

Ecological site R007XY014OR

Loamy 8-10 PZ

Last updated: 2/06/2025

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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

R007XY012OR	Sandy 8-10 PZ Sandy 8-10" PZ
R007XY014OR	Loamy 8-10 PZ Loamy 8-10" PZ
R007XY015OR	Shallow Loam 8-10 PZ Shallow Loam 8-10" PZ

Similar sites

R007XY015OR	Shallow Loam 8-10 PZ Shallow Loam 8-10" PZ (lower production)
R007XY013OR	Sandy Loam 8-10 PZ Sandy Loam 8-10" PZ (coarser surface texture)

Table 1. Dominant plant species

Tree	Not specified
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Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on nearly level to gently rolling terraces and uplands.

Table 2. Representative physiographic features

Landforms	(1) Terrace
Flooding frequency	None
Elevation	152–335 m
Slope	0–20%
Water table depth	152 cm
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 10 inches which occurs mostly as rain during the months of November through April. The temperature regime is mesic with temperature extremes ranging from 115 degrees F to -10 F. The frost-free period is 180 to 215 days, and the optimum period for plant growth is mid-March to mid-June.

Table 3. Representative climatic features

Frost-free period (average)	215 days
Freeze-free period (average)	
Precipitation total (average)	254 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 calcareous lacustrine sediments, alluvium, or basalt. Permeability is moderate and the available water capacity is 5 to 12 inchesw for the profile. There is a slight hazard for both wind and water erosion.

Table 4. Representative soil features

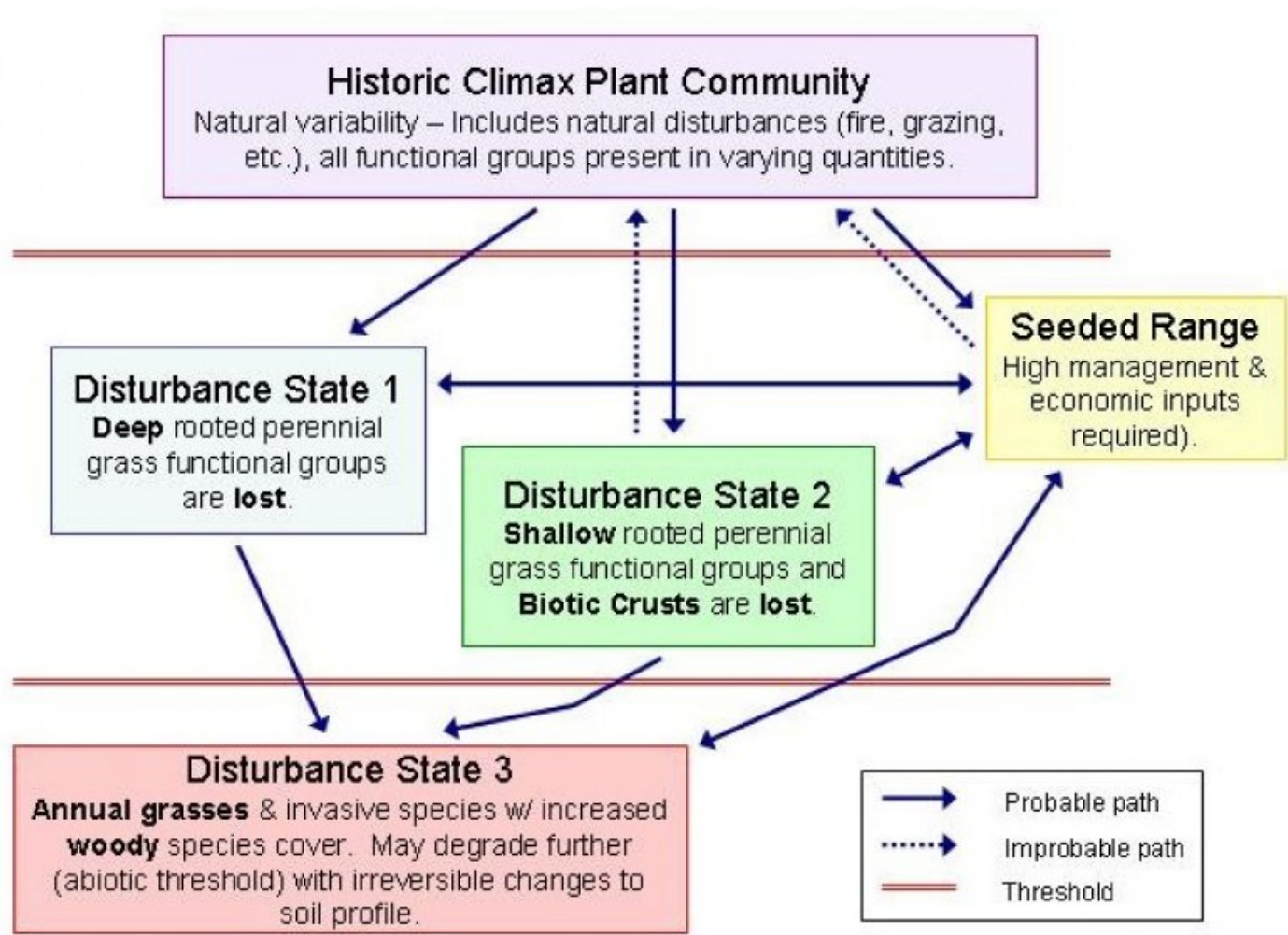
Surface texture	(1) Silt loam
Drainage class	Well drained
Permeability class	Moderate
Soil depth	102–152 cm
Available water capacity (0-101.6cm)	12.7–30.48 cm

Ecological dynamics

If heavy grazing causes site deterioration, bluebunch wheatgrass decreases in the stand; sandberg bluegrass, broom snakeweed, rabbitbrush, and big sagebrush increase. With further deterioration, cheatgrass, mustards, tasweed, and diffuse knapweed invade the site. Frequent burning commonly results in an increase in rabbitbrush and cheatgrass.

There is little variation in this site. The uniform, moderately deep to very deep silt loam favors dominance by bluebunch wheatgrass. Needleandthread will increase in areas of soil textural changes to very fine sandy loams.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
Reference

Community 1.1
Bluebunch Wheatgrass, Sandberg Bluegrass, and Basin Big Sagebrush

There is little variation in the characteristics of this site. The uniform, moderately deep to cvery deep silt loam favors dominance of bluebunch wheatgrass. Needle and thread will increase in some areas of soil textural changes to very fine sandy loams.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	484	622	753
Forb	40	56	94
Shrub/Vine	27	45	61
Total	551	723	908

Figure 3. Plant community growth curve (percent production by month).

OR2271, B7 LOAMY, GOOD CONDITION. RPC growth curve B7 LOAMY, GOOD CONDITION.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	15	25	20	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 (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant deep rooted perennial grasses			404–538	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	404–538	–
2	Sub-dominant deep rooted perennial grasses			7–34	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	7–34	–
3	Dominant shallow rooted perennial grasses			67–168	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	67–168	–
5	Other perennial grasses			7–13	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	0–7	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–7	–
Forb					
7	Dominant perennial forbs			13–40	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	7–20	–
	phlox	PHLOX	<i>Phlox</i>	7–20	–
8	Sub-dominant perennial forbs			20–40	
	pussytoes	ANTEN	<i>Antennaria</i>	7–13	–
	milkvetch	ASTRA	<i>Astragalus</i>	7–13	–
	desertparsley	LOMAT	<i>Lomatium</i>	7–13	–
9	Other perennial forbs			7–13	
	onion	ALLIU	<i>Allium</i>	0–7	–
	balsamroot	BALSA	<i>Balsamorhiza</i>	0–7	–
	naked mariposa lily	CANU2	<i>Calochortus nudus</i>	0–7	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–7	–
	lupine	LUPIN	<i>Lupinus</i>	0–7	–
Shrub/Vine					
11	Dominant evergreen shrubs			13–34	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	13–34	–
12	Sub-dominant evergreen shrubs			7–13	
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	7–13	–
15	Other shrubs			7–13	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	0–7	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–7	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–7	–
	spineless horsebrush	TECA2	<i>Tetradymia canescens</i>	0–7	–

Animal community

This site provides nesting cover for long-billed curlew, and food and cover for mule deer, pronghorn antelope, song birds, small mammals and their associated predators.

The scarcity of water is the limiting factor in the use of this site by wildlife. When located near dependable water sources, and irrigated croplands, this site is used extensively by ring-necked pheasants.

Livestock Grazing:

This site is well suited to fall, winter, and spring grazing by livestock in a grazing system that provides for spring deferment in two out of three years.

Hydrological functions

The soils of this site have moderate intake rates and low runoff potential. The hydrologic soil groups are B and C.

Other information

Caution must be exercised in seeding because the soils are droughty and subject to wind erosion.

Contributors

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Approval

Kirt Walstad, 2/06/2025

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	07/26/2012
Approved by	Kirt Walstad
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

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):** 2-10%
-
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, slight wind erosion hazard
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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 strongly resistant to erosion; aggregate stability = 5-6
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
Moderately deep to very deep, well drained silt loams; Low OM (2-3%)
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (30-50%) and slopes (0-20%) should limit rainfall impact and overland flow; slightly increased flow possible on steeper slopes (up to 20%)
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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: Needle and thread > Bluebunch wheatgrass > basin big sagebrush > sandberg bluegrass > dominant forbs
>= other grasses = other forbs = 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
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14. **Average percent litter cover (%) and depth (in):** In areas with adequate plant cover

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 800, Normal: 600, Unfavorable: 500 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:** Rabbitbrush, sage brush and broom snakeweed may increase and reduce cover of herbaceous plants. Cheatgrass and annual forbs invade sites that have lost shallow rooted perennial grass functional groups

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