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 Shallow Loam (Pinyon-Utah juniper)
SITE NUMBER: 047BY326UT
MLRA: 047B
Original Site Description: Author: Date:
Revised Site Description: Author: TS Date: 05/06/1993
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: 10-20 inches
Surface Textures: Cobbly Loam, Very Cobbly Silt Loam to Extremely Cobbly Clay Loam
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures: Very Cobbly Clay Loam to Gravelly Sandy Loam
Subsurface Fragments(<=3" % vol, >3" % vol):
Geologic Parent Materials: Residuum from Mixed Sedimentary and Igneous Rocks
Moisture Regime:
Temperature Regime:
Runoff: Rapid
Permeability(min-max): Moderate to Moderately Rapid
Drainage Class(min-max): Well Drained
Water Erosion Hazard: Moderate to Severe
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): 1-2

Major Soils Associated With This Site:

Soil Survey Area: 636
Comodore CBXCL 15-40%
Redcreek CBL 15-50%
Tolman CBVSiL 8-35%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Mountainsides and Ridges
Aspect: All

	Minimum	Maximum
Slope:	5	40
Elevation:	6500	8000

Flooding:
- Frequency:
- Duration:

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

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 14-16
Mean Annual Air Temperature: 40-44
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	36	39	43	52	63	74	80	77	71	60	45	37
Mean	20	24	29	37	46	55	62	60	53	43	30	22
Low	5	9	14	22	30	36	44	43	35	26	15	7

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	1.76	4.08	2.85	2.63	2.08	4.17	2.32	4.43	5.30	4.47	2.03	2.90
Mean	0.74	0.75	0.90	0.69	0.76	0.71	1.10	1.75	1.28	1.09	0.75	1.14
Low	0.09	0.00	0.04	0.03	0.00	0.00	0.06	0.10	0.00	0.00	0.03	0.00

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 Utah juniper, pinyon, mountain big sagebrush, and black sagebrush. Indian ricegrass is evident in the aspect. Forbs make up a minor component 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		60	90	10	15
Blue grama	BOGR2		30	60	5	10
Bluebunch wheatgrass	PSSP6		30	60	5	10
Needleandthread	HECO26		18	30	3	5
Bottlebrush squirreltail	ELEL5	1	6	18	1	3
Nevada bluegrass	PONE3	1	6	18	1	3
Other perennial grasses	PPGG	1	18	30	3	5
Other annual grasses	AAGG	1	18	30	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Freckled milkvetch	ASLE8		6	18	1	3
Redroot wild buckwheat	ERRA3		6	18	1	3
Longleaf phlox	PHLO2		6	18	1	3
Gooseberryleaf globemallow	SPGR2	2	6	18	1	3
Grassy rockgoldenrod	PEPU7	2	6	18	1	3
Other perennial forbs	PPFF	2	6	18	1	3
Other annual forbs	AAFF	2	6	18	1	3

Shrubs, %

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

			Low	High	Low	High
Mountain big sagebrush	ARTRV		60	90	10	15
Black sagebrush	ARNO4		60	90	10	15
Bitterbrush	PUTR2		30	60	5	10
Low rabbitbrush	CHVI8		18	30	3	5
Birchleaf mountainmahogany	CEMO2	3	6	18	1	3
Curlleaf mountainmahogany	CELE3	3	6	18	1	3
Broom snakeweed	GUSA2	3	6	18	1	3
Squaw apple	PERA4	3	6	18	1	3
Other shrubs	SSSS	3	6	30	1	5

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Pinyon	PIED	4	30	60	5	10
Utah juniper	JUOS	4	30	60	5	10
Rocky Mountain juniper	JUSC2	4	6	30	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	600	700
Average Year	400	600
Unfavorable Year	200	300

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	2
Shrubs	2	4	10
Trees	30	12	15
Cryptogams			

b. Other

Litter	
Coarse Fragments	

Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates, Indian ricegrass, blue grama, bluebunch wheatgrass, and antelope bitterbrush decrease. Utah juniper, pinyon, mountain big sagebrush, and black sagebrush will increase. When the potential natural plant community is burned, the grasses and antelope bitterbrush will increase and juniper, pinyon, and sagebrush will decrease.

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	5	15	20	20	25	15	0	0	0
Name	PNC											
ID Number	UT3261											
Description	Excellent Condition											

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

8. Associated Sites Within MLRA

047BY322UT
Upland Shallow Loam (Mountain big sagebrush)

047BY333UT
Upland Stony Loam (Pinyon-Utah juniper)

047BY304UT
Upland Gravelly 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

Fair summer grazing for livestock depending on slopes.

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

Tree cover and slope.

b. List of Potential Species Present

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

This site has good aesthetic appearance and beauty. Good diversity of plants.

4. Wood Products

This site produces wood products suitable for fence posts and fuel wood.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
Latitude: Longitude:

Modal Soil: Tolman Very Cobbly Silt Loam 8-35% — loamy-skeletal, mixed Lithic Argiborolls

Type Location: SE ¼ Section 30, Township 32S, Range 5W

General Legal Description:

Field Office Site Location
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					
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:** Upland Shallow loam (47BY326UT) Pinyon-juniper, Indian ricegrass, Black sagebrush, Mountain big 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 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 20 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): 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 9 inches. Structure varies from fine granular to fine sub-angular blocky. Color varies from grayish brown (10YR5/2) to very dark grayish brown (10YR3/2). A mollic epipedon is typical and can range to 16 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 will be reduced. Significant increases in Pinyon-juniper canopy reduces understory vegetation and increases runoff.

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 13 to 16 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: Indian ricegrass, Mountain big sagebrush; Sub-dominants: Black sagebrush, Bitterbrush & Needleandthread. 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 and overstory trees 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): 400 - 600 #/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, Sandberg bluegrass & Annual forbs.

17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years. Understory reproduction is reduced as overstory canopy closes.