USDA Natural Resources
Conservation Service

# Ecological site R010XC018OR
# SR Adobeland 9-12 PZ

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## 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.

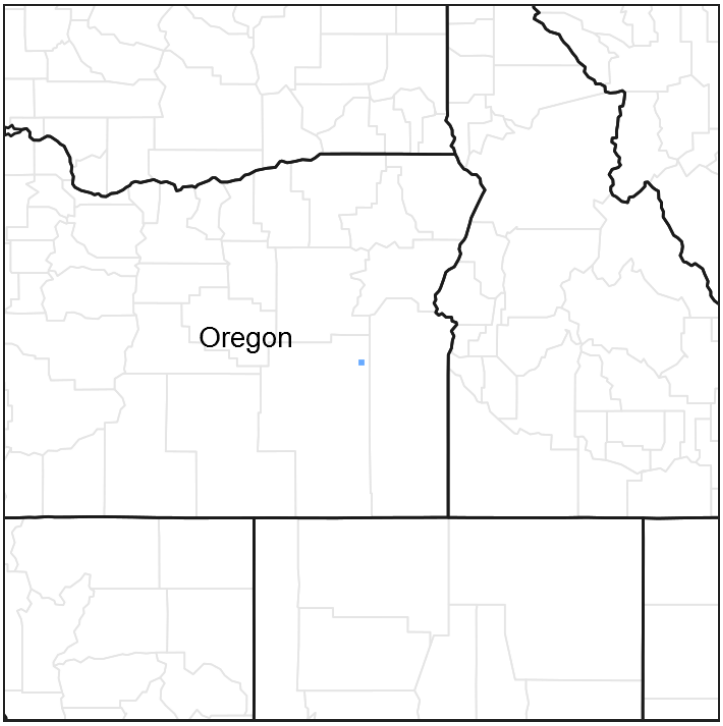



**Figure 1. Mapped extent**

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

| | |
|---|---|
| R010XC021OR | **SR Clayey 9-12 PZ**<br>SR Clayey 9-12" PZ |
| R010XC043OR | **SR South 9-12 PZ**<br>SR Clayey South 9-12" PZ |

**Table 1. Dominant plant species**

| | |
|---|---|
| Tree | Not specified |
| Shrub | (1) *Artemisia tridentata ssp. tridentata* |
| Herbaceous | (1) *Leymus cinereus*<br>(2) *Pseudoroegneria spicata ssp. spicata* |

## Physiographic features

This site occurs in ancient lacustrine sediments on low terraces and rolling hills. Slopes range from 0 to 12 percent. Elevations range from 2000 to 4000 feet.

**Table 2. Representative physiographic features**

| | |
|---|---|
| Landforms | (1) Terrace<br>(2) Hill |
| Elevation | 2,000–4,000 ft |
| Slope | 0–12% |
| Water table depth | 60 in |
| Aspect | Aspect is not a significant factor |

## Climatic features

The annual precipitation ranges from 9 to 12 inches, most of which occurs in the form of snow during the months of December through March. Localized, occasionally severe, convectional storms occur during the summer. The soil temperature regime is mesic with a mean annual air temperature of 52 degrees F. Temperature extremes range from 100 to -10 degrees F. The frost-free period ranges from 110 to 140 days. The optimum period for plant growth is from April through June.

**Table 3. Representative climatic features**

| | |
|---|---|
| Frost-free period (average) | 140 days |
| Freeze-free period (average) | |
| Precipitation total (average) | 12 in |

## Influencing water features

## Soil features

The soils of this site are typically deep clays over lacustrine sediments or bedrock. They are generally well-drained. Typically both the surface and subsoil are clays with high shrink well potentials. Soil churning is prevalent. Depth to bedrock is usually greater than 60 inches. Permeability is very slow. The available water holding capacity is about 6 to 8 inches for the profile. The potential for erosion is moderate to severe.

**Table 4. Representative soil features**

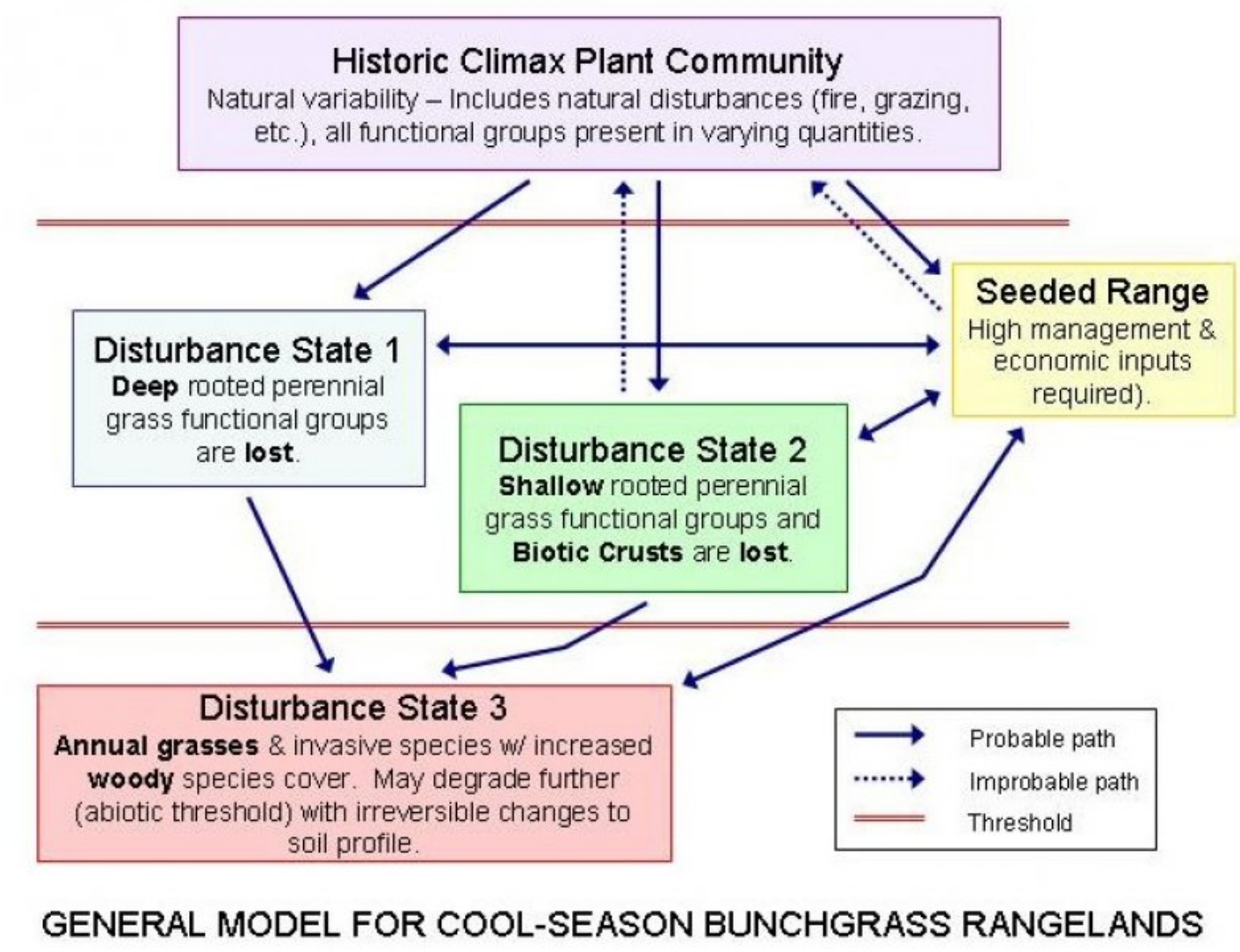
| | |
|---|---|
| Surface texture | (1) Clay |
| Family particle size | (1) Clayey |
| Drainage class | Well drained |
| Permeability class | Very slow |
| Soil depth | 60 in |
| Available water capacity (0-40in) | 6–8 in |

## Ecological dynamics

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, basin wildrye and bluebunch wheatgrass decrease. Both of these grasses are preferred species during the spring. Bareground increases and annual grasses and forbs such as China lettuce invade. Under deteriorated conditions, excessive erosion in the bare soil interspaces reduces the site productivity and contributes to downstream sedimentation.

## 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 basin wildrye. Basin big sagebrush and bluebunch wheatgrass are common in the stand. Vegetative composition of the community is approximately 95 percent grasses, 2 percent forbs, and 3 percent shrubs. Approximate ground cover is 40-60 percent (basal and crown).

**Table 5. Annual production by plant type**

| Plant Type | Low (Lb/Acre) | Representative Value (Lb/Acre) | High (Lb/Acre) |
|---|---|---|---|
| Grass/Grasslike | 1080 | 1395 | 1710 |
| Shrub/Vine | 30 | 53 | 75 |
| Forb | 30 | 45 | 60 |
| **Total** | **1140** | **1493** | **1845** |

## Additional community tables

**Table 6. Community 1.1 plant community composition**

| Group | Common Name | Symbol | Scientific Name | Annual Production (Lb/Acre) | Foliar Cover (%) |
|---|---|---|---|---|---|
| **Grass/Grasslike** | | | | | |
| 1 | **Perennial, deep-rooted, dominant** | | | 900–1200 | |
| | basin wildrye | LECI4 | *Leymus cinereus* | 900–1200 | – |
| 2 | **Perennial, deep-rooted, sub-dominant** | | | 165–480 | |
| | bluebunch wheatgrass | PSSP6 | *Pseudoroegneria spicata* | 150–450 | – |
| | squirreltail | ELEL5 | *Elymus elymoides* | 15–30 | – |
| 5 | **Other perennial grasses, all** | | | 15–30 | |
| | bluegrass | POA | *Poa* | 0–15 | – |
| | Sandberg bluegrass | POSE | *Poa secunda* | 0–15 | – |
| **Forb** | | | | | |
| 9 | **Other perennial forbs, all** | | | 15–30 | |
| 10 | **Other annual forbs, all** | | | 15–30 | |
| **Shrub/Vine** | | | | | |
| 11 | **Perennial, evergreen, dominant** | | | 30–75 | |
| | basin big sagebrush | ARTRT | *Artemisia tridentata ssp. tridentata* | 30–75 | – |

## Animal community

Livestock Grazing:

This site is suited to use by cattle, sheep, and horses during most seasons under a planned grazing system. Limitations are associated with the churning nature of the soil during the late winter and early spring. Care should be taken to avoid trampling damage

and soil compaction when the soils are wet.

Native Wildlife Associated with the Potential Climax Community:

Mule deer
Antelope
Hawks
Rodents

This site offers food and cover for mule deer, antelope, rodents, and a variety of birds.

## Hydrological functions

The soils are in hydrologic group D. The soils of this site have high runoff potential.

## Contributors

BLM/SCS - Range Team - Burns - A. Bahn, H. Barrett
M. Parks (OSU)

## Approval

Kirt Walstad, 5/13/2025

## 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 | 08/07/2012 |
| Approved by | Kirt Walstad |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

## Indicators

1. **Number and extent of rills:** None, moderate to severe sheet & rill erosion hazard

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2. **Presence of water flow patterns:** None to some - soil churning is prevalent

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3. **Number and height of erosional pedestals or terracettes:** None to some - soil churning is prevalent

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10-25%

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

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Significantly resistant to erosion: aggregate stability = 4-6

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep, well drained clays with high shrink-swell potential: moderate OM (2-4%)

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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 (2-12%) 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: Basin wildrye > Bluebunch wheatgrass > shrubs > 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: 1800, Normal: 1500, Unfavorable: 1000 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:** Perennial brush species 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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