

Ecological site R008XY200OR South 10-14 PZ

Accessed: 04/07/2026

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.

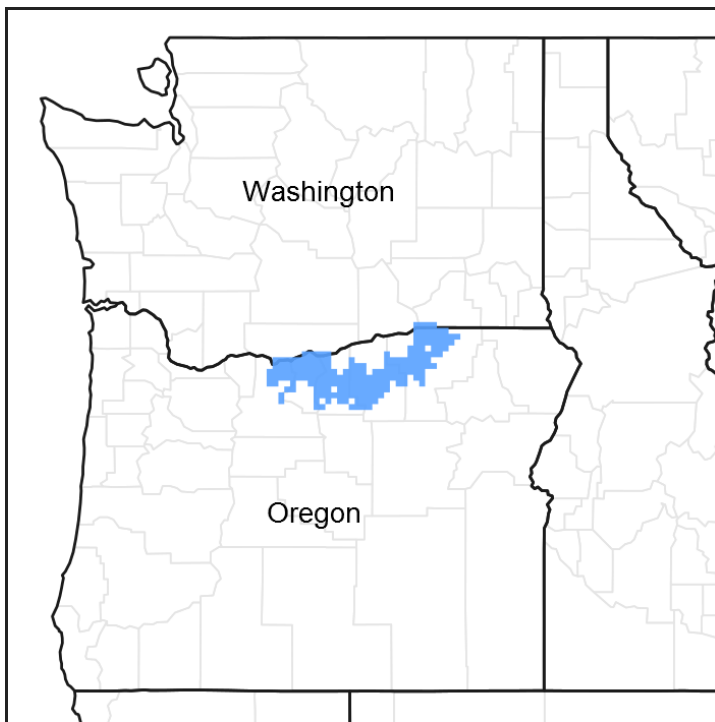


Figure 1. Mapped extent

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

R008XY110OR	Loamy 10-12 PZ
R008XY120OR	Loamy 12-14 PZ
R008XY150OR	Very Shallow Loam 10-14 PZ

R008XY210OR	Shallow South 10-14 PZ
R008XY220OR	North 10-14 PZ

Similar sites

R008XY210OR	Shallow South 10-14 PZ Shallower soil, steeper slopes
-------------	---

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata ssp. tridentata</i> (2) <i>Ericameria nauseosa</i>
Herbaceous	(1) <i>Pseudoroegneria spicata ssp. spicata</i> (2) <i>Poa secunda</i>

Physiographic features

This site occurs on the side slopes of dissected uplands.

Table 2. Representative physiographic features

Landforms	(1) Valley side
Flooding frequency	None
Ponding frequency	None
Elevation	183–914 m
Slope	12–35%
Water table depth	152–229 cm
Aspect	SE, S, W

Climatic features

The annual precipitation ranges from 10 to 14 inches which occurs mostly as rain with snow during November through April. Spring and fall rains are common. The temperature regime is mesic with extremes ranging from 110 degrees F. to -10 degrees F. The frost free period ranges from 160 to 220 days and the optimum period for plant growth is early March to mid-May.

Table 3. Representative climatic features

Frost-free period (average)	220 days
-----------------------------	----------

Freeze-free period (average)	250 days
Precipitation total (average)	356 mm

Influencing water features

Soil features

The soils of this site are moderately deep to very deep, well drained silt loams formed in loess over basalt. Subsoils occasionally are silty clay loams. Permeability is moderate and the available water holding capacity is 6 to 8.5 inches for the rooting profile. The erosion hazard is moderate for water and slight for wind.

Table 4. Representative soil features

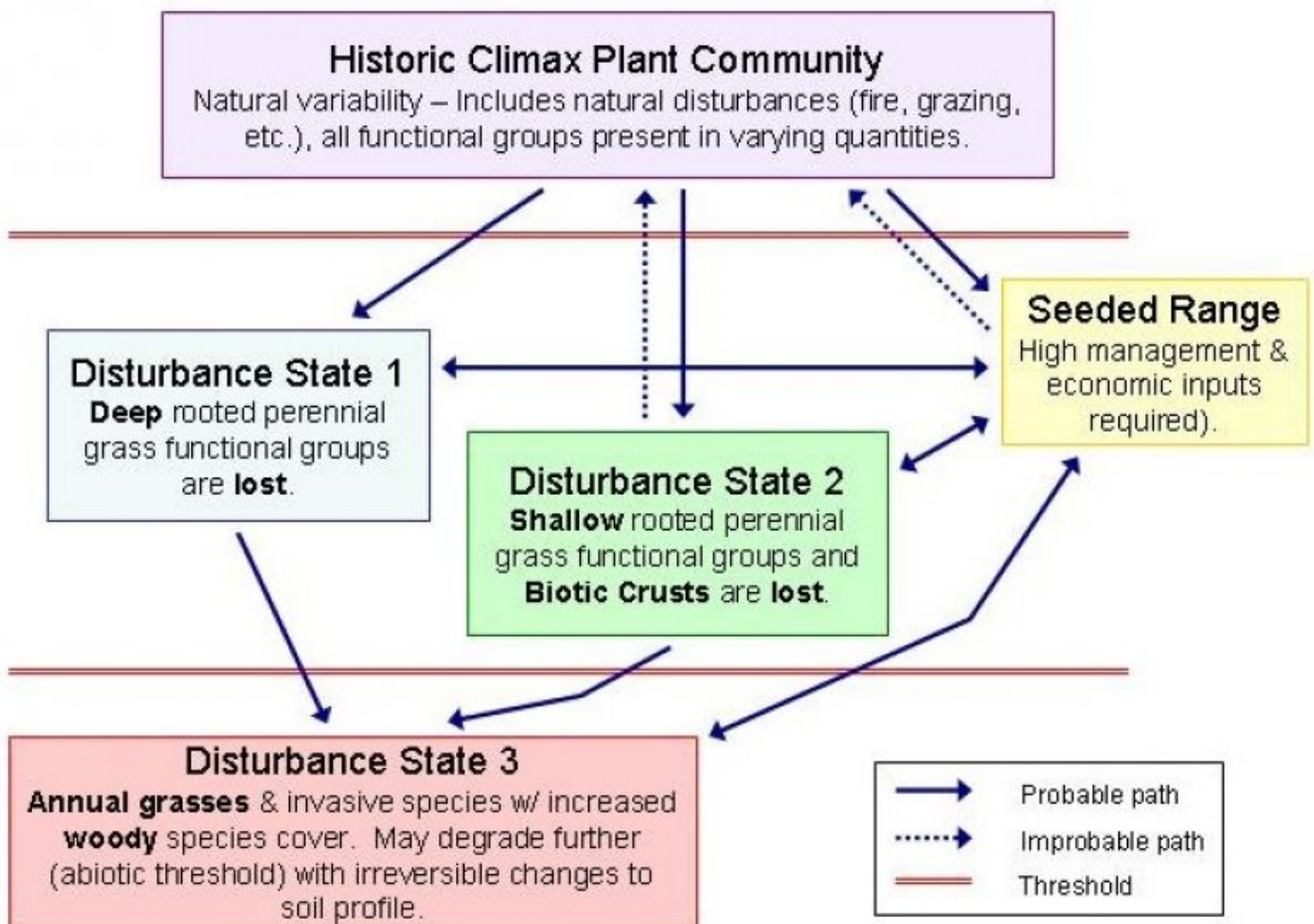
Parent material	(1) Loess–basalt
Surface texture	(1) Silt loam (2) Very fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately slow to moderately rapid
Soil depth	152 cm
Surface fragment cover ≤3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	15.24–21.59 cm
Calcium carbonate equivalent (0-101.6cm)	0%
Electrical conductivity (0-101.6cm)	0 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)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

If heavy grazing causes site deterioration, bluebunch wheatgrass will decline in vigor and give way to cheatgrass, rabbitbrush, and often big sagebrush. A lack of periodic fire will encourage an increase in shrubs.

Variability in this site results from changes in slope steepness. Steep slopes are prone to runoff and soil loss. This results in shallower soils, lower plant density and lower production. Conversely, moderate slopes support more dense and productive stands.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC, PSSP6-POSE

Community 1.1

Reference Plant Community

The potential native plant community is dominated by bluebunch wheatgrass with lesser

amounts of Sandberg bluegrass. Thurber needlegrass and a variety of forbs occur in minor amounts. Vegetative composition is about 85% grasses, 10% forbs, and 5% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	381	857	1143
Forb	45	101	135
Shrub/Vine	22	50	67
Total	448	1008	1345

**Figure 5. Plant community growth curve (percent production by month).
OR2501, B8 Loamy, Droughty North, Good Condition. RPC Growth Curve B8
Loamy, Droughty North, & South, Good Condition.**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	20	25	20	10	5	0	5	5	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	Moderately deep rooted perennial bunch-grasses			706–908	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	706–908	–
4	Shallow rooted perennial bunch-grasses			30–71	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	30–71	–
5	Other perennial grasses			30–50	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	0–30	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–30	–
Forb					
7	Perennial forbs			50–101	
	milkvetch	ASTRA	<i>Astragalus</i>	10–30	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	10–30	–
	desertparsley	LOMAT	<i>Lomatium</i>	10–20	–

	lupine	LUPIN	<i>Lupinus</i>	10–20	–
	common yarrow	ACMI2	<i>Achillea millefolium</i>	10–20	–
9	Other perennial forbs			10–30	
	pussytoes	ANTEN	<i>Antennaria</i>	0–10	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–10	–
	phlox	PHLOX	<i>Phlox</i>	0–10	–
	deathcamas	ZIGAD	<i>Zigadenus</i>	0–10	–
Shrub/Vine					
11	Evergreen shrubs			20–40	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	10–20	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	10–20	–
12	Other Shrubs			0–20	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	0–10	–
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	0–10	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–10	–

Animal community

This site is used by deer in winter and spring. Hungarian partridge are common on this site when it occurs in association with cropland.

Hydrological functions

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

Wood products

None

Other products

This site is suitable for use in all seasons under a planned grazing system. Care should be taken to ensure proper grazing use during spring when livestock concentrate on this site.

Contributors

Barrett, Bahn
Bob Gillaspy
E Ersch (OSU)
K.Kennedy

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, Bruce Franssen
Contact for lead author	State Rangeland Management Specialist
Date	01/15/2005
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None

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):** 10% - 15%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None

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 = 4-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** weak fine granular structure to moderate medium and fine subangular blocky structure. 4 to 15 inches thick, with dry color values 4 to 6. Low organic matter content (1% to 4%).

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (40-60%) limits rainfall impact and overland flow, steeper slopes can have more serious problems with run off.

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: Moderately deep-rooted perennial bunch-grasses.

Sub-dominant: Shallow-rooted perennial bunchgrasses.

Other: Forbs > Shrubs

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: 1200, Normal: 900, Unfavorable: 400 lbs/acre/year for reference plant community.
-

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:** Cheatgrass will invade sites that have lost moderately deep rooted perennial bunch-grass functional group.
-

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