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 Shallow Loam (Black sagebrush)
SITE NUMBER: 034XY118UT
MLRA: 034
Original Site Description: Author: JLB GWL Date: 05/15/1981
Revised Site Description: Author: JLB GWL Date: 12/08/1993
Approved by: Title: State Range Cons. Signed: Pat Shaver Date: 06/25/1994

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: 5-20 inches
Surface Textures:
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures:
Subsurface Fragments(<=3" % vol, >3" % vol): >35%
Geologic Parent Materials: Colluvium from Sedimentary Rock
Moisture Regime:
Temperature Regime: Mesic
Runoff:
Permeability(min-max):
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):

Major Soils Associated With This Site:

Soil Survey Area: 047

Walknolls STX-L 25-50%, 3-25%	Casmos CN-L 2-25% 25-40%
Farb SL 2-15%	Persayo CNV-L 3-8%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Pediment Backslopes, Plateau Backslopes and Dissected Hillslopes
Aspect: All

	Minimum	Maximum
Slope:	2	50
Elevation:	4600	6000

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

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 5-8
Mean Annual Air Temperature: 44-47
Mean Annual Soil Temperature: 47-50
Frost Free Period (days): 0-0
Freeze Free Period (days): 110-125

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	29	38	52	64	74	84	91	89	79	66	48	33
Mean	16	24	37	48	57	66	73	71	61	49	35	20
Low	3	10	23	32	40	48	55	53	43	33	21	8

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	0.54	0.44	0.56	0.55	0.77	0.66	0.49	0.57	0.63	0.88	0.47	0.52
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 dominant aspect of the plant community is black sagebrush. 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
Galleta	HIJA		35	52.5	10	15
Salina wildrye	LESAS		17.5	35	5	10
Bottlebrush squirreltail	ELEL5		10.5	17.5	3	5
Indian ricegrass	ACHY		10.5	17.5	3	5
Needleandthread	HECO26		10.5	17.5	3	5
Other perennial grasses	PPGG	1	10.5	17.5	3	5
Other annual grasses	AAGG	1	10.5	17.5	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Longleaf phlox	PHLO2	2	3.5	7	1	2
Hegde mustard	SIOF	2	3.5	7	1	2
Holboell rockcress	ARHO2	2	3.5	7	1	2
Shrubby waxfruit	GLSU	2	3.5	7	1	2
Broom snakeweed	GUSA2	2	3.5	7	1	2
Spiny sweetvetch	HEBOG2	2	3.5	7	1	2
Barneby pepperweed	LEBA	2	3.5	7	1	2
Broadbeard beardtongue	PEANV2	2	3.5	7	1	2
Uinta basin beardtongue	PEGR6	2	3.5	7	1	2
Westwater tumblemustard	THEL	2	3.5	7	1	2
Slender gilia	GILE3	2	3.5	7	1	2
Scarlet globemallow	SPCO	2	3.5	7	1	2
Mountain pepperweed	LEMO2	2	3.5	7	1	2
Basin fleabane	ERPU9	2	3.5	7	1	2
Yellow milkvetch	ASFL	2	3.5	7	1	2
Other perennial forbs	PPFF	2	17.5	35	5	10
Other annual forbs	AAFF	2	17.5	35	5	10

Shrubs/Vines, %

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

			Low	High	Low	High
Black sagebrush	ARNO4		140	157.5	40	45
Shadscale	ATCO		17.5	35	5	10
Spiny greasebush	GLSPM	3	3.5	10.5	1	3
Narrowleaf low rabbitbrush	CHVIS5	3	3.5	10.5	1	3
Winterfat	KRLA2	3	3.5	10.5	1	3
Bud sagebrush	ARSP5	3	3.5	10.5	1	3
Slender wild buckwheat	ERMI4	3	3.5	10.5	1	3
Broom snakeweed	GUSA2	3	3.5	10.5	1	3
Uinta basin hookless cactus	SCGL3	3	3.5	10.5	1	3
Whipple fishhook cactus	SCWH	3	3.5	10.5	1	3
Shortspine horsebrush	TESP2	3	3.5	10.5	1	3
Other shrubs	SSSS	3	10.5	17.5	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	400	450
Average Year	300	350
Unfavorable Year	150	200

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	50	2	20
Trees			
Cryptogams			

b. Other

Litter	

Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, Indian ricegrass and bud sagebrush decrease while galleta, wild buckwheat, horsebrush and shadscale increase. Fire is not an important factor in this ecosystem. Cheatgrass and other annuals 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	65	5	0	0	0	0	0	0
Name	PNC											
ID Number	UT1181											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

034XY121UT
Desert Shallow Loam (Indian ricegrass)

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 provides proper grazing for sheep and cattle 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 limited cover for wildlife.

b. List of Potential Species Present

Wildlife using this site include mice, kangaroo rat, snake, jackrabbit, coyote, bobcat, and hawk.

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 may have scenic vistas. Recreation values are hiking and hunting.

4. Wood Products

None

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

The Uinta Basin hookless cactus has been found on this site and a possibility of other species.

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
Latitude: Longitude:

Modal Soil: Walknolls STX-L 25-50% Severely Eroded 2-25% — loamy-skeletal, mixed, calcareous, mesic Lithic Torriorthents

Type Location: NE ¼, NE ¼, SW ¼; Section 17, Township 10S, Range 23E SLBM

General Legal Description:

Field Office Site Location
Roosevelt
Price

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: 6/20/04 **MLRA:** 034X_ **Ecological Site:** Desert Shallow Loam (034XY118UT) Galleta, Salina wildrye, Black 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: Minor rill development in exposed areas. Rills 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 somewhat muted in appearance. An increase in rill formation may be seen after disturbance events such as recent fire or thunderstorms. 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 with slope.

3. Number and height of erosional pedestals or terracettes: Plants and rocks 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): 10 – 20%. (Surface rock covers 35 – 90% of this site).

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 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): 60 to 70% of this site should have an erosion rating of 4 or 5. 30 to 40% may have a rating of 2 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 7 inches. Structure is fine granular. Color is brown (10YR6/3). An ochric epipedon extends to about 7 inches.

10. Effect of plant community composition (relative proportion of different functional

groups) & spatial distribution on infiltration & runoff: When perennial plants 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. Bedrock occurs at 10 to 12 inches.

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, non-sprouting shrubs > sprouting shrubs, annual forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Black sagebrush, Galleta > Sub-dominants: Salina Wildrye, Shadscale. The perennial grass/non-sprouting shrub functioning group is expected as understory 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 (10-15%) and depth (.25-.50 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 300 - 350 #/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, Snakeweed & Annual forbs.

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