USDA Natural Resources Conservation Service

Ecological site R023XY408OR
ROCKY RIDGES 12-16 PZ

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.

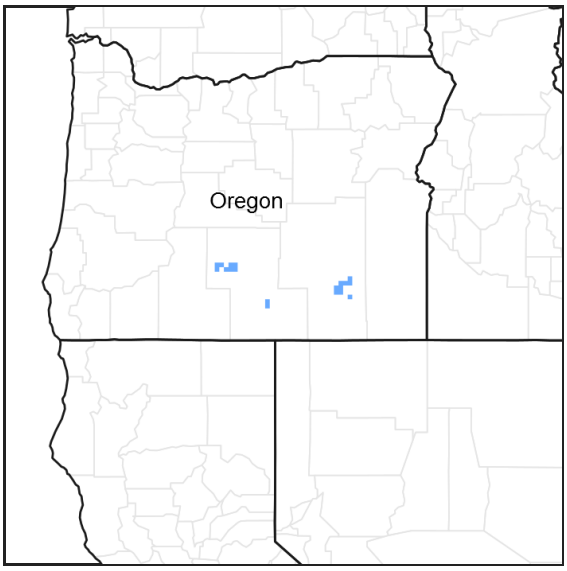


Figure 1. Mapped extent

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

R023XY216OR	**CLAYPAN 12-16 PZ** Claypan 12-16" PZ
R023XY302OR	**SOUTH SLOPES 12-16 PZ** South Slopes 12-16" PZ
R023XY310OR	**NORTH SLOPES 12-16 PZ** North Slopes 12-16" PZ
R023XY312OR	**SHALLOW NORTH 12-16 PZ** Shallow North 12-16" PZ
R023XY318OR	**LOAMY 12-16 PZ** Loamy 12-16" PZ
R023XY404OR	**DEEP NORTH 12-18 PZ** Deep North Slopes 12-18" PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	Not specified

Physiographic features

This site occurs on mountain ridges, shoulders, and sideslopes. Slopes range from 3 to 65%. Elevations range from 6000 to 8500 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope (2) Ridge
Elevation	1,829–2,591 m
Slope	3–65%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation is 12 to 16 inches, most of which occurs in the form of snow during December to March. Springs rains are common. the soil temperature regime is frigid to cryic. Extreme temperatures range from 90 degrees F. to -30 degrees F. The frost-free period is less than 50 days . The optimum period for plant growth is from early May through mid-July.

Table 3. Representative climatic features

Frost-free period (average)	50 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 and shallow to bedrock. The soil is clay loam and has 15 to 35 percent rock fragments in the surface (primarily stones and cobbles). the water holding capacity (AWC) is about 1 to 3 inches for the profile.

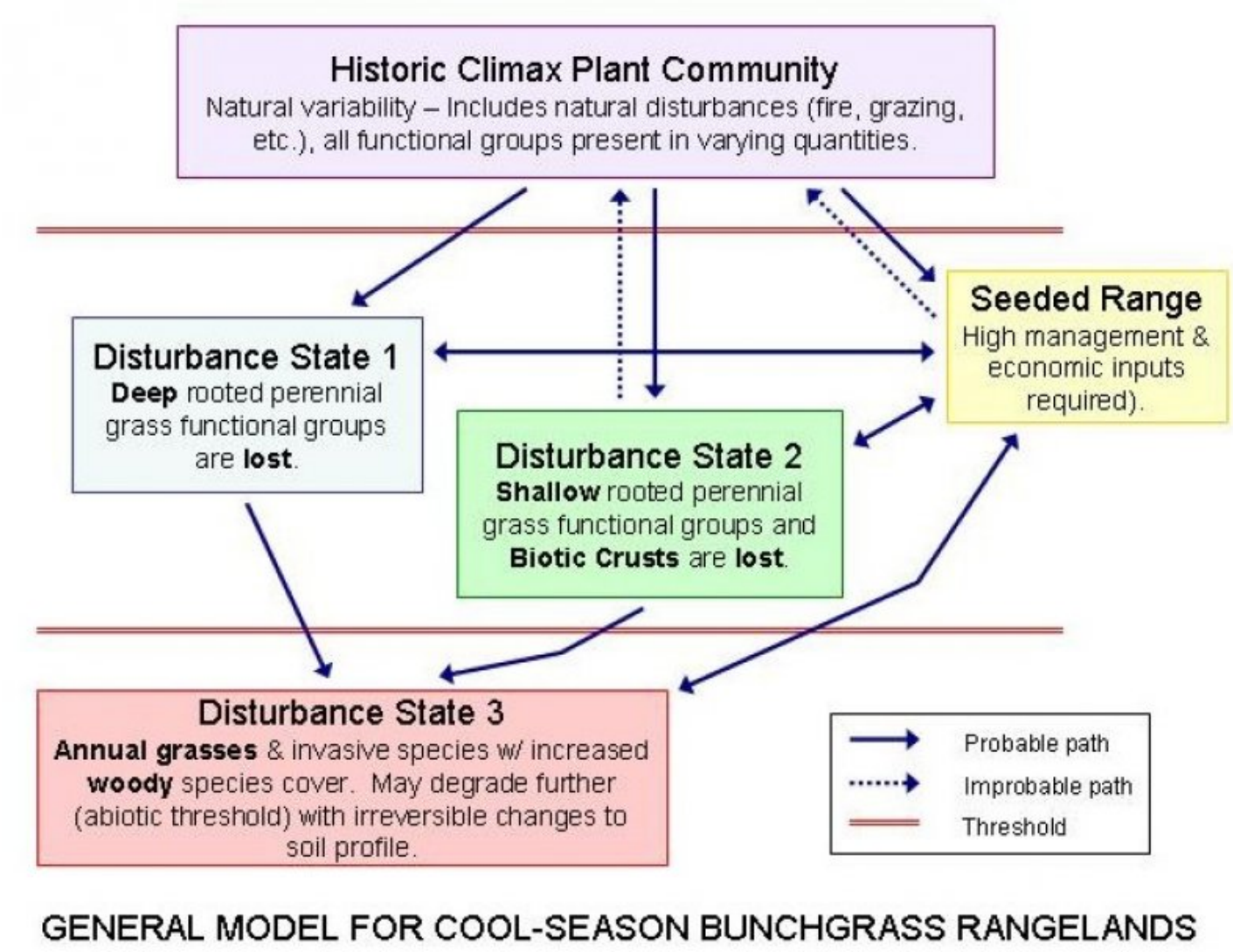
Table 4. Representative soil features

Surface texture	(1) Clay loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Moderate

Ecological dynamics

Range in Characterisics:
Variabilty in plant composition and production results from variation in soil depth. Where soils are most shallow, plant production decreases and grasses tend to dominate in the understory. As soils deepen, big sagebrush and snowberry increase.
Response to Disturbance:
If heavy grazing causes site deterioration, cusick bluegrass and basin wildrye decrease and big sagebrush increases. With prolonged abuse, lupine and other unpalatable forbs 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 curlleaf mountian mahogany witha n understory of mountian big sagebrush, snowberry, and Idaho fescue. Vegetative composition is about 35 percent grass, 10 percent forbs, and 55 percent shrubs.

Additional community tables

Animal community

Livestock Grazing:
This site is suited to livestock sue during summer and early fall with a planned grazing system.
Wildlife:
This site offers food and cover to mule deer throughout the year.

Hydrological functions

The soils of this site have rapid infiltration rates and medium to rapid runoff potential. Teh hydrologic soil group is D.

Contributors

Justin Gredvig
SCS/BLM Team, Hines, OR

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	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 to some on steeper slopes

2. **Presence of water flow patterns:** None to some on steeper slopes

3. **Number and height of erosional pedestals or terracettes:** None to few - pedestals

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-15%

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 - 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):** Shallow, well drained stony loams and clay loams with 15-35% rock fragments on the surface: Moderate OM (1-3%)

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate to significant ground cover (55-80%) and gentle to steep slopes (3-65% - most < 15%) 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

---

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: Idaho fescue > Curlleaf mountain mahogany > other grasses > other shrubs > 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: 800, Normal: 600, Unfavorable: 400 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:** Perennial brush species and forbs will increase with deterioration of plant community, while Cusick bluegrass and Basin wildrye decrease in the stand.

---

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

---