, grey rabbitbrush, and prickly gilia.

Juniper cover and bluebunch wheatgrass increases in the stand where stoniness increases.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1 Reference State

Community 1.1 Reference Plant Community

The potential native plant community is dominated by western juniper, big sagebrush and Idaho fescue. Bluebunch wheatgrass is abundant along with lesser amounts of Sandberg bluegrass, Junegrass, big bluegrass and a variety of forbs. Minor occurrences of bitterbrush, gray horsebrush, and small green rabbitbrush are also present.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	549	706	863
Shrub/Vine	118	151	185
Forb	78	101	123
Tree	39	50	62
Total	784	1008	1233

Figure 4. Plant community growth curve (percent production by month).
OR4031, B10A Mesic, Mid Elev., North, Good Condition. B10A Mesic, Mid
Elev., North, Good Condition RPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	25	40	25	5	0	0	0	0

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	Dominant deep rooted perennial grasses			404–605	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	404–605	–
2	Sub-dominant deep rooted perennial grasses			161–282	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	151–252	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	10–30	–
4	Sub-dominant shallow rooted perennial grasses			30–131	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	20–101	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	10–30	–
Forb					
7	Dominant perennial forbs			10–30	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	10–30	–
8	Sub-dominant perennial forbs			40–81	
	milkvetch	ASTRA	<i>Astragalus</i>	10–20	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	10–20	–
	fleabane	ERIGE2	<i>Erigeron</i>	10–20	–
	phlox	PHLOX	<i>Phlox</i>	10–20	–
9	Other perennial forbs			10–61	
	agoseris	AGOSE	<i>Agoseris</i>	0–6	–
	western pearly everlasting	ANMA	<i>Anaphalis margaritacea</i>	0–6	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–6	–
	snow buckwheat	ERNI2	<i>Eriogonum niveum</i>	0–6	–
	flax	LINUM	<i>Linum</i>	0–6	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–6	–
Shrub/Vine					
11	Dominant evergreen shrubs			101–151	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	101–151	–
12	Sub-dominant evergreen shrubs			10–20	
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	10–20	–
15	Other shrubs			10–30	
	slender buckwheat	ERMI4	<i>Eriogonum microthecum</i>	0–10	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	0–10	–
	desert gooseberry	RIVE	<i>Ribes velutinum</i>	0–10	–
	horsebrush	TETRA3	<i>Tetradymia</i>	0–10	–
Tree					
16	Dominant evergreen trees			50–101	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	50–101	–

Animal community

Mule deer use this site in late spring, summer and fall. Winter use is made of the site in open, mild winter.

Hydrological functions

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

Wood products

Juniper firewood and posts.

Other products

Late season grazing in mid summer and fall will be concentrated on Idaho fescue and Thurber needlegrass, rather than bluebunch wheatgrass.

Other information

Recommended species for range seedings include crested wheatgrass, pubescent wheatgrass, Siberian wheatgrass, big bluegrass, sheep fescue, and bluebunch wheatgrass.

Other references

B10B Site also similar to this site:
Droughty North 9-12 PZ #010XB084OR

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 and Bruce Franssen
Contact for lead author	State Rangeland Management Specialist
Date	08/03/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

2. **Presence of water flow patterns:** None to some on steeper slopes
-

3. **Number and height of erosional pedestals or terracettes:** None to some on steeper slopes
-
4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-10%
-
5. **Number of gullies and erosion associated with gullies:** None
-
6. **Extent of wind scoured, blowouts and/or depositional areas:** None to some, Slight to severe 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, well drained gravelly loamy sands (volcanic ash); low OM (1-2%)
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (70-85%) and moderate to steep slopes (20-65%) moderately limit rainfall impact and overland flow
-
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 >
- 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: 1100, Normal: 900, Unfavorable: 700 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. Western Juniper readily increases on the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.

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