

# Ecological site R008XY130OR

## Sandy Loam

### 10-12 PZ

Last updated: 5/02/2025  
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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.

#### Associated sites

|             |                            |
|-------------|----------------------------|
| R008XY110OR | Loamy 10-12 PZ             |
| R008XY150OR | Very Shallow Loam 10-14 PZ |
| R008XY200OR | South 10-14 PZ             |
| R008XY220OR | North 10-14 PZ             |

#### Similar sites

|             |                                 |
|-------------|---------------------------------|
| R008XY110OR | Loamy 10-12 PZ<br>Finer texture |
|-------------|---------------------------------|

Table 1. Dominant plant species

|            |               |
|------------|---------------|
| Tree       | Not specified |
| Shrub      | Not specified |
| Herbaceous | Not specified |

#### Physiographic features

This site occurs on nearly level to gently rolling uplands.

Table 2. Representative physiographic features

|           |             |
|-----------|-------------|
| Landforms | (1) Hill    |
| Elevation | 310 – 760 m |
| Slope     | 0 – 20 %    |

### Climatic features

The annual precipitation ranges from 10 to 12 inches, most of which occurs as rain with snow during the months of November through May. Spring and fall rains are common. The temperature regime is mesic with temperature extremes ranging from 110 degrees F. to -10 degrees F. The frost-free period is 140 to 200 days and the optimum period for plant growth is early April through mid-June.

Table 3 Representative climatic features

|                               |          |
|-------------------------------|----------|
| Frost-free period (average)   | 200 days |
| Freeze-free period (average)  |          |
| Precipitation total (average) | 310 mm   |

### Influencing water features

#### Soil features

The soils of this site are very deep, well drained fine sandy loams formed in loess over basalt bedrock. The permeability is moderate and the available water holding capacity is 10 to 12 inches for the profile. The erosion hazard is moderate for wind and slight for water.

Table 4. Representative soil features

|                                         |                 |
|-----------------------------------------|-----------------|
| Soil depth                              | 150 cm          |
| Available water capacity<br>(0-101.6cm) | 25.4 – 30.48 cm |

### Ecological dynamics

If heavy grazing causes site deterioration, Idaho fescue, bluebunch wheatgrass, and needle and thread will decrease in the stand in that order. Rabbitbrush, lupine, and big sagebrush will increase. Cheatgrass, fiddleneck, and Russian thistle will invade the site. A lack of occasional fire will encourage an increase of shrubs.

The plant composition on this site depends strongly on soil surface texture and to a lesser extent on aspect. Typically, the very fine sandy loam surface texture gives rise to the high proportion of needleandthread while a shift to finer texture promotes an increase in the amount of bluebunch wheatgrass. North-trending slopes tend to show an increase in Idaho fescue.

### State and transition model

### Additional community tables

Table 5. Community 1.1 plant community composition

| Group                  | Common Name                                          | Symbol | Scientific Name                             | Annual Production () | Foliar Cover (%) |
|------------------------|------------------------------------------------------|--------|---------------------------------------------|----------------------|------------------|
| <b>Grass/Grasslike</b> |                                                      |        |                                             |                      |                  |
| 1                      | <b>Dominant deep rooted perennial grasses</b>        |        |                                             | 706-1110             |                  |
|                        | needle and thread                                    | HECO26 | <i>Hesperostipa comata</i>                  | 504-706              | –                |
|                        | bluebunch wheatgrass                                 | PSSP6  | <i>Pseudoroegneria spicata</i>              | 202-404              | –                |
| 2                      | <b>Sub-dominant deep rooted perennial grasses</b>    |        |                                             | 50-151               |                  |
|                        | Idaho fescue                                         | FEID   | <i>Festuca idahoensis</i>                   | 50-151               | –                |
| 4                      | <b>Sub-dominant shallow rooted perennial grasses</b> |        |                                             | 20-50                |                  |
|                        | Sandberg bluegrass                                   | POSE   | <i>Poa secunda</i>                          | 20-50                | –                |
| 5                      | <b>Other perennial grasses</b>                       |        |                                             | 0-50                 |                  |
|                        | squirreltail                                         | ELEL5  | <i>Elymus elymoides</i>                     | 0-20                 | –                |
| 6                      | <b>Annual grasses</b>                                |        |                                             | 10-20                |                  |
|                        | sixweeks fescue                                      | VUOC   | <i>Vulpia octoflora</i>                     | 10-20                | –                |
| <b>Forb</b>            |                                                      |        |                                             |                      |                  |
| 7                      | <b>Dominant perennial forbs</b>                      |        |                                             | 30-61                |                  |
|                        | common yarrow                                        | ACMI2  | <i>Achillea millefolium</i>                 | 10-20                | –                |
|                        | fleabane                                             | ERIGE2 | <i>Erigeron</i>                             | 10-20                | –                |
|                        | phlox                                                | PHLOX  | <i>Phlox</i>                                | 10-20                | –                |
| 9                      | <b>Other perennial forbs</b>                         |        |                                             | 0-67                 |                  |
|                        | pussytoes                                            | ANTEN  | <i>Antennaria</i>                           | 0-11                 | –                |
|                        | milkvetch                                            | ASTRA  | <i>Astragalus</i>                           | 0-11                 | –                |
|                        | arrowleaf balsamroot                                 | BASA3  | <i>Balsamorhiza sagittata</i>               | 0-11                 | –                |
|                        | sagebrush mariposa lily                              | CAMA5  | <i>Calochortus macrocarpus</i>              | 0-11                 | –                |
|                        | willowherb                                           | EPILO  | <i>Epilobium</i>                            | 0-11                 | –                |
|                        | buckwheat                                            | ERIOG  | <i>Eriogonum</i>                            | 0-11                 | –                |
|                        | lupine                                               | LUPIN  | <i>Lupinus</i>                              | 0-11                 | –                |
|                        | woolly plantain                                      | PLPA2  | <i>Plantago patagonica</i>                  | 0-11                 | –                |
| <b>Shrub/Vine</b>      |                                                      |        |                                             |                      |                  |
| 11                     | <b>Dominant shrubs</b>                               |        |                                             | 20-40                |                  |
|                        | basin big sagebrush                                  | ARTRT  | <i>Artemisia tridentata ssp. tridentata</i> | 10-20                | –                |
|                        | rubber rabbitbrush                                   | ERNA10 | <i>Ericameria nauseosa</i>                  | 10-20                | –                |
| 15                     | <b>Other shrubs</b>                                  |        |                                             | 0-20                 |                  |
|                        | yellow rabbitbrush                                   | CHVI8  | <i>Chrysothamnus viscidiflorus</i>          | 0-10                 | –                |
|                        | broom snakeweed                                      | GUSA2  | <i>Gutierrezia sarothrae</i>                | 0-10                 | –                |

## Animal community

Where associated with croplands, this site is used by upland game birds including Hungarian partridge, chukars and ring-necked pheasants.

## Hydrological functions

The soils of this site have modeate infiltration rates and low runoff potential. The hydrologic soil group is B.

## Wood products

None

## Other products

This site is suitable for grazing by livestock during all seasons of the year but most ideally, it is suited to fall, winter, and early spring use under a planned grazing system.

## Contributors

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## Approval

Kirt Walstad, 5/02/2025

## 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                                        | 07/26/2012                                        |
| Approved by                                 |                                                   |
| Approval date                               |                                                   |
| Composition (Indicators 10 and 12) based on | Annual Production                                 |

## Indicators

1. Number and extent of rills: None, slight sheet & rill erosion hazard

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2. Presence of water flow patterns: None

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3. Number and height of erosional pedestals or terracettes: None

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4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):  
10-15%

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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):  
Slightly to moderately resistant to erosion; aggregate stability = 3-4

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9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Very deep, well  
drained very fine sandy loams; Low OM (2-3%)

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10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on  
infiltration and runoff: Significant ground cover (40-60%) and level to gently rolling slopes (2-20%) 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: Needle and thread > Bluebunch wheatgrass > Idaho fescue > Sandberg bluegrass = other grasses = other forbs > annual  
grasses + dominant forbs = dominant shrubs = other shrubs

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: 1200, Normal: 900, Unfavorable: 500 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. Western Juniper readily invades the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional group

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

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