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 Sandy Loam (Wyoming big sagebrush)
SITE NUMBER: 035XY216UT
MLRA: 035
Original Site Description: Author: GSC Date: 04/29/1986
Revised Site Description: Author: GSC Date: 09/27/1993
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: 40->60 inches
Surface Textures: Fine Sand, Loamy Fine Sand and Fine Sandy Loam
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures: Fine Sandy Loam and/or Loamy Fine Sand
Subsurface Fragments(<=3" % vol, >3" % vol):
Geologic Parent Materials: Alluvium and Eolian from Sandstone
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): 5-6

Major Soils Associated With This Site:

Soil Survey Area: 642
Palma Family FSL Yarts FSL
Newsrock Family FS

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Undulating to Rolling Fans and Benches
Aspect:

	Minimum	Maximum
Slope:	2	15
Elevation:	5000	6000

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

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8-12
Mean Annual Air Temperature: 52-54
Mean Annual Soil Temperature: 54-56
Frost Free Period (days): 0-0
Freeze Free Period (days): 110-150

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	36	42	50	60	69	81	86	84	75	62	48	38
Mean	28	33	40	49	58	68	73	72	64	52	39	30
Low	18	24	31	38	46	56	61	60	53	41	30	21

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	0.56	0.39	0.95	0.67	0.61	0.58	1.50	1.17	1.10	1.21	0.91	0.50
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 Indian ricegrass, needleandthread, big sagebrush and fourwing saltbush. The composition by air-dry weight is approximately 60 percent perennial grasses, 5 percent forbs and 35 percent shrubs. Both Wyoming big sagebrush and mountain big sagebrush occur in this site. The latter being more xeric variant of the subspecies. Allow up to 15 percent of either species alone or in combination.

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
Needleandthread	HECO26		100	125	20	25
Galleta	HIJA		25	50	5	10
Blue grama	BOGR2	1	15	25	3	5
Bottlebrush squirreltail	ELEL5	1	15	25	3	5
Purple threeawn	ARPU9	1	15	25	3	5
Other perennial grasses	PPGG	1	25	50	5	10
Other annual grasses	AAGG	1	25	50	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Woolly milkvetch	ASMO7	2	5	15	1	3
Plateau yellow catseye	CRFL5	2	5	15	1	3
Shaggy fleabane	ERPU2	2	5	15	1	3
Eriogonum	ERIOG	2	5	15	1	3
Flatspine burr ragweed	AMAC2	2	5	15	1	3
Fineleaf woollywhite	HYFI	2	5	15	1	3
Tufted evening primrose	OECE2	2	5	15	1	3
Lobeleaf groundsel	SEMU3	2	5	15	1	3
Gooseberryleaf globemallow	SPGR2	2	5	15	1	3
Hoary townsend daisy	TOIN	2	5	15	1	3
Other perennial forbs	PPFF	2	25	50	5	10
Other annual forbs	AAFF	2	25	50	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	4	50	75	10	15
Mountain big sagebrush	ARTRV	4	50	75	10	15
Fourwing saltbush	ATCA2	0	25	50	5	10
Mormontea	EPVIV2	0	25	50	5	10
Winterfat	KRLA2	0	15	25	3	5
Low rabbitbrush	CHVI8	3	5	15	1	3
Rubber rabbitbrush	CHNA2	3	5	15	1	3
Broom snakeweed	GUSA2	3	5	15	1	3
Threadleaf groundsel	SEFLD	3	5	15	1	3
Central pricklypear	OPPO	3	5	15	1	3
Fineleaf yucca	YUAN2	3	5	15	1	3
Other shrubs	SSSS	3	25	50	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	650	700
Average Year	450	500
Unfavorable Year	250	300

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	15
Forbs (perennial)	5	1	2
Shrubs	20	3	10
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	

Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, Indian ricegrass, needleandthread, fourwing saltbush and winterfat decrease while galleta, blue grama, threeawn, big sagebrush, broom snakeweed and low rabbitbrush increase. When the potential plant community is burned, fourwing saltbush, big sagebrush, and winterfat decrease while galleta, blue grama, threeawn, broom snakeweed and low rabbitbrush increase. Cheatgrass and annual forbs 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	15	45	35	0	0	0	0	0	0
Name	PNC											
ID Number	UT2161											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

035XY209UT
Semidesert Loam (Wyoming big 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

This site provides proper grazing for cattle and sheep 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 wildlife.

b. List of Potential Species Present

Wildlife using this site include coyote, bobcat, jackrabbit, snake, hawk, 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

Recreation values 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:
Latitude: Longitude:

Modal Soil: Palma Family FSL — coarse-loamy, mixed, mesic Ustollic Haplargids

Type Location: Kodachrome Basin State Reserve, Lower Slickrock; NE ¼, SW ¼; Section 21, Township 38S, Range 1W

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: 6/21/04 **MLRA:** 035X_ **Ecological Site:** Semidesert Sandy loam (035X216UT) Wyoming big sagebrush, Indian ricegrass, Needleandthread. **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 4 feet long) and follow the surface micro-features. Old rills will weather quickly because of loose surface textures. An increase in rill formation may be seen major disturbance events such as severe thunderstorms.

2. Presence of water flow patterns: Flow patterns wind around perennial plants bases and show minor evidence of erosion. They are short and stable and there is slight evidence of deposition.

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

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 40 – 60%.

5. Number of gullies and erosion associated with gullies: None to few. Any gullies present should show little sign of active erosion and should appear stable.

6. Extent of wind scoured, blowouts and/or depositional areas: Slight wind generated soil movement is normal. Wind caused blowouts and deposition are mostly stable or have healed over. Slight coppice mounding around perennial vegetation is common. Increased wind generated soil movement can occur after severe wind events.

7. Amount of litter movement (describe size and distance expected to travel): Some redistribution caused by both wind and water. 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): 70 to 80% of this site should have an erosion rating of 4 or 6. 20 to 30% may have a rating of 3 to 4. The average should be a 4.

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 4 inches. Structure ranges from single grains to weak platy. Color varies from reddish yellow (5YR4/6) to brown (7.5YR5/4). An ochric horizon extends to a depth of 3 to 7 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 can increase and infiltration 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 50-60 years. Perennial bunchgrasses, non-sprouting shrubs > rhizomatous grasses, sprouting shrubs, annuals > invaders such as Russian thistle & Annual forbs. Dominants: Wyoming big sagebrush, Indian ricegrass & Needleandthread; Sub-dominants: Fourwing & Galleta. The perennial grass/non-sprouting shrub functioning groups are 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.

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): 450 - 500 #/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": Low green rabbitbrush, Snakeweed & Pricklypear.

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