USDA Natural Resources Conservation Service

Ecological site R023XY100OR
LAKEBED

Accessed: 05/13/2025

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.

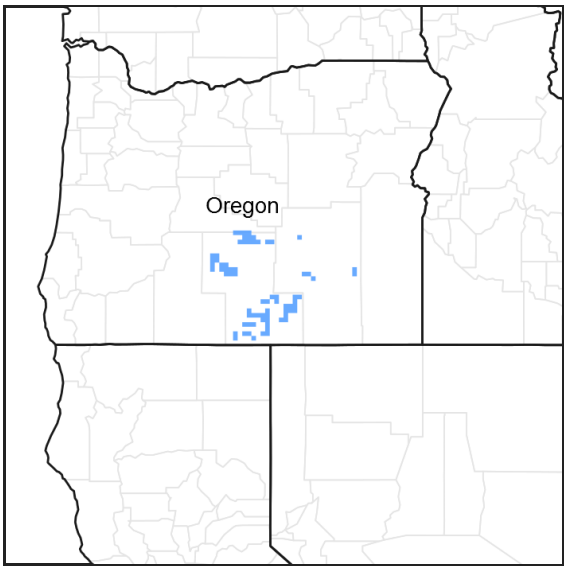


Figure 1. Mapped extent

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

R023XY200OR	**PONDED CLAY** Ponded Clay (silver sage present, cyclic ponding duration shorter)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Eleocharis* (2) *Rumex*

Physiographic features

This site occurs in small to large lake basins that receive additional moisture as runoff from surrounding uplands. Slopes range from 0 to 1 percent. Elevations range from 4000 to 5800 feet.

Table 2. Representative physiographic features

Landforms	(1) Lakebed
Ponding duration	Long (7 to 30 days)

Ponding frequency	Frequent
Elevation	1,219–1,768 m
Slope	0–1%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 12 inches, most of which occurs in the form of snow during the months of December through February. Additional moisture is supplied to the site by run-on from snow melt. Spring and fall rains are common. The soil temperature regime is frigid. Extreme air temperatures range from 110 degrees F. to -30 degrees F. The frost-free period is 60 to 100 days. The optimum period for plant growth is early May through July.

Table 3. Representative climatic features

Frost-free period (average)	100 days
Freeze-free period (average)	0 days
Precipitation total (average)	305 mm

Influencing water features

Soil features

The soils in this site are deep and poorly or very poorly drained. They are generally formed in fine textured alluvium. The surface layer is typically a silt loam to clay loam over a clay subsoil. Permeability is very slow. The available water holding capacity (AWC) is about 5 to 12 inches for the profile. The soil is subject to annual ponding in the spring and early summer. A high water table restricts the effective rooting depth. The hazard of water erosion is slight.

Table 4. Representative soil features

Surface texture	(1) Silty clay loam
Family particle size	(1) Clayey
Drainage class	Poorly drained to very poorly drained
Permeability class	Very slow
Soil depth	183 cm
Available water capacity (0-101.6cm)	20.32–30.48 cm

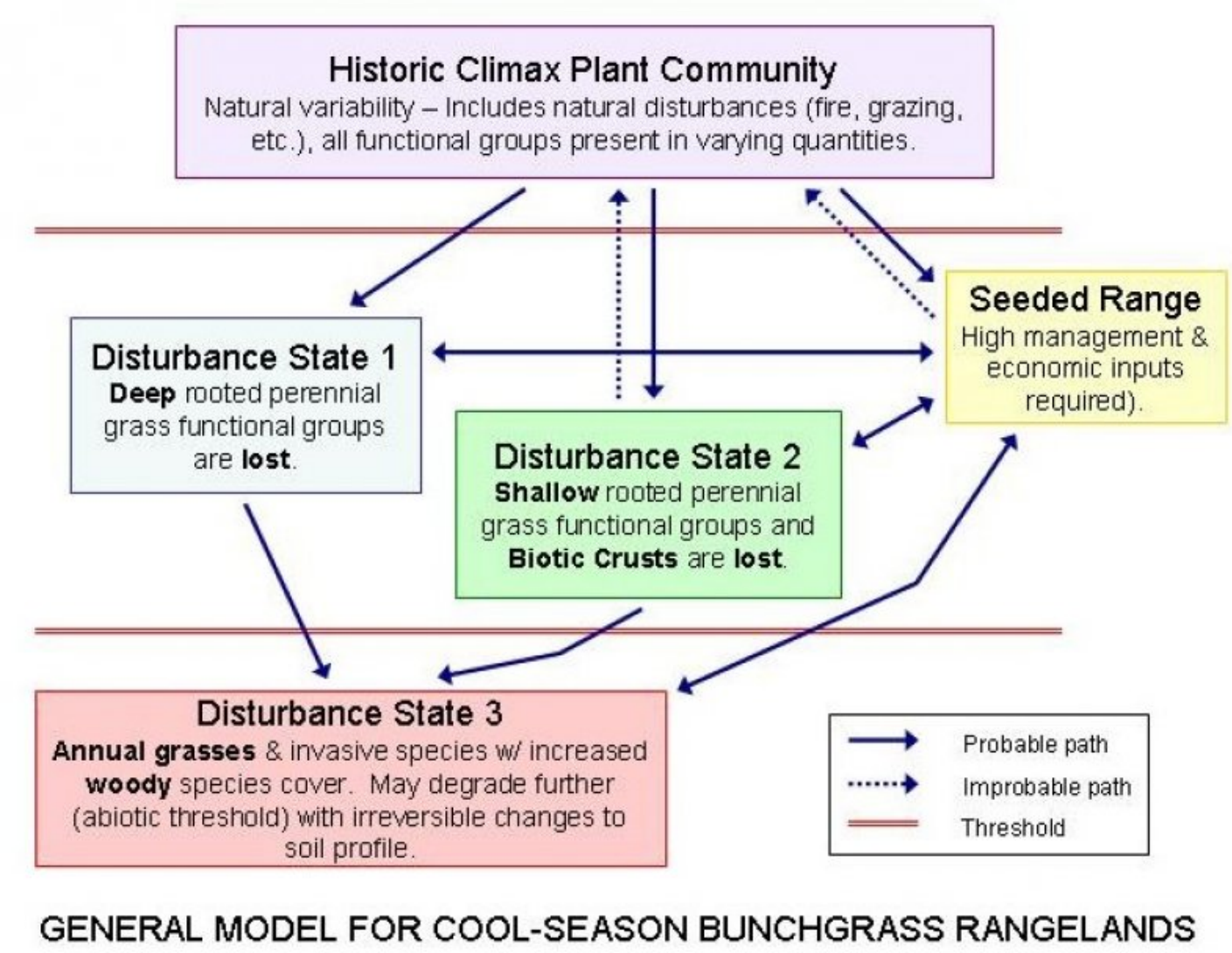
Ecological dynamics

The potential native plant community is dominated by spikerush, Baltic rush and dock. Mat muhly and bottlebrush squirreltail are common. Vegetative composition is about 65 percent grass and 35 percent forbs.

Range in Characteristics:
Variability in plant composition is dependent upon the depth and duration of standing water. Where sufficient water collects, the plant composition consists mainly of Baltic rush, spikerush and dock. Where little water collects povertyweed and bottlebrush squirreltail are dominant.

Response to Disturbance
If heavy grazing causes site deterioration, spikerush, mat muhly and dock decrease. Bottlebrush squirreltail, poveryweeed and knotweed will increase.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

The potential native plant community is dominated by spikerush, Baltic rush and dock. Mat muhly and bottlebrush squirreltail are common. Vegetative composition is about 65 percent grass and 35 percent forbs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	729	1020	1457
Forb	392	549	785
Total	**1121**	**1569**	**2242**

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, perennial, moderate rooted grasslike**			471–785	
	spikerush	ELEOC	*Eleocharis*	471–785	–
2	**Sub-dominant, moderate rooted grass-like**			157–314	
	squirreltail	ELEL5	*Elymus elymoides*	62–123	–
3	**Moderate rooted, perennial grasses**			157–314	
	squirreltail	ELEL5	*Elymus elymoides*	78–157	–
	mat muhly	MURI	*Muhlenbergia richardsonis*	78–157	–
4	**Other perennial grass/grasslike**			34–78	
	sedge	CAREX	*Carex*	11–34	–
	saltgrass	DISP	*Distichlis spicata*	0–34	–
	beardless wildrye	LETR5	*Leymus triticoides*	11–34	–
Forb					
5	**Dominant, perennial forb**			392–549	
	dock	RUMEX	*Rumex*	392–549	–
6	**Sub-dominant, perennial forb**			78–157	
	povertyweed	IVAX	*Iva axillaris*	78–157	–
7	**Other perennial forbs**			6–78	
	arnica	ARNIC	*Arnica*	6–17	–
	evening primrose	OENOT	*Oenothera*	6–17	–
	knotweed	POLYG4	*Polygonum*	6–17	–
	candytuft	SMELO	*Smelowskia*	6–17	–
	fiveleaf clover	TRAN	*Trifolium andersonii*	6–17	–

Animal community

Livestock Grazing:
This site suited to grazing in late summer and fall under a planned grazing system.

Wildlife:
This site provides water for numerous species of wildlife and waterfowl when ponded. Antelope prefer this site and make excellent use of it when forage is readily available. Various species use this site during the fall and winter.

Hydrological functions

The soils of this site have slow infiltration rates and are ponded. The hydrologic soil group is D.

Other information

This site is classified as a Type I Wetland in USFWS Circular 39.

Contributors

1994 Version In ESIS (ignore Notes) AB
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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
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Date	08/09/2012
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):** 10-30%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, 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 = 4-6

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep poorly drained silt loams: Moderate OM (2-4%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (40-60%) and gentle slopes (0-1%) effectively limit 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: Spikerush > Dock > Baltic rush > Mat muhly = Povertyweed = Squirreltail > other grasses > other forbs

    Sub-dominant:

    Other:

    Additional:

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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: 1600, Normal: 1100, Unfavorable: 700 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:** Squirreltail, povertyweed, and knotweed will increase with deterioration of plant community. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.

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

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