

Ecological site R006XB014OR Meadow Swale 14-26 PZ

Accessed: 05/08/2024

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

| | |
|-------------|--|
| R006XB012OR | Dry Pumice Meadow 14-26 PZ |
| R006XB013OR | Wet Pumice Meadow 14-26 PZ This site is associated with Wet Pumice Meadow, Dry Pumice Meadow, Marshy Swale, and Wet Marsh sites in the B6 South MLRA. They are frequently in complexes of all the sites and usually do not occupy large homogenous areas. They may be isolated wet areas within drier sites (Dry and Wet Pumice Meadow) or can be associated with standing water sites (Marshy Swale and Wet Marsh). The site also occurs adjacent to perennial streams on river terraces. |
| R006XB015OR | Marshy Swale 14-26 PZ |
| R006XB016OR | Wet Marsh 14-26 PZ |

Similar sites

| | |
|-------------|-----------------------------------|
| R006XB015OR | Marshy Swale 14-26 PZ |
| R006XB013OR | Wet Pumice Meadow 14-26 PZ |

Table 1. Dominant plant species

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

Physiographic features

Basin

Table 2. Representative physiographic features

| | |
|--------------------|---------------------------------|
| Landforms | (1) Alluvial fan (2) Terrace |
| Flooding frequency | None |
| Ponding duration | Very long (more than 30 days) |
| Ponding frequency | Frequent |
| Elevation | 1,219–1,829 m |
| Slope | 0–1% |
| Ponding depth | 10–30 cm |
| Water table depth | 0–122 cm |

| | |
|--------|------------------------------------|
| Aspect | Aspect is not a significant factor |
|--------|------------------------------------|

Climatic features

This site is characterized by relatively short, hot summers and cold, snowy winters. The site receives approximately 20 inches of precipitation per year, the bulk of which is snowfall. There are frequent thunderstorms in the summer months. There may be ground fogs in the mornings during the growing season which affect stomatal gas exchange and photosynthetic activity.

Table 3. Representative climatic features

| | |
|-------------------------------|---------|
| Frost-free period (average) | 20 days |
| Freeze-free period (average) | 49 days |
| Precipitation total (average) | 635 mm |

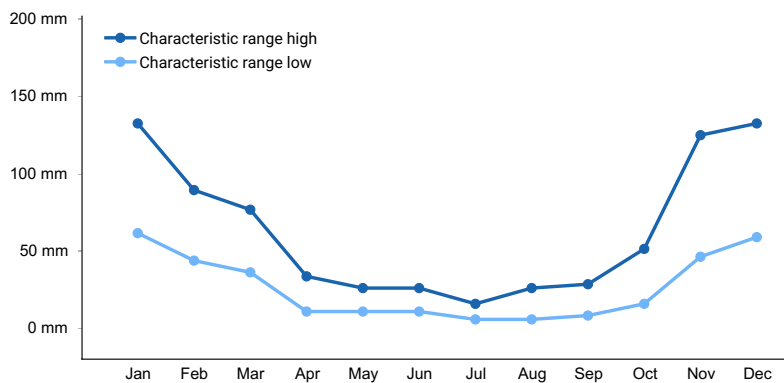


Figure 1. Monthly precipitation range

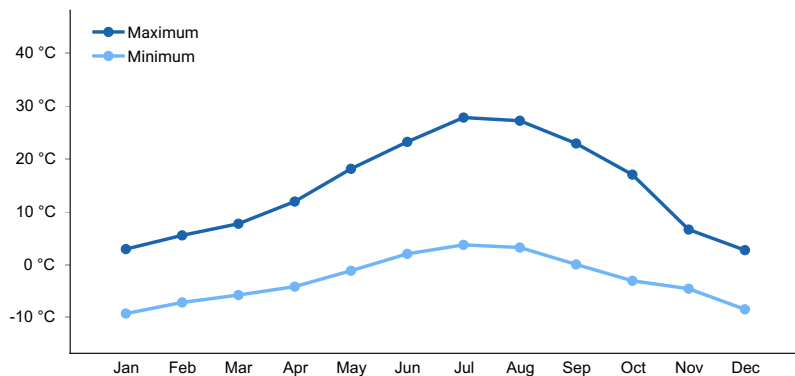


Figure 2. Monthly average minimum and maximum temperature

Influencing water features

Soil features

Soils for this site typically have a thin organic layer over loams, layer of coarse pumice over heavy clay loams. There is an apparent water table present for most of the year. The soils are ponded for a significant time in the spring and early summer. These relatively young soils have been deposited over older, remnant fans and terraces. Variations and intergrades of soil characteristics are common.

Table 4. Representative soil features

| | |
|----------------------|---------------------|
| Surface texture | (1) Mucky silt loam |
| Family particle size | (1) Loamy |
| Drainage class | Poorly drained |

| | |
|---|----------------|
| Permeability class | Slow |
| Soil depth | 102–152 cm |
| Surface fragment cover <=3" | 2% |
| Surface fragment cover >3" | 2% |
| Available water capacity (0-101.6cm) | 10.16–16.51 cm |
| Calcium carbonate equivalent (0-101.6cm) | 2% |
| Electrical conductivity (0-101.6cm) | 0–2 mmhos/cm |
| Sodium adsorption ratio (0-101.6cm) | 1–0 |
| Soil reaction (1:1 water) (0-101.6cm) | 2 |
| Subsurface fragment volume <=3" (Depth not specified) | 2% |
| Subsurface fragment volume >3" (Depth not specified) | 2% |

Ecological dynamics

The site is a wet meadow site usually found in swales, which may be old channels that have been filled with pumice and sediments. They may also be found in claypan areas where they appear as small ponds filled with vegetation. The apparent water table comes to the surface for much of the year (the site is ponded for part of the year), however, in later portions of the growing season the upper portion of the soil profile is dry. The interpretative plant community for this site is the Historic Climax Plant Community (HCPC).

State and transition model

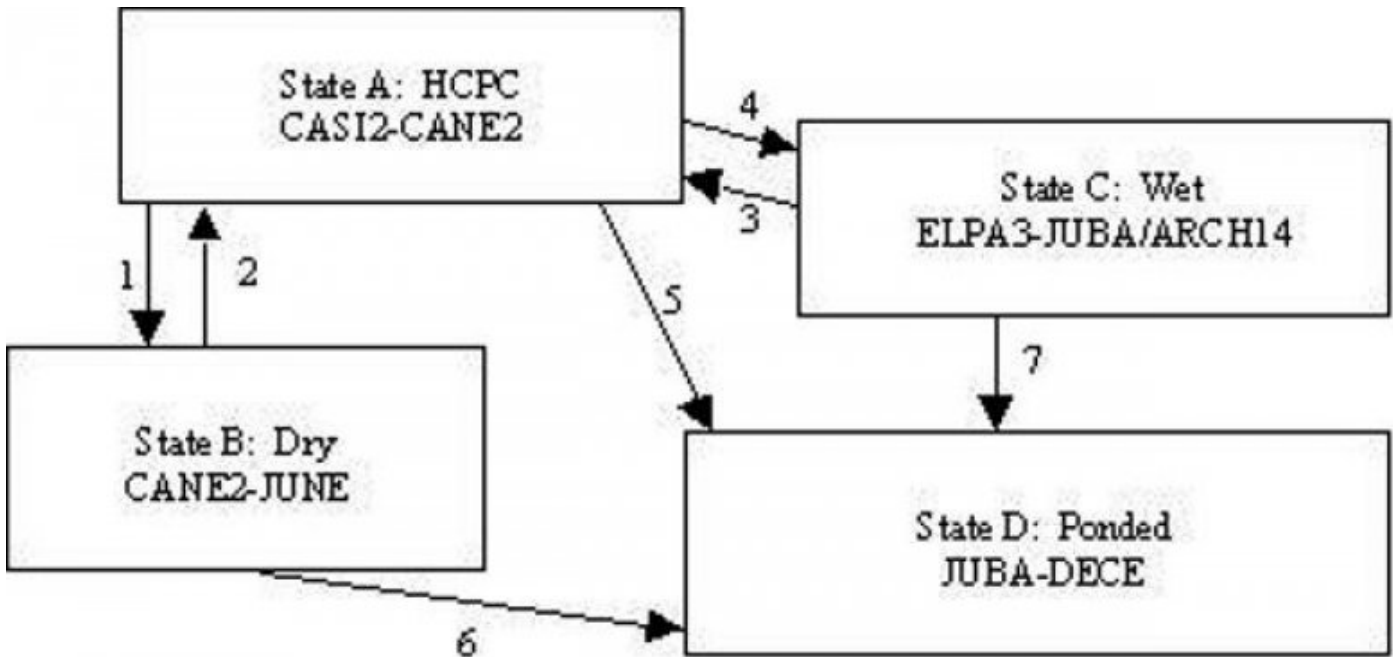


Figure 3. Meadow Swale State & Transition Model

State 1
HCPC: CASI2-CANE2

Community 1.1
HCPC: CASI2-CANE2

This state is dominated by Short-beaked Sedge and Nebraska Sedge. These fine leafed sedges form a dense canopy.

Table 5. Annual production by plant type

| Plant Type | Low (Kg/Hectare) | Representative Value (Kg/Hectare) | High (Kg/Hectare) |
|-----------------|---------------------|--------------------------------------|----------------------|
| Grass/Grasslike | 3699 | 4203 | 4708 |
| Forb | 785 | 897 | 1009 |
| Total | 4484 | 5100 | 5717 |

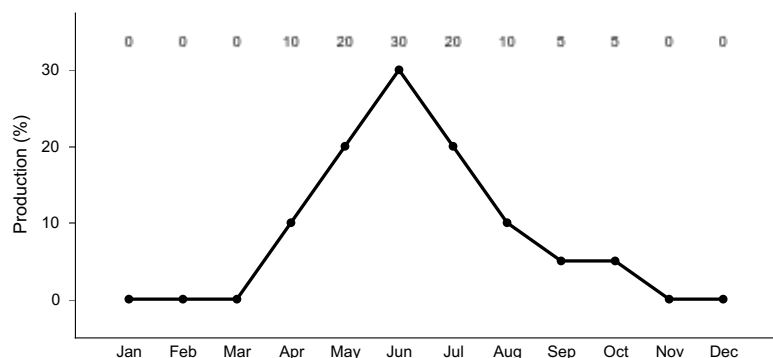


Figure 5. Plant community growth curve (percent production by month). OR1891, B6 Meadow Swale RPC. (CASI2-CANE2) B6 Meadow Swale RPC.

State 2
State B: CANE2-JUNE

Community 2.1
State B: CANE2-JUNE

The Nebraska Sedge and Sierra Rush state occurs when the reference community is heavily grazed and the influence of the water table is lessened by drainage.

State 3
State C: ELPA3-JUBA/ARCH14

Community 3.1
State C: ELPA3-JUBA/ARCH14

This state is usually wet quite late into the growing season. The state is dominated by Creeping Spike Rush, Baltic Rush, and Meadow Arnica. The state develops from grazing pressure and additional water from irrigation or drainage from adjacent sites.

State 4
State D: JUBA-DECA18

Community 4.1
State D: JUBA-DECA18

This Baltic Rush and Tufted Hairgrass state is very wet. It is dominated by the Baltic Rush with a scattering of Tufted Hairgrass. This state may be below a threshold. It is not known if this state can recover to any other state.

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 | | | | 3754–5212 | |
| | analogue sedge | CASI2 | <i>Carex simulata</i> | 2522–3082 | – |
| | Nebraska sedge | CANE2 | <i>Carex nebrascensis</i> | 841–1401 | – |
| | clustered field sedge | CAPR5 | <i>Carex praegracilis</i> | 280–560 | – |
| | slenderbeak sedge | CAAT3 | <i>Carex athrostachya</i> | 111–168 | – |
| 2 | | | | 111–168 | |
| 3 | | | | 222–336 | |
| | Sierra rush | JUNE | <i>Juncus nevadensis</i> | 111–168 | – |
| Forb | | | | | |
| 4 | | | | 560–841 | |
| | Chamisso arnica | ARCHI4 | <i>Arnica chamissonis ssp. foliosa var. incana</i> | 560–841 | – |
| 5 | | | | 9–56 | |
| | agoseris | AGOSE | <i>Agoseris</i> | 9–56 | – |
| | small camas | CAQU2 | <i>Camassia quamash</i> | 9–56 | – |
| | falsegold groundsel | PAPSP2 | <i>Packera pseud aurea var. pseud aurea</i> | 9–56 | – |
| | American bistort | POBI6 | <i>Polygonum bistortoides</i> | 9–56 | – |
| | western dock | RUAQ | <i>Rumex aquaticus</i> | 9–56 | – |

Animal community

Several grazing animals seasonally use the site. Mule deer, elk, and antelope use the site for grazing. The fine sedge component of the site provides good quality forage for a variety of animals. The position of the site makes it attractive to grazing animals when the adjacent sites are wet; or adjacent forage is coarse and/or unpalatable. The site supplies very good food and cover for nesting waterfowl. The site is an important source of invertebrates for foraging birds.

Contributors

Jeffrey P. Repp

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) | |
| Contact for lead author | |
| Date | |

| | |
|---|-------------------|
| Approved by | |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

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

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

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

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

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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:

Sub-dominant:

Other:

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
-

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):**
-

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:**
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17. **Perennial plant reproductive capability:**
-