

Ecological site R021XY200OR **LOAMY 10-14 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

| | |
|-------------|--|
| R021XY204OR | SHALLOW STONY 10-20 PZ Shallow Stony 10-20" PZ |
| R021XY208OR | SANDY 10-14 PZ Sandy 10-14" PZ |
| R021XY300OR | SOUTH SLOPES 10-14 PZ South Slopes 10-14" PZ |
| R021XY302OR | NORTH SLOPE 10-14 PZ North Slopes 10-14" PZ |

Similar sites

| | |
|-------------|--|
| R021XY206OR | DEEP LOAMY 10-14 PZ Deep Loamy 10-14" PZ |
| R021XY300OR | SOUTH SLOPES 10-14 PZ South Slopes 10-14" PZ (slopes greater than 30%) |
| R021XY202OR | SHALLOW LOAM 10-14 PZ Shallow Loam 10-14" PZ (lower production) |

| | |
|-------------|---|
| R021XY208OR | SANDY 10-14 PZ Sandy 10-14" PZ (coarser soil texture) |
| R021XY402OR | ROCKY RIDGES 14+ PZ Rocky Ridges 14-18" PZ (shallow soils) |
| R021XY210OR | LOAMY 14-18 PZ Loamy 14-18" PZ (higher precipitation) |
| R021XY302OR | NORTH SLOPE 10-14 PZ North Slopes 10-14" PZ (slopes greater than 30%) |

Table 1. Dominant plant species

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

Physiographic features

The site typically occurs on lake terraces, hills and fans adjacent to lake basins.

Table 2. Representative physiographic features

| | |
|-----------|--|
| Landforms | (1) Alluvial fan (2) Lake terrace (3) Hill |
| Elevation | 1,250–1,463 m |
| Slope | 2–20% |
| Aspect | Aspect is not a significant factor |

Climatic features

The annual precipitation ranges from 10 to 14 inches, but may range to 16 inches on soils which have low water holding capacities. Most of the precipitation occurs in the form of snow during the months of October through April. The soil temperature regime is mesic with a mean annual air temperature of about 47 degrees F. Temperature extremes range from 110 to -30 degrees F. The frost-free period ranges from 70 to 120 days. The optimum period for plant growth is from late April to June.

Table 3. Representative climatic features

| | |
|-------------------------------|----------|
| Frost-free period (average) | 120 days |
| Freeze-free period (average) | 0 days |
| Precipitation total (average) | 356 mm |

Influencing water features

Soil features

The soils of this site are moderately deep to deep and well drained. Root restrictive layers are absent within the upper 20 inches of the soil profile. The available water holding capacity is 4 to 6 inches. Runoff is slow to medium. Erosion hazard by water is slight to moderate.

Table 4. Representative soil features

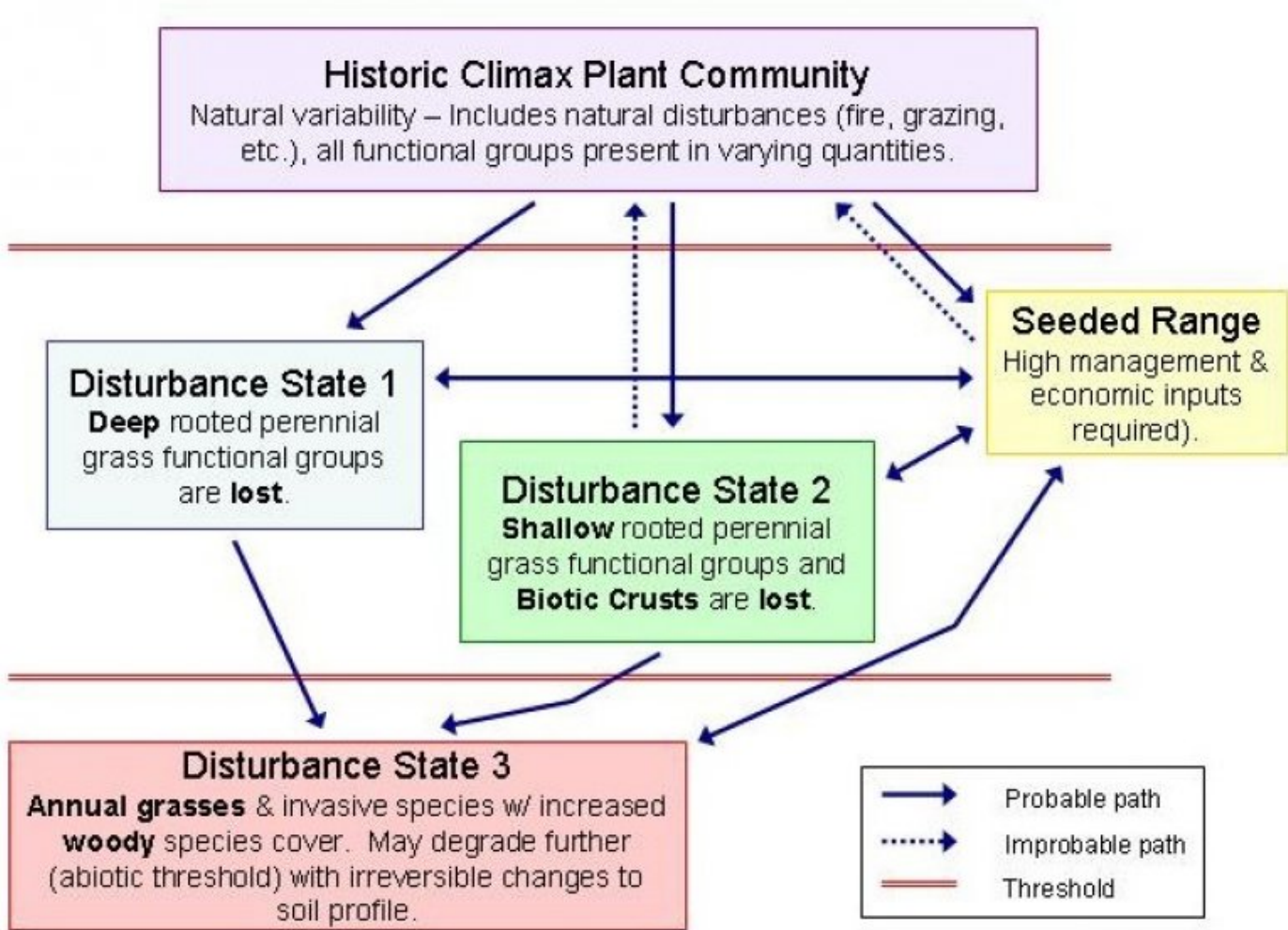
| | |
|---|----------------|
| Available water capacity (0-101.6cm) | 10.16–15.24 cm |
|---|----------------|

Ecological dynamics

This site is typically dominated by bluebunch wheatgrass. Idaho fescue will increase in proportion at the upper end of the precipitation range and Thurber needlegrass may increase in proportion at the drier end of the range or where gravels increase in the soil.

If the condition of the site deteriorates as a result of overgrazing, big sagebrush and rabbitbrush will become dominant on the site. Sandberg bluegrass and unpalatable forbs will increase in the understory. Cheatgrass and annual forbs will invade the site. Western juniper may establish on the site in the absence of periodic fire.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC, PSSP6-FEID/PUTR2-ARTRW8

Community 1.1

HCPC, PSSP6-FEID/PUTR2-ARTRW8

The potential native plant community is dominated by bluebunch wheatgrass and Idaho fescue. Antelope bitterbrush, basin big sagebrush and green rabbitbrush are common. Vegetative composition of the plant community is approximately 80% grasses, 5% forbs, and 15% shrubs.

Table 5. Annual production by plant type

| Plant Type | Low (Kg/Hectare) | Representative Value (Kg/Hectare) | High (Kg/Hectare) |
|-----------------|---------------------|--------------------------------------|----------------------|
| Grass/Grasslike | 565 | 736 | 908 |
| Shrub/Vine | 81 | 177 | 272 |
| Forb | 40 | 76 | 111 |
| Total | 686 | 989 | 1291 |

Figure 4. Plant community growth curve (percent production by month).
OR5511, D21 Low Elev., NA, Good Condition. RPC Growth Curve.

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 15 | 30 | 50 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |

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 | Dominant deep rooted perennial grasses | | | 404–605 | |
| | bluebunch wheatgrass | PSSP6 | <i>Pseudoroegneria spicata</i> | 404–605 | – |
| 2 | Sub-dominant deep rooted perennial grasses | | | 121–202 | |
| | Idaho fescue | FEID | <i>Festuca idahoensis</i> | 101–151 | – |
| | Thurber's needlegrass | ACTH7 | <i>Achnatherum thurberianum</i> | 20–50 | – |
| 4 | Sub-dominant shallow rooted perennial grasses | | | 20–50 | |
| | Sandberg bluegrass | POSE | <i>Poa secunda</i> | 20–50 | – |
| 5 | Other perennial grasses | | | 20–50 | |
| | squirreldtail | ELEL5 | <i>Elymus elymoides</i> | 0–6 | – |
| | prairie Junegrass | KOMA | <i>Koeleria macrantha</i> | 0–6 | – |
| | melicgrass | MELIC | <i>Melica</i> | 0–6 | – |
| Forb | | | | | |
| 7 | Dominant perennial forbs | | | 40–61 | |
| | tapertip hawksbeard | CRAC2 | <i>Crepis acuminata</i> | 10–20 | – |
| | buckwheat | FAES2 | <i>Fagopyrum esculentum</i> | 10–20 | – |
| | lupine | LUPIN | <i>Lupinus</i> | 10–20 | – |
| 9 | Other perennial forbs | | | 10–50 | |
| | milkvetch | ASTRA | <i>Astragalus</i> | 0–6 | – |
| | fleabane | ERIGE2 | <i>Erigeron</i> | 0–6 | – |
| | aster | EUCEP2 | <i>Eucephalus</i> | 0–6 | – |
| | desertparsley | LOMAT | <i>Lomatium</i> | 0–6 | – |
| | ragwort | SENEC | <i>Senecio</i> | 0–6 | – |
| | deathcamas | ZIGAD | <i>Zigadenus</i> | 0–6 | – |
| Shrub/Vine | | | | | |
| 12 | Sub-dominant evergreen shrubs | | | 20–101 | |
| | Wyoming big sagebrush | ARTRW8 | <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> | 20–101 | – |
| 13 | Dominant deciduous (or 1/2 shrubs) shrubs | | | 50–151 | |
| | antelope bitterbrush | PUTR2 | <i>Purshia tridentata</i> | 50–151 | – |
| 14 | Sub-dominant deciduous (or 1/2 shrubs) shrubs | | | 10–20 | |
| | green rabbitbrush | ERTE18 | <i>Ericameria teretifolia</i> | 10–20 | – |

Animal community

This site offers forage production for pronghorn antelope and mule deer and limited cover for various bird species.

Hydrological functions

The soils are in hydrologic groups C and D.

Other products

This site is suited to livestock grazing during all seasons under a planned grazing system.

Other information

Increase in western juniper and the subsequent competition for moisture will lead to a reduction of soil cover and accelerated soil loss. Improving infiltration and permeability, and reducing runoff should be the immediate goal of juniper control.

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 |
| Contact for lead author | Oregon NRCS State Rangeland Management Specialist |
| Date | 08/21/2012 |
| Approved by | Bob Gillaspay |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

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

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):** 10-20%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, slight 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):**
Moderately deep to deep, well drained loams (restrictive layer below 20"): Moderate OM (2-3%)
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (60-70%) limits rainfall impact and overland flow (slightly higher hazard on steeper slopes (to 20%))
-
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: Bluebunch wheatgrass > Idaho fescue > Antelope bitterbrush > Wyoming big sagebrush > other grasses > other forbs > dominant forbs = Green rabbitbrush
- 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: 1200, Normal: 900, Unfavorable: 700 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 will increase with deterioration of plant community. Western Juniper readily increases on the site. Cheatgrass and Medusahead invade sites that have lost seep rooted perennial grass functional groups.

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