

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: Desert Loam (Shadscale)

SITE NUMBER: 028AY124UT

MLRA: 028A

Original Site Description: Author: DJS

Date: 09/01/1987

Revised Site Description: Author: DJS

Date: 05/18/1993

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:

Surface Textures: Fine Sandy Loam

Surface Fragments(<=3" % cover, >3" % cover): 0-10% cover

Subsurface Textures:

Subsurface Fragments(<=3" % vol, >3" % vol): 0-15%

Geologic Parent Materials: Alluvium and Lacustrine Sediments from Limestone
And Basalt

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max):

Drainage Class(min-max):

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 CaCl₂):

pH Range:

Available Water Capacity (inches): 2-6

Major Soils Associated With This Site:

Soil Survey Area: 601

Smaug VFSL

Mazuma FSL

Papoose SL

Declo L

Hiko Springs SL

Penoyer L

Swinger FLS

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

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1. Potential Plant Community Description and Ecological Factors

The dominant aspect of the plant community is Indian ricegrass and shadscale. The composition by air dry weight is approximately 45 percent perennial grasses, 15 percent forbs, and 40 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
Indian ricegrass	ACHY		100	125	20	25
Bottlebrush squirreltail	ELEL5		50	75	10	15
Galleta	HIJA		15	25	3	5
Western wheatgrass	PASM	1	5	15	1	3
Needleandthread	HECO26	1	5	15	1	3
Blue grama	BOGR2	1	5	15	1	3
Nevada bluegrass	PONE3	1	5	15	1	3
Sandberg bluegrass	POSE	1	5	15	1	3
Sand dropseed	SPCR	1	5	15	1	3
Other perennial grasses	PPGG	1	15	25	3	5
Other annual grasses	AAGG	1	15	25	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Scarlet globemallow	SPCO	2	15	25	3	5
Cushion wild buckwheat	EROV	2	15	25	3	5
Torrey milkvetch	ASCA9	2	15	25	3	5
Shaggy fleabane	ERPU2	2	15	25	3	5
Other perennial forbs	PPFF	2	50	75	10	15
Other annual forbs	AAFF	2	50	75	10	15

Shrubs/Vines, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Shadscale	ATCO		75	100	15	20
Bud sagebrush	ARSP5		25	50	5	10
Winterfat	KRLA		25	50	5	10
Nevada jointfir	EPNE	3	5	15	1	3
Low rabbitbrush	CHVI8	3	5	15	1	3
Black sagebrush	ARNO4	3	5	15	1	3
Fourwing saltbush	ATCA2	3	5	15	1	3
Greenmolly	KOAM	3	5	15	1	3
Nuttall horsebrush	TENU2	3	5	15	1	3
Other shrubs	SSSS	3	15	25	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	550	600
Average Year	450	500
Unfavorable Year	350	400

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	20	1	10
Forbs (perennial)	5	1	2
Shrubs	15	1	5
Trees			
Cryptogams			

b. Other

Litter	
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Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, Indian ricegrass, squirreltail, bud sagebrush, and winterfat decrease while shadscale and rabbitbrush increase.

When the potential natural plant community is burned, Indian ricegrass, shadscale, and winterfat decrease while rabbitbrush and Sandberg bluegrass increase.

Annual forbs and annual grasses 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	UT1161											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

028AY119UT
 Desert Flat (Shadscale)

028AY104UT
 Desert Alkali Bench (Bud sagebrush)

028AY001UT
 Alkali Flat (Greasewood)

028AY140UT
 Desert Slit Flat (Winterfat)

9. Correlated Sites in Other States

(Give site name and number)

D. MAJOR USES OF THIS SITE

1. Livestock

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a. Site Factors Influencing Management

This site is suited for sheep and cattle grazing during winter and spring.

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 provides food and limited cover for wildlife.

b. List of Potential Species Present

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

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

Resources that have special aesthetic and landscape value are wildflowers. Some recreation uses of this site are hiking and hunting.

4. Wood Products

None

5. Other Uses

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E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soils: Smaug VFSL – course-silty, mixed, mesic Typic Torriorthents

Type Location: 25 Miles South of Park Valley, Box Elder County, Utah Benchlands
 Immediately South of Bovine Point and Bordering Red Dome

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	25				
Permanent Transect Location					

Other References

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Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): Shane A. Green
Contact for lead author: shane.green@ut.usda.gov Reference site used? Yes/No
Date: 7/26/06 MLRA: 028A Ecological Site: Desert Loam(Shadscale)28AY124UT 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.
2. Presence of water flow patterns: Flow patterns wind around perennial plants bases and show no to very slight evidence of erosion (increasing with slope). They are short and stable and there is very little evidence of deposition.
3. Number and height of erosional pedestals or terracettes: Plants should show very little or no pedestaling. Terracettes should be absent.
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 40 - 50% (up to 10% of soil surface is covered with rock).
5. Number of gullies and erosion associated with gullies: None to very few. Any gullies present should show little sign of active erosion and should be stabilized with perennial vegetation (species may be different as the gully may represent a different ecological site).
6. Extent of wind scoured, blowouts and/or depositional areas: Some wind scouring may occur. Wind caused blowouts and deposition is very rare or not present.
7. Amount of litter movement (describe size and distance expected to travel): Minimal redistribution caused by water or wind. Minor litter removal may occur in flow channels with deposition occurring at points of obstruction. Fine litter may be removed from the site by wind action.
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): 60 to 70% of this site should have a stability rating of 5 or 6. 30 to 40% may have a rating of 3 to 4. 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 1 to 4". Structure is granular. Color is Grayish brown (2.5Y6/3). Soil organic matter is 0.4%. No difference in color under vegetation.
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: When perennial vegetation decreases, 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. Bedrock occurs at approximately 14 inches.
12. Functional/Structural Groups (list in order of descending dominance by above-ground

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weight using symbols: », >, = to indicate much greater than, greater than, and equal to): Assumed fire cycle of 70+ years. Perennial bunch grasses, non-sprouting shrubs > rhizomatous grasses, sprouting shrubs, annual forbs > invaders such as Cheatgrass & Halogeton. Dominants: Indian ricegrass & galleta; Sub-dominants: Shadscale, Budsage & Gardner Saltbush. 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 very long fire cycle.

14. Average percent litter cover (5-10%) and depth (.25-.50 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 250 - 300 #/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, Green rabbitbrush, Halogeton, & Snakeweed.

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