USDA Natural Resources
Conservation Service

Ecological site R028AY014UT
Semiwet Fresh Streambank

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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.

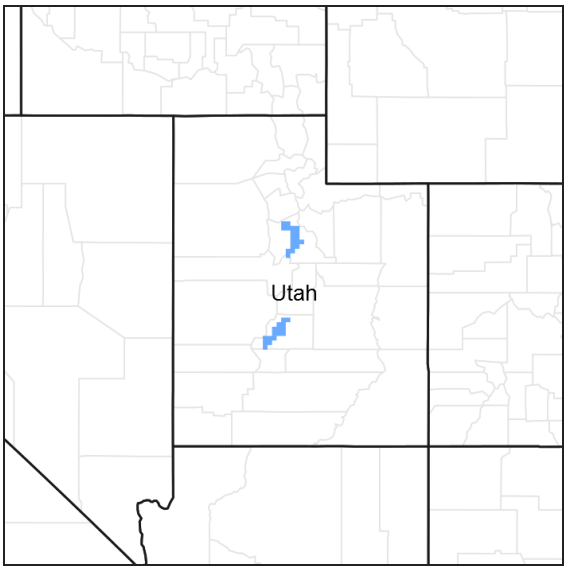

Figure 1. Mapped extent

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

R028AY020UT	**Wet Fresh Meadow**
R028AY022UT	**Wet Fresh Streambank** This site is also a similar site with an hydrology differentiae.
R028AY120UT	**Desert Gravelly Loam (Shadscale)**

Table 1. Dominant plant species

Tree	(1) *Populus fremontii*
Shrub	(1) *Salix exigua*
Herbaceous	Not specified

Physiographic features

This site occurs on gently sloping flood plains, alluvial fans, and flood-plain steps in canyons and small valley bottoms. It is found at elevations between 4,500 and 7,400 feet on slopes no greater than 5 percent in most cases. Brief flooding events may occur on this site occaisionally, but ponding is not an issue. The water table fluctuates throughout the year, but stays mostly between 18 and 72 inches from the soil surface.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Alluvial fan (3) Flood-plain step
Flooding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Flooding frequency	None to occasional
Ponding frequency	None
Elevation	4,500–7,400 ft
Slope	0–4%
Water table depth	18–72 in
Aspect	Aspect is not a significant factor

Climatic features

The climate of this site is characterized by cold, snowy winters and warm dry summers. Annual precipitation typically ranges between 15 and 20 inches, though a high water table is the most important water resource for plant growth. The water table can be elevated as early as March and as late as August in some areas. June through September are the driest months, accounting for only 20 percent of the annual precipitation. October through May are the wet months, and account for the other 80 percent of the annual precipitation.

Table 3. Representative climatic features

Frost-free period (average)	175 days
Freeze-free period (average)	144 days
Precipitation total (average)	18 in

Influencing water features

Soil features

The soils of this site are deep, gravelly sandy loams that formed in alluvium derived from mixed parent materials. Rock fragments are abundant throughout the profile and are usually present on the soil surface. Textures are variable throughout the profile and are often highly stratified. These soils are poorly-drained to well-drained and have moderately rapid to very rapid permeability. The soils of this site are often highly calcareous and have pH ranging from 7.4 to 8.4. Available water-holding capacity ranges from 1.7 to 2.7 inches of water in the upper 40 inches of soil. The soil moisture regime is aquic and the soil temperature regime is mesic.

This site is found in the Utah County Soil Survey Area(UT621), and is correlated to the Provo(Pw, Px) and Steed(Sd, Se) soil components.

Table 4. Representative soil features

Surface texture	(1) Gravelly sandy loam (2) Gravelly fine sandy loam (3) Sand
Family particle size	(1) Sandy
Drainage class	Poorly drained to well drained
Permeability class	Moderately rapid to very rapid
Soil depth	60 in
Surface fragment cover <=3"	5–27%
Surface fragment cover >3"	0–5%

Available water capacity (0-40in)	1.7–2.7 in
Calcium carbonate equivalent (0-40in)	1–40%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–5
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	35–39%
Subsurface fragment volume >3" (Depth not specified)	6–9%

Ecological dynamics

As ecological condition deteriorates due to overgrazing, Great Basin wildrye, redtop, and Kentucky bluegrass decrease, while rubber rabbitbrush, willow, and woods rose increase. When the potential natural plant community is burned, cottonwood and box elder decrease while grasses and grasslike plants increase. Cheatgrass, gumweed, poverty weed, and bull thistle are most likely to invade this 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 cottonwood trees, willows, and grasses or grasslike plants. The composition by air-dry weight is approximately 45 percent perennial grasses, 15 percent forbs, and 40 percent shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	405	653	900
Shrub/Vine	360	580	800
Forb	135	218	300
Total	**900**	**1451**	**2000**

Table 6. Ground cover

Tree foliar cover	10-15%
Shrub/vine/liana foliar cover	15-30%
Grass/grasslike foliar cover	4-5%
Forb foliar cover	1-5%
Non-vascular plants	0%
Biological crusts	0%
Litter	0%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

Table 7. Canopy structure (% cover)

Height Above Ground (Ft)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.5	–	–	–	–
>0.5 <= 1	–	–	–	0-10%
>1 <= 2	–	–	0-10%	–
>2 <= 4.5	–	–	–	–
>4.5 <= 13	–	25-35%	–	–
>13 <= 40	10-20%	–	–	–
>40 <= 80	–	–	–	–
>80 <= 120	–	–	–	–
>120	–	–	–	–

Figure 7. Plant community growth curve (percent production by month). UT0141, PNC. Excellent Condition.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	15	40	30	5	5	0	0	0	0

Additional community tables

Table 8. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Tree					
0	**Trees**			0	
	boxelder	ACNE2	*Acer negundo*	0	–
	narrowleaf cottonwood	POAN3	*Populus angustifolia*	0	–
	Fremont cottonwood	POFR2	*Populus fremontii*	0	–
Shrub/Vine					
0	**Primary Shrubs**			315–450	
	narrowleaf willow	SAEX	*Salix exigua*	225–300	–
	silver buffaloberry	SHAR	*Shepherdia argentea*	45–75	–
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	45–75	–
3	**Secondary Shrubs**			75–150	
	Utah serviceberry	AMUT	*Amelanchier utahensis*	15–45	–
	yellow rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus*	15–45	–
	western white clematis	CLLI2	*Clematis ligusticifolia*	15–45	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	15–45	–
	skunkbush sumac	RHTRT	*Rhus trilobata var. trilobata*	15–45	–
	Woods' rose	ROWO	*Rosa woodsii*	15–45	–
	coralberry	SYOR	*Symphoricarpos orbiculatus*	15–45	–
Grass/Grasslike					
0	**Primary Grasses**			465–675	
	Kentucky bluegrass	POPR	*Poa pratensis*	300–375	–
	clustered field sedge	CAPR5	*Carex praegracilis*	75–150	–
	arctic rush	JUAR2	*Juncus arcticus*	45–75	–
	western wheatgrass	PASM	*Pascopyrum smithii*	45–75	–
1	**Seconary Grasses**			75–150	
	creeping bentgrass	AGST2	*Agrostis stolonifera*	15–45	–
	saltgrass	DISP	*Distichlis spicata*	15–45	–
	squirreltail	ELEL5	*Elymus elymoides*	15–45	–
	basin wildrye	LECI4	*Leymus cinereus*	15–45	–
	timothy	PHPR3	*Phleum pratense*	15–45	–
Forb					
0	**Primary Grasses**			45–75	
	silverweed cinquefoil	ARAN7	*Argentina anserina*	45–75	–
2	**Seconary Forbs**			75–150	
	white sagebrush	ARLU	*Artemisia ludoviciana*	15–45	–
	field horsetail	EQAR	*Equisetum arvense*	15–45	–
	redwool plantain	PLER	*Plantago eriopoda*	15–45	–
	gooseberryleaf globemallow	SPGR2	*Sphaeralcea grossulariifolia*	15–45	–
	common dandelion	TAOF	*Taraxacum officinale*	15–45	–
	strawberry clover	TRFR2	*Trifolium fragiferum*	15–45	–

Animal community

This is one of Utah's highest yielding range sites. The plants are predominantly grasses and grasslike plants with a few forbs and practically no shrubs. To control soil erosion and degradation of the plant community, this site may be properly grazed early with animals being removed early to allow key plants to go ungrazed during the last part of the growing season. A stubble height of 4 to 5 inches should be adhered to.

Wildlife using this site include rabbit, coyote, raccoon, owl, bald eagle, and mule deer.

This is a short list of the more common species found. Many other species are present as well and migratory birds are present at times.

Hydrological functions

Soils in this site are grouped mainly into C hydrologic group. They have moderately high runoff potential. When the vegetation is in climax (potential), the hydrologic curves are 75 to 72. Refer to SCS National Engineering Handbook, Section 4, to determine runoff quantities by use of these curves. Where range condition has declined from climax, field investigation is needed to determine hydrologic curve numbers.

Recreational uses

This site has good values for aesthetics and natural beauty. It has a large number of forbs and shrubs which have flowers in bloom from early spring throughout the summer and into the fall. It has a combination of grasses, forbs, small shrubs, large shrubs, and trees which offer excellent possibilities for screening and high value as camping and picnicking areas. Hunting for upland game birds, cottontail rabbits, elk, and mule deer is good to excellent on this site. Fishing is opportune on streams through this site. Summer homes are a possibility on this site, but detailed on-site investigation should be made to determine feasibility of the soils for septic tanks and sewage disposal facilities when specific location are tentatively planned for summer homes or other building sites. Due to the high water table, sewage disposal is extremely difficult.

Wood products

The tree species, except for cottonwood, do not grow large enough to make them valuable for lumber. Occasionally, cottonwood and rocky mountain juniper have been used for saw timber. No site index determinations have been made to date on these species. Some values exist for fence posts and fuel for fireplaces and campfires. Some species furnish raw material for knick-knacks, or ornamental uses.

Other information

Threatened and endangered species include plants and animals.

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)	
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:

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

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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):**

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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:**

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17. **Perennial plant reproductive capability:**
