USDA Natural Resources Conservation Service

Ecological site R023XY118OR
BASIN DRY MEADOW

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.

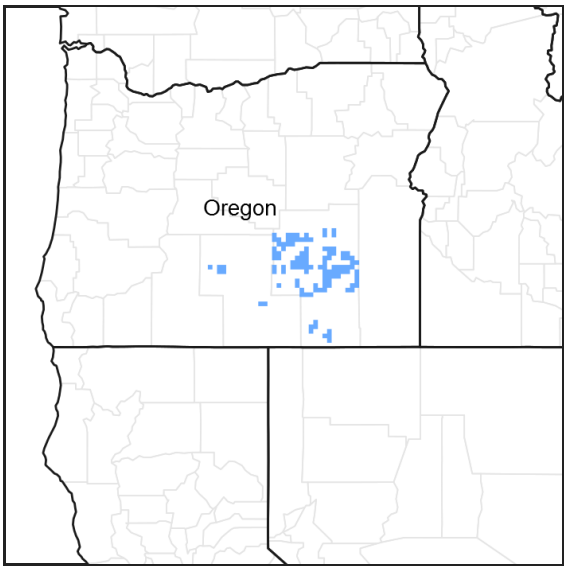


Figure 1. Mapped extent

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

R023XY115OR	**WET MARSH** Wet Marsh
R023XY116OR	**SEMI-WET MARSH** Semi-Wet Marsh
R023XY117OR	**BASIN WET MEADOW** Basin Wet Meadow

Similar sites

R023XY117OR	**BASIN WET MEADOW** Basin Wet Meadow (higher water table, frequent flooding)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Leymus triticoides*

Physiographic features

This site occurs in basins and valleys on the floodplains of perennial and intermittent drainage systems. Slopes range from 0 to 3 percent. Elevation varies from 4000 to 4500 feet.

Table 2. Representative physiographic features

Landforms	(1) Basin floor (2) Valley (3) Flood plain
Ponding frequency	Occasional
Elevation	1,219–1,372 m
Slope	0–3%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 12 inches, most of which occurs between the months of December through March. The mean annual air temperature is 48 degrees F. Temperature extremems range from 110 to -30 degrees F. The period of optimum plant growth is from the first of April through June.

Table 3. Representative climatic features

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

Influencing water features

Soil features

The soils of this site are medium textured, very deep and somewhat poorly drained. Ponding is occasional from March to May. The surface texture is a silt loam. The next layer is a clay loam. Subsoils change abruptly to a coarser textured loam or sandy loam at approximately 1.5 to 2 feet. The water table is seasonal.

Table 4. Representative soil features

Surface texture	(1) Silt loam
Family particle size	(1) Clayey
Drainage class	Somewhat poorly drained

Ecological dynamics

Range in Characteristics:

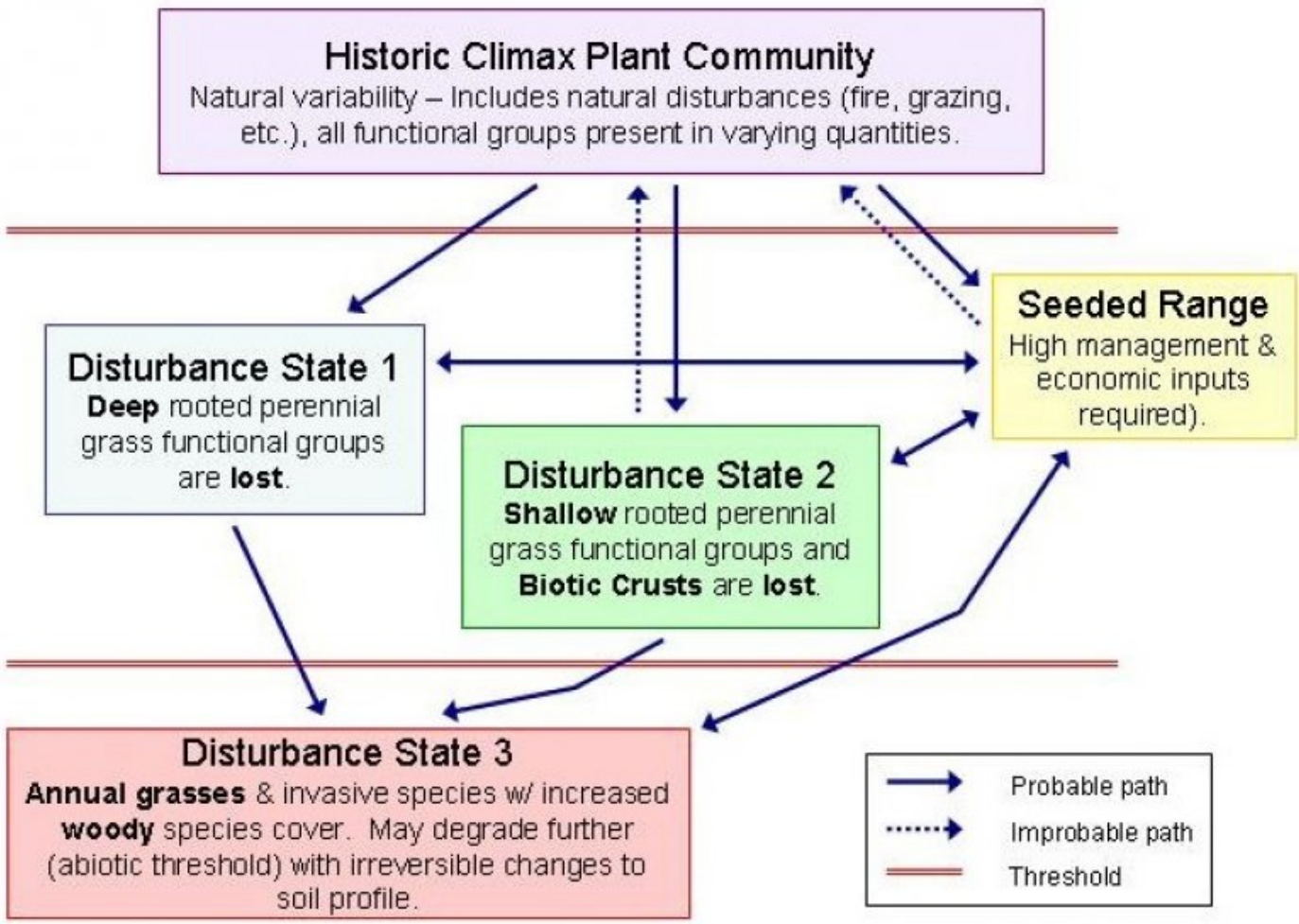
Variation in plant composition and production results from duration and depth of subsurface flows. Nevada bluegrass, baltic rush, and sedge increase in areas that have high water tables and long duration subsurface flows. On lower ends of floodplains where ephemeral flows are periodic, production decreases and creeping wildrye increases.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, creeping wildrye decreases while poverty weed increases and Canadian thistle and perennial pepperweed may invade. With further deterioration Canadian thistle

and perennial pepperweed can become a major problem, annuals and foxtail barley will invade, bareground increases and production decreases. If the site is altered through some type of flood irrigation, production will increase along with sedges, rushes, sod bluegrasses, timothy, and meadow foxtail.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
Reference State

Community 1.1
Reference Plant Community

The potential native plant community is strongly dominated by creeping wildrye (bluejoint). Baltic rush, sedges, poverty weed, and other forbs and grasses are minor. The potential vegetative composition is greater than 80 percent creeping wildrye. Approximate ground cover is 90-110 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1597	2130	3194
Forb	84	112	168
Total	**1681**	**2242**	**3362**

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	**Perennial, rhizomatous**			1793–2130	
	beardless wildrye	LETR5	*Leymus triticoides*	1793–2130	–
5	**Other perennial grasses**			112–448	
	sedge	CAREX	*Carex*	0–112	–
	annual hairgrass	DEDA	*Deschampsia danthonioides*	0–112	–
	basin wildrye	LECI4	*Leymus cinereus*	0–112	–
	mat muhly	MURI	*Muhlenbergia richardsonis*	0–112	–
	Sandberg bluegrass	POSE	*Poa secunda*	0–112	–
Forb					
7	**Perennial forbs**			45–112	
	povertyweed	IVAX	*Iva axillaris*	0–45	–
	cinquefoil	POTEN	*Potentilla*	0–45	–
	short-rayed alkali aster	SYFR2	*Symphyotrichum frondosum*	0–45	–

Animal community

Livestock Grazing:

This site is suitable for late summer and fall livestock use after it dries and the surface is firm. Ponding precludes use for the remainder of the year.

Native Wildlife Associated with the Potential Climax Community:

This site provides excellent nesting areas along with food and cover for a variety of waterfowl and upland birds. Areas of standing residue provide excellent nesting cover for cinnamon teal, shovelers, mallards, pheasants, and short eared owls. Cupola type nests are constructed by several of the species. The value of the site for dryland nesting waterfowl increases when it is near wet marshes and open water areas.

Hydrological functions

The hydrologic cover condition is good when the ecological condition is high.

Other information

This site may be periodically prescribed burned to improve the vigor of the stand. This site is a Type 2 Wetland (Inland Fresh Meadows).

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
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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

2. **Presence of water flow patterns:** None 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):** 0-5%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, moderate wind erosion hazard

7. **Amount of litter movement (describe size and distance expected to travel):** Fine ot moderately coarse - 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 = 3-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very deep somewhat poorly drained medium textured soils: Moderate to high OM (3-6%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (9-110%) and gentle slopes (0-3%) significantly limit rainfall impact and overland flow

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: Creeping wildrye > other grasses & grass-likes > 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

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 3000, Normal: 2000, Unfavorable: 1500 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:** Povertyweed will increase with detrioration of plant community. Canadian thistle, perennial pepperweed, annuals, and foxtail barley invade sites that have lost deep rooted perennial grass functional groups.

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