

Ecological site R008XY140OR Shallow Loam 10-14 PZ

Last updated: 5/02/2025
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

R008XY130OR	Sandy Loam 10-12 PZ
R008XY150OR	Very Shallow Loam 10-14 PZ
R008XY200OR	South 10-14 PZ

R008XY220OR	North 10-14 PZ
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Similar sites

R008XY130OR	Sandy Loam 10-12 PZ Coarser texture
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on level to gently sloping uplands and plateau shoulders.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Plateau
Elevation	152–2,134 m
Slope	2–15%

Climatic features

The annual precipitation ranges from 10 to 14 inches which occurs mostly as snow during December through May. Spring and fall rains are common. The temperature regime is mesic with extreme temperatures ranging from 110 degrees F. to -20 degrees F. The frost-free period is 100 to 180 days long and the optimum period for plant growth is from early April through mid-June.

Table 3. Representative climatic features

Frost-free period (average)	180 days
Freeze-free period (average)	
Precipitation total (average)	356 mm

Influencing water features

Soil features

The soils of this site are shallow loams formed over basalt bedrock. Their permeability is moderate and the available water holding capacity is 1 to 2 inches for the profile. The erosion hazard for water is moderate and slight for wind.

Table 4. Representative soil features

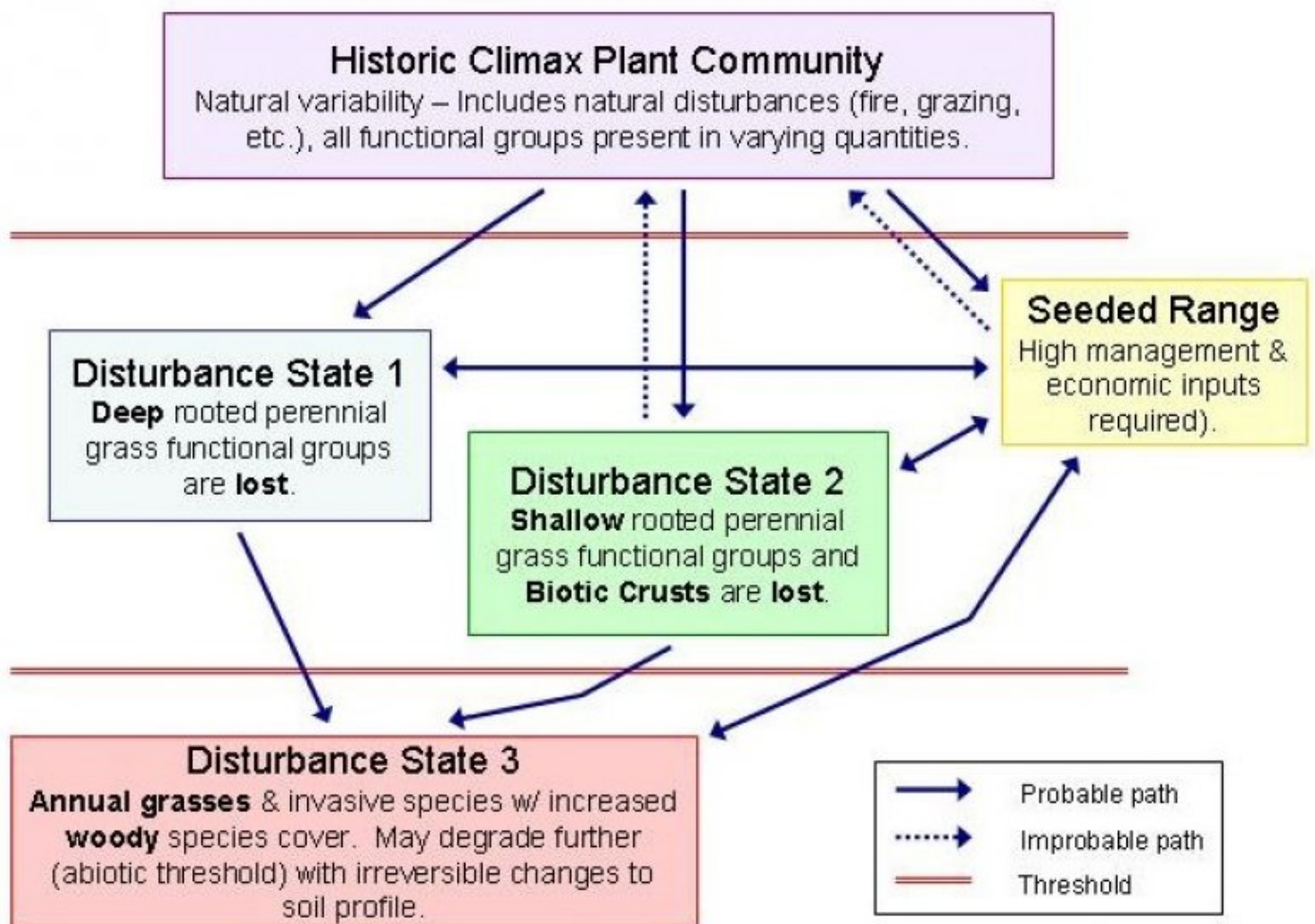
Surface texture	(1) Loam
Permeability class	Moderate
Soil depth	51 cm
Available water capacity (0-101.6cm)	2.54–5.08 cm

Ecological dynamics

If heavy grazing causes site deterioration, bluebunch wheatgrass will decrease in the stand and Sandberg bluegrass, six weeks fescue, yarrow, and gray rabbitbrush will increase. Cheatgrass, China lettuce, salsify, and Russian thistle can invade this site.

Variability in plant composition and production is influenced by soil depth and aspect. Production is reduced and plants that are drought tolerant increase as soil depth decreases. Slopes that dip north will support small amounts of Idaho fescue.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1 Reference

Community 1.1 Reference Plant Community

The potential native community is dominated by bluebunch wheatgrass with lesser amounts of Sandberg bluegrass. Vegetative composition is about 95% grass, 3% forbs, and 2% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	409	723	925
Forb	28	39	56
Shrub/Vine	11	22	28
Total	448	784	1009

Figure 3. 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	Dominant deep rooted perennial grasses			549–706	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	549–706	–
4	Sub-dominant shallow rooted perennial grasses			39–118	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	39–118	–
5	Other perennial grasses			0–16	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	0–8	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–8	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–8	–
6	Annual grasses			8–16	
	sixweeks fescue	VUOC	<i>Vulpia octoflora</i>	8–16	–
Forb					
7	Dominant perennial forbs			24–47	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	8–16	–
	fleabane	ERIGE2	<i>Erigeron</i>	8–16	–
	phlox	PHLOX	<i>Phlox</i>	8–16	–
9	Other perennial forbs			0–16	
	pussytoes	ANTEN	<i>Antennaria</i>	0–8	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–8	–
	sagebrush mariposa lily	CAMA5	<i>Calochortus macrocarpus</i>	0–8	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–8	–
	flax	LINUM	<i>Linum</i>	0–8	–

	desertparsley	LOMAT	<i>Lomatium</i>	0–8	–
Shrub/Vine					
11	Dominant evergreen shrubs			8–16	
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	8–16	–
15	Other shrubs			0–16	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	0–8	–
	yellow rabbitbrush	CHV18	<i>Chrysothamnus viscidiflorus</i>	0–8	–

Animal community

When associated with croplands, this site is used by upland game birds including Hungarian partridge and ring-necked pheasants. Mule deer and pronghorn antelope will use this site as well.

Hydrological functions

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

Wood products

None

Other products

This site is suitable for grazing during all seasons under a planned grazing system, but best suited for use during the fall, winter, and early spring.

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.

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Date	07/27/2012
Approved by	Kirt Walstad
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:** Some, in bare ground and around surface rock fragments

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):** 15-15%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Non, 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 to significantly resistant to erosion; aggregate stability = 4-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Shallow loams: Low OM (1-2%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderately low ground cover (25-35%) and surface rock fragments limit rainfall impact and moderately suppress water 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: Bluebunch wheatgrass > Sandberg bluegrass > dominant forbs > other grasses = other forbs = dominant shrubs = other shrubs

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: 900, Normal: 700, Unfavorable: 400 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 invades 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
