

Ecological site R007XY013OR **Sandy Loam 8-10 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

R007XY011OR	Sands 8-10 PZ Sands 8-10" PZ
R007XY012OR	Sandy 8-10 PZ Sandy 8-10" PZ
R007XY014OR	Loamy 8-10 PZ Loamy 8-10" PZ

Similar sites

R007XY014OR	Loamy 8-10 PZ Loamy 8-10" PZ (finer surface texture)
R007XY012OR	Sandy 8-10 PZ Sandy 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 sloping terraces and terrace fronts. Slopes commonly range from 5-12%, but in extremes range from 0-20%.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Alluvial fan
Flooding frequency	None
Elevation	400–1,100 ft
Slope	0–20%
Water table depth	60 in
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 average annual air temperature is 53 degrees F with extremes ranging from 115 degrees F to -10 degrees F. The frost-free period ranges from 180 to 215 days and the optimum period for plant growth is from mid-March to mid-June.

Table 3. Representative climatic features

Frost-free period (average)	215 days
Freeze-free period (average)	
Precipitation total (average)	10 in

Influencing water features

Soil features

The soils of this site are moderately deep to very deep, well drained and formed in wind deposited loess over alluvium or lacustrine sediments. Soil surface textures are fine sandy loam about 5 to 10 inches thick over very fine sandy loam or silt loam subsoils. Gravels may be present in the subsoils. The available water holding capacity ranges from 4 to 10 inches for the profile. Permeability is moderately rapid to the substratum and moderately rapid in the substratum. Soil reaction is neutral in the surface layer and mildly to moderately alkaline in the subsoil. Runoff is slow and the erosion hazard is slight for water and moderate for wind.

Table 4. Representative soil features

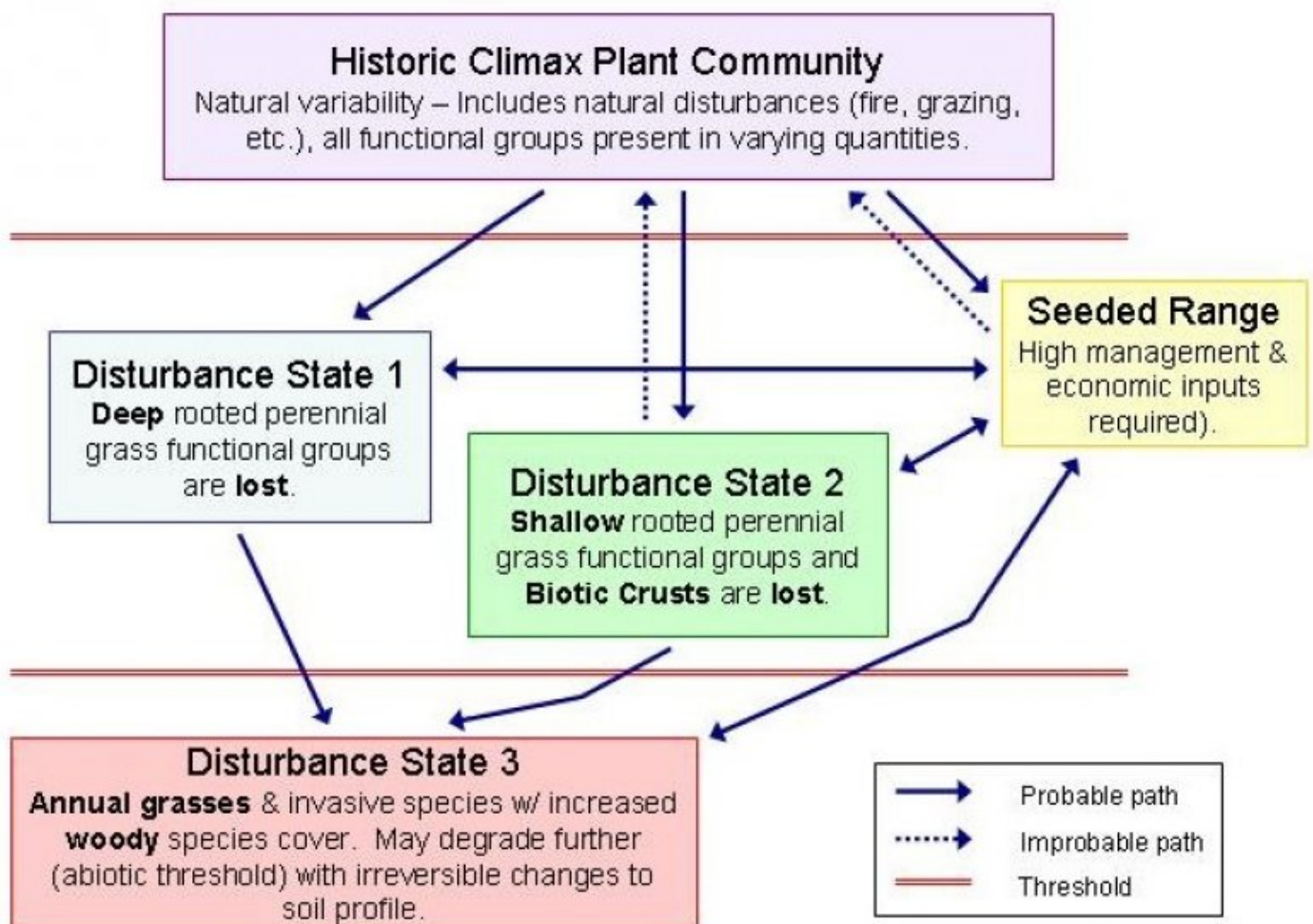
Surface texture	(1) Sandy loam (2) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately rapid
Available water capacity (0-40in)	4–10 in

Ecological dynamics

Any disturbance that reduces plant cover will expose the soils of this site to wind erosion. Uncontrolled wind erosion will result in blow-out depressions and the deposition of coarse fragments will form drifts, hummocks, and dunes downwind. If heavy grazing causes site deterioration, needle and thread and bluebunch wheatgrass will decline. Cheatgrass, mustards, china lettuce, and tarweed will invade the site. Frequent fire may cause an increase in rabbitbrush.

Variability in plant composition on this site results from variations in soil surface textures. Fine textured surfaces favor the establishment of bluebunch wheatgrass. Coarse textured surfaces will encourage a higher proportion of needle and thread.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1 Reference

Community 1.1 Needle and Thread, Bluebunch Wheatgrass, and Sandberg Bluegrass

Needle and thread, bluebunch wheatgrass, sandberg bluegrass community. The HCPC is the interpretative plant community for the site. Variability in plant composition on this site results from variations in soil subsurface textures. Fine textured surfaces (silts) favor the establishment of bluebunch wheatgrass. Coarse textured surfaces (sands) will encourage a higher proportion of needle and thread.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	305	435	560
Forb	20	35	50
Shrub/Vine	10	20	30
Total	335	490	640

Figure 3. Plant community growth curve (percent production by month).
OR2261, B7 SANDS, GOOD CONDITION. RPC growth curve B7 SANDS,
GOOD CONDITION.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	15	20	25	15	5	5	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	Dominant deep rooted perennial grasses			200–300	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	200–300	–
2	Sub-dominant deep rooted perennial grasses			75–175	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	75–175	–
3	Dominant shallow rooted perennial grasses			25–75	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	25–75	–
5	Other perennial grasses			5–10	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	0–5	–
	squirreldtail	ELEL5	<i>Elymus elymoides</i>	0–5	–
Forb					
7	Dominant a perennial forbs			10–30	
	desertparsley	LOMAT	<i>Lomatium</i>	5–15	–
	phlox	PHLOX	<i>Phlox</i>	5–15	–
8	Sub-dominant perennial forbs			5–10	
	balsamroot	BALSA	<i>Balsamorhiza</i>	5–10	–
9	Other perennial forbs			5–10	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–5	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–5	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–5	–
	naked mariposa lily	CANU2	<i>Calochortus nudus</i>	0–5	–
	lupine	LUPIN	<i>Lupinus</i>	0–5	–
Shrub/Vine					
11	Dominant evergreen shrubs			5–15	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	5–15	–
15	Other shrubs			5–15	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata ssp. wyomingensis</i>	0–5	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–5	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–5	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–5	–

Animal community

Native Wildlife Associated with the Climax Community:

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

Wildlife:

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 suited to fall, winter, and spring grazing by livestock in a grazing system that provides spring deferment in two of three years.

Hydrological functions

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

Other information

Caution must be exercised in any vegetative manipulation or excavation work to prevent soil erosion by wind.

Contributors

J P Repp
Alan Bahn
E Ersch (OSU)

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	07/25/2012
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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to few; moderate to severe wind erosion hazard
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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - 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):** Slightly to moderately resistant to erosion; aggregate stability = 3-4
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
Moderately deep to very deep fine sandy loam surface textures; low OM (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 ground cover (30-50%) and gentle (5-12%) slopes should reduce 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
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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: Needle and thread > bluebunch wheatgrass > sandberg bluegrass > dominant forbs > basin big sagebrush >= other shrubs > other grasses >= other forbs
- 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
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 800, Normal: 500, Unfavorable: 300 lbs/acre/year at high RSI (HCPC)
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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: Rabbirbrush, 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 should be capable of reproducing annually
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