

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

This draft ecological site description is approved for field use and testing for a one year period beginning MM, YYYY.  
Additional information and comments on this site should be sent to the Utah State Range Management Specialist.

STATE: Utah

SITE TYPE: Rangeland

ECOLOGICAL SITE NAME: Loamy Bottom (Great Basin wildrye)

SITE NUMBER: 028AY006UT

MLRA: 028A

Original Site Description: Author: DJS

Date: 09/01/1987

Revised Site Description: Author: DJS

Date: 05/12/1993

Approved by: Title: State Range Cons.

Signed: Pat Shaver

Date: 08/30/1993

Ecological Site Definition - A distinctive kind of land, with specific physical characteristics, which differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation, and in its response to management.

### **A. PHYSICAL CHARACTERISTICS**

*(description narrative of this particular site)*

#### **1. SOILS**

Depth: >60

Surface Textures: Silt Loam

Surface Fragments(<=3" % cover, >3" % cover):

Subsurface Textures:

Subsurface Fragments(<=3" % vol, >3" % vol): <15%

Geologic Parent Materials: Mixed Alluvium from Quartzite, Limestone, & Mica Schist

Moisture Regime:

Temperature Regime:

Runoff: Slow

Permeability(min-max): Moderate

Drainage Class(min-max): Well Drained

Water Erosion Hazard:

Wind Erosion Hazard:

Electrical Conductivity (EC in mmhos/cm):

Sodium Adsorption Ration (SAR):

Soil Reaction (1:1 water):

Soil Reaction (0.1 M CaCl<sub>2</sub>):

pH Range:

Available Water Capacity (inches): 9-12

Major Soils Associated With This Site:

Soil Survey Area: 601

Birdow SiL

Koosharem SiL

Redola L

**Additional information may be found in Section II of the Field Office Technical Guide.**

#### **2. PHYSIOGRAPHIC FEATURES**



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## **1. Potential Plant Community Description and Ecological Factors**

The dominant aspect of the plant community is Great Basin wildrye. The composition by air-dry weight is approximately 70 percent perennial grasses, 10 percent forbs, and 20 percent shrubs.

## **2. Plant Community Composition by Weight and Percentage**

Grasses and Grasslike, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Great Basin wildrye	LECI4		720	880	45	55
Western wheatgrass	PASM		80	160	5	10
Nevada bluegrass	PONE3		48	80	3	5
Alkali sacaton	SPAI	1	16	48	1	3
Bottlebrush squirreltail	ELEL5	1	16	48	1	3
Indian ricegrass	ACHY	1	16	48	1	3
Needleandthread	HECO26	1	16	48	1	3
Other perennial grasses	PPGG	1	80	160	5	10
Other annual grasses	AAGG	1	80	160	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Longleaf hawksbeard	CRAC2	2	16	32	1	2
Arrowleaf balsamroot	BASA3	2	16	32	1	2
Skeletonleaf burr ragweed	AMTO3	2	16	32	1	2
Low penstemon	PEHU	2	16	32	1	2
Shaggy fleabane	ERPU2	2	16	32	1	2
Louisiana wormwood	ARLU	2	16	32	1	2
Other perennial forbs	PPFF	2	80	160	5	10
Other annual forbs	AAFF	2	80	160	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre	% by Weight of Total Composition
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			Low	High	Low	High
Basin big sagebrush	ARTRT		80	160	5	10
Rubber rabbitbrush	ERNA10		48	80	3	5
Greasewood	SAVE4	3	16	32	1	2
Low rabbitbrush	CHVI8	3	16	32	1	2
Fourwing saltbush	ATCA	3	16	32	1	2
Nevada jointfir	EPNE	3	16	32	1	2
Woods rose	ROWO	3	16	32	1	2
Other forbs	SSSS	3	48	80	3	5

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High

### **3. Plant Community Annual Production**

At the highest potential similarity index, this site will produce approximately the following amount of air-dry herbage, expressed as pounds/acre:

	Low	High
Favorable Year	2400	2600
Average Year	1400	1600
Unfavorable Year	900	1100

### **4. Ground Cover and Structure**

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	25	4	
Forbs (perennial)	2	0.5	
Shrubs	10	5	
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	

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Bare Ground	
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### **5. Ecological Dynamics of the Site**

As ecological condition deteriorates due to overgrazing, basin wildrye, western wheatgrass, and Nevada bluegrass decrease, while basin big sagebrush and rabbitbrush increase.

When the potential natural plant community is burned, basin big sagebrush decrease while rubber rabbitbrush increases.

Halogeton, Russian thistle, and cheatgrass are most likely to invade this site.

### **Plant Communities & Transitional Pathways**

(Show a steady state diagram with influences to move from one steady state to another)

### **6. Plant Growth Curves**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent Growth	0	0	5	25	50	10	0	0	5	5	0	0
Name	PNC											
ID Number	UT0061											
Description	Excellent Condition											

### **7. Aspect Differences Near MLRA Boundaries**

(Give related range sites in MLRA's above and below)

### **8. Associated Sites Within MLRA**

028AY004UT  
 Alkali Flat (Greasewood)

028AY001UT  
 Alkali Bottom (Alkali Sacaton)

### **9. Correlated Sites in Other States**

(Give site name and number)

## **D. MAJOR USES OF THIS SITE**

### **1. Livestock**

a. Site Factors Influencing Management

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This site is suited for cattle and sheep grazing during spring, summer, and fall. Grazing suitability is good.

b. Guide to Forage Quality(Plant preference by season)

Species	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep

VG = Very Good    G = Good    F = Fair    P = Poor

**2. Wildlife**

a. Site Factors Influencing Management

This site has good food and cover for wildlife.

b. List of Potential Species Present

Wildlife using this site include rabbit, coyote, fox, mule deer and pronghorn antelope.

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.

c. Guide to Forage Preference of Managed Wildlife Species

Wildlife Species →				
Plant Species ↓	Use	Season	Use	Season

Use - A = preferred or desirable  
 B = some use, but less important  
 C = little use or used occasionally

Season - F = Fall (Oct-Nov)  
 W = Winter (Dec-Feb)  
 Sp. = Spring (Mar-May)  
 Su. = Summer (Jun-Sep)

**3. Recreational Uses**

This site has values for natural beauty values. Recreation uses for this site include hiking and hunting.

**4. Wood Products**

None

**5. Other Uses**

**E. THREATENED AND ENDANGERED SPECIES**

1. Plants

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## 2. Animals

### **F. MODAL LOCATION AND DOCUMENTATION**

State: Utah                      County:  
 Latitude:                        Longitude:

Modal soil: Birdow SiL – fine-loamy, mixed, mesic Cumulic Haploxerolls

Type Location: SW ¼ of NW ¼ Section 1, Township 11N, Range 13W

General Legal Description:

#### **Field Office Site Location**

Logan  
 Provo  
 Cedar City  
 Murray  
 Richfield

#### **Data Collected and References**

Sampling Source	Number of Records	Range Similarity Index			
		> 76%	51-75%	26-50%	0-25%
NRCS - ECS - 417					
UTAH - RANGE - 2	5				
Permanent Transect Location					

#### **Other References**

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### Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): V. Keith Wadman  
 Contact for lead author: \_\_\_\_\_ Reference site used? Yes/No  
 Date: 6/15/04 MLRA: 028A Ecological Site: Loamy Bottom (028AY006UT) Great Basin Wildrye, Basin big sagebrush This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.

**Indicators** For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for each community within the reference state, when appropriate & (3) cite data. Continue descriptions on separate sheet.

1. Number and extent of rills: None to very few. Any rills present should be short in length (less than 4 feet long) and follow the surface micro-features. Old rills should be weathered and muted in appearance. An increase in rill formation may be seen after disturbance events such as recent fire or thunderstorms.

2. Presence of water flow patterns: Flow patterns wind around perennial plants bases and show little evidence of erosion. They are short and stable and there is little evidence of deposition. May increase slightly with slope.

3. Number and height of erosional pedestals or terracettes: Plants should show little or no pedestaling. Terracettes should be absent or rare.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 10 - 20%.

5. Number of gullies and erosion associated with gullies: None to few. Any gullies present should show little sign of erosion and should be stabilized with vegetation.

6. Extent of wind scoured, blowouts and/or depositional areas: Little evidence of wind generated soil movement. Wind caused blowouts and deposition are not present.

7. Amount of litter movement (describe size and distance expected to travel): Most litter resides in place with minor redistribution caused by water movement. Minor litter removal may occur in flow channels with deposition occurring at points of obstruction.

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values for both plant canopy and interspaces, if different): 80 to 90% of this site should have an erosion rating of 5 or 6. 10 to 20% may have a rating of 3 to 5. The average should be a 5.

9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different): Soil surface varies from 3 to 8". Structure is weak platy to granular. Color is grayish brown (10YR5/3). A mollic epipedon typically extends to 20 inches.

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: When perennial grasses decrease, reducing ground cover and increasing bare ground, runoff can increase and infiltration be reduced. A reduction in vegetative structure can reduce snow capture.

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 weight using symbols: », >, = to indicate much greater than, greater than, and equal to): Assumed fire cycle of 40-60 years. Perennial bunchgrasses, non-sprouting shrubs > small perennial grasses, sprouting shrubs, annual forbs > invaders such as Cheatgrass & Halogeton. Dominants: Great basin Wildrye, Western wheatgrass; Sub-dominants: Basin big sagebrush, Rubber rabbitbrush. The perennial grass/non-sprouting shrub functioning group is expected on this site.

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): All age classes of perennial grasses should be present. Slight decadence in the principle shrubs could occur near the end of the fire cycle.

14. Average percent litter cover (20-25%) and depth (.50-1.0 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 1400 - 1600 #/acre on an average year.

16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do, continue to increase regardless of the management of the site and may eventually dominate the site": Cheatgrass, Halogeton, Russian thistle, & Annual forbs.

17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years.