

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: Mountain Gravelly Loam (Mountain big sagebrush)

SITE NUMBER: 047AY406UT

MLRA: E47

Original Site Description: Author: DLT, DJS

Date: 12/10/1991

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: Very Dark Brown Loams to Sandy Loams

Surface Fragments(<=3" % cover, >3" % cover): Up to 40%

Subsurface Textures: Cobbly Loam or Cobbly Sandy Clay Loam

Subsurface Fragments(<=3" % vol, >3" % vol): 30-35%

Geologic Parent Materials:

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max): Moderate

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): 5-7

Major Soils Associated With This Site:

Soil Survey Area: 613

Ayoub Cb-L, 2-15%

Yeates Hollow Gr-L, 3-10%

Patio Gr-L, 40-60%

Bullnel Loam, 4-30%

Yeates Hollow Gr-L, 25-40%

Dunford Cb-L, 25-40%

Bullnel Gr-L, 2-50%

Moweba Gr-L, 6-50%

Richville Gr-L, 30-60%

St. Marys Loam, 10-40

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

1. Potential Plant Community Description and Ecological Factors

The vegetation of this site is a browse aspect and consists of about 25 percent shrubs, 60 percent grasses, and 15 percent forbs.

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
Slender wheatgrass	ELTR7		130	195	10	15
Bluebunch wheatgrass	PSSP6		130	195	10	15
Letterman needlegrass	ACLE9		65	130	5	10
Nevada bluegrass	PONE3		39	65	3	5
Muttongrass	POFE		39	65	3	5
Columbia needlegrass	ACNE9	1	13	65	1	5
Bottlebrush squirreltail	ELEL5	1	13	65	1	5
Geyer sedge	CAGE2	1	13	65	1	5
Mountain brome	BRCA5	1	13	65	1	5
Sheep fescue	FEOV	1	13	65	1	5
Other perennial grasses	PPGG	1	130	195	10	15
Other annual grasses	AAGG	1	130	195	10	15

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Sticky purple cranesbill	GEVI2	2	13	39	1	3
Thickleaf peavine	LALA3	2	13	39	1	3
Low beardtongue	PEHU	2	13	39	1	3
Longleaf phlox	PHLO2	2	13	39	1	3
Showy false goldeneye	HEMU3	2	13	39	1	3
Longleaf hawksbeard	CRAC2	2	13	39	1	3
Spurred lupine	LUCAC3	2	13	39	1	3
Common yarrow	ACMI2	2	13	39	1	3
Shortstem wild buckwheat	ERBR5	2	13	39	1	3
Small leaf pussytoes	ANMI3	2	13	39	1	3
Silverleaf milkvetch	ASAR4	2	13	39	1	3
Louisiana wormwood	ARLU	2	13	39	1	3
Lobeleaf groundsel	SEMU3	2	13	39	1	3
Other perennial forbs	PPFF	2	130	195	10	15
Other annual forbs	AAFF	2	130	195	10	15

Shrubs/Vines, %

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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		130	195	10	15
Bitterbrush	PUTR2		39	65	3	5
Birchleaf mountainmahogany	CEMO2		39	65	3	5
Mountain snowberry	SYOR2	3	13	26	1	2
Saskatoon serviceberry	AMAL2	3	13	26	1	2
Slender wild buckwheat	ERMI4	3	13	26	1	2
Spineless horsebrush	TECA2	3	13	26	1	2
Stickyleaf low rabbitbrush	CHVIV4	3	13	26	1	2
Other shrubs	SSSS	3	39	65	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	1900	2000
Average Year	1200	1300
Unfavorable Year	800	900

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	40	2	10
Forbs (perennial)	15	1	5
Shrubs	20	3	10
Trees			
Cryptogams			

b. Other

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Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As this site deteriorates due to excessive grazing big sagebrush and snowberry will increase. Fire will reduce the density of big sagebrush, but low rabbitbrush will increase.

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	20	50	5	10	5	5	0	0
Name	PNC											
ID Number	UT4061											
Description	Excellent Condition											

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent Growth	0	0	0	0	30	50	0	10	10	0	0	0
Name	Good Condition No. 1											
ID Number	UT4062											
Description	Needlegrass, Bluegrass and Sagebrush											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

047AY430UT

Mountain Loam (Mountain big sagebrush)

047AY432UT

Mountain Loam (Oak)

047AY434UT

Mountain Loam (Shrub)

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 fairly good balance of nutritious forage. Sheep, cattle and horses do well for the spring, summer and fall seasons.

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 produces good habitat for many species of wildlife.

b. List of Potential Species Present

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 excellent potential for aesthetics and natural beauty. It has a large number of forbs and shrubs which have flowers in bloom from early spring, throughout the summer, and into the fall. It has shrubs which offer screening for camping and picnicking. Hunting for upland game birds, snowshoe rabbits, elk and mule deer is good to excellent. Fishing is opportune on streams through and adjacent to this site. This site has values for snowmobiling and skiing during a fairly long period of the winter season.

4. Wood Products

None

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

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1. Plants
2. Animals

Both the American peregrine falcon and the prairie falcon may occasionally seek their prey on this site. They are both threatened or endangered.

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soil: Yeates Hollow GR-L, 3-50% – clayey-skeletal, montmorillonitic, frigid Typic Argixerolls

Type Location: SE ¼; SW ¼; SW ¼; Section 36, Township 1S, Range 4E.

General Legal Description:

Field Office Site Location

Logan
 Provo
 Murray
 Price
 Cedar City
 Richfield

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: 6/24/04 MLRA: 047A Ecological Site: Mountain Gravelly Loam (047AY406UT)
Slender wheatgrass, Bluebunch wheatgrass, 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 8 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.

2. Presence of water flow patterns: Flow patterns wind around 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 35% 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.

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): 70 to 80% of this site should have an erosion rating of 5 or 6. 20 to 30% may have a rating of 3 to 4. The average should be a 5. Litter accumulation and cryptogamic crusts reduce 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 6 to 11 inches. Structure varies from coarse granular to subangular blocky. Color varies from brown (7.5YR5/3) to very dark brown (10YR4/2). There is a mollic epipedon that ranges from 10 to 20 inches deep.

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

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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.

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 argillic horizon at about 6 to 20 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 > sprouting shrubs, perennial forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Slender wheatgrass, Bluebunch wheatgrass & Mountain big sagebrush; Sub-dominants: Letterman needlegrass, Bitterbrush. The perennial bunchgrass/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 (20-25%) and depth (.75-1.25 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 1200 - 1300 #/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": Green rabbitbrush, Spineless horsebrush, Bottlebrush squirreltail & Annual forbs.

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