

Ecological site R023XY117OR BASIN WET MEADOW

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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

R023XY115OR	WET MARSH Wet Marsh
R023XY116OR	SEMI-WET MARSH Semi-Wet Marsh
R023XY118OR	BASIN DRY MEADOW Basin Dry Meadow

Similar sites

R023XY116OR	SEMI-WET MARSH Semi-Wet Marsh (ponding depth and duration longer)
R023XY118OR	BASIN DRY MEADOW Basin Dry Meadow (ponding depth and duration longer)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) <i>Carex nebrascensis</i> (2) <i>Juncus balticus</i>

Physiographic features

This site occurs in basins and valleys on the floodplains of perennial drainage systems. Slopes range from 0 to 1 percent. Elevation varies from 4000 to 4600 feet.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Basin floor (3) Valley
Ponding frequency	Frequent
Elevation	1,220 – 1,400 m
Slope	0 %
Ponding depth	20 – 80 cm
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)	310 mm

Influencing water features

Soil features

The soils of this site are medium textured, very deep and poorly drained. Ponding to depths of .5 to 2.5 feet above the soil surface is frequent from March to June. The surface texture is a silt loam over a silt loam to silty clay loam subsoil. Permeability is moderate. The water table is seasonal.

Table 4. Representative soil features

Surface texture	(1) Silt loam
Family particle size	(1) Clayey

Drainage class	Poorly drained
Permeability class	Moderate

Ecological dynamics

Range in Characteristics:

Variation in plant composition and production results from duration of surface ponding. Nebraska sedge increases in areas that are ponded for long durations. Baltic rush with a wider ecologic amplitude, increases in both dry and wet areas. Spikerush appears to occupy a narrow ponded ecologic niche. The three species, Nebraska sedge, baltic rush, and spikerush forming monotypic stands, are very resilient against invasion of other species in undisturbed conditions.

Response to Disturbance:

If the site is disturbed and/or 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 or disturbance, Nebraska sedge will decrease, baltic rush will increase and reed canarygrass will strongly invade. Reed canarygrass is very competitive on this site, increasing rapidly with minor disturbance. With continued disturbance, reed canarygrass will increase along with an invasion of meadow foxtail, rhizomatous wheatgrasses, and bluegrasses. Perennial pepperweed, Canadian thistle, and foxtail barley may also invade under deteriorating conditions.

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 (%)
Grass/Grasslike					
1	Perennial, rhizomatous, grass-like			1569-2242	
	Nebraska sedge	CANE2	Carex nebrascensis	897-1345	–
	spikerush	ELEOC	Eleocharis	224-448	–
5	Other perennial grasses and grass-likes			112-336	
	shortawn foxtail	ALAE	Alopecurus aequalis	0-90	–
	American sloughgrass	BESY	Beckmannia syzigachne	0-90	–
	sedge	CAREX	Carex	0-90	–
	annual hairgrass	DEDA	Deschampsia danthonioides	0-90	–
	teal lovegrass	ERHY	Eragrostis hypnoides	0-90	–
Forb					
9	Other perennial forbs			45-179	
	silverweed cinquefoil	ARAN7	Argentina anserina	0-45	–
	sea milkwort	GLMA	Glaux maritima	0-45	–
	biennial cinquefoil	POBI7	Potentilla biennis	0-45	–
	alkali buttercup	RACY	Ranunculus cymbalaria	0-45	–
	ragwort	SENEC	Senecio	0-45	–
	short-rayed alkali aster	SYFR2	Symphyotrichum frondosum	0-45	–
	water speedwell	VEAN2	Veronica anagallis-aquatica	0-45	–

Animal community

Livestock Grazing: This site is suitable for late summer and fall livestock use after it dries and the surface is firm. Ponding precluded use for the remainder of the year. Native Wildlife Associated with the Potential Climax Community: This site provides good nesting areas along with food and cover for a variety of waterfowl and upland songbirds. Rails and common snipes nest in sedge. Areas that are partially burned or hayed in a mosaic pattern provide excellent, high protein spring feed for cranes and geese. The value of the site for waterfowl increases when it is near wet marshes and open water areas.

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 may occur with a perched water table, care should be taken in constructing ponds to avoid seasonal water loss in the subsurface sand layers. An on-site soil investigation is needed prior to construction. This site is a Type 2 Wetland (Inland Fresh Meadow).

Contributors

A V Bahn
Bob Gillaspy
M. Parks (OSU)

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	
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, moderate 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):
Moderate to significant resistance to erosion: aggregate stability = 4-6`

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

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

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: Nebraska sedge > Baltic rush > Spikerush > other grasses & grass-likes > forbs

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: 3000, Normal: 2000, Unfavorable: 1500 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: Rush species will increase with deterioration of plant community. Reed canarygrass, Meadow foxtail, Kentucky bluegrass, thistles, perennial pepperweed, and foxtail barley invade sites that have lost deep rooted perennial grass functional groups.

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