USDA Natural Resources
Conservation Service

Ecological site R028AY010UT
Semiwet Saline 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.

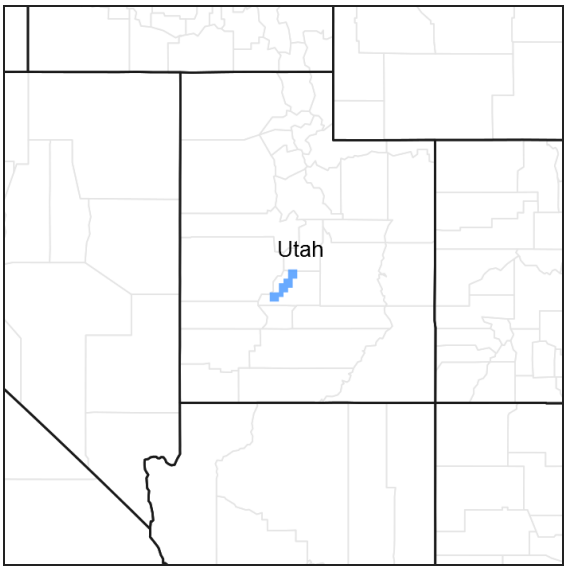

Figure 1. Mapped extent

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.

Classification relationships

General Legal Description: SWA-C290 Photo 1B-5-014

Modal Soils: Airport – fine-silty, mixed, mesic Typic Natraquolls

Associated sites

R028AY012UT	**Semiwet Fresh Meadow**
R028AY020UT	**Wet Fresh Meadow**
R028AY022UT	**Wet Fresh Streambank**

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Sarcobatus vermiculatus* (2) *Ericameria nauseosa*
Herbaceous	(1) *Distichlis spicata* (2) *Carex praegracilis*

Physiographic features

Affected Bottom Lands and Flood Plains

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Elevation	4,500–5,200 ft
Slope	0–3%

Climatic features

The climate is cold and snowy in the winter and warm and dry in the summer. The average annual precipitation is 5 to 8 inches. Approximately 70 percent comes as rain from March through October. On the average, June through September are the driest months and March through May are the wettest months.

Table 3. Representative climatic features

Frost-free period (average)	0 days
Freeze-free period (average)	140 days
Precipitation total (average)	11 in

Influencing water features

Soil features

Characteristic soils in this site are somewhat poorly and poorly drained. They formed in loamy alluvium derived mainly from mixed parent materials.

Moderate and strong alkali and salt concentrations and a fluctuating moderately deep (20 to 40 inches) water table characterize the soils. Additional water is received from runoff. Profile textures range within the loamy to clayey classes. Clay and silty clay are most common. Loamy fine sand will also occur. The fine textured soils may have natric horizons. The coarser textured soils are least affected by sodium and more affected by salts. Permeabilities are variable dependent upon the textures. Water is available for year long plant growth.

Average annual soil loss in potential is approximately 0.1 tons/acre.

Table 4. Representative soil features

Surface texture	(1) Loam (2) Clay (3) Fine sandy loam
Drainage class	Somewhat poorly drained to poorly drained

Ecological dynamics

As ecological condition deteriorates due to overgrazing, the more palatable plants decrease. They will be replaced by greasewood and rabbitbrush. If this situation continues, the plant community will be opened up to invasion by other species, erosion, and a drying of the site.

State and transition model

Ecosystem states

1. Reference State

State 1 submodel, plant communities

1.1. Reference State

State 1
Reference State

Community 1.1
Reference State

The dominant aspect of the plant community is saltgrass and sedges. The composition by air-dry weight is approximately 80 percent perennial grasses, 5 percent forbs, and 15 percent shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	600	920	1240
Shrub/Vine	113	173	233
Forb	38	58	78
Total	**751**	**1151**	**1551**

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Shrub/Vine					
0	**Dominant Shrubs**			72–120	
	rubber rabbitbrush	ERNAN5	*Ericameria nauseosa ssp. nauseosa var. nauseosa*	36–60	–
	greasewood	SAVE4	*Sarcobatus vermiculatus*	36–60	–
3	**Sub-Dominant Shrubs**			60–132	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	36–60	–
	basin saltbush	ATTR3	*Atriplex tridentata*	12–36	–
Grass/Grasslike					
0	**Dominant Grasses**			684–996	
	saltgrass	DISP	*Distichlis spicata*	240–300	–
	clustered field sedge	CAPR5	*Carex praegracilis*	180–240	–
	foxtail barley	HOJU	*Hordeum jubatum*	60–120	–
	scratchgrass	MUAS	*Muhlenbergia asperifolia*	36–60	–
	Nuttall's alkaligrass	PUNU2	*Puccinellia nuttalliana*	36–60	–
3	**Sub-Dominant Grasses**			24–120	
	Grass, annual	2GA	*Grass, annual*	12–60	–
	Grass, perennial	2GP	*Grass, perennial*	12–60	–
Forb					
2	**Sub-Dominant Forbs**			132–300	
	Forb, annual	2FA	*Forb, annual*	36–60	–
	Forb, perennial	2FP	*Forb, perennial*	36–60	–
	western tansymustard	DEPI	*Descurainia pinnata*	12–36	–
	herb sophia	DESO2	*Descurainia sophia*	12–36	–
	pingue rubberweed	HYRI	*Hymenoxys richardsonii*	12–36	–
	Mojave seablite	SUMO	*Suaeda moquinii*	12–36	–

Animal community

This site provides proper grazing for livestock during all seasons of the year.
This site provides food and some cover for wildlife.
Wildlife using this site include rabbit, coyote, fox, and pronghorn antelope.

Hydrological functions

The soil series are in hydrologic group d. The hydrologic curve number is 80 when the vegetation is in good condition.

Recreational uses

This site has values for natural beauty

Wood products

None

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.

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

Indicators

1. **Number and extent of rills:** No rills present. Very minor rill development may occur in sparsely vegetated areas. If rills are present, they should be widely spaced and not connected. Rill development may increase following large storm events, but should begin to heal during the following growing season. Frost heaving will accelerate recovery. Rill development may increase when run inflow enters site from adjacent sites that produce large amounts of runoff (i.e. steeper sites, slickrock, rock outcrop). Site is essentially level and rills do not form.

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2. **Presence of water flow patterns:** Essentially none. Site is essentially level, water flow patterns are not expected to form.

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3. **Number and height of erosional pedestals or terracettes:** Plants may have small pedestals (1-3”) where they are adjacent to water flow patterns, but without exposed roots. Terracettes should be few and stable. Terracettes should be small (1-3”) and show little sign of active erosion. Some plants may appear to have a pedestal but rather than be formed by erosion, the only place litter accumulates and soil collects is at plant bases forming the appearance of a pedestal.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 0-10% bare ground (soil with no protection from raindrop impact). Herbaceous communities are most likely to have lower values. As species composition by shrubs increases, bare ground is likely to increase. Poorly developed biological soil crust that is susceptible to raindrop splash erosion should be recorded as bare ground. Very few if any bare spaces of greater than 1 square foot. Large slick spots up to 100’ may develop due to chemical reactions in the soil.

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5. **Number of gullies and erosion associated with gullies:** No gullies present. Site is essentially level, so no gullies are expected to form.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Very minor evidence of active wind-generated soil movement. Wind scoured (blowouts) and depositional areas are rarely present. If present they have muted features and are mostly stabilized with vegetation and/or biological crust. Gravel or desert pavement protects the site from wind scour.

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7. **Amount of litter movement (describe size and distance expected to travel):** Most litter resides in place with some redistribution caused by water and wind movement. Very minor litter removal may occur in flow patterns and rills with deposition occurring at points of obstruction. The majority of litter accumulates at the base of plants. Some leaves, stems, and small twigs may accumulate in soil depressions adjacent to plants. Woody stems are not likely to move.

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface is moderately stable (average soil stability score of 3.5 -5).

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** This description is based on the modal soil (Airport). This site has 4 correlated soils, resulting in variation of each of these attributes. Unless working on a location with the modal soil, it is critical to supplement this description with the soil-specific information from the published soil survey.

   Soil surface horizon is typically 4 to 12 inches deep. Structure in upper inch is typically weak, then platy. Color is typically gray (10YR 5/1), very dark gray (10YR 3/1), moist. Mollic epipedon is common.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Bunchgrasses important for increasing infiltration and reducing runoff. Bunchgrasses important for increasing infiltration and reducing runoff. Litter plays a role in increasing infiltration and decreasing runoff. Plants provide microhabitat for seedlings, catch litter and soil, and slow raindrops and runoff. Vascular plants and/or well-developed biological soil crusts (where present) will break raindrop impact and splash erosion. Spatial distribution of vascular plants and interspaces between well-developed biological soil crusts (where present) provide detention storage and surface roughness that slows runoff allowing time for infiltration. Interspaces between plants and any well-developed biological soil crusts (where present) may serve as water flow patterns during episodic runoff events, with natural erosion expected in severe storms. When perennial grasses decrease, reducing ground cover and increasing bare ground, runoff is expected to increase and any associated infiltration reduced.

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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. Naturally occurring soil horizons may be harder than the surface because of an accumulation of clay or calcium carbonate and should not be considered as compaction layers.

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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: clustered field sedge, mountain rush, saltgrass

    Sub-dominant: rabbitbrush, greasewood

Other: forbs > other shrubs > other grasses

Additional: Functional/structural groups may appropriately contain non-native species if their ecological function is the same as the native species in the reference state (e.g. crested wheatgrass and Russian wildrye may substitute for mid stature cool season perennial native bunchgrasses.). Biological soil crust is variable in its expression on this site and is measured as a component of ground cover. Forbs can be expected to vary widely in their expression in the plant community based upon departures from average growing conditions.

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** During years with average to above average precipitation, there should be very little recent mortality or decadence apparent in either the shrubs or grasses. Some mortality of bunchgrass and other shrubs may occur during very severe (long-term) droughts. There may be partial mortality of individual bunchgrasses and shrubs during less severe drought. Long-lived species dominate site. Open spaces from disturbance are quickly filled by new plants through seedlings and reproductive reproduction (tillering).

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14. **Average percent litter cover (%) and depth (in):** Litter cover includes litter under plants. Most litter will be fine litter. Depth should be 1-2 leaf thickness in the interspaces and up to 1/2” under canopies. Litter cover may increase to 15-25% following years with favorable growing conditions. Excess litter may accumulate in absence of disturbance. Vegetative production may be reduced if litter cover exceeds 40%.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1150#/acre.
Even the most stable communities exhibit a range of production values. Production will vary between communities and across the MRLA. Refer to the community descriptions in the ESD. Production will differ across the MLRA due to the naturally occurring variability in weather, soils, and aspect. The biological processes on this site are complex; therefore, representative values are presented in a land management context.

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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:** Cheatgrass, halogeton, green rabbitbrush, annual forbs, broom snakeweed, Utah juniper, purple threeawn, medusahead rye.

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17. **Perennial plant reproductive capability:** Reproduction restricted by effective precipitation, rock cover, soil depth, and generally harsh growing conditions; all to be expected for site. Site provides harsh environment for seedling establishment.
