

Ecological site R007XY010OR

Sandy Bottom 8-10 PZ

Accessed: 05/18/2024

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
R007XY012OR	Sandy 8-10 PZ
R007XY013OR	Sandy Loam 8-10 PZ
R007XY014OR	Loamy 8-10 PZ
R007XY015OR	Shallow Loam 8-10 PZ
R007XY020OR	South 8-10 PZ

Similar sites

R007XY012OR	Sandy 8-10 PZ R007XY011 has a coarser texture. R007XY012 is droughtier and has no water table.
R007XY011OR	Sands 8-10 PZ R007XY011 has a coarser texture. R007XY012 is droughtier and has no water table.

Table 1. Dominant plant species

Tree	Not specified
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Shrub	Not specified
Herbaceous	Not specified

Physiographic features

The site occurs on moderately level to gently sloping floodplains and stream terraces. Slopes commonly range from 0-3%. Elevations range from 400 to 1,100 feet.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Stream terrace
Flooding duration	Extremely brief (0.1 to 4 hours) to very brief (4 to 48 hours)
Flooding frequency	None to rare
Ponding duration	Very brief (4 to 48 hours)
Ponding frequency	None to rare
Elevation	122–335 m
Slope	0–3%
Ponding depth	0–5 cm
Water table depth	152 cm
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 10 inches, most of which occurs 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 100 to 180 days and the optimum period of plant growth is from mid-March to mid-June.

Table 3. Representative climatic features

Frost-free period (average)	180 days
Freeze-free period (average)	0 days
Precipitation total (average)	254 mm

Influencing water features

Soil features

The soils of this site are deep, well drained fine sandy loam. Soil reaction is neutral to mildly alkaline on the surface and moderately to strongly alkaline in the subsoil. Permeability is moderately rapid and the available water capacity is 5 to 10 inches for the profile. In addition to rainfall moisture is supplied to this site through lateral subsurface flows. Runoff is low. The erosion hazard is slight for water and moderate for wind.

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately rapid

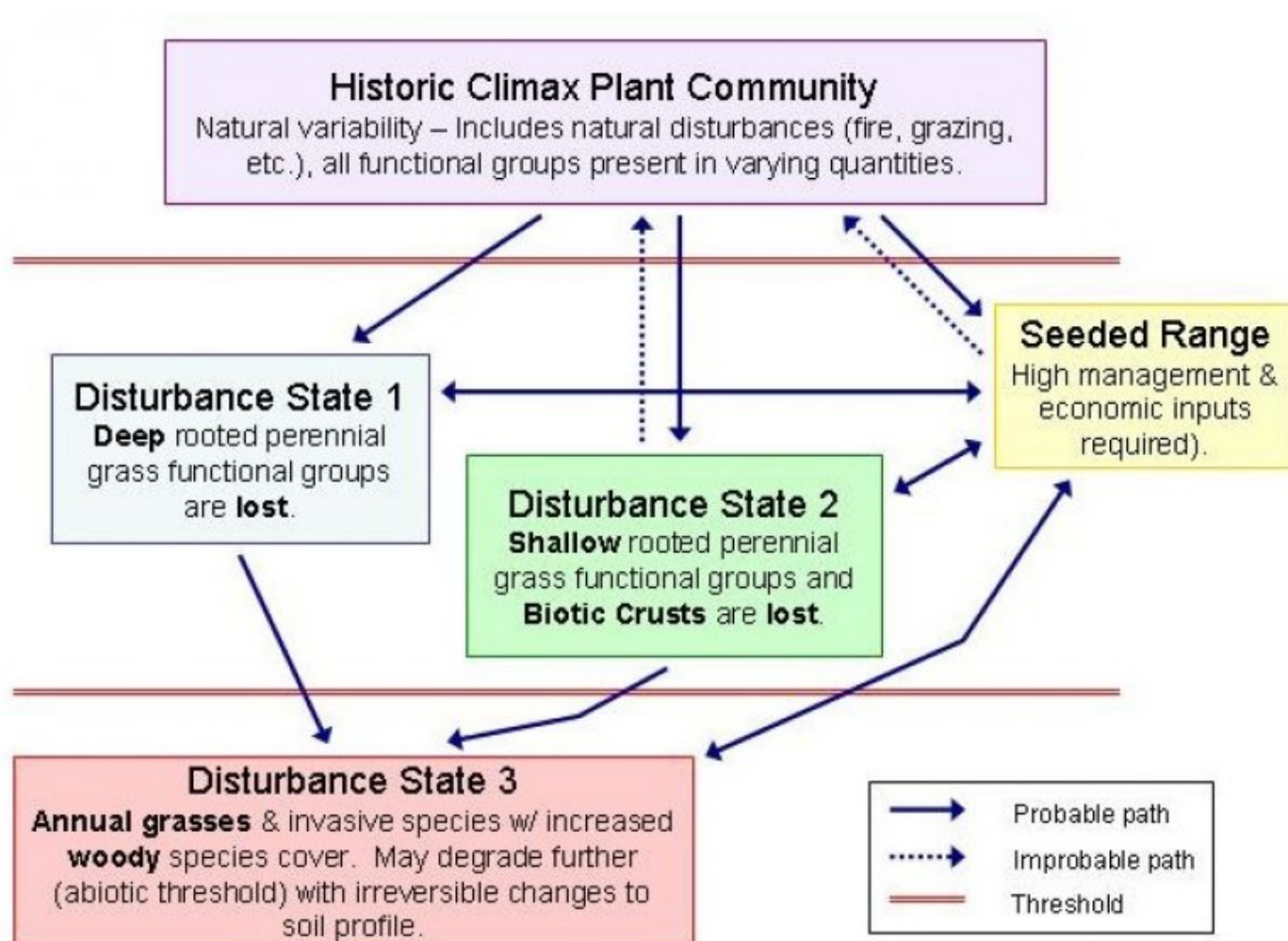
Soil depth	152 cm
Available water capacity (0-101.6cm)	12.7–25.4 cm

Ecological dynamics

Basin wildrye and other perennial grasses decrease in the stand with deterioration of the site. Basin big sagebrush strongly increases in the absence of fire. Rabbitbrush increases with fire. Annuals such as cheatgrass, russian thistle, and china lettuce will invade degraded sites. Scurfpea will increase and diffuse; russian knapweed (noxious weed) can invade the site.

Loss of deep rooted perennial grasses constitutes an ecological threshold; only shallow rooted grasses remain. Loss of sandberg bluegrass and other shallow rooted grasses results in another threshold dominated by big sagebrush and annuals (particularly cheatgrass).

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC: LECI4-HECO26/ARTRT

Community 1.1

HCPC: LECI4-HECO26/ARTRT

Basin wildrye - needle and thread community. The HCPC is the interpretative plant community for this site.

Production of basin wildrye will vary considerably depending on the extent of subsurface moisture. Needle and thread will increase with coarseness of the soil texture and as subsurface moisture becomes less of an influence. Bluebunch wheatgrass will occur as the amount of silt in the subsurface layer increases.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	2354	2858	3363
Shrub/Vine	67	118	168
Forb	67	118	168
Total	2488	3094	3699

Figure 4. Plant community growth curve (percent production by month).
OR2251, B7 SANDY BOTTOM GC . Growth curve for RPC B7 SANDY
BOTTOM GOOD CONDITION.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	20	25	15	10	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 (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant deep rooted perennial			2018–2522	
	basin wildrye	LECI4	<i>Leymus cinereus</i>	2018–2522	–
2	Sub-dominant deep rooted perennial			235–673	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	168–504	–
	beardless wildrye	LETR5	<i>Leymus triticoides</i>	67–168	–
5	Other perennial grasses			101–168	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	0–101	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–101	–
	tufted wheatgrass	ELMA7	<i>Elymus macrourus</i>	0–101	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	0–101	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	0–101	–
Forb					
9	Other forbs			67–168	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–67	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–67	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–67	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–67	–
	lupine	LUPIN	<i>Lupinus</i>	0–67	–
	phlox	PHLOX	<i>Phlox</i>	0–67	–
	scurfpea	PSORA2	<i>Psoraleidium</i>	0–67	–
Shrub/Vine					
11	Dominant evergreen			67–168	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	67–168	–
15	Other shrubs			67–135	
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–67	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–67	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–67	–

Animal community

Native Wildlife Associated with the Climax Community:

Mule deer and pronghorn antelope will use this site for food and cover during the fall, winter, and early spring. Various birds, rodents, rabbits, and their associated predators commonly occupy the site.

Livestock Grazing:

This site is well suited to livestock grazing in all seasons but is ideally suited to winter use. Special care must be exercised during the growing season to protect the very sensitive basin wildrye.

Hydrological functions

Watershed:

The soils of this site have rapid intake rates and low runoff potential. The hydrologic soil group is B.

Other information

The site has medium potential for range seeding. Special care must be exercised in seeding because the soils are droughty, subject to wind erosion, and often occur next to intermittent drainages subject to high runoff.

Contributors

Alan Bahn
E Ersch (OSU)
J P Repp

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	Bob Gillaspy
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):** 5-12%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to few, moderate 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 resistant to erosion; aggregate stability = 2-3
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep fine sandy loam and loam surface textures, mollisols, 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:** Relatively high ground cover (50-70%) and low (0-3%) slopes should reduce rainfall impact and overland flow
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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: Basin wildrye > Needle and thread > creeping wildrye > other perennial grasses > basin big sage >= perennial 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
-
14. **Average percent litter cover (%) and depth (in):** Cover of mostly herbaceous and limited woody litter scattered throughout the site
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 5000, Normal: 3000, Unfavorable: 2000 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:** Rabbitbrush, broom snakeweed and sage brush may increase and reduce cover of herbaceous plants. Cheatgrass and Medusahead invade sites that have lost shallow rooted perennial grass functional groups

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