USDA Natural Resources Conservation Service

Ecological site R023XY414OR
SEMI WET MEADOW

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

R023XY212OR	**LOAMY 10-12 PZ** Loamy 10-12" PZ
R023XY214OR	**CLAYPAN 10-12 PZ** Claypan 10-12" PZ
R023XY216OR	**CLAYPAN 12-16 PZ** Claypan 12-16" PZ
R023XY318OR	**LOAMY 12-16 PZ** Loamy 12-16" PZ

Similar sites

R023XY416OR	**WET MEADOW** Wet Meadow (higher water table during growing season)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	(1) *Elymus trachycaulus* (2) *Poa leibergii*

Physiographic features

This site occurs along narrow stream valleys in mountainous uplands. Slopes range from 0 to 2%. Elevations range from 5500 to 6500 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain (2) Stream
Elevation	1,676–1,981 m
Slope	0–2%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 9 to 16 inches, most of which occurs in the form of snow during the months of December through February. Spring rains are common. This site receives additional moisture from run-on during snow melt. The soil temperature regime is frigid. Temperature extremes range from 90 degrees F. to -30 degrees F. The frost-free period is about 50 to 90 days. The optimum period of plant growth is from mid-May through mid-July.

Table 3. Representative climatic features

Frost-free period (average)	90 days
Freeze-free period (average)	0 days
Precipitation total (average)	406 mm

Influencing water features

Soil features

The soils in this site are medium textured over very gravelly or cobbly coarse textured material. The soils are somewhat pooorly drained with a water table present at some depth throughout the summer. The soil is subject to annual flooding in the spring months from snow melt. The available water holding capacity (AWC) is about 5 to 10 inches for the profile. The effective rooting depth can be limited by the high water table.

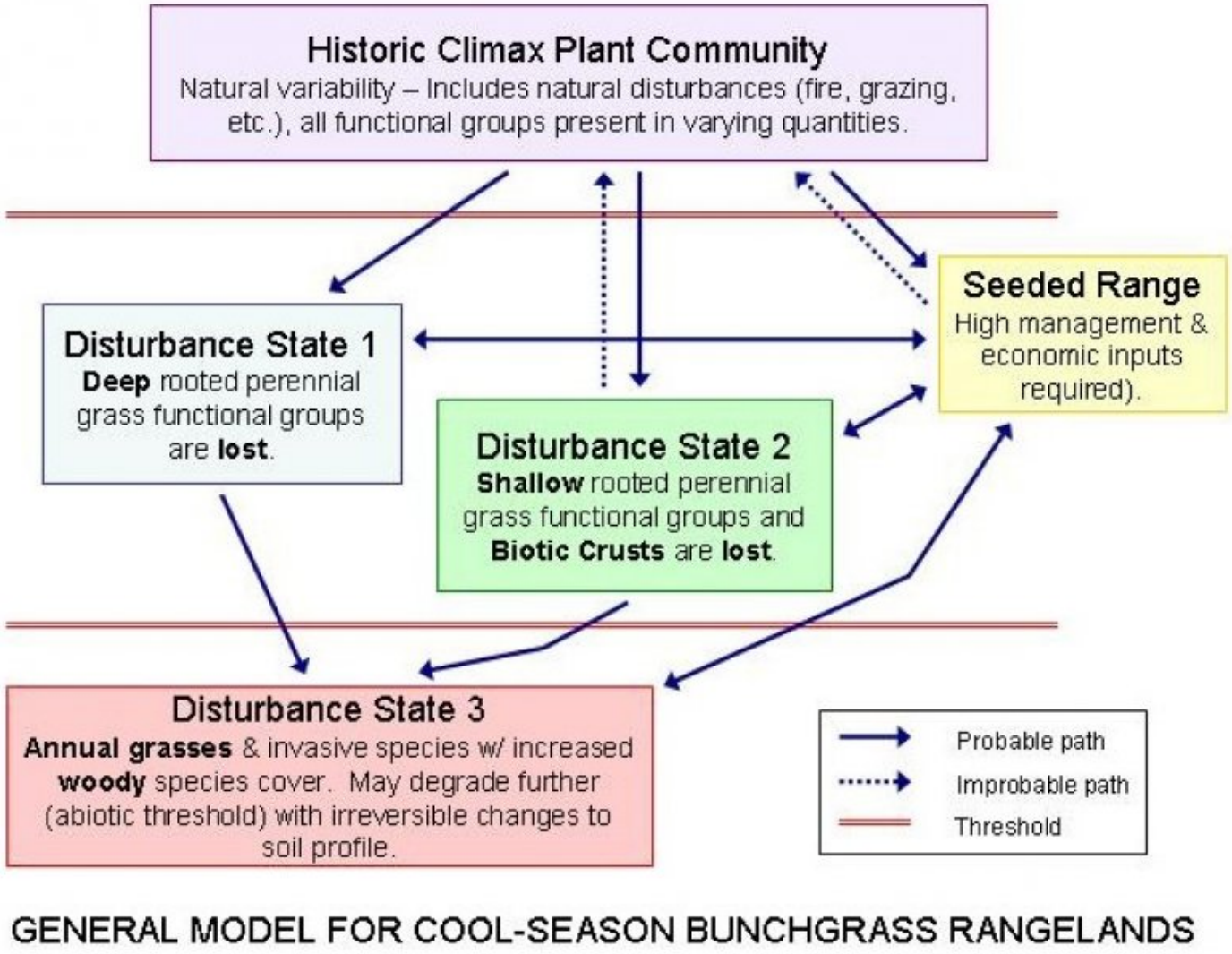
Table 4. Representative soil features

Drainage class	Somewhat poorly drained
Permeability class	Moderate

Ecological dynamics

Range in Characteristics:
There is little variability in the production and plant composition on this site because of the influence of supplemental moisture.
Response to Disturbance:
If heavy grazing causes site deterioration, Leiberg bluegrass and other palatable grasses and forbs will decrease. Sedges, mat muhly, and yarrow will increase. Dock, thistle, and undesirable plants will invade. Where gullying is allowed to occur, the site will become drier, allowing invasion of silver sage and big sagebrush.

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 dominated by slender wheatgrass and leiberg bluegrass with lesser amounts of mat muhly and prairie junegrass. Vegetative compositiion is about 95 percent grasses and 5 percent forbs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1597	2130	2343
Forb	84	112	123
Total	**1681**	**2242**	**2466**

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, moderately deep-rooted, bunchgrass**			785–1121	
	slender wheatgrass	ELTR7	*Elymus trachycaulus*	785–1121	–
2	**Perennial, moderately deep-rooted, rhizomatous**			785–1121	
	Leiberg's bluegrass	POLE	*Poa leibergii*	785–1121	–
3	**Perennial, moderately deep-rooted, bunchgrass**			45–112	
	prairie Junegrass	KOMA	*Koeleria macrantha*	45–112	–
4	**Perennial, shallow rooted, bunchgrass**			90–224	
	mat muhly	MURI	*Muhlenbergia richardsonis*	45–112	–
5	**Perennial, other**			22–45	
	sedge	CAREX	*Carex*	22–45	–
Forb					
8	**Perennial**			90–179	
	common yarrow	ACMI2	*Achillea millefolium*	22–45	–
	larkspur	DELPH	*Delphinium*	22–45	–
	beardtongue	PENST	*Penstemon*	22–45	–
	silver cinquefoil	POAR8	*Potentilla argentea*	22–45	–
9	**Perennial, other**			45–67	
	gentian	GENTI	*Gentiana*	0–45	–
	waterleaf	HYDRO4	*Hydrophyllum*	0–45	–
	clover	TRIFO	*Trifolium*	0–45	–

Animal community

Livestock Grazing:
This site is suitable to livestock grazing during summer and fall. Without adequate time control in the grazing system, animals will concentrate on this site and damage both soil and plant resources.
Wildlife:
Sage grouse depend heavily on this site for insects and tender green shoots in spring and early summer.

Hydrological functions

The soils of this site have moderate infiltration rates and slow runoff potential. The hydrological soil group is D.

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	08/17/2012
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

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, Slight to 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 = 2-4

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderately deep to deep medium textured (silt loams & loams) soils over coarse textured materials: 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 (85-90%) and gentle slopes (0-2%) effectively 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

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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: Slender wheatgrass = Leiberg bluegrass > other grasses > 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: 2200, Normal: 2000, Unfavorable: 1500 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:** Sedges, mat muhly, and yarrow will increase with deterioration of plant community. Dock, thistle, and undesirable plants will invade sites that have lost deep rooted native 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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