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: Semidesert Alkali Loam (Black greasewood)
SITE NUMBER: 028AY202UT
MLRA: 028A
Original Site Description: Author: DJS GR Date: 09/01/1987
Revised Site Description: Author: Date:
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 inches
Surface Textures:
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures:
Subsurface Fragments(<=3" % vol, >3" % vol): <15%
Geologic Parent Materials: Alluvium from Tuffaceous Sandstone & Limestone
Moisture Regime:
Temperature Regime:
Runoff: Medium
Permeability(min-max): Moderately Slow
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 CaCl2):
pH Range:
Available Water Capacity (inches): 5-10

Major Soils Associated With This Site:

Soil Survey Area: 611

Medburn FSL, Saline, 2-4%	Taylorsflat, L, Saline, 0-3%
Freedom SiL, 0-3%	Kunzler L, LS, 0-3%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Lake Fans and Fan Terraces
Aspect: All

	Minimum	Maximum
Slope:	1	5
Elevation:	4800	5300

Flooding:
Frequency:
Duration:
Ponding:
Depth (inches):
Frequency:
Duration:
Water Table Depth:

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8-12
Mean Annual Air Temperature: 45-52
Mean Annual Soil Temperature: 47-54
Frost Free Period (days): 0-0
Freeze Free Period (days): 100-150

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	38	44	52	62	72	82	90	88	79	66	51	41
Mean	26	31	38	46	55	64	72	70	61	49	37	28
Low	13	18	24	30	38	45	53	52	42	32	22	15

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	1.20	1.20	1.50	1.40	1.60	1.20	1.40	1.60	1.40	1.40	1.20	1.20
Mean	0.80	0.80	1.00	0.90	1.00	0.70	0.90	1.00	0.80	0.90	0.80	0.80
Low	0.30	0.30	0.40	0.40	0.40	0.20	0.30	0.30	0.20	0.30	0.30	0.30

Climate Stations: St. ID.: Location: Period:
From: To:
(Includes factors such as storm intensity, precipitation dependability, origin and pattern of storms, driest and wettest months, orographic effects, etc.)

Influencing Water Features (if any):

Wetland Description(Cowardin System) System Subsystem Class

Stream Types(Rosgen System) System

C. PLANT COMMUNITY CHARACTERISTICS

1. Potential Plant Community Description and Ecological Factors

The general view of this site is Wyoming big sagebrush and greasewood. The composition by air-dry weight is approximately 35 percent perennial grasses, 10 percent forbs, and 55 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
Bottlebrush squirreltail	ELEL5		97.5	130	15	20
Nevada bluegrass	PONE3		32.5	65	5	10
Indian ricegrass	ACHY		32.5	65	5	10
Sand dropseed	SPCR	1	6.5	19.5	1	3
Galleta	HIJA	1	6.5	19.5	1	3
Western wheatgrass	PASM	1	6.5	19.5	1	3
Other perennial grasses	PPGG	1	19.5	32.5	3	5
Other annual grasses	AAGG	1	19.5	32.5	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Pacific aster	ASCH2	2	6.5	32.5	1	5
Clasping pepperweed	LEPE2	2	6.5	32.5	1	5
Scarlet globemallow	SPCO	2	6.5	32.5	1	5
Freckled milkvetch	ASLE8	2	6.5	32.5	1	5
Other perennial forbs	PPFF	2	32.5	65	5	10
Other annual forbs	AAFF	2	32.5	65	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Wyoming big sagebrush	ARTRW		97.5	130	15	20
Black greasewood	SAVE4		97.5	162.5	15	25
Shadscale	ATCO	3	6.5	19.5	1	3
Narrowleaf low rabbitbrush	CHVIS5	3	6.5	19.5	1	3
Bud sagebrush	ARSP5	3	6.5	19.5	1	3
Green molly	KOAM	3	6.5	19.5	1	3
Winterfat	KRLA2	3	6.5	19.5	1	3
Rubber rabbitbrush	CHNA2	3	6.5	19.5	1	3
Other shrubs	SSSS	3	32.5	65	5	10

Trees, %

Common Name	National	Group	Pounds per Acre	% by Weight of

	Symbol				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	650	800
Average Year	500	650
Unfavorable Year	200	350

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	20	2	10
Forbs (perennial)	5	1	5
Shrubs	40	4	20
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

This site is a broad ecotone between Alkali Flat (Greasewood) 028AY004UT and Semidesert Loam (Wyoming big sagebrush) 028AY220UT. Greasewood increases as the ecotone nears the Alkali Flat site and Wyoming big sagebrush increases as it nears Semidesert Loam.

As this site deteriorates due to overgrazing, bottlebrush squirreltail and Indian ricegrass decrease while big sagebrush, low rabbitbrush, and greasewood increase.

Fire will kill big sagebrush and shadscale but rabbitbrush and greasewood will increase. Snakeweed, halogeton, and Russian thistle invade as the site weakens.

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	15	40	30	5	5	0	0	0	0
Name	PNC											
ID Number	UT2021											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

028AY220UT
Semidesert Loam (Wyoming big sagebrush)

028AY004UT
Alkali Flat (Greasewood)

9. Correlated Sites in Other States

(Give site name and number)

D. MAJOR USES OF THIS SITE

1. Livestock

a. Site Factors Influencing Management

This site is suited for sheep and cattle grazing during fall, 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 cover for some wildlife.

b. List of Potential Species Present

Wildlife using this site include golden eagle (spring and fall), jack rabbit, desert cottontail, prairie dog, pronghorn antelope, 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.

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 is used for hiking and upland game hunting.

4. Wood Products

None

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
Latitude: Longitude:

Modal Soils: Medburn FSL, Saline 2-4% — coarse-loamy, mixed (calcareous), mesic Xerollic Torriorthents

Site Type: Rangeland
Ecological Site Name: Semidesert Alkali Loam (Black greasewood)
Site Number: 028AY202UT

Type Location: SE ¼, SE ¼; Section 31, Township 12N, Range 14W

General Legal Description:

Field Office Site Location

Logan
Murray
Provo
Richfield
Cedar City

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	12				
Permanent Transect Location					

Other References

Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): V. Keith Wadman
Contact for lead author: _____ **Reference site used?** Yes/No
Date: 6/17/04 **MLRA:** 028A_ **Ecological Site:** Semidesert Alkali Loam (28AY202UT) Greasewood, Wyoming big sagebrush, Bottlebrush squirreltail. **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 few. Any rills present should be somewhat short in length (less than 6 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 plant bases and show little to slight evidence of erosion. They are short and stable and there is minor evidence of deposition.

3. **Number and height of erosional pedestals or terracettes:** Plants should show little or no pedestialing. Terracettes should be absent or few.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground):** 25 – 30%.

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:** Minor 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 some 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 4 to 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 5". Structure is weakly platy. Color is pale brown (10YR6/3). An ochric epipedon extends to a depth of 8 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 will 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.

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 grasses, sprouting shrubs > sprouting shrubs, annual forbs > invaders such as Cheatgrass & Halogeton. Dominants: Bottlebrush squirreltail, Greasewood; Sub-dominants: Wyoming big sagebrush, Nevada bluegrass. The perennial grass/sprouting shrub (Greasewood) 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 (10-20%%) and depth (.50-.75 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 500 - 650 #/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, Snakeweed, Green rabbitbrush, & Annual forbs.

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