USDA Natural Resources
Conservation Service

# Ecological site R023XY116OR
# SEMI-WET MARSH

Accessed: 05/11/2025

## 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.

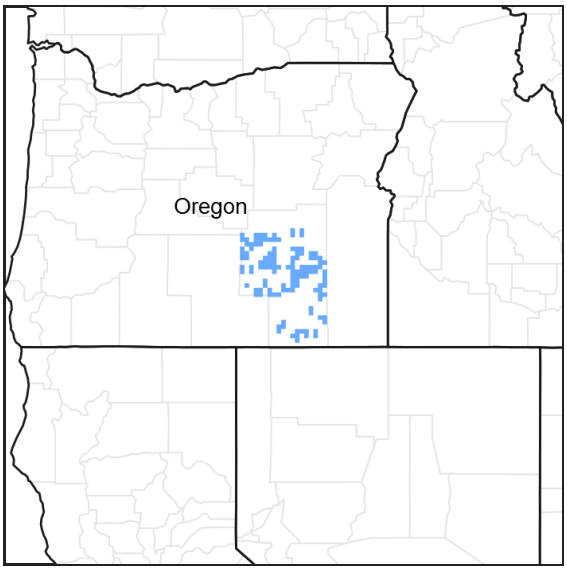



**Figure 1. Mapped extent**

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

| | |
|---|---|
| R023XY115OR | **WET MARSH**<br>Wet Marsh |
| R023XY117OR | **BASIN WET MEADOW**<br>Basin Wet Meadow |
| R023XY118OR | **BASIN DRY MEADOW**<br>Basin Dry Meadow |

## Similar sites

| | |
|---|---|
| R023XY115OR | **WET MARSH**<br>Wet Marsh (ponding depth and duration longer) |

**Table 1. Dominant plant species**

| | |
|---|---|
| Tree | Not specified |
| Shrub | Not specified |
| Herbaceous | (1) *Typha* |

## Physiographic features

This site occurs in basins and valley on the floodplains of perennial and drainage systems. Slopes range from 0 to 1 percent. Elevation varies from 4000 to 4500 feet.

**Table 2. Representative physiographic features**

| | |
|---|---|
| Landforms | (1) Flood plain<br>(2) Basin floor<br>(3) Valley floor |
| Ponding frequency | Frequent |
| Elevation | 4,000–4,500 ft |
| Slope | 0–1% |
| Ponding depth | 12–30 in |
| Aspect | Aspect is not a significant factor |

## Climatic features

The annual precipitation ranges from 8 to 12 inches, most of which occurs between the months of December through March. The mean annual air temperature is 48 degrees F. Temperature extremes range from 110 to -30 degrees F. The period of optimum plant growth is from the first of April through June.

**Table 3. Representative climatic features**

| | |
|---|---|
| Frost-free period (average) | 0 days |
| Freeze-free period (average) | 0 days |
| Precipitation total (average) | 12 in |

## Influencing water features

## Soil features

The soils of this site are very deep and poorly drained. Ponding to depths of 1 to 2.5 feet above the soil surface is frequent from March to July. Textures are loams to silty clay loams over a heavy clay subsoil. At approximately 2 feet, textures become sandy. A seasonal water table is present.

**Table 4. Representative soil features**

| | |
|---|---|
| Surface texture | (1) Loam<br>(2) Silty clay loam |
| Family particle size | (1) Clayey |
| Drainage class | Poorly drained |

## Ecological dynamics

Range in Characteristics:

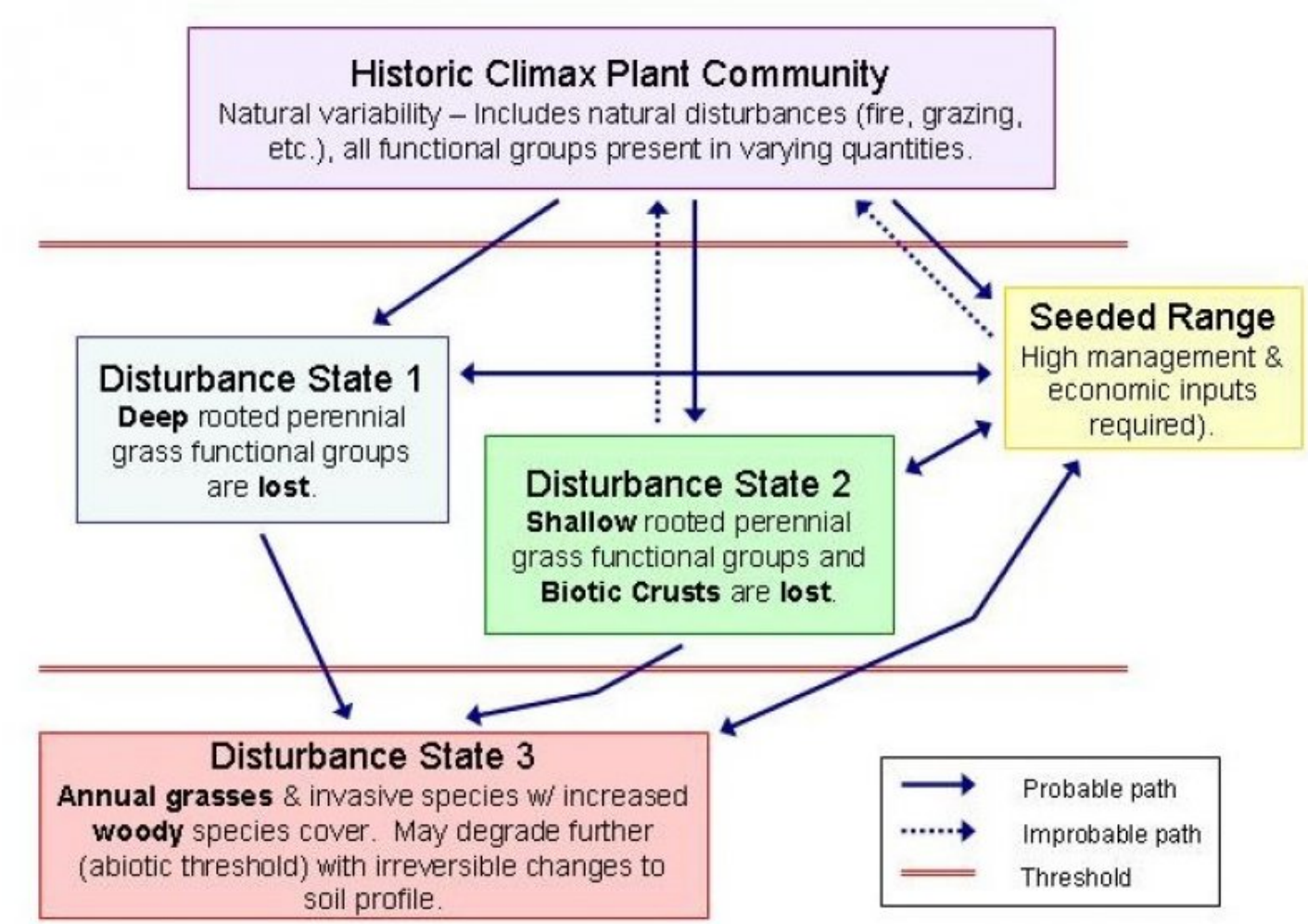
Variation in plant composition and production results from depth and duration of surface ponding. Hardstem bulrush, a species that can withstand a longer period of inundation than cattail, increases in areas that are ponded for long periods or at greater depths. Cattails cannot withstand prolonged submergence at depths of 2.5 to 3 feet. In drier areas that have a short period of inundation, baltic rush increases in the stand.

Response to Disturbance:

If the extent and duration of ponding is reduced to critical levels through water regulation or drainage, extensive changes to dry site conditions will result. Under initial drying conditions, hardstem bulrush will disappear, cattails will decrease and baltic rush will increase. Reed canarygrass will strongly invade and with continued drying and/or disturbance, it will dominate the site. Perennial pepperweed, Canadian thistle, smartweeds, and foxtail barley will invade.

With prolonged ponding to depths of 2.5 to 3 feet or burning or clipping plus ponding, the amount of cattails will be reduced. This occurs because emerged cattail stems are necessary for air transport to submerged crowns and roots.

### State and transition model




GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

### State 1
### Reference State

### Community 1.1
### Reference Plant Community

The potential native plant community is strongly dominated by cattails. Broadleaf cattail usually dominates over narrowleaf cattail with integrades occurring. Hardstem bulrush is present along with minor amounts of sedge and baltic rush. The potential vegetative composition is approximately 75 percent cattails and 15 percent bulrush. The approximate ground cover is 90-120 percent (basal and crown).

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

| Plant Type | Low (Lb/Acre) | Representative Value (Lb/Acre) | High (Lb/Acre) |
|---|---|---|---|
| Forb | 3000 | 3750 | 5250 |
| Grass/Grasslike | 1000 | 1250 | 1750 |
| **Total** | **4000** | **5000** | **7000** |

## 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, rhizomatous, bulrush** | | | 500–1000 | |
| | hardstem bulrush | SCAC3 | *Schoenoplectus acutus* | 500–1000 | – |
| 2 | **Perennial, deep-rooted, rhizomatous grass-like** | | | 250–650 | |
| | sedge | CAREX | *Carex* | 100–250 | – |
| 5 | **Other perennial grasses and grass-like** | | | 150–500 | |
| | shortawn foxtail | ALAE | *Alopecurus aequalis* | 0–150 | – |
| | sloughgrass | BECKM | *Beckmannia* | 0–150 | – |
| | spikerush | ELEOC | *Eleocharis* | 0–150 | – |
| | teal lovegrass | ERHY | *Eragrostis hypnoides* | 0–150 | – |
| **Forb** | | | | | |
| 7 | **Perennial, erect, rhizomatous, monocot** | | | 3500–4000 | |
| | cattail | TYPHA | *Typha* | 3500–4000 | – |
| 9 | **Other perennial forbs** | | | 100–250 | |
| | alkali buttercup | RACY | *Ranunculus cymbalaria* | 0–100 | – |
| | short-rayed alkali aster | SYFR2 | *Symphyotrichum frondosum* | 0–100 | – |

## Animal community

Livestock Grazing:

This site is suitable for limited fall livestock use after it drys and the surface is firm. Ponding precludes use for the remainder of the year.

Native Wildlife Associated with the Potential Climax Community:

Various waterfowl and upland songbirds including mallards and marsh wrens use this site for nesting, food, and cover. The value of the site for waterfowl increases when it is adjacent to wet marshes and open water areas. In terms of preference for nesting, diving ducks prefer the safer Wet Marsh site while dabbling ducks prefer the drier Basin Dry Meadow site.

## Hydrological functions

The hydrologic cover condition is good when the ecological condition is high.

## Other information

This site may be periodically burned (prescribed) to improve the vigor of the stand. As this site often occurs with a perched water table, care should be taken in constructing ponds to avoid late season water loss in the subsurface sand layers. An on-site soil investigation is needed prior to construction. This site is a Type 3 Wetland (Inland

Shallow Fresh Marsh).

## 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 | 08/09/2012 |
| Approved by | Bob Gillaspy |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

## Indicators

1. **Number and extent of rills:** None

2. **Presence of water flow patterns:** None to some

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):** 0-5%

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 to moderately coarse - 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

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very deep poorly drained silt loam to muck: Moderate to high OM (3-6%)

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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 (90-120%) and gentle slopes (0-1%) significantly 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: Cattails > Bulrushes > Grasses and grass-likes > other emergent 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: 7000, Normal: 5000, Unfavorable: 4000 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:** Rush species will increase with deterioration of plant community. Reed canarygrass, Meadow foxtail, Kentucky bluegrass, thistle, perennial pepperweed, and foxtail barley 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