

Ecological site R008XY210OR

Shallow South 10-14 PZ

Accessed: 05/12/2025

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.

Associated sites

R008XY110OR	Loamy 10-12 PZ
R008XY120OR	Loamy 12-14 PZ
R008XY130OR	Sandy Loam 10-12 PZ
R008XY140OR	Shallow Loam 10-14 PZ
R008XY150OR	Very Shallow Loam 10-14 PZ
R008XY200OR	South 10-14 PZ

Similar sites

R008XY200OR	South 10-14 PZ Moderately deep soil
R008XY140OR	Shallow Loam 10-14 PZ Higher precipitation, flatter slopes
R008XY150OR	Very Shallow Loam 10-14 PZ Very shallow soil

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>tridentata</i> (2) <i>Ericameria nauseosa</i>
Herbaceous	(1) <i>Pseudoroegneria spicata</i> ssp. <i>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	300–3,000 ft
Slope	12–70%
Water table depth	60 in
Aspect	SE, S, W

Climatic features

The annual precipitation ranges from 10 to 14 inches which occurs mostly as snow in the winter during the months of November through April. Spring and fall rains are common. The temperature regime is mesic with extremes ranging from 110 degrees F. and -10 degrees F. The frost free period ranges from 160 to 250 days and the optimum period for plant growth is early March to mid-May.

Table 3. Representative climatic features

Frost-free period (average)	250 days
Freeze-free period (average)	300 days
Precipitation total (average)	14 in

Influencing water features

Soil features

The soils of this site are shallow, extremely cobbly to gravelly loams. They are formed in alluvium. Permeability is moderate and the available water holding capacity is 1 to 2.6 inches for the profile. The erosion hazard is high for water and slight for wind. Lickskillet is the typical soil series for this site.

Table 4. Representative soil features

Parent material	(1) Loess–basalt
Surface texture	(1) Extremely stony loam (2) Very stony (3) Very gravelly
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	10–20 in

Surface fragment cover <=3"	12–17%
Surface fragment cover >3"	14–22%
Available water capacity (0-40in)	1–2.6 in
Calcium carbonate equivalent (0-40in)	0%
Electrical conductivity (0-40in)	0 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	6.1–7.3
Subsurface fragment volume <=3" (Depth not specified)	18–24%
Subsurface fragment volume >3" (Depth not specified)	15–21%

Ecological dynamics

If heavy grazing causes site deterioration, bluebunch wheatgrass decreases and annuals invade. Broom snakeweed and gray rabbitbrush increase. Noxious weeds such as diffuse knapweed, dalmation toadflax, and yellow star thistle will readily invade. A lack of periodic fire will encourage an increase in shrubs and western juniper.

Variation in plant composition and production are related to soil depth. As depth increases, the amount of bluebunch wheatgrass increases. With a decrease in soil depth, the production and amount of bluebunch wheatgrass decrease. Sandberg bluegrass and forbs increase in composition with decreasing soil depth.

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 (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	255	510	765
Forb	30	60	90
Shrub/Vine	15	30	45
Total	300	600	900

Figure 5. Plant community growth curve (percent production by month).
OR2531, B8 Shallow Site, Good Condition. B8 Shallow Site, Good Condition
RPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	15	20	25	15	10	0	0	5	10	0	0

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Moderately deep rooted perennial bunchgrasses			420–480	
	bluebunch wheatgrass	PSSPS	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	420–480	–
4	Shallow rooted perennial bunch grasses			30–90	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	30–90	–
5	Other perennial grasses			18–30	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	0–18	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–18	–
Forb					
7	Perennial forbs			30–60	
	desertparsley	LOMAT	<i>Lomatium</i>	6–18	–
	phlox	PHLOX	<i>Phlox</i>	6–18	–
	common yarrow	ACMI2	<i>Achillea millefolium</i>	6–12	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	6–12	–
	fleabane	ERIGE2	<i>Erigeron</i>	6–12	–
	buckwheat	ERIOG	<i>Eriogonum</i>	6–12	–
9	Other perennial forbs			0–12	
	onion	ALLIU	<i>Allium</i>	0–5	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–5	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–5	–
	lupine	LUPIN	<i>Lupinus</i>	0–5	–
Shrub/Vine					
10	Evergreen Shrubs			12–48	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	6–12	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	6–12	–
12	Other Shrubs			0–12	
	scabland sagebrush	ARRI2	<i>Artemisia rigida</i>	0–6	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–6	–
Tree					
16	Evergreen trees			0–6	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	0–6	–

Animal community

The scarcity of water on upper slopes limits wildlife use on this site. Along intermittent and perennial stream bottoms it provides food and cover for quail, chukar and other birds. Deer use this site for winter and spring forage.

Hydrological functions

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

Wood products

None

Other products

This site is suited for fall, winter and spring grazing in a grazing system that minimizes soil disturbance under saturated conditions.

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, 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:** Some rills present due to slope. More rills will be present on steeper slopes.

2. **Presence of water flow patterns:** Few to some.

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% - 25%

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
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7. **Amount of litter movement (describe size and distance expected to travel):** Fine sized litter with 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):** Moderately resistant to erosion: aggregate stability = 4-5
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** weak very fine granular to moderate fine subangular blocky structure, 3 to 9 inches thick with a dry color value of 4 to 5. Low organic matter (1-2%).
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate to low ground cover (20-40%) limits rainfall impact and overland flow, steeper slopes can have more serious problems with run off and infiltration.
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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
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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 bunch-grasses
- Other: Perennial forbs > Shrubs
- Additional: Scattered Western Juniper may be present.
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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: 900, Normal: 600, Unfavorable: 300 lbs/acre/year for the reference plant community.
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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: Cheatgrass and Medusahead invade sites that have lost moderately deep-rooted perennial bunch-grass functional group.
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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually.
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