

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 Stony Loam (Pinyon-Utah juniper)

SITE NUMBER: 047BY333UT

MLRA: 047B

Original Site Description: Author: TS

Date:

Revised Site Description: Author:

Date:

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: Gravelly Loam

Surface Fragments(<=3" % cover, >3" % cover):

Subsurface Textures: Gravelly Sandy Loam

Subsurface Fragments(<=3" % vol, >3" % vol):

Geologic Parent Materials: Alluvium from Igneous and Sedimentary Rocks

Moisture Regime:

Temperature Regime:

Runoff: Medium

Permeability(min-max): Moderately Rapid

Drainage Class(min-max): Well Drained

Water Erosion Hazard: Moderate

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

Major Soils Associated With This Site:

Soil Survey Area: 636

Tridell GRL, Moist, 4-25%

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

1. Potential Plant Community Description and Ecological Factors

The general view of this site is pinyon and juniper. The composition by air-dry weight is approximately 55 percent perennial grasses, 10 percent forbs, 35 percent shrubs, and 15 percent trees.

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
Nevada bluegrass	PONE3		60	90	10	15
Blue grama	BOGR2		30	60	5	10
Needleandthread	HECO26		30	60	5	10
Bottlebrush squirreltail	ELEL5		30	60	5	10
Western wheatgrass	PASM	1	6	18	1	3
Sandberg bluegrass	POSE	1	6	18	1	3
Bluebunch wheatgrass	PSSP6	1	6	18	1	3
Ross sedge	CARO5	1	6	18	1	3
Sand dropseed	SPCR	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
James catseye	CRCI3		6	30	1	5
Redroot wild buckwheat	ERRA3		6	30	1	5
Freckled milkvetch	ASLE8		6	30	1	5
Pingue	HYRI	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, %

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Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Mountain big sagebrush	ARTRV	4	60	120	10	20
Bitterbrush	PUTR2	4	60	120	10	20
Black sagebrush	ARNO4	0	30	60	5	10
Mexican cliffrose	PUME	3	6	18	1	3
Broom snakeweed	GUSA2	3	6	18	1	3
Low rabbitbrush	CHVI8	3	6	18	1	3
Mountain snowberry	SYOR2	3	6	18	1	3
Mormon tea	EPVI	3	6	18	1	3
Other shrubs	SSSS	3	30	60	5	10

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Pinyon	PIED	4	60	90	10	15
Utah juniper	JUOS	4	60	90	10	15
Rocky Mountain juniper	JUSC2	4	60	90	10	15

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	800	1000
Average Year	400	600
Unfavorable Year	150	250

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	20	4	10
Trees	30	12	15
Cryptogams			

b. Other

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Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As the ecological condition deteriorates, Indian ricegrass and the bluegrasses decrease, while the Utah juniper and pinyon increase. When the potential natural plant community is burned, juniper, pinyon, and sagebrush decrease and the grasses and bitterbrush increase. Pinyon and juniper will readily increase on this site and can completely dominate the 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	0	5	15	20	20	25	15	0	0	0
Name	PNC											
ID Number	UT3331											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

047BY332UT
 Upland Stony Loam (Black sagebrush)

047BY304UT
 Upland Gravelly Loam (Pinyon-Utah juniper)

047BY309UT
 Upland Loam (Black sagebrush)

047BY326UT
 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

Fair summer grazing.

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

Good tree cover.

b. List of Potential Species Present

Fair mule deer and elk habitat.

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 aesthetic appearance beauty.

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4. Wood Products

This site produces 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: Tridell Gravelly Loam, Moist, 4-25% — loamy-skeletal, mixed Aridic Calciborolls

Type Location: SW ¼ Section 22, Township 35S, Range 4W

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

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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 Stony Loam (47BY333UT) Pinyon-juniper, Indian ricegrass, Mountain big sagebrush, Bitterbrush 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 pedestaling 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 50% 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 is typically 4 inches. Structure is fine granular. Color is typically brown (10YR5/3.) A mollic epipedon is typical and can extend to 10 inches.

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<p>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.</p>	
<p>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None.</p>	
<p>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: Bitterbrush Nevada bluegrass & Needleandthread. The perennial grass/non-sprouting shrub functioning group is expected as understory on this site.</p>	
<p>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.</p>	
<p>14. Average percent litter cover (10-15%) and depth (.25-.50 inch).</p>	
<p>15. Expected annual production (this is TOTAL above-ground production, not just forage production): 400 - 600 #/acre on an average year.</p>	
<p>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.</p>	
<p>17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years. Under-story reproduction is reduced as over-story canopy closes.</p>	