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 Stony Loam (Black sagebrush)
SITE NUMBER: 047BY252UT
MLRA: 047B
Original Site Description: Author: Date:
Revised Site Description: Author: TS Date: 06/09/1993
Approved by: Title: State Range Cons. Signed: Pat Shaver Date:

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: 40-60 inches
Surface Textures: Loam
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures: Very Cobbly or Very Gravelly
Subsurface Fragments(<=3" % vol, >3" % vol):
Geologic Parent Materials: Alluvium from Mixed Sedimentary and Igneous Rock
Moisture Regime:
Temperature Regime:
Runoff: Slow
Permeability(min-max): Moderately Rapid
Drainage Class(min-max): Well Drained
Water Erosion Hazard: Slight
Wind Erosion Hazard:
Electrical Conductivity (EC in mmhos/cm):
Sodium Adsorption Ration (SAR):
Soil Reaction (1:1 water):
Soil Reaction (0.1 M $CaCl_2$):
pH Range:
Available Water Capacity (inches): 4.0-6.5

Major Soils Associated With This Site:

Soil Survey Area: 636

Bruman CBL, Moist, 10-30%	Tridell L 2-4%
Tridell CBL 2-45%	Ipson STVL, DRY, 5-25%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Dissected Alluvial Fans Along Foothills and Benches
Aspect: All

	Minimum	Maximum
Slope:	2	25
Elevation:	5000	6800

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

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 9-14
Mean Annual Air Temperature: 40-45
Mean Annual Soil Temperature: 42-47
Frost Free Period (days): 0-0
Freeze Free Period (days): 70-100

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	39	43	49	60	69	77	84	81	75	65	51	41
Mean	23	27	34	42	50	57	64	63	55	45	34	25
Low	6	12	19	24	31	38	45	44	35	26	16	9

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	1.27	1.03	1.90	1.20	1.44	0.87	1.85	1.40	1.88	1.20	1.17	0.95
Mean	0.64	0.60	0.83	0.64	0.68	0.49	1.52	1.54	1.00	0.86	0.60	0.59
Low												

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 aspect of this site is one of a shrubland with significant grass production. The shrub component is dominated by black sagebrush. The grasses are dominated by Indian ricegrass. Blue grama and needleandthread also make up a significant portion of the grasses. Forbs are apparent, but make up a minor portion of the plant community.

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		70	245	10	15
Blue grama	BOGR2		35	70	5	10
Needleandthread	HECO26		35	70	5	10
Bottlebrush squirreltail	ELEL5		21	35	3	5
Sandberg bluegrass	POSE	1	7	14	1	2
Sand dropseed	SPCR	1	7	14	1	2
Bluegrass spp.	POA++	1	7	14	1	2
Other perennial grasses	PPGG	1	7	35	1	5
Other annual grasses	AAGG	1	7	35	1	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Redroot wild buckwheat	ERRA3	2	21	35	3	5
Pacific aster	ASCH2	2	21	35	3	5
Gooseberryleaf globemallow	SPGR2	3	7	21	1	3
Freckled milkvetch	ASLE8	3	7	21	1	3
James catseye	CRCI3	3	7	21	1	3
Carpet phlox	PHHO	3	7	21	1	3
Dusty beardtongue	PECO5	3	7	21	1	3
Other perennial forbs	PPFF	3	7	21	1	3
Other annual forbs	AAFF	3	7	21	1	3

Shrubs, %

Common Name	National	Group	Pounds per Acre	% by Weight of

	Symbol				Total Composition	
			Low	High	Low	High
Black sagebrush	ARNO4		175	245	25	35
Winterfat	KRLA2		21	35	3	5
Big sagebrush	ARTR2		35	70	5	10
Broom snakeweed	GUSA2	4	7	21	1	3
Ballhead skyrocket	IPPCOC3	4	7	21	1	3
Bitterbrush	PUTR2	4	7	21	1	3
Low rabbitbrush	CHVI8	4	7	21	1	3
Pigmy sagebrush	ARPY2	4	7	21	1	3
Other shrubs	SSSS	4	7	35	1	5

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	700	900
Average Year	500	700
Unfavorable Year	350	450

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft.)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	30	2	10
Forbs (perennial)	5	1	2
Shrubs	3	2	15
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates, Indian ricegrass and blue grama decrease and black sagebrush and big sagebrush increase. When the natural plant community is burned, black sagebrush and big sagebrush decrease

while Indian ricegrass, needleandthread, and blue grama increase. Pinyon and juniper 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	10	20	25	20	10	5	5	0	0
Name	PNC											
ID Number	UT2521											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries
(Give related range sites in MLRA's above and below)

8. Associated Sites Within MLRA

047BY221UT
Semidesert Loam (Black sagebrush)

047BY210UT
Semidesert Gravelly Loam (Black sagebrush)

047BY322UT
Upland Stony Loam (Black sagebrush)

047BY236UT
Semidesert Shallow Loam (Black sagebrush)

9. Correlated Sites in Other States
(Give site name and number)

D. MAJOR USES OF THIS SITE

1. Livestock

a. Site Factors Influencing Management

Good spring/fall grazing for cattle and sheep.

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

No cover. Good feed value.

b. List of Potential Species Present

Mule deer and 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 fair aesthetics appearance and beauty.

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 Soil: Tridell Cobbly Loam 4-25% — loamy-skeletal, mixed, Aridic Calciborolls

Type Location: NE ¼; Section 23, Township 23S, Range 5W

General Legal Description:

Field Office Site Location
Cedar City
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					
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: 6/27/04 **MLRA:** 047B_ **Ecological Site:** Semidesert Stony loam (047BY252UT) Black sagebrush, Indian ricegrass) **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: Minor rill development in exposed areas. Rills present should be short on flatter slopes but may become longer (4 to 12 feet) as slope steepens. They should be somewhat widely spaced (3 to 6 feet), and follow the surface micro-features. Old rills should be weathered and muted in appearance. The presence of surface coarse fragments may reduce rill formation.

2. Presence of water flow patterns: Flow patterns wind around surface rock & perennial plant bases and show minor evidence of erosion. They are somewhat short and stable and there is only minor evidence of deposition. Evidence of flow will increase somewhat with slope.

3. Number and height of erosional pedestals or terracettes: Plants may show minor pedestialing on their down slope side. Terracettes should be few and stable.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 20 – 30%. (Soil surface is typically covered by 30 to 60% rock).

5. Number of gullies and erosion associated with gullies: Few. Gullies should show only minor signs of active erosion and should be mostly stabilized with vegetation. Gullies may show slightly more indication of erosion as slope steepens. The presence of surface rock may mask erosion indicators.

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): Some down slope redistribution caused by water. Some litter removal may occur in flow channels with deposition occurring at points of obstruction. Litter movement will increase with slope.

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): 70 to 80% of this site should have an erosion rating of 4 or 5. 20 to 30% may have a rating of 3 to 4. The average should be a 4. Litter accumulation and cryptogamic crusts reduce erosion. The presence of surface rock also reduces site erosion.

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 4 to 10 inches. Structure typically varies from fine granular to medium subangular blocky. Color is typically varies from grayish brown (10YR5/2) to brown (10YR5/3). Soils typically have an ochric or mollic epipedon that ranges to about 10 inches deep.

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 will be reduced.

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 40-70+ years. Perennial grasses, non-sprouting shrubs > sprouting shrubs, perennial & annual forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Indian ricegrass & Black sagebrush; Sub-dominants: Winterfat, Blue grama, Needleandthread. 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 long fire cycle.

14. Average percent litter cover (10-15%) and depth (.25-.50 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 500 - 700 #/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": Pinyon/juniper, Green rabbitbrush, Bottlebrush squirreltail & Annual forbs.

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