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: Upland Loam (Basin big sagebrush)
SITE NUMBER: 035XY306UT
MLRA: 035
Original Site Description: Author: GSC Date: 07/15/1983
Revised Site Description: Author: GSC Date: 11/03/1993
Approved by: Title: State Range Cons. Signed: Pat Shaver Date: 05/27/1994

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: >60 inches
Surface Textures:
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures:
Subsurface Fragments(<=3" % vol, >3" % vol):
Geologic Parent Materials: Eolian Deposits and Alluvium from Weathered Sandstone and Shale
Moisture Regime:
Temperature Regime:
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: 638
Barx

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Level to Very Gently Sloping Benches, Mesas, and Rolling Hills
Aspect: All

	Minimum	Maximum
Slope:	1	15
Elevation:	5200	7900

Flooding:
- Frequency:
- Duration:

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

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 12-15
Mean Annual Air Temperature: 47-55
Mean Annual Soil Temperature: 49-57
Frost Free Period (days): 0-0
Freeze Free Period (days): 100-130

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	47	51	56	64	74	85	90	88	81	71	57	48
Mean	31	36	40	48	58	66	73	71	63	53	41	33
Low	16	21	25	31	39	47	55	53	46	35	25	18

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	1.70	1.60	1.83	0.96	0.81	0.54	1.27	1.80	1.13	1.04	1.39	1.41
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 Wyoming big sagebrush. The composition by air-dry weight is approximately 60 percent perennial grasses, 5 percent forbs and 35 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
Needleandthread	HECO26		150	200	15	20
Indian ricegrass	ACHY		100	150	10	15
Muttongrass	POFE		50	100	5	10
Blue grama	BOGR2		30	50	3	5
Galleta	HIJA		30	50	3	5
Bottlebrush squirreltail	ELEL5	1	10	30	1	3
Sand dropseed	SPCR	1	10	30	1	3
Purple threeawn	ARPU9	1	10	30	1	3
Sandberg bluegrass	POSE	1	10	30	1	3
Nevada bluegrass	PONE3	1	10	30	1	3
Western wheatgrass	PASM	1	10	30	1	3
Prairie junegrass	KOMA	1	10	30	1	3
Other perennial grasses	PPGG	1	50	100	5	10
Other annual grasses	AAGG	1	50	100	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Woolly milkvetch	ASMO7	2	10	30	1	3
Scarlet skyrocket	IPAGA3	2	10	30	1	3
Gooseberryleaf globemallow	SPGR2	2	10	30	1	3
Small leaf pussytoes	ANMI3	2	10	30	1	3
Sego lily	CANU3	2	10	30	1	3
Desert larkspur	DEAN	2	10	30	1	3
Utah fleabane	ERUT	2	10	30	1	3
Cushion wild buckwheat	EROV	2	10	30	1	3
Whitestem stickleaf	MEAL6	2	10	30	1	3
Carpet phlox	PHHO	2	10	30	1	3
Other perennial forbs	PPFF	2	50	100	5	10
Other annual forbs	AAFF	2	50	100	5	10

Shrubs/Vines, %

Common Name	National	Group	Pounds per Acre	% by Weight of

	Symbol				Total Composition	
			Low	High	Low	High
Basin big sagebrush	ARTRT	3	200	250	20	25
Winterfat	KRLA2	3	20	50	2	5
Fourwing saltbush	ATCA2	3	10	30	1	3
Mormontea	EPVI	3	10	30	1	3
Shadscale	ATCO	3	10	30	1	3
Low rabbitbrush	CHVI8	3	10	30	1	3
Spiny hopsage	GRSP	3	10	30	1	3
Broom snakeweed	GUSA2	3	10	30	1	3
Bush pepperweed	LEFR2	3	10	30	1	3
Central pricklypear	OPPO	3	10	30	1	3
Spineless horsebrush	TECA2	3	10	30	1	3
Bigelow sagebrush	ARBI3	3	10	30	1	3
Other shrubs	SSSS	3	50	100	5	10

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	1250	1300
Average Year	950	1000
Unfavorable Year	750	800

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft.)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	50	2	30
Forbs (perennial)	5	1	2
Shrubs	15	5	5
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, needleandthread, muttongrass, Indian ricegrass, and winterfat decrease while big sagebrush, blue grama, low rabbitbrush, broom snakeweed, and pricklypear increase. When the potential natural plant community is burned, big sagebrush can be temporarily eliminated and muttongrass and needleandthread may decrease while low rabbitbrush, snakeweed, pricklypear, galleta, and blue grama may increase. Utah juniper, pinyon, and cheatgrass are most likely to invade this site. In the absence of fire, pinyon and juniper may become dense enough to exclude the understory. When this happens, soil erosion is generally high.

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	0	10	30	45	5	5	5	0	0	0
Name	PNC											
ID Number	UT3061											
Description	Excellent Condition											

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

8. Associated Sites Within MLRA

035XY302UT
Upland Dissected Slopes (Pinyon-Utah juniper)

035XY315UT
Upland Shallow Loam (Pinyon-Utah juniper)

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 cattle and sheep during spring, summer, and fall.

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 wildlife.

b. List of Potential Species Present

Wildlife using this site include coyote, bobcat, jackrabbit, mule deer, and elk.

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

Recreation activities are hiking and 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: San Juan
Latitude: Longitude:

Modal Soil: Barx — fine-loamy, mixed, mesic Ustollic Haplargids

Type Location: Consult the San Juan County Central Soil Survey Report.

General Legal Description:

Field Office Site Location
Price
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					
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: 6/23/04 **MLRA:** 035X **Ecological Site:** Upland Loam (035XY306UT) Basin big sagebrush, Indian ricegrass, Fourwing saltbush. **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). They are somewhat widely spaced (4 to 8 feet) 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): 40 – 45%.

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 5 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 2 to 3 inches. Structure is thin platy. Color is reddish brown (5YR5/4). Little difference in color under vegetation.

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. Some soils have an increase in clay content at 3 to 9 inches that could be mistaken for a compaction layer.

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 > rhizomatous grasses, sprouting shrubs, annual forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Indian ricegrass, Basin big sagebrush; Sub-dominants: Fourwing saltbush, Western wheatgrass. 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 (10-20%) and depth (.50-.75 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 950 - 1000 #/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, 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. Green rabbitbrush sprouts vigorously following fire.