

Ecological site R021XY208OR

SANDY 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

| | |
|-------------|-----------------------|
| R021XY200OR | LOAMY 10-14 PZ |
| R021XY300OR | SOUTH SLOPES 10-14 PZ |
| R021XY302OR | NORTH SLOPE 10-14 PZ |

Table 1. Dominant plant species

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

Physiographic features

This site occurs on beach terraces adjacent to lake basins.

Table 2. Representative physiographic features

| | |
|-----------|-------------------|
| Landforms | (1) Beach terrace |
| Elevation | 1,219–1,372 m |

| | |
|--------|------------------------------------|
| Slope | 0–30% |
| Aspect | Aspect is not a significant factor |

Climatic features

The annual precipitation ranges from 10 to 14 inches, most of which occurs in the form of snow during the months of November through April. The soil temperature regime is mesic with the mean annual air temperature of about 48 degrees F. Temperature extremes range from 100 to -30 degrees F. The frost free period ranges from 70 to 120 days. The optimum period for plant growth is from mid-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 have sandy textures throughout the profile to a depth of 60 inches or more. Permeability is rapid. The available water holding capacity is 6 to 8 inches. Runoff is very slow. Erosion hazard by water is slight. Erosion by wind is moderate to high.

Table 4. Representative soil features

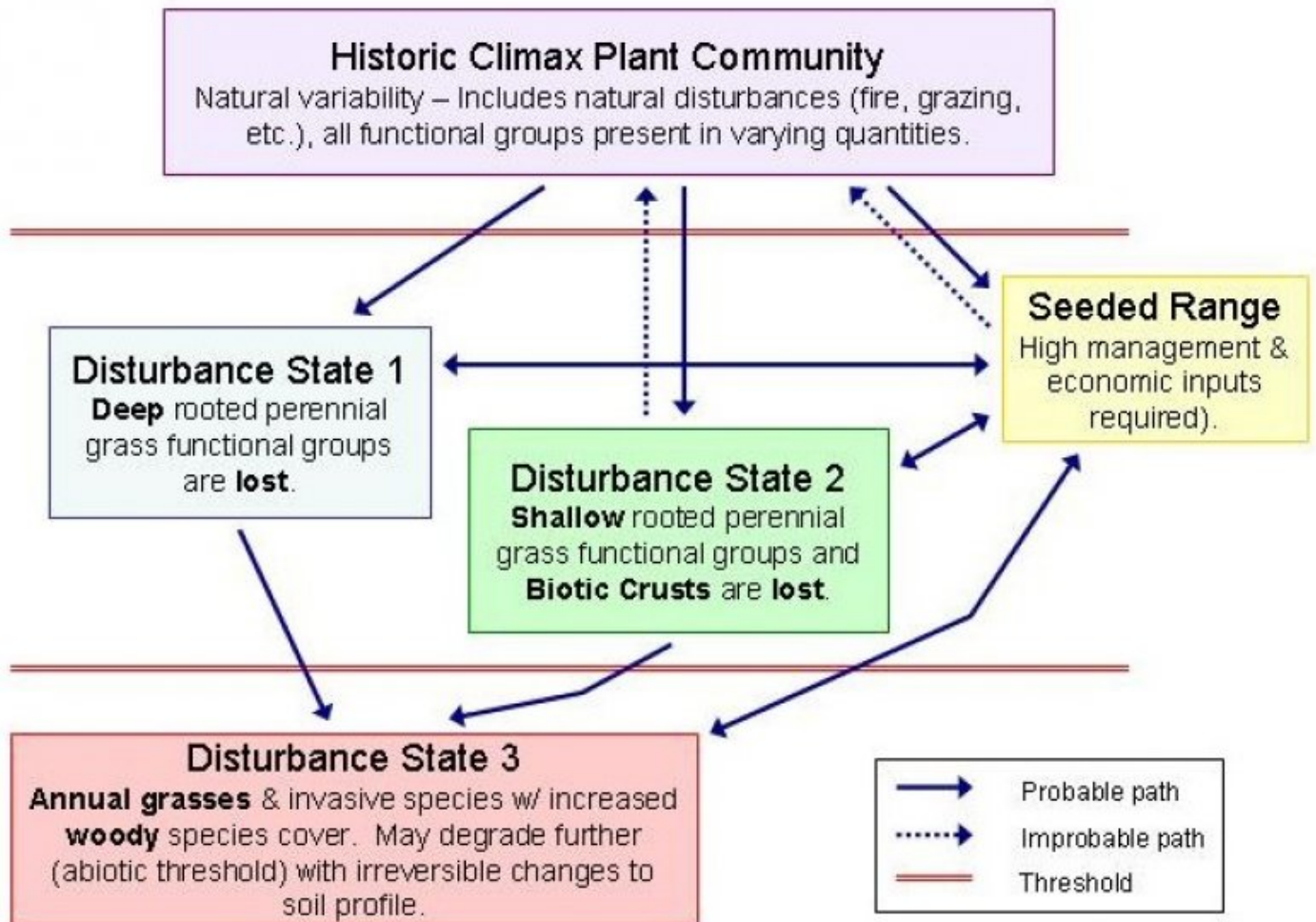
| | |
|--------------------------------------|----------------|
| Surface texture | (1) Sand |
| Family particle size | (1) Sandy |
| Permeability class | Rapid |
| Soil depth | 152 cm |
| Available water capacity (0-101.6cm) | 15.24–20.32 cm |

Ecological dynamics

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue, Thurber needlegrass and Indian ricegrass will decrease. Bottlebrush squirreltail and Sandberg bluegrass will increase. Big sagebrush and rabbitbrush may increase at the expense of antelope bitterbrush. Western juniper may invade the site.

Variability in plant production and composition on this site results from changes in soil surface texture. Coarse textured surfaces promote a larger proportion of Indian ricegrass while a finer textured surface will favor basin wildrye and needleandthread.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC, FEID-ACTH7/PUTR2

Community 1.1

HCPC, FEID-ACTH7/PUTR2

The potential native plant community is dominated by Idaho fescue and Thurber needlegrass. Antelope bitterbrush and big sagebrush often dominate the aspect. Vegetative composition of the community is approximately 70% grasses, 5% forbs, and 25% shrubs.

Table 5. Annual production by plant type

| Plant Type | Low (Kg/Hectare) | Representative Value (Kg/Hectare) | High (Kg/Hectare) |
|-----------------|---------------------|--------------------------------------|----------------------|
| Grass/Grasslike | 544 | 751 | 958 |
| Shrub/Vine | 203 | 314 | 426 |
| Forb | 64 | 91 | 118 |
| Total | 811 | 1156 | 1502 |

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 | | | 426–639 | |
| | Idaho fescue | FEID | <i>Festuca idahoensis</i> | 426–639 | – |
| 2 | Sub-dominant deep rooted perennial grasses | | | 96–267 | |
| | Thurber's needlegrass | ACTH7 | <i>Achnatherum thurberianum</i> | 54–160 | – |
| | mountain guava | PSAM | <i>Psidium amplexicaule</i> | 21–54 | – |
| | Indian ricegrass | ACHY | <i>Achnatherum hymenoides</i> | 21–54 | – |
| 5 | Other perennial grasses | | | 21–54 | |
| | squirreltail | ELEL5 | <i>Elymus elymoides</i> | 0–6 | – |
| | needle and thread | HECO26 | <i>Hesperostipa comata</i> | 0–6 | – |
| | prairie Junegrass | KOMA | <i>Koeleria macrantha</i> | 0–6 | – |
| | Sandberg bluegrass | POSE | <i>Poa secunda</i> | 0–6 | – |
| | bluebunch wheatgrass | PSSP6 | <i>Pseudoroegneria spicata</i> | 0–6 | – |
| Forb | | | | | |
| 7 | Dominant perennial forbs | | | 43–85 | |
| | common yarrow | ACMI2 | <i>Achillea millefolium</i> | 11–21 | – |
| | buckwheat | ERIOG | <i>Eriogonum</i> | 11–21 | – |
| | desertparsley | LOMAT | <i>Lomatium</i> | 11–21 | – |
| | lupine | LUPIN | <i>Lupinus</i> | 11–21 | – |
| 9 | Other perennial forbs | | | 21–33 | |
| | pussytoes | ANTEN | <i>Antennaria</i> | 0–6 | – |
| | common starlily | LEMO4 | <i>Leucocrinum montanum</i> | 0–6 | – |
| | phacelia | PHACE | <i>Phacelia</i> | 0–6 | – |
| | phlox | PHLOX | <i>Phlox</i> | 0–6 | – |
| Shrub/Vine | | | | | |
| 12 | Sub-dominant evergreen shrubs | | | 21–106 | |
| | Wyoming big sagebrush | ARTRW8 | <i>Artemisia tridentata ssp. wyomingensis</i> | 21–106 | – |
| 13 | Dominant deciduous (or 1/2 shrubs) shrubs | | | 160–267 | |
| | antelope bitterbrush | PUTR2 | <i>Purshia tridentata</i> | 160–267 | – |
| 15 | Other shrubs | | | 21–54 | |
| | rubber rabbitbrush | ERNA10 | <i>Ericameria nauseosa</i> | 0–6 | – |
| | green rabbitbrush | ERTE18 | <i>Ericameria teretifolia</i> | 0–6 | – |

Animal community

This site offers food and cover for mule deer, burrowing rodents and various bird species and their associated predators.

Hydrological functions

The soils are in hydrologic group A.

Other products

This site is suited to livestock grazing in all seasons of the year under a planned grazing system.

Other information

This site has a high probability as an archeological site. Special care must be exercised in designing a seeding plan because the soils are very droughty and subject to wind erosion.

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 Gillaspy |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

1. **Number and extent of rills:** None, slight 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):** 10-25%

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

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

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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):** Slightly resistant to erosion: aggregate stability = 2-4
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep, well drained loamy fine sand and loamy sands: Low OM (<1%)
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (70-80%) limits rainfall impact and overland flow (slightly higher hazard on steeper slopes (to 30%))
-
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 > Antelope bitterbrush > Thurber needlegrass > Wyoming big sagebrush > other grasses = forbs = other shrubs
- 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: 950, 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 may invade the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.

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