

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 Very Steep Stony Loam (Mountain big sagebrush)

SITE NUMBER: 047AY474UT

MLRA: E47

Original Site Description: Author: DLT

Date: 12/23/1992

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:

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

Subsurface Textures: Sandy Loam to Clay

Subsurface Fragments(<=3" % vol, >3" % vol): >50%

Geologic Parent Materials: Alluvium and Colluvium from Sandstone, Shale, Limestone, Quartzite Schist, Gneiss and Igneous Rock

Moisture Regime:

Temperature Regime:

Runoff: Slight with Proper Management

Permeability(min-max): Slow to Rapid

Drainage Class(min-max): Well Drained

Water Erosion Hazard: None to Slight

Wind Erosion Hazard:

Electrical Conductivity (EC in mmhos/cm):

Sodium Adsorption Ration (SAR):

Soil Reaction (1:1 water):

Soil Reaction (0.1 M CaCl<sub>2</sub>):

pH Range:

Available Water Capacity (inches): 8-10

Major Soils Associated With This Site:

Soil Survey Area: 613

Cutoff Family GRV-SCL,M; 30-70%

Durst GR-L, 40-70%

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

#### **2. PHYSIOGRAPHIC FEATURES**



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### **1. Potential Plant Community Description and Ecological Factors**

This site has a general but somewhat scattered aspect of shrubs. The vegetation is approximately 65 percent perennial grasses, 10 percent forbs, and 25 percent shrubs by air-dry weight.

### **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
Bluebunch wheatgrass	PSSP6		420	490	30	35
Slender wheatgrass	ELTR7		70	140	5	10
Letterman needlegrass	ACLE9		42	70	3	5
Nevada bluegrass	PONE		42	70	3	5
Great basin wildrye	LECI4	1	14	42	1	3
Geyer sedge	CAGE2	1	14	42	1	3
Sheep fescue	FEOV	1	14	42	1	3
Muttongrass	POFE	1	14	42	1	3
Prairie junegrass	KOMA	1	14	42	1	3
Needleandthread	HECO26	1	14	42	1	3
King fescue	LEKI2	1	14	42	1	3
Bottlebrush squirreltail	ELEL5	1	14	42	1	3
Sandberg bluegrass	POSE	1	14	42	1	3
Bulbous oniongrass	MEBU	1	14	42	1	3
Other perennial grasses	PPGG	1	70	140	5	10
Other annual grasses	AAGG	1	70	140	5	10

Forbs, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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Site Type: Rangeland

Ecological Site Name: Mountain Very Steep Stony Loam (Mountain big sagebrush)

Site Number: 047AY474UT

	Symbol				Total Composition	
			Low	High	Low	High
Common yarrow	ACMI2	2	14	42	1	3
Wyoming Indian paintbrush	CALI4	2	14	42	1	3
Tolmie owlclover	ORTO	2	14	42	1	3
Tapertip onion	ALAC4	2	14	42	1	3
Western mountain aster	ASOC	2	14	42	1	3
Shortstem white buckwheat	ERBR5	2	14	42	1	3
Low beardtongue	PEHU	2	14	42	1	3
Whitestem globemallow	SPMU2	2	14	42	1	3
Sticky purple cranesbill	GEVI2	2	14	42	1	3
Louisiana wormwood	ARLU	2	14	42	1	3
Bastard toadflax	COUM	2	14	42	1	3
Rocky mountain dwarfsunflower	HEUN	2	14	42	1	3
Showy false goldeneye	HEMU3	2	14	42	1	3
Hairy false goldenaster	HEVI4	2	14	42	1	3
Spurred lupine	LUCAC3	2	14	42	1	3
Arrowleaf balsamroot	BASA3	2	14	42	1	3
White stoneseed	LIRU4	2	14	42	1	3
Other perennial forbs	PPFF	2	70	210	5	15
Other annual forbs	A AFF	2	70	210	5	15

## Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Mountain big sagebrush	ARTRV		140	210	10	15
Bitterbrush	PUTR2		42	70	3	5
Birchleaf mountain mahogany	CEMO2		42	70	3	5
Saskatoon serviceberry	AMAL2	3	14	56	1	4
Mountain snowberry	SYOR2	3	14	56	1	4
Creeping Oregon grape	MARE11	3	14	56	1	4
Stickyleaf low rabbitbrush	CHVIV4	3	14	56	1	4
Central pricklypear	OPPO	3	14	56	1	4
Other shrubs	SSSS	3	70	140	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**

Site Type: Rangeland

Ecological Site Name: Mountain Very Steep Stony Loam (Mountain big sagebrush)

Site Number: 047AY474UT

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	1500	1600
Average Year	1300	1400
Unfavorable Year	700	800

#### **4. Ground Cover and Structure**

##### a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	35	2	10
Forbs (perennial)	5	1	5
Shrubs	15	4	5
Trees			
Cryptogams			

##### b. Other

Litter	
Coarse Fragments	
Bare Ground	

#### **5. Ecological Dynamics of the Site**

Plant species likely to invade this site upon deterioration are cheatgrass, annual forbs, knotweed, Utah juniper, pinyon pine, rubber rabbitbrush and snakeweed.

#### **Plant Communities & Transitional Pathways**

(Show a steady state diagram with influences to move from one steady state to another)

#### **6. Plant Growth Curves**

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Site Number: 047AY474UT

	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	UT4741											
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											
ID Number	UT4742											
Description	needlegrass, bluegrass, big 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)

047AY402UT

Mountain Clay (Northern Mulesears)

### **9. Correlated Sites in Other States**

(Give site name and number)

## **D. MAJOR USES OF THIS SITE**

### **1. Livestock**

#### a. Site Factors Influencing Management

Livestock grazing is limited because of steep 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**

Site Type: Rangeland

Ecological Site Name: Mountain Very Steep Stony Loam (Mountain big sagebrush)

Site Number: 047AY474UT

a. Site Factors Influencing Management

This site is good habitat for many species of wildlife.

b. List of Potential Species Present

This site is good habitat for chukars, quail, sage grouse, mule deer, antelope, elk, squirrels, snowshoe hare, songbirds, coyotes, wildcats, cougars, golden eagles and bear.

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 steep site has good aesthetic appearance and natural beauty. It has a variety of grasses, forbs and shrubs which add diversity and color to the landscape. Hunting for upland game birds, deer and elk is good to excellent.

**4. Wood Products**

None

**5. Other Uses**

**E. THREATENED AND ENDANGERED SPECIES**

1. Plants
2. Animals

**F. MODAL LOCATION AND DOCUMENTATION**

State: Utah

County:

Site Type: Rangeland

Ecological Site Name: Mountain Very Steep Stony Loam (Mountain big sagebrush)

Site Number: 047AY474UT

Latitude: Longitude:

Modal Soil: Cutoff Family GRV-SCL, Moist 30-70% — loamy-skeletal, mixed frigid Calcixerollic Xerochrepts

Type Location: NW ¼, SE ¼, SE ¼; Section 35, Township 5N, Range 2E

General Legal Description:

**Field Office Site Location**

Logan

Murray

Provo

Price

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
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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 Very Steep Stony Loam (047AY474UT) Mountain big sagebrush, Bluebunch wheatgrass, Slender wheatgrass 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 40% 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: None. 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 4 or 5. 20 to 30% may have a rating of 3 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 5 inches. Structure typically ranges fine to medium granular. Color ranges from dark reddish brown (5YR3/4) to very dark grayish brown (10YR3/2). Soils typically vary from ochric to mollic epipedons, depths vary from 10 to 20 (5 for ochric) inches.

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

Site Type: Rangeland

10

Ecological Site Name: Mountain Very Steep Stony Loam (Mountain big sagebrush)

Site Number: 047AY474UT

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. Bedrock occurs at approximately 25 to 30 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 bunchgrasses, non-sprouting shrubs > sprouting shrubs, perennial & annual forbs > invaders such as Cheatgrass, Peppergrass & Annual mustards. Dominants: Bluebunch wheatgrass & Mountain big sagebrush; Sub-dominants: Bitterbrush & Slender wheatgrass. 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 bunchgrasses 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): 1300 - 1400 #/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.